

Supplemental Appendix 1

A new genus and two new species of tetras (Characiformes: Characidae), with a redescription and generic reassignment of *Axelrodia lindeae* Géry

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Species analyzed and their respective morphological data:

Amazonichthys lindeae: MPEG 31193, 27 alc, 18.1-24.9 mm SL, 2 CS, 19.5-24.2 mm SL, Brazil, Pará, Óbidos, Rio Amazonas, Igarapé Curuçambá.

?1010001000000000010100000000101001001000000010100010100000001101010*0
110001*00000000*0100010101000*000001000100000001*110100*1010010000000
00010100001000000000000100000000*****111100111100000*0110000001011
0000000000000000100000001001000010000011011010001000110010100010010010
1000011100000111000000100000001011001001000011000011010101000100000000
000000000000000100010001001000000000000010000000010010000111000001111[
01]010110001011[01]1011001110001100100100101101001000000001000101[01]100
01000000000000000000??00??0100???????

Amazonichthys camelierae: LIRP 16999, 7 alc, 25.0-28.6 mm SL, 4 CS, 24.6-26.7 mm SL, Brazil, Pará, Jacareacanga, Rio Amazonas, Rio Tapajós.

?10100010000000000101000000001010010010000[01]0010100010100000001101010
*0110001*00000000*0100010101000*000001000100000001*110000*10100100000
0000010100001000000000000100000000*****111100111100000*01100000010
11000000000000000001000000010010000100000110110100010001100101000100100
1010000111000001110000001000000010010010010000110000110101010001000000
000000000000000010001000100100000000000000100000000100100001110000011
11101011000101111011001110001100100100101101001001000001000101[01]10001
00000000000000000000??00??0100???????

Amazonichthys lu: INPA 26832, 48 alc, 15.2-17.4 mm SL, 2 CS, 16.3-17.2 mm SL, Brazil, Roraima, Boa Vista, Rio Negro, Igarapé Murupu tributary of Rio Branco.

?1010001000000000010100000000101001001000000010[01]00010100000001101010
*0110001*00000000*0100010101000*000001000100000[01]11*110100*101001000
000000010100001000000000000100000000*****111100111100000*011000000
1011000000000000000010000000100100001000001[01]011010001000110010100010
01001010000110000001110000[01]01000000010010010010000110000110101010001
0000000000000000000001000100010010000000000000100000000100100001110
00001111[01]010110001011[01]10110011100011000001001011010010000000010001
01[01]10001000000000000000000000000000??00??0100???????

Axelrodia stigmatias: INPA 29258, 48 (of 285), 14.7-24.9 mm SL, 2 CS, 18.4-18.6 mm SL, Brazil, Amazonas, Beruri, Rio Purus, Igarapé Ajará, Lago Ayapuá.

?10100010000000000101000000[01]0001001101001000000100010100001001101110
*01??001*00101000010000010101000*00000000010000*11**110100*101001000000
000010100001000000000000100000000****111100111000000*011000000001
000000000000000000010000000100100011000001101001000100011001000001001001
0100001110000011000001010010000100100100100001000001100010*00010000000
00000000000000001100100010010000000010000001000000001001000011100000001
00000010001[01]100001100000000000****001011000010010000010011011100111
0000000000000000??00??0100???????

Aphyocharacidium melandetum: ANSP 177067, 2 CS, 23.4-23.6 mmSL, Guyana,
Potaro-Siparuni, Essequibo River, Burro Burro River, Water Dog Falls.

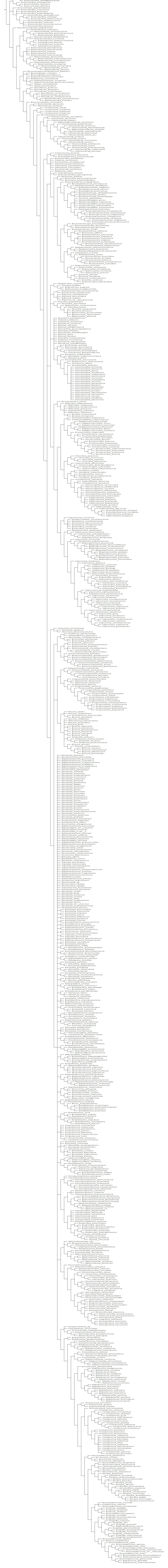
?1010001100000000010100000010*0100100100000001?[01]00010100000001101010
*1110001*0000[01]000010000010101000*000001000100001001*1100*0*101001000
0000000101000010000000000100101000000****11111100111101000*011000100
001100000000000000011000000100100001000001001101000100011001010001010
001010000111000011110000001??00000100100100100001100001[01]010101000100
0000000000000000?00010?010001001100000001000000[01]00000000100100001110
00001[01]1100[01]0010001010[01]101100111000101??00?0010????00100000000100
0??1[01]??00100000000000000000??00??0100???????

Species analyzed and their respective molecular data (COXI):

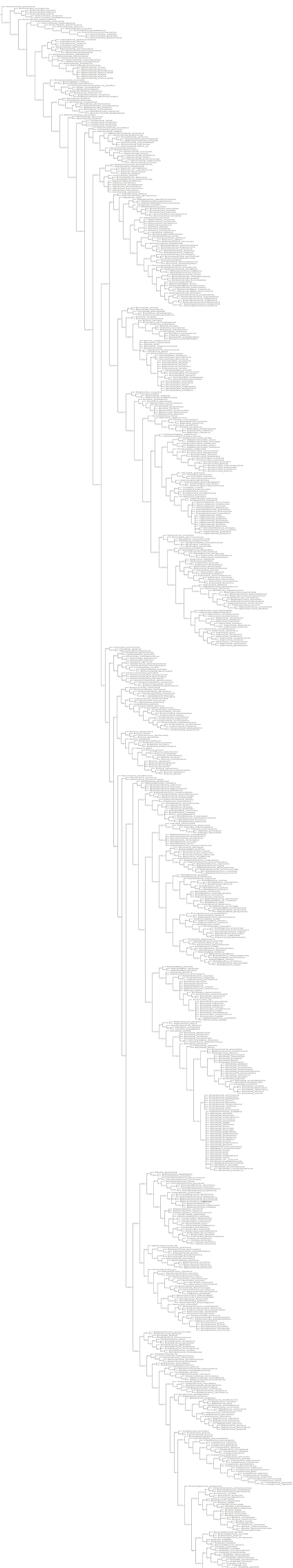
Aphyocharacidium melandetum: MHNG 2759.090, 21.9 mm SL, French Guiana, St
Laurent du Maroni, Maroni River. Genbank voucher GFSU14e-1505-1 cytochrome
oxidase subunit 1 (COI) gene, partial cds; mitochondrial, 852 bp linear DNA.

CTTTATTTGGTATTTGGTGCTTGAGCTGGAATAGTGGGCACAGCTCTTAGCC
TTCTAATTCGAGCAGAACTAAGCCAACCCGGATCTTTATTAGGCGATGATCA
AATTTATAATGTAATTGTTACTGCACACGCATTTGTAATAATTTTCTTTATAG
TTATAACCGTTATAATTGGAGGTTTTGGGAACTGACTTATTCCGCTAATAAT
TGGAGCCCCCGACATAGCCTTTCCACGAATAAACAATATGAGTTTTTACTA
CTCCCCCGTCATTCTTACTTCTCTTAGCCTCATCAGGCGTTGAGGCTGGTGC
CGGAACAGGTTGAACTGTTTACCCGCCTCTTGCGGGCAACCTGGCACATGC
AGGAGCTTCAGTAGACTTAACTATCTTCTCACTTCATTTAGCCGGGGTTTCC
TCTATTCTAGGGGCCATTAACCTTTATTACAACAATTATTAATAAAAACCC
CTGCCATTTACAATACCAAACACCATTATTTGTCTGAGCTGTCCTCATCAC
AGCTGTCCTCCTTCTCCTTTCTCTACCTGTTTTAGCAGCCGGAATCACCATAC
TTTTAACAGACCGTAATCTTAATACTACATTCTTTGACCCCGCAGGAGGAGG
AGACCCAATTCTTTATCAGCACTTA

Consensus of the eight most parsimonious trees obtained under equal weighting (length = 86,828 steps).

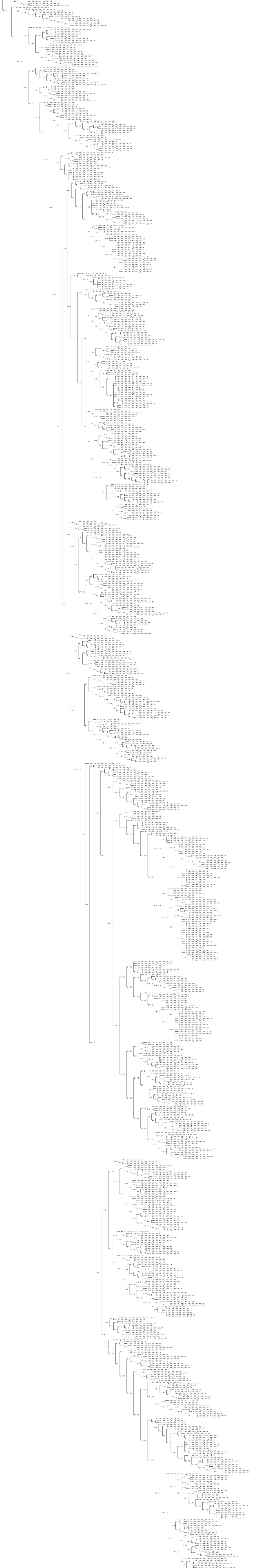


Consensus of the nine most parsimonious trees obtained from the combined phylogenetic analysis under parsimony and extended implied weighting (BLK; k = 16.07213706; fit = 160.251742; length = 79.959 steps). Support is expressed as GC-values (differences of frequencies “group present/contradicted”).



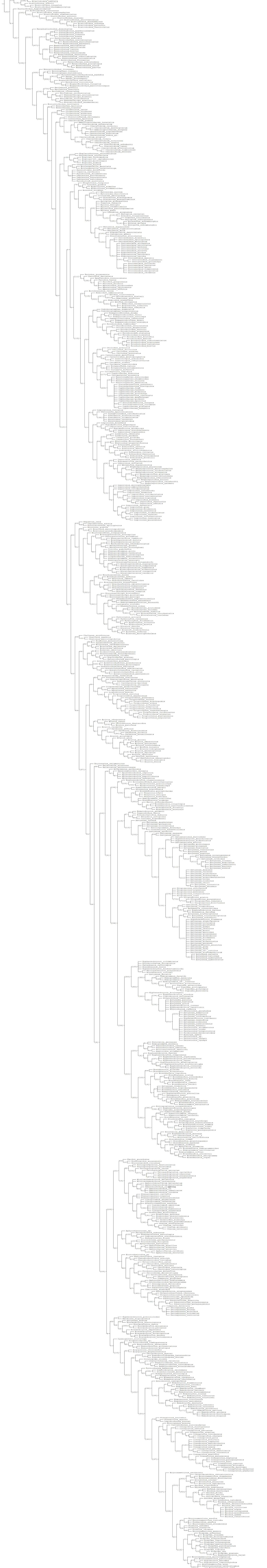
Analysis of the seven most parsimonious trees obtained from the combined phylogenetic analysis under parsimony and extended implied weighting (BLK; k = 25.00110209; fit = 128.806682; length = 79.654 steps).

Support is expressed as GC-values (differences of frequencies "group present/contradicted").



Consensus of the eight most parsimonious trees obtained from the combined phylogenetic analysis under parsimony and extended implied weighting (BLK; k = 32.14427412; fit = 112.208952; length = 79.684 steps).

Support is expressed as GC-values (differences of frequencies "group present/contradicted").



Analysis of the ten most parsimonious trees obtained from the combined phylogenetic analysis under parsimony and extended implied weighting (BLK; k=42.85903216; fit=95.780766; length=79,628 steps). Support is expressed as GC-values (differences of frequencies "group present/contradicted").



Consensus of the ten most parsimonious trees obtained from the combined phylogenetic analysis under parsimony and extended implied weighting (BLK; k =42.85903216; fit = 95.780766; length = 79.628 steps), with node numbers.



Synapomorphie list generated with consensus tree under extended implied weighting (BLK; $k = 42.85903216$; Node numbers refer to nodes in consensus)

Abramites_hypselonotus :

Char. 523: C --> T
Char. 532: A --> G
Char. 553: C --> T
Char. 562: C --> T
Char. 568: C --> T
Char. 607: A --> CT
Char. 631: T --> C
Char. 634: A --> G
Char. 637: T --> C
Char. 640: C --> T
Char. 664: C --> T
Char. 670: T --> C
Char. 679: C --> T
Char. 703: C --> T
Char. 712: C --> A
Char. 730: C --> T
Char. 749: C --> T
Char. 757: T --> A
Char. 775: A --> G
Char. 778: C --> T
Char. 785: C --> T
Char. 787: C --> A
Char. 796: A --> T
Char. 820: C --> A
Char. 823: A --> T
Char. 829: A --> T
Char. 833: C --> T
Char. 835: C --> AG
Char. 841: C --> T
Char. 864: C --> T
Char. 877: A --> G
Char. 880: T --> C
Char. 907: A --> T
Char. 910: C --> T
Char. 911: C --> T
Char. 940: C --> A
Char. 943: C --> T
Char. 970: C --> A
Char. 1003: A --> T
Char. 1012: C --> A
Char. 1048: C --> T
Char. 1057: C --> T
Char. 1081: A --> T
Char. 1091: C --> T
Char. 1094: C --> T
Char. 1096: T --> A
Char. 1125: C --> T
Char. 1153: C --> T
Char. 1165: C --> T
Char. 1171: C --> G
Char. 1189: T --> C
Char. 1195: A --> G
Char. 1210: C --> T
Char. 1252: A --> T
Char. 1271: C --> T
Char. 1283: C --> T
Char. 1303: C --> T
Char. 1346: A --> C
Char. 1363: C --> T
Char. 1402: T --> C
Char. 1405: A --> C
Char. 1459: C --> T
Char. 1466: G --> A
Char. 1467: C --> AT
Char. 1468: A --> G
Char. 1478: G --> A
Char. 1489: C --> A
Char. 1502: C --> T
Char. 1549: T --> C
Char. 1591: C --> T
Char. 1615: G --> A
Char. 1633: T --> A
Char. 1651: A --> T
Char. 1657: T --> C
Char. 1666: A --> G
Char. 1687: G --> A
Char. 1723: C --> T

Char. 1762: C --> T
Char. 1765: C --> T
Char. 1771: A --> T
Char. 1772: C --> T
Char. 1786: T --> C
Char. 1789: T --> G
Char. 1795: A --> T
Char. 1804: T --> C
Char. 1819: C --> T
Char. 1831: A --> CT
Char. 1867: A --> C
Char. 1909: C --> T
Char. 1927: C --> A
Char. 1948: C --> T
Char. 1988: T --> A
Char. 1996: T --> C
Char. 2005: C --> T
Char. 2014: C --> T
Char. 2020: C --> T
Char. 2050: C --> A
Char. 2104: T --> G
Char. 2122: C --> T
Char. 2128: A --> T
Char. 2440: A --> G
Char. 2491: T --> C
Char. 2530: C --> T
Char. 2664: C --> T
Char. 2725: A --> G
Char. 3464: G --> A
Char. 3610: G --> A
Char. 3628: C --> T
Char. 3661: A --> G
Char. 3727: G --> A
Char. 3763: C --> T
Char. 3769: T --> G
Char. 3799: G --> A
Char. 3882: T --> C
Char. 3889: C --> T
Char. 3970: T --> A
Char. 3989: C --> A
Char. 4034: C --> T
Char. 4066: G --> A
Char. 4147: G --> A
Char. 4153: C --> T
Char. 4219: C --> T
Char. 4255: A --> T
Char. 4360: C --> T
Char. 4470: T --> C
Char. 4521: G --> C
Char. 4540: C --> T
Char. 4869: G --> C
Char. 4887: C --> T
Char. 4926: G --> A
Char. 4977: C --> T
Char. 5023: C --> G
Char. 5076: G --> A
Char. 5196: C --> T
Char. 5259: C --> A
Char. 5373: T --> A
Char. 5454: G --> A
Char. 5543: A --> G
Char. 5544: T --> C
Char. 5744: C --> T
Char. 6211: A --> G
Char. 6253: A --> T
Char. 6254: A --> T
Char. 6300: G --> A
Char. 6424: T --> C
Char. 6452: A --> T
Char. 6477: A --> T
Char. 6485: A --> T
Char. 6569: G --> A
Char. 6589: A --> G
Acestrocephalus_sardina :
Dorsolateral_processes_of_vomer (15):
(1)_present --> (0)_absent
Length_of_caudal-fin_canal_of_lateral_line (126):
(1)_almost_reaching_posterior_margin_of_caudal_fin --> (0)_reaching_only_half_of_caudal-fin_length
Posterior_extension_of_ventral_process_of_quadrate (233):

(1)_with_posterodorsal_process_as_posteriormost_region -->
(0)_extended_more_than_posterodorsal_process
Lateral_lamella_of_pelvic_bone (373):
(1)_present_and_reaching_two_thirds_of_bone -->
(0)_absent_or_reduced_to_posterior_third_of_bone
Main_axis_of_supraneurals (396):
(0)_not_bifurcated -->
(1)_at_least_some_of_them_distally_bifurcated
Char. 1520: G --> A
Char. 1522: A --> C
Char. 1531: C --> T
Char. 1561: C --> T
Char. 1606: T --> C
Char. 1612: C --> T
Char. 1621: T --> C
Char. 1627: T --> A
Char. 1633: T --> A
Char. 1642: T --> C
Char. 1648: C --> T
Char. 1651: A --> G
Char. 1654: A --> G
Char. 1672: A --> G
Char. 1687: G --> A
Char. 1690: T --> C
Char. 1705: T --> C
Char. 1711: A --> C
Char. 1747: A --> G
Char. 1756: C --> T
Char. 1771: T --> C
Char. 1774: C --> T
Char. 1786: C --> T
Char. 1792: C --> T
Char. 1795: CT --> A
Char. 1798: A --> G
Char. 1801: C --> A
Char. 1804: A --> G
Char. 1816: A --> G
Char. 1819: T --> C
Char. 1828: A --> G
Char. 1831: A --> G
Char. 1834: CT --> G
Char. 1843: A --> T
Char. 1858: A --> G
Char. 1867: AT --> C
Char. 1876: A --> G
Char. 1882: T --> C
Char. 1885: C --> T
Char. 1897: C --> T
Char. 1909: T --> C
Char. 1921: A --> G
Char. 1924: A --> T
Char. 1945: T --> C
Char. 1954: T --> C
Char. 1957: A --> G
Char. 1966: T --> C
Char. 1969: T --> C
Char. 1978: C --> T
Char. 1984: C --> T
Char. 1987: T --> C
Char. 1993: G --> A
Char. 1999: A --> G
Char. 2014: CT --> G
Char. 2020: T --> C
Char. 2027: A --> G
Char. 2029: T --> G
Char. 2036: G --> A
Char. 2041: T --> G
Char. 2083: A --> G
Char. 2086: CT --> A
Char. 2101: C --> T
Char. 2110: T --> C
Char. 2119: T --> C
Char. 2143: A --> G
Char. 2146: T --> C
Char. 2149: CT --> G
Char. 2155: A --> G
Char. 3802: C --> T
Char. 3865: C --> T
Char. 3892: C --> T
Char. 3943: C --> T
Char. 3964: C --> T
Char. 4003: C --> T

Char. 4053: C --> T
Char. 4069: G --> A
Char. 4081: A --> G
Char. 4099: A --> C
Char. 4234: C --> T
Char. 4276: T --> C
Char. 4327: G --> T
Char. 4384: C --> T
Char. 4401: A --> G
Char. 4441: C --> T
Char. 4444: C --> T
Char. 4447: A --> G
Char. 4480: G --> A
Char. 4588: C --> T
Char. 4651: G --> C
Char. 4693: C --> T
Char. 4722: C --> T
Char. 4809: C --> G
Char. 4818: A --> G
Char. 4896: C --> T
Char. 4963: C --> A
Char. 4992: T --> C
Char. 5032: C --> T
Char. 5059: A --> G
Char. 5175: C --> T
Char. 5244: A --> G
Char. 5441: G --> A
Char. 5487: T --> C
Char. 5498: C --> A
Char. 5514: C --> T
Char. 5598: A --> C
Char. 5646: C --> T
Acestrorhynchus_lacustris :
Posterior_laminar_expansion_of_epiphyseal_bar
(33): (0)_absent --> (1)_present
Position_of_coronomeckelian (159):
(0)_situated_mainly_lateral_to_Meckelian_cartilage -->
(1)_situated_mainly_dorsal_to_Meckelian_cartilage
Anterior_tip_of_pelvic_bone (379):
(0)_anterior_to_fifth_rib -->
(1)_posterior_to_fifth_rib
Char. 688: A --> G
Char. 784: T --> A
Char. 1126: C --> T
Char. 1246: C --> T
Char. 1351: T --> C
Char. 1405: A --> G
Char. 1601: C --> T
Char. 1606: C --> T
Char. 1666: A --> G
Char. 1729: G --> A
Char. 1810: G --> A
Char. 1885: A --> C
Char. 1921: G --> A
Char. 1933: T --> C
Char. 6325: C --> T
Acestrorhynchus_pantaneiro :
No autapomorphies
Acrobrycon_ipanquianus :
Articulation_between_second_and_third_infraorbital
als (86): (1)_anteroventrally_angled --> (0)_vertical
Cartilage-
filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_cleithrum
Caudal-
fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (445): (0)_absent --> (1)_present
Hypertrophied_ventral-caudal-
peduncle_squamation (472): (0)_absent -->
(1)_present_restricted_to_scales_below_lateral_line
Char. 1558: T --> C
Char. 1561: C --> T
Char. 1598: C --> T
Char. 1639: A --> G
Char. 1705: T --> A
Char. 1708: T --> C
Char. 1750: A --> G
Char. 1762: T --> C
Char. 1765: C --> T
Char. 1777: C --> T
Char. 1825: A --> G
Char. 1831: A --> G
Char. 1843: T --> C
Char. 1849: A --> G
Char. 1852: A --> T
Char. 1903: T --> C
Char. 1918: C --> T
Char. 1927: T --> A
Char. 2024: T --> C
Char. 2056: C --> T
Char. 2101: C --> T
Char. 2131: A --> C
Char. 2137: A --> G
Char. 2158: C --> T
Char. 2332: T --> C
Char. 2530: C --> T
Char. 2632: G --> A
Char. 2707: G --> A
Char. 3466: C --> T
Char. 3508: A --> T
Char. 3541: A --> T
Char. 3730: G --> A
Char. 3767: A --> G
Char. 3775: G --> A
Char. 3845: C --> A
Char. 3952: C --> A
Char. 4398: A --> T
Char. 4441: C --> T
Char. 4466: G --> T
Char. 4591: G --> A
Char. 5299: C --> A
Char. 5394: A --> G
Char. 5664: C --> T
Char. 5688: C --> T
Char. 5845: A --> G
Char. 6016: T --> C
Char. 6040: A --> G
Char. 6254: A --> G
Char. 6322: T --> C
Char. 6357: A --> G
Char. 6361: T --> C
Char. 6414: A --> G
Char. 6440: A --> G
Char. 6515: A --> G
Agoniates_anchovia :
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Posterior_extension_of_ventral_process_of_quadrate
(233):
(0)_extended_more_than_posterodorsal_process -->
(1)_with_posterodorsal_process_as_posteriormost_region
Total_number_of_vertebrae (326):
(0)_40_or_fewer --> (1)_41_or_more
Posterior_margin_of_cleithrum (342):
(0)_with_concavity_poorly_pronounced_or_lacking -->
(1)_with_markedly_concave_margin_almost_forming_straight_angle
Char. 532: A --> G
Char. 533: C --> T
Char. 538: C --> T
Char. 547: A --> G
Char. 562: C --> T
Char. 571: A --> G
Char. 574: C --> G
Char. 583: A --> C
Char. 607: A --> C
Char. 640: C --> T
Char. 658: C --> T
Char. 697: C --> T
Char. 712: C --> G
Char. 742: T --> C
Char. 757: C --> T
Char. 781: C --> T
Char. 784: C --> T
Char. 808: C --> T
Char. 829: C --> T
Char. 838: C --> A
Char. 856: A --> G
Char. 859: A --> G
Char. 913: A --> C
Char. 946: A --> T
Char. 950: G --> A
Char. 961: A --> G
Char. 971: C --> T
Char. 985: C --> T
Char. 988: T --> C
Char. 1003: C --> T
Char. 1006: C --> T
Char. 1012: C --> T
Char. 1021: A --> G
Char. 1069: A --> G
Char. 1087: A --> T
Char. 1100: A --> T
Char. 1102: A --> G
Char. 1111: A --> C
Char. 1141: A --> G
Char. 1183: A --> G
Char. 1195: A --> G
Char. 1198: C --> T
Char. 1211: C --> T
Char. 1213: A --> G
Char. 1216: T --> C
Char. 1225: C --> T
Char. 1243: A --> T
Char. 1249: A --> G
Char. 1270: A --> C
Char. 1276: C --> T
Char. 1291: T --> C
Char. 1329: G --> C
Char. 1345: C --> T
Char. 1351: C --> T
Char. 1354: A --> G
Char. 1357: C --> T
Char. 1385: A --> C
Char. 1402: T --> C
Char. 1405: A --> G
Char. 1414: A --> G
Char. 1426: A --> G
Char. 1429: C --> T
Char. 3487: C --> T
Char. 3532: C --> T
Char. 3613: G --> A
Char. 4411: G --> T
Char. 4414: G --> A
Char. 4731: C --> T
Char. 4814: G --> A
Char. 4830: G --> A
Char. 4835: C --> T
Char. 4839: G --> A
Char. 5009: C --> T
Char. 5061: C --> G
Char. 5079: C --> T
Char. 5162: C --> T
Char. 5163: A --> G
Char. 5242: C --> T
Char. 5264: C --> T
Char. 5330: G --> A
Char. 5340: C --> T
Char. 5427: T --> A
Char. 5595: T --> C
Char. 5606: T --> A
Char. 5660: G --> A
Char. 5712: T --> G
Char. 5743: A --> T
Char. 6211: A --> G
Char. 6253: A --> G
Char. 6298: A --> T
Char. 6301: T --> C
Char. 6345: A --> G
Char. 6374: A --> G
Char. 6414: A --> G
Char. 6424: C --> T
Char. 6484: C --> T
Char. 6485: A --> G
Char. 6567: A --> G
Agoniates_halecinus :
Position_of_foramen_anteromedial_to_auditory_fo

ramen (57):
(0)_more_distant_than_anterolateral_foramen_from_auditory_foramen -->
(1)_as_close_as_anterolateral_foramen_from_auditory_foramen

Shape_of_dentigerous_plate_of_fifth_ceratobranchial (287): (1)_elongated,_without_posterior_notch --> (0)_rounded,_with_posterior_notch

Char. 529: A --> C
Char. 544: T --> A
Char. 565: C --> T
Char. 569: A --> T
Char. 572: G --> T
Char. 573: C --> G
Char. 577: T --> C
Char. 586: C --> G
Char. 588: C --> G
Char. 673: C --> T
Char. 694: T --> C
Char. 700: T --> C
Char. 706: C --> T
Char. 724: A --> G
Char. 727: A --> G
Char. 730: C --> T
Char. 739: A --> T
Char. 760: A --> G
Char. 766: C --> T
Char. 775: A --> C
Char. 787: C --> A
Char. 802: A --> G
Char. 850: T --> C
Char. 853: T --> C
Char. 868: A --> C
Char. 871: A --> G
Char. 880: T --> C
Char. 901: T --> C
Char. 925: T --> C
Char. 941: C --> T
Char. 942: T --> A
Char. 944: C --> A
Char. 955: T --> C
Char. 956: G --> A
Char. 1018: A --> G
Char. 1019: C --> T
Char. 1024: C --> T
Char. 1042: C --> T
Char. 1072: C --> A
Char. 1093: A --> G
Char. 1096: T --> A
Char. 1099: A --> G
Char. 1104: T --> A
Char. 1117: C --> T
Char. 1118: C --> T
Char. 1156: C --> T
Char. 1189: C --> T
Char. 1228: C --> T
Char. 1229: C --> T
Char. 1255: A --> C
Char. 1300: C --> T
Char. 1303: C --> T
Char. 1309: T --> C
Char. 1358: C --> T
Char. 1372: A --> T
Char. 1375: C --> T
Char. 1381: C --> T
Char. 1384: A --> G
Char. 1408: A --> C
Char. 3479: G --> A
Char. 3523: T --> C
Char. 3533: A --> G
Char. 3985: C --> T
Char. 4159: A --> T
Char. 4261: C --> A
Char. 4345: A --> T
Char. 4466: G --> T
Char. 4716: G --> A
Char. 4770: C --> T
Char. 4847: A --> T
Char. 4878: G --> A
Char. 4887: T --> C
Char. 5008: C --> A
Char. 5088: A --> G

Char. 5151: C --> T
Char. 5235: C --> T
Char. 5657: T --> G
Char. 5709: A --> C
Char. 6319: A --> C
Char. 6329: T --> C
Char. 6357: A --> G
Char. 6408: G --> A
Char. 6412: A --> G
Char. 6442: A --> C
Char. 6445: A --> T
Char. 6454: A --> G
Char. 6475: T --> C
Char. 6477: A --> G
Char. 6514: T --> C

Alestes_macrophthalmus :

Char. 715: C --> T
Char. 751: T --> C
Char. 781: C --> T
Char. 805: A --> G
Char. 832: C --> T
Char. 854: A --> G
Char. 868: A --> C
Char. 969: C --> T
Char. 1006: T --> C
Char. 1033: A --> G
Char. 1039: A --> G
Char. 1042: T --> C
Char. 1054: C --> T
Char. 1111: C --> T
Char. 1117: C --> T
Char. 1165: C --> T
Char. 1249: A --> G
Char. 1250: C --> T
Char. 1255: A --> G
Char. 1258: A --> G
Char. 1267: C --> G
Char. 1291: A --> G
Char. 1300: C --> T
Char. 1309: A --> G
Char. 1318: A --> G
Char. 1324: A --> G
Char. 1339: C --> T
Char. 1399: A --> G
Char. 1411: A --> G
Char. 1420: A --> G
Char. 1435: T --> C
Char. 1456: A --> G
Char. 1462: C --> T
Char. 1519: T --> A
Char. 1534: A --> G
Char. 1543: A --> G
Char. 1573: G --> A
Char. 1630: T --> C
Char. 1639: A --> G
Char. 1699: T --> C
Char. 1708: G --> C
Char. 1717: A --> G
Char. 1747: A --> G
Char. 1828: A --> G
Char. 1882: C --> T
Char. 1888: A --> C
Char. 1903: T --> C
Char. 1927: T --> C
Char. 1954: T --> C
Char. 2125: T --> C

Aphyocharacidium_bolivianum :

No autapomorphies
Aphyocharacidium_melandetum :

No autapomorphies
Amazonichthys_lu (MCP 37314) :

All trees:

Parietal_branch_of_laterosensory_canal (116):
(0)_present_reaching_parietal_bone_or_not -->
(1)_completely_absent

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent

Shape_of_dentigerous_plate_of_fifth_ceratobranchial (287): (1)_elongated,_without_posterior_notch --> (0)_rounded,_with_posterior_notch

Denticles_on_gill_rakers (300): (0)_present -->
(1)_absent

Distribution_of_bony_hooks_on_pelvic-fin_segments_of_adult_males (450):

(1)_unpaired,_oriented_medially -->
(0)_bilateral,_at_least_in_some_segments

Amazonichthys_lindeae :

Development_of_transverse_process_of_neural_arc_h_of_third_vertebra (312):

(0)_not_reaching_anterior_margin_of_tripus -->
(1)_well_developed_and_extending_beyond_anterior_margin_of_tripus

Amazonichthys_camelierae :

Lateral_line (123): (1)_interrupted -->
(0)_complete

Number_of_scales_in_lateral_series (467):

(0)_33_or_more --> (1)_32_or_fewer
Amazonichthys_lu :

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent

Shape_of_dentigerous_plate_of_fifth_ceratobranchial (287): (1)_elongated,_without_posterior_notch --> (0)_rounded,_with_posterior_notch

Distribution_of_bony_hooks_on_pelvic-fin_segments_of_adult_males (450):

(1)_unpaired,_oriented_medially -->
(0)_bilateral,_at_least_in_some_segments

Axelrodia_stigmatias :

Relative_length_of_frontal_fontanel (29):

(1)_3/4_or_more_of_length_of_parietal_fontanel -->
(0)_up_to_2/3_length_of_parietal_fontanel

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):

(0)_contacting,_or_almost_contacting,_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids

Articulation_between_second_and_third_infraorbitals (86): (0)_vertical --> (1)_anteroventrally_angled

Ventral_extent_of_third_infraorbital (88):

(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly -->
(0)_reaching_horizontal_arm_of_preopercle

Foramen_in_posterior_region_of_metapterygoid (227):

(1)_present,_encircled_by_metapterygoid_or_bordered_by_cartilage -->

(0)_an_incomplete_arch,_bordered_posteriorly_by_hyomandibula

Large_medial_foramen_on_hyomandibula

(241): (0)_absent -->

(1)_present,_communicating_with_hyomandibular_canal

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent

Denticles_on_gill_rakers (300): (0)_present -->

(1)_absent

Dorsal_development_of_third_postcleithrum (365):

(0)_projects_dorsally_to_posterior_region_of_scapula -->

(1)_not_projects_dorsally_to_posterior_region_of_scapula

Number_of_branched_anal-fin_rays (419):

(1)_18_or_more --> (0)_17_or_fewer

Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Aphyocharax_anisitsi :
Number_of_supraneurals (393):
(1)_six_or_more --> (0)_five_or_fewer
Bony_hooks_on_first_pelvic-fin_ray_of_adult_males (448): (0)_absent -->
(1)_present
Char. 664: T --> C
Char. 685: C --> T
Char. 700: T --> C
Char. 706: AC --> G
Char. 751: T --> C
Char. 820: A --> G
Char. 841: C --> T
Char. 856: A --> G
Char. 871: A --> G
Char. 886: G --> A
Char. 889: G --> A
Char. 901: T --> C
Char. 913: A --> T
Char. 940: A --> T
Char. 943: A --> G
Char. 949: T --> C
Char. 958: A --> G
Char. 964: A --> G
Char. 988: T --> A
Char. 1003: T --> C
Char. 1015: AC --> T
Char. 1099: A --> G
Char. 1135: A --> G
Char. 1141: A --> T
Char. 1144: C --> T
Char. 1294: A --> G
Char. 1333: A --> G
Char. 1339: C --> T
Char. 1348: T --> C
Char. 1522: A --> G
Char. 1537: T --> C
Char. 1633: T --> G
Char. 1654: A --> G
Char. 1675: C --> T
Char. 1720: T --> C
Char. 1744: C --> T
Char. 1774: T --> C
Char. 1796: C --> T
Char. 1873: T --> C
Char. 1903: T --> C
Char. 1906: C --> T
Char. 1972: A --> G
Char. 2026: A --> G
Char. 2032: A --> G
Char. 2038: T --> C
Char. 2053: A --> T
Char. 2059: A --> T
Char. 2074: A --> T
Char. 2080: A --> T
Char. 2248: C --> T
Char. 2725: C --> T
Char. 2791: T --> G
Char. 3715: G --> A
Char. 3895: C --> A
Char. 3913: G --> C
Char. 3943: T --> A
Char. 3985: C --> T
Char. 4373: T --> G
Char. 4417: G --> A
Char. 4528: G --> A
Char. 4911: T --> C
Char. 5082: G --> CT
Char. 5298: C --> A
Char. 5322: C --> AT
Char. 5409: G --> A
Char. 5466: C --> A
Char. 5933: T --> C
Char. 5972: A --> G
Char. 5973: G --> A
Char. 6005: C --> T
Char. 6020: A --> G
Char. 6028: T --> C
Char. 6040: A --> G
Char. 6042: T --> C
Char. 6293: T --> A

Char. 6326: A --> G
Char. 6328: A --> G
Char. 6333: T --> C
Char. 6381: A --> T
Char. 6589: G --> A
Aphyocharax_dentatus :
Char. 670: C --> T
Char. 673: C --> T
Char. 674: A --> T
Char. 679: T --> C
Char. 715: T --> C
Char. 739: A --> G
Char. 829: T --> C
Char. 832: T --> C
Char. 833: T --> C
Char. 847: A --> G
Char. 911: C --> T
Char. 919: A --> G
Char. 941: C --> T
Char. 979: C --> T
Char. 991: T --> C
Char. 1000: C --> T
Char. 1013: G --> A
Char. 1018: A --> G
Char. 1024: C --> T
Char. 1039: A --> G
Char. 1054: C --> A
Char. 1063: T --> C
Char. 1094: C --> T
Char. 1100: T --> C
Char. 1120: A --> G
Char. 1129: C --> T
Char. 1133: T --> C
Char. 1141: A --> G
Char. 1153: C --> T
Char. 1156: T --> C
Char. 1175: G --> A
Char. 1180: C --> T
Char. 1201: A --> G
Char. 1207: C --> T
Char. 1225: T --> C
Char. 1229: C --> T
Char. 1249: A --> G
Char. 1267: C --> T
Char. 1271: C --> G
Char. 1300: A --> G
Char. 1315: A --> G
Char. 1318: T --> C
Char. 1331: C --> T
Char. 1357: C --> T
Char. 1417: A --> C
Char. 3784: G --> A
Char. 3830: C --> T
Char. 3947: C --> T
Char. 4192: C --> A
Char. 4437: A --> T
Char. 4451: C --> T
Char. 4454: A --> T
Char. 4460: C --> A
Char. 4461: G --> A
Char. 4497: C --> T
Char. 4527: T --> AC
Char. 4881: T --> G
Char. 5154: C --> T
Char. 5538: G --> A
Char. 6183: A --> G
Char. 6254: T --> A
Char. 6497: A --> G
Char. 6508: T --> C
Char. 6514: A --> G
Char. 6519: T --> C
Aphyocharax_nattereri :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (1)_present --> (0)_absent
Rhinosphenoid (34): (1)_present --> (0)_absent
Length_of_laterosensory_canal_of_dentary (103):
(0)_piercing_almost_entire_length_of_dentary -->
(1)_reduced_or_absent
Anguloarticular_laterosensory_canal (105):
(0)_present --> (1)_absent

Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Relative_length_of_palatine (209):
(1)_distinctly_longer_than_one-half_length_of_ectopterygoid -->
(0)_approximately_one-half_length_of_ectopterygoid_or_less
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial
Number_of_branched_rays_on_dorsal_fin (409): (1)_nine_or_more --> (0)_eight_or_fewer
Squamation_of_isthmus (464):
(0)_with_two_or_more_rows_of_scales -->
(1)_with_only_one_row_or_a_triad_of_scales
Number_of_scales_in_lateral_series (467):
(0)_33_or_more --> (1)_32_or_fewer
Fused_gill_filaments_associated_with_gland_cells (511): (1)_present --> (0)_absent
Char. 652: A --> T
Char. 685: C --> T
Char. 799: A --> G
Char. 802: A --> G
Char. 829: T --> C
Char. 841: C --> A
Char. 856: A --> C
Char. 865: A --> T
Char. 910: C --> A
Char. 913: A --> T
Char. 943: A --> T
Char. 949: T --> C
Char. 951: C --> T
Char. 953: A --> G
Char. 955: CT --> A
Char. 960: C --> G
Char. 961: A --> G
Char. 979: C --> T
Char. 988: T --> A
Char. 1039: A --> G
Char. 1045: A --> C
Char. 1057: C --> T
Char. 1063: T --> A
Char. 1066: T --> C
Char. 1086: T --> C
Char. 1105: T --> A
Char. 1111: C --> A
Char. 1135: A --> T
Char. 1150: A --> G
Char. 1159: C --> A
Char. 1165: C --> T
Char. 1174: A --> G
Char. 1219: C --> T
Char. 1231: A --> G
Char. 1234: A --> G
Char. 1250: C --> T
Char. 1258: A --> G
Char. 1261: C --> A
Char. 1262: C --> T
Char. 1283: C --> T
Char. 1298: G --> A
Char. 1306: A --> G
Char. 1315: A --> T
Char. 1321: A --> G
Char. 1336: A --> G
Char. 1346: C --> G
Char. 1348: T --> G
Char. 1357: C --> A
Char. 1367: A --> G
Char. 1368: C --> T
Char. 1369: T --> G
Char. 1372: A --> G
Char. 2232: A --> G
Char. 2305: C --> A
Char. 2419: C --> T
Char. 2548: C --> T
Char. 2560: A --> G
Char. 2572: T --> C
Char. 2602: C --> A
Char. 2629: C --> T

Char. 2653: G --> C
Char. 2713: T --> C
Char. 2827: G --> A
Char. 2860: T --> C
Char. 3472: C --> G
Char. 3583: G --> A
Char. 3658: A --> T
Char. 3670: A --> T
Char. 3770: C --> A
Char. 3775: A --> G
Char. 3844: A --> G
Char. 3845: C --> T
Char. 3865: C --> T
Char. 3877: C --> T
Char. 3889: C --> T
Char. 3931: G --> A
Char. 3955: A --> T
Char. 3982: C --> T
Char. 4000: A --> G
Char. 4006: C --> T
Char. 4021: A --> G
Char. 4033: G --> T
Char. 4057: C --> T
Char. 4075: C --> T
Char. 4111: G --> A
Char. 4165: G --> A
Char. 4192: C --> T
Char. 4216: G --> C
Char. 4252: G --> T
Char. 4267: C --> T
Char. 4333: G --> A
Char. 4374: C --> T
Char. 4451: C --> T
Char. 4471: G --> A
Char. 4498: T --> C
Char. 4516: T --> C
Char. 4519: G --> C
Char. 4555: T --> C
Char. 4588: C --> T
Char. 4600: C --> T
Char. 4650: C --> T
Char. 4860: G --> T
Char. 4920: G --> A
Char. 5055: A --> T
Char. 5079: C --> T
Char. 5277: C --> G
Char. 5296: A --> G
Char. 5299: C --> T
Char. 5361: T --> G
Char. 5439: A --> T
Char. 5441: G --> A
Char. 5499: A --> T
Char. 5505: G --> A
Char. 5523: C --> T
Char. 5555: C --> T
Char. 5605: C --> T
Char. 5625: G --> C
Char. 5679: G --> A
Char. 6191: C --> T
Char. 6195: A --> C
Char. 6293: T --> A
Char. 6328: A --> T
Char. 6342: G --> A
Char. 6423: A --> G
Char. 6471: T --> G
Char. 6484: A --> T
Char. 6505: G --> A
Char. 6629: A --> T
Aphyodite_grammica :
Form_of_mesethmoid_spine (3):
(0)_long_extending_between_premaxillae -->
(1)_relatively_short_with_premaxillae_articulating
_anteriorly
Anterior_paired_projections_of_parasphenoid
(43): (1)_present --> (0)_absent
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than
_antorbital_width
Articulation_between_second_and_third_infraorbit
als (86): (0)_vertical --> (1)_anteroventrally_angled

Fourth_infraorbital (90): (0)_present -->
(1)_absent
Fourth_infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_
infraorbitals -->
(1)_absent_or_excluded_from_posterior_margin_of_
_infraorbital_series
Anterior_extension_of_anguloarticular_laterosenso
ry_canal (106):
(0)_not_reaching_vertical_through_Meckelian_cart
ilage -->
(1)_reaching_vertical_through_Meckelian_cartilage
Length_of_ascending_process_of_premaxilla
(129): (0)_reaching_at_least_one_
third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_
_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meck
elian_cartilage
Number_of_rows_of_premaxillary_teeth (170):
(1)_two_or_three --> (0)_one
Number_of_teeth_on_inner_premaxillary_row
(182): (0)_five_or_fewer --> (1)_six_or_more
Number_of_teeth_on_inner_premaxillary_row
(183): (0)_six_or_fewer --> (1)_seven_or_more
Number_of_teeth_on_inner_premaxillary_row
(184): (0)_seven_or_fewer --> (1)_eight_or_more
Number_of_cusps_of_anterior_maxillary_teeth
(192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp
Size_and_number_of_anterior_dentary_teeth
(199):
(0)_four_or_five_relatively_broad_teeth_at_front_o
f_dentary -->
(1)_eight_or_more_small_and_slender_teeth_at_fro
nt_of_dentary
Number_of_cusps_of_anterior_dentary_teeth
(201): (1)_five_or_more --> (0)_three_or_fewer
Abrupt_decrease_in_size_of_dentary_teeth
(207): (1)_present --> (0)_absent
Relative_length_of_palatine (209):
(0)_approximately_one_
half_length_of_ectopterygoid_or_less -->
(1)_distinctly_longer_than_one_
half_length_of_ectopterygoid
Rows_of_gill_rakers_on_second_ceratobranchial
(292): (0)_one --> (1)_two
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_
less
Process_of_scapula_forming_anterior_border_of_s
capular_foramen (359): (0)_present --> (1)_absent
Origin_of_A1_section_of_adductor_mandibulae
(476):
(0)_principally_on_vertical_arm_of_preopercle -->
(1)_restricted_or_almost_restricted_to_horizontal_a
rm_of_preopercle
Char. 565: C --> T
Char. 586: A --> C
Char. 607: A --> C
Char. 613: C --> T
Char. 619: A --> G
Char. 625: T --> C
Char. 631: C --> T
Char. 664: C --> T
Char. 670: T --> C
Char. 682: T --> C
Char. 700: T --> C
Char. 730: C --> T
Char. 754: T --> A
Char. 775: A --> G
Char. 784: T --> A
Char. 799: A --> G
Char. 808: T --> C
Char. 841: T --> C
Char. 856: A --> G

Char. 892: T --> C
Char. 904: T --> C
Char. 919: A --> C
Char. 1015: C --> A
Char. 1018: T --> A
Char. 1042: C --> T
Char. 1048: C --> T
Char. 1066: C --> T
Char. 1081: A --> G
Char. 1094: A --> G
Char. 1108: A --> T
Char. 1177: T --> C
Char. 1201: A --> G
Char. 1231: T --> C
Char. 1240: C --> T
Char. 1276: T --> C
Char. 1294: A --> G
Char. 1295: C --> T
Char. 1303: C --> A
Char. 1315: A --> C
Char. 1329: G --> C
Char. 1330: C --> A
Char. 1366: A --> G
Char. 1375: T --> A
Char. 1381: C --> T
Char. 1405: A --> T
Char. 1411: G --> A
Char. 1455: T --> C
Char. 1480: C --> T
Char. 1481: C --> A
Char. 1507: A --> G
Char. 2313: T --> C
Char. 2497: G --> A
Char. 2518: A --> T
Char. 2623: T --> A
Char. 2664: C --> T
Char. 2728: A --> G
Char. 2875: A --> G
Char. 2896: T --> C
Char. 2902: C --> T
Char. 3586: G --> A
Char. 3716: G --> C
Char. 3811: G --> A
Char. 3844: A --> G
Char. 3913: A --> G
Char. 4045: A --> G
Char. 4426: G --> A
Char. 4469: A --> G
Char. 4633: T --> C
Char. 4646: A --> T
Char. 4721: A --> C
Char. 4800: T --> C
Char. 4884: A --> G
Char. 5059: A --> G
Char. 5322: C --> T
Char. 5472: T --> C
Char. 5538: G --> A
Char. 5589: T --> C
Char. 5616: A --> C
Char. 5625: G --> T
Char. 5634: A --> G
Char. 5694: T --> G
Char. 6118: T --> C
Char. 6119: T --> C
Char. 6130: A --> G
Char. 6182: A --> G
Char. 6253: A --> T
Char. 6298: A --> T
Char. 6301: T --> C
Char. 6319: A --> G
Char. 6343: G --> A
Char. 6365: A --> G
Char. 6381: A --> G
Char. 6417: T --> A
Char. 6441: G --> T
Char. 6444: T --> A
Char. 6462: G --> A
Char. 6475: T --> C
Char. 6484: T --> C
Char. 6493: A --> T
Char. 6562: C --> T
Char. 6575: T --> C
Argopleura_magdalensis :

Char. 3501: C --> T
Char. 3559: G --> A
Char. 3823: T --> C
Char. 3835: C --> T
Char. 3925: G --> C
Char. 4066: C --> G
Char. 4411: G --> T
Char. 4444: C --> A
Char. 4480: G --> T
Char. 4537: G --> A
Char. 4585: C --> T
Char. 6015: A --> G
Char. 6074: C --> T
Char. 6327: A --> G
Char. 6414: A --> G
Char. 6433: T --> G
Astyanacinus moorii :
Anterior_paired_projections_of_parasphenoid
(43): (0)_absent --> (1)_present

Position_of_foramen anteromedial_to_auditory_foramen (57):
(0)_more_distant_than anterolateral_foramen_from_auditory_foramen -->
(1)_as_close_as anterolateral_foramen_from_auditory_foramen
Number_of_maxillary_teeth (189):
(0)_only_one,_or_absent --> (1)_two_or_more

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (1)_six_or_more --> (0)_five_or_fewer
Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present,_communicating_with_hyomandibular_canal
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins,_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epicapital -->
(1)_posterior_to_lateral_margin_of_epiocapital
Bony_lamellae_associated_with_supraneurals (397):
(1)_wider_than_primary_axis_of_supraneurals -->
(0)_absent_or_small

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half -->
(0)_on_vertical_through_Meckelian_cartilage_posterior_half
Chevron-shaped_lines_following_myosepta (498): (0)_absent --> (1)_present
Char. 538: C --> T
Char. 550: C --> T
Char. 559: T --> A
Char. 568: A --> T
Char. 601: A --> G
Char. 621: T --> C
Char. 622: T --> C
Char. 632: A --> T
Char. 640: T --> C
Char. 649: A --> T
Char. 655: C --> T
Char. 664: C --> T
Char. 670: T --> C
Char. 673: C --> T
Char. 694: T --> A
Char. 700: C --> T
Char. 706: C --> A
Char. 709: C --> T
Char. 736: T --> C
Char. 739: T --> A
Char. 751: C --> T
Char. 757: A --> C
Char. 760: A --> G
Char. 787: A --> C
Char. 802: A --> G

Char. 823: A --> T
Char. 845: G --> A
Char. 853: T --> C
Char. 859: A --> G
Char. 866: C --> T
Char. 880: T --> C
Char. 886: C --> A
Char. 892: C --> T
Char. 907: C --> G
Char. 940: T --> C
Char. 943: A --> G
Char. 950: G --> A
Char. 951: T --> C
Char. 962: G --> A
Char. 963: C --> T
Char. 982: C --> T
Char. 997: A --> C
Char. 1003: A --> T
Char. 1030: C --> T
Char. 1043: T --> C
Char. 1048: C --> T
Char. 1065: A --> T
Char. 1072: C --> T
Char. 1081: T --> G
Char. 1084: T --> C
Char. 1096: T --> C
Char. 1097: A --> T
Char. 1100: G --> A
Char. 1107: C --> T
Char. 1110: C --> T
Char. 1114: A --> G
Char. 1117: C --> T
Char. 1120: A --> T
Char. 1123: T --> C
Char. 1129: C --> T
Char. 1135: C --> T
Char. 1171: A --> T
Char. 1183: A --> T
Char. 1198: A --> C
Char. 1219: C --> T
Char. 1225: C --> T
Char. 1246: T --> C
Char. 1249: A --> G
Char. 1252: A --> T
Char. 1267: A --> C
Char. 1270: C --> T
Char. 1285: A --> T
Char. 1288: A --> C
Char. 1303: C --> A
Char. 1306: C --> A
Char. 1309: T --> C
Char. 1318: CT --> A
Char. 1333: A --> C
Char. 1339: C --> T
Char. 1351: C --> T
Char. 1358: C --> T
Char. 6152: T --> C
Char. 6161: A --> G
Char. 6205: T --> C
Char. 6209: C --> T
Char. 6227: C --> T
Char. 6294: C --> T
Char. 6308: A --> G
Char. 6314: T --> C
Char. 6344: A --> G
Char. 6351: A --> G
Char. 6368: C --> T
Char. 6378: A --> T
Char. 6381: G --> C
Char. 6410: A --> T
Char. 6432: A --> G
Char. 6433: C --> T
Char. 6443: T --> A
Char. 6446: T --> C
Char. 6458: T --> C
Char. 6485: T --> A
Char. 6493: A --> T
Char. 6499: T --> A
Char. 6506: G --> A
Char. 6511: A --> C
Char. 6518: C --> T
Char. 6528: A --> G
Char. 6572: T --> C

Char. 6636: C --> T
Astyanax abramis :
Rhinosphenoid (34): (1)_present --> (0)_absent
Horizontal_process_of_anguloarticular (161):
(0)_laterally_covered_by_dentary_only_anteriorly -->
(1)_broadly_covered_by_dentary_to_tip_of_Meckelian_cartilage

Alignment_of_cusps_of_medial_teeth_on_inner_premaxillary_row (179):
(1)_forming_shallow_arch_or_aligned_in_straight_series -->
(0)_forming_anteriorly_concave_semicircle_from_ventral_view
Maxillary_teeth (188): (1)_present -->
(0)_absent
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone,_or_less
Distribution_of_bony_hooks_on_pelvic_fin_segments_of_adult_males (450):
(1)_unpaired,_oriented_medially -->
(0)_bilateral,_at_least_in_some_segments
Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more
Little_spot_on_each_scale_of_flanks (502):
(0)_absent --> (1)_present
Sclerotic_bones (508):
(0)_single_anteroventrally_open_bone -->
(1)_two_bones_separated_by_cartilages
Char. 1585: C --> T
Char. 1669: A --> CT
Char. 1705: T --> C
Char. 1711: A --> G
Char. 1795: T --> C
Char. 1807: T --> C
Char. 1825: A --> G
Char. 1892: C --> T
Char. 1903: C --> T
Char. 2038: T --> AG
Char. 2116: T --> C
Char. 2134: T --> C
Char. 6254: T --> A
Char. 6304: A --> T
Char. 6322: C --> T
Char. 6326: T --> C
Char. 6345: A --> G
Char. 6441: T --> C
Char. 6463: C --> T
Char. 6508: A --> G

Astyanax lacustris :
Rhinosphenoid (34): (1)_present --> (0)_absent
Form_of_fourth_infraorbital (92):
(0)_square_or_more_developed_longitudinally_than_dorsoventrally -->
(1)_longer_dorsoventrally_than_longitudinally
Horizontal_process_of_anguloarticular (161):
(0)_laterally_covered_by_dentary_only_anteriorly -->
(1)_broadly_covered_by_dentary_to_tip_of_Meckelian_cartilage

Alignment_of_cusps_of_medial_teeth_on_inner_premaxillary_row (179):
(1)_forming_shallow_arch_or_aligned_in_straight_series -->
(0)_forming_anteriorly_concave_semicircle_from_ventral_view
Maxillary_teeth (188): (1)_present -->
(0)_absent
Distribution_of_bony_hooks_on_pelvic_fin_segments_of_adult_males (450):
(1)_unpaired,_oriented_medially -->
(0)_bilateral,_at_least_in_some_segments
Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more

Little_spot_on_each_scale_of_flanks (502):
(0)_absent --> (1)_present
Char. 539: C --> T
Char. 574: T --> C
Char. 580: T --> C
Char. 583: C --> T
Char. 625: C --> T
Char. 637: T --> C
Char. 742: T --> C
Char. 772: T --> C
Char. 781: C --> T
Char. 785: C --> T
Char. 790: A --> C
Char. 796: A --> G
Char. 799: A --> G
Char. 811: A --> G
Char. 865: A --> CT
Char. 889: C --> T
Char. 904: T --> C
Char. 916: A --> T
Char. 967: C --> T
Char. 970: C --> T
Char. 985: C --> T
Char. 991: C --> T
Char. 1000: C --> A
Char. 1013: G --> A
Char. 1018: A --> G
Char. 1093: A --> G
Char. 1147: A --> T
Char. 1153: C --> T
Char. 1174: T --> GC
Char. 1240: C --> T
Char. 1297: A --> T
Char. 1342: A --> G
Char. 1345: T --> C
Char. 1354: A --> G
Char. 1585: C --> T
Char. 1711: A --> G
Char. 1726: C --> T
Char. 1795: T --> C
Char. 1807: T --> C
Char. 1825: A --> G
Char. 1892: C --> T
Char. 1903: C --> T
Char. 1906: A --> T
Char. 1915: A --> G
Char. 1924: C --> T
Char. 2038: T --> A
Char. 2089: T --> C
Char. 2116: T --> C
Char. 2134: T --> C
Astyanax_eigenmanniorum :
Char. 1669: C --> T
Char. 1744: T --> A
Char. 1771: C --> G
Char. 1810: G --> C
Char. 1825: A --> G
Char. 1894: C --> T
Char. 1948: T --> C
Char. 2026: G --> C
Char. 2050: C --> A
Char. 2053: A --> C
Char. 2071: T --> C
Char. 2131: G --> A
Astyanax_cf_rutilus :
Relative_length_of_frontal_fontanel (29):
(0)_up_to_2/3_length_of_parietal_fontanel -->
(1)_3/4_or_more_of_length_of_parietal_fontanel
Lateroventral_expansion_of_ectopterygoid
(214):
(1)_present_expanded_twice_length_of_palatine_c
artilage -->
(0)_absent_articulating_almost_exclusively_with_
cartilage_of_palatine
Posterior_extent_of_ventral_process_of_quadrate
(234):
(0)_reaching_vertical_through_posterior_margin_o
f_symplectic -->
(1)_falling_short_of_posterior_margin_of_symplec
tic
Number_of_gill_rakers_on_first_hypobranchial_an
d_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_
less
Number_of_supraneurals (393):
(0)_five_or_fewer --> (1)_six_or_more
Main_axis_of_supraneurals (396):
(1)_at_least_some_of_them_distally_bifurcated -->
(0)_not_bifurcated
Number_of_branched_anal-fin_rays (420):
(0)_24_or_fewer --> (1)_25_or_more
Distribution_of_bony_hooks_on_pelvic-
fin_branched_rays_of_males (449):
(1)_restricted_to_medial_branches -->
(0)_on_all_branches
Distribution_of_bony_hooks_on_pelvic-
fin_segments_of_adult_males (450):
(1)_unpaired_oriented_medially -->
(0)_bilateral_at_least_in_some_segments
Distribution_of_bony_hooks_on_anal-
fin_branches_of_adult_males (453):
(1)_restricted_or_almost_restricted_to_posterior_
primary_branch --> (0)_on_all_branches
Char. 1669: C --> T
Char. 1744: T --> A
Char. 1771: C --> G
Char. 1810: G --> C
Char. 1825: A --> G
Char. 1888: G --> A
Char. 1894: C --> T
Char. 1948: T --> C
Char. 1972: G --> A
Char. 2026: G --> C
Char. 2050: C --> A
Char. 2053: A --> C
Char. 2056: C --> T
Char. 2071: T --> C
Char. 2125: T --> C
Char. 2131: G --> A
Astyanax_chico :
Form_of_fourth_infraorbital (92):
(0)_square_or_more_developed_longitudinally_tha
n_dorsoventrally -->
(1)_longer_dorsoventrally_than_longitudinally
Cusps_of_teeth_on_outer_premaxillary_row
(177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Distribution_of_bony_hooks_on_pelvic-
fin_branched_rays_of_males (449):
(0)_on_all_branches -->
(1)_restricted_to_medial_branches
Distribution_of_bony_hooks_on_anal-
fin_branches_of_adult_males (453):
(0)_on_all_branches -->
(1)_restricted_or_almost_restricted_to_posterior_
primary_branch
Circuli_on_posterior_field_of_scales (456):
(0)_present --> (1)_absent
Papillae_on_tongue (506):
(1)_forming_longitudinal_rows_anteriorly -->
(0)_not_aligned
Sclerotic_bones (508):
(0)_singleanteroventrally_open_bone -->
(1)_two_bones_separated_by_cartilages
Astyanax_correntinus :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wi
ng -->
(1)_projecting_mesethmoid_wing_longer_than_nas
al_width
Relative_length_of_frontal_fontanel (29):
(0)_up_to_2/3_length_of_parietal_fontanel -->
(1)_3/4_or_more_of_length_of_parietal_fontanel
Cusps_of_teeth_on_outer_premaxillary_row
(177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Maximum_number_of_cusps_of_anterior_dentary_
teeth (202): (0)_five_or_fewer --> (1)_six_or_more
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Astyanax_cremnobates :
Relative_length_of_frontal_fontanel (29):
(0)_up_to_2/3_length_of_parietal_fontanel -->
(1)_3/4_or_more_of_length_of_parietal_fontanel
Rhinosphenoid (34): (1)_present --> (0)_absent
Length_of_sphenotic_spine (47):
(1)_reaching_to_horizontal_through_dorsal_margin
_of_hyomandibula -->
(0)_not_reaching_to_anterodorsal_angle_of_hyoma
ndibula
Lateral_coverage_of_dilatator_fossa_by_infraorbita
l_series (94):
(0)_almost_complete_at_least_in_its_ventral_bord
er -->
(1)_leaving_a_conspicuous_naked_area_in_anterio
r_region_of_fossa
Canal_of_lateral_line_on_caudal-
fin_membrane (125): (1)_present --> (0)_absent
Ventral_margin_of_horizontal_process_of_anguloa
rticular (162):
(0)_posteroventrally_angled_relative_to_dentary_la
terosensory_canal -->
(1)_perpendicular_to_laterosensory_canal_of_denta
ry
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Transitional_vertebrae_with_haemal_canal
(332): (0)_absent_or_just_one --> (1)_two_or_more
Position_of_ventral_end_of_posttemporal
(336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioc
cipital -->
(1)_posterior_to_lateral_margin_of_epiocipital
Number_of_branched_anal-fin_rays (419):
(1)_18_or_more --> (0)_17_or_fewer
Char. 1588: A --> G
Char. 1843: A --> T
Char. 1885: T --> C
Char. 1894: A --> C
Char. 1897: A --> T
Char. 1927: C --> T
Char. 2014: C --> A
Char. 5827: G --> A
Char. 5910: C --> T
Char. 5924: A --> G
Char. 6001: G --> A
Astyanax_endy :
Anterior_tip_of_pelvic_bone (376):
(1)_posterior_to_second_rib -->
(0)_anterior_to_second_rib
Longitudinal_position_of_insertion_of_mandibular_
accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_post
erior_half -->
(1)_on_vertical_through_Meckelian_cartilage_mid
dle_or_anterior_half
Astyanax_latens :
Number_of_cusps_of_anterior_maxillary_teeth
(193): (1)_five_or_more_cusps --> (0)_up_to_three
Abrupt_decrease_in_size_of_dentary_teeth
(207): (0)_absent --> (1)_present
Number_of_gill_rakers_on_first_hypobranchial_an
d_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more
Cartilage-
filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scap
ula -->
(1)_much_reduced_by_expansions_of_coracoid_an
d_cleithrum
Anal-fin_position (416):
(0)_posterior_or_at_vertical_through_base_of_l

ast_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Astyanax_lineatus :
Rhinosphenoid (34): (1)_present --> (0)_absent
Horizontal_process_of_anguloarticular (161):
(0)_laterally_covered_by_dentary_only_anteriorly -->
(1)_broadly_covered_by_dentary_to_tip_of_Meckelian_cartilage

Alignment_of_cusps_of_medial_teeth_on_inner_premaxillary_row (179):
(1)_forming_shallow_arch_or_aligned_in_straight_series -->
(0)_forming_anteriorly_concave_semicircle_from_ventral_view
Relative_length_of_palatine (209):
(0)_approximately_half_length_of_ectopterygoid_or_less -->
(1)_distinctly_longer_than_half_length_of_ectopterygoid
Anterior_tip_of_pelvic_bone (376):
(0)_anterior_to_second_rib -->
(1)_posterior_to_second_rib
Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more
Zigzag_lines_between_rows_of_scales (497):
(0)_absent --> (1)_present
Astyanax_mexicanus :
Char. 5034: A --> G
Astyanax_paris :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wing -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Number_of_cusps_of_anterior_maxillary_teeth (193): (1)_five_or_more_cusps --> (0)_up_to_three
Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present_communicating_with_hyomandibular_canal
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Char. 1517: C --> T
Char. 1543: G --> A
Char. 1564: G --> A
Char. 1591: A --> G
Char. 1648: T --> C
Char. 1663: T --> C
Char. 1711: A --> G
Char. 1735: G --> A
Char. 1738: C --> T
Char. 1759: A --> G
Char. 1762: T --> C
Char. 1783: T --> C
Char. 1792: C --> T
Char. 1810: G --> A
Char. 1813: A --> G
Char. 1819: T --> C
Char. 1828: G --> A
Char. 1849: C --> T
Char. 1858: T --> C
Char. 1892: C --> T
Char. 1909: T --> C
Char. 1915: A --> G
Char. 1924: C --> T
Char. 1939: G --> A
Char. 1987: T --> C
Char. 1988: T --> A
Char. 2008: A --> G
Char. 2017: G --> A
Char. 2020: T --> C
Char. 2032: A --> G
Char. 2056: C --> T
Char. 2074: C --> T
Char. 2098: T --> C
Char. 2131: G --> A

Char. 2152: T --> C
Char. 2161: A --> G
Astyanax_pelegrini :
Lateroventral_expansion_of_ectopterygoid (214):
(0)_absent_articulating_almost_exclusively_with_cartilage_of_palatine -->
(1)_present_expanded_twice_length_of_palatine_cartilage
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present_communicating_with_hyomandibular_canal

Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (294): (1)_15_or_fewer --> (0)_16_or_more
Size_of_haemal_prezygapophyses_of_anterior_caudal_vertebrae (334):
(0)_similar_than_corresponding_postzygapophyses_or_shorter -->
(1)_much_extended_relative_to_corresponding_postzygapophyses
Astyanax_puka :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wing -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Number_of_cusps_of_first_maxillary_tooth (194): (0)_five_or_fewer --> (1)_seven_or_more
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_d_cleithrum
Anal_fin_position (416):
(0)_posterior_of_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Astyanax_troya :
Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present_communicating_with_hyomandibular_canal
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_d_cleithrum
Circuli_on_posterior_field_of_scales (456):
(0)_present --> (1)_absent
Papillae_on_tongue (506):
(1)_forming_longitudinal_rows_anteriorly -->
(0)_not_aligned
Atopomesus_pachyodus :

Opening_between_orbitosphenoid_and_pterosphenoid (41):
(0)_present_rounded_or_ovate_usually_margined_by_frontal_dorsally --> (1)_absent

Ethmopalatine_cartilage (208):
(0)_absent_or_reduced_in_size -->
(1)_present_and_conspicuous
Ventral_exit_of_hyomandibular_nerve (242):
(1)_on_posterior_margin_of_bone -->
(0)_on_lateral_surface_of_bone_through_an_ovate_foramen
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial

Rows_of_gill_rakers_on_third_and_fourth_ceratobranchials (293): (1)_two --> (0)_one
Rows_of_gill_rakers_on_first_epibranchial (302): (1)_two --> (0)_one
Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33
Ventral_extension_of_coracoid_lamella (350):
(0)_reaching_ventral_margin_of_cleithrum -->
(1)_falling_short_of_ventral_margin_of_cleithrum
Lateral_lamella_of_pelvic_bone (373):
(0)_absent_or_reduced_to_posterior_third_of_bone --> (1)_present_and_reaching_two_thirds_of_bone
Number_of_scales_in_lateral_series (467):
(0)_33_or_more --> (1)_32_or_fewer
Insertion_of_facial_tendon (478):
(0)_on_quadrate_near_its_articulation_with_preopercle --> (1)_on_preopercle_posterior_to_quadrate

Attonitus_ephemeros :
Char. 2312: C --> G
Char. 2313: T --> C
Char. 2530: C --> T
Char. 4088: G --> A
Char. 4189: G --> A
Char. 4345: C --> T
Char. 5028: T --> A
Char. 5233: A --> G
Char. 5295: G --> T
Char. 5640: T --> C
Char. 5909: T --> G
Char. 5936: A --> G
Char. 5943: A --> G
Char. 6001: A --> C
Char. 6002: T --> C
Char. 6028: T --> C
Char. 6037: T --> G
Char. 6040: A --> G
Char. 6071: A --> G
Char. 6099: C --> T
Char. 6229: G --> C
Char. 6245: A --> G
Char. 6247: C --> T
Char. 6317: A --> G
Char. 6324: C --> T
Char. 6347: A --> G
Char. 6368: C --> G
Char. 6457: A --> G
Char. 6458: C --> T
Char. 6476: C --> A
Char. 6497: A --> G
Char. 6508: T --> C
Char. 6514: A --> G
Char. 6515: A --> G
Aulixidens_eugeniae :
Width_of_vomer (14):
(0)_as_wide_as_palatine_or_wider -->
(1)_more_slender_than_palatine
Anterior_margin_of_lamellar_region_of_vomer (16): (0)_narrower_than_anterior_region -->
(1)_as_wide_as_posterior_margin_of_anterior_region
Form_of_anterior_process_of_lateral_ethmoid (20): (1)_slender_and_separated_from_vomer -->
(0)_broad_in_ventral_view_contacting_vomer_in_its_entire_length

Anterior_end_of_ascending_process_of_maxilla (132): (1)_pointed_or_rounded -->
(0)_with_conspicuous_notch

Anterior_process_of_maxilla (133):
(0)_slender_relative_to_laminar_region -->
(1)_as_thick_as_posterior_region
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage
Number_of_rows_of_premaxillary_teeth (170):
(1)_two_or_three --> (0)_one

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch -->
(1)_with_cusps_aligned_in_straight_series
Maxillary_teeth (188): (1)_present -->
(0)_absent
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent
Number_of_dentary_teeth_on_outer_row (198):
(1)_ten_or_more --> (0)_eight_or_fewer
Form_of_anterior_expansion_of_basihyal (260):
(0)_slender_with_anterior_margin_less_than_two-thirds_of_its_length -->
(1)_expanded_anterior_margin_with_two-thirds_or_more_of_its_length
Interhyal (306): (0)_present --> (1)_absent
Bony_hooks_on_last_pelvic-fin_ray_of_adult_males (447):
(0)_absent_or_reduced_in_number -->
(1)_as_numerous_as_in_other_rays
Bony_hooks_on_first_pelvic-fin_ray_of_adult_males (448): (0)_absent -->
(1)_present

Bario_steindachneri :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Prootic_foramen_anteromedial_to_auditory_foramen (56): (0)_visible_as_a_pore_lateral_to_myodome -->
(1)_an_oblique_canal_near_anterior_margin_of_prootic

Dorsal_end_of_laterosensory_canal_of_preopercle_and_suprapercle (108):
(0)_not_overlapping_anterodorsal_process_of_opercle -->
(1)_overlapping_anterodorsal_process_of_opercle

Ventral_margin_of_horizontal_process_of_angular_rticular (162):
(0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal -->
(1)_perpendicular_to_laterosensory_canal_of_dentary

Lateroventral_expansion_of_ectopterygoid (214):
(0)_absent_articulating_almost_exclusively_with_cartilage_of_palatine -->
(1)_present_expanded_twice_length_of_palatine_cartilage
Metapterygoid_foramen (228):
(0)_a_well_defined_transverse_foramen -->
(1)_as_a_canal_oblique_to_metapterygoid

Posterior_extent_of_ventral_process_of_quadrate (234):
(1)_falling_short_of_posterior_margin_of_symplectic -->
(0)_reaching_vertical_through_posterior_margin_of_symplectic

Dorsal-fin_rays_articulating_with_first_dorsal_ptyerygiophore (404): (1)_three_or_four --> (0)_two
Pectoral-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (443): (0)_absent --> (1)_present

Dorsal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (444): (0)_absent --> (1)_present
Caudal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (445): (0)_absent --> (1)_present
Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-fin_base -->
(1)_several_rows_covering_basal_third_of_anal-fin

Zigzag_lines_between_rows_of_scales (497):
(0)_absent --> (1)_present
Char. 2290: G --> A
Char. 2596: A --> T
Char. 3559: G --> A
Char. 4066: C --> T
Char. 4207: A --> G
Char. 4219: C --> G
Char. 4224: C --> A
Char. 4235: A --> T
Char. 4242: C --> T
Char. 4253: C --> T
Char. 4284: C --> A
Char. 4294: C --> A
Char. 4349: C --> T
Char. 4350: G --> C
Char. 4351: A --> G
Char. 4352: G --> A
Char. 4353: A --> G
Char. 4386: A --> G
Char. 4466: G --> A
Char. 4626: G --> A
Char. 4651: G --> A
Char. 4717: C --> G
Char. 4729: A --> C
Char. 4736: A --> C
Char. 4737: G --> T
Char. 4740: T --> G
Char. 4741: T --> G
Char. 4742: A --> G
Char. 4827: G --> A
Char. 5034: A --> C
Char. 5178: G --> A
Char. 5694: T --> G
Char. 6255: C --> A
Char. 6295: A --> G
Char. 6345: C --> T
Char. 6408: G --> T
Char. 6414: A --> T
Char. 6417: T --> C
Char. 6458: C --> A
Char. 6467: C --> T
Char. 6484: C --> A
Char. 6499: A --> G
Char. 6605: A --> C
Boulengerella_lateristriga :
Char. 523: T --> C
Char. 544: T --> C
Char. 553: C --> T
Char. 607: A --> G
Char. 640: C --> T
Char. 709: C --> T
Char. 731: A --> G
Char. 778: C --> T
Char. 904: T --> C
Char. 919: A --> G
Char. 949: T --> C
Char. 982: A --> G
Char. 1015: A --> G
Char. 1066: C --> T
Char. 1120: A --> G
Char. 1162: C --> T
Char. 1174: A --> G
Char. 1177: T --> C
Char. 1192: T --> C
Char. 1216: T --> C
Char. 1250: C --> T
Char. 1262: C --> T
Char. 1282: C --> T
Char. 1327: A --> G
Char. 1333: A --> T
Char. 1396: A --> T

Char. 1408: A --> T
Char. 1501: A --> T
Char. 2287: T --> G
Char. 2371: T --> C
Char. 2380: T --> G
Char. 2441: T --> G
Char. 2527: C --> A
Char. 2629: C --> T
Char. 2671: C --> T
Char. 2738: A --> T
Char. 2764: C --> T
Char. 2815: G --> A
Char. 2876: C --> A
Char. 6251: A --> G
Char. 6294: T --> C
Brachyhalcinus_copei :
Char. 6445: C --> T
Astyanax_bransfordii :
No autapomorphies
Brittanichthys_axelrodi :
Posterior_portion_of_mesethmoid_spine (5):
(0)_relatively_slender -->
(1)_as_broad_as_lateral_wings_of_mesethmoid
Posterior_extension_of_vomer (18):
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection -->
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection

Dorsal_process_of_apterotic_where_tendon_from_epaxial_musculature_attach (52): (0)_absent -->
(1)_present_projecting_dorsally_from_tube_for_semicircular_canal

Relative_position_of_anterior_margin_of_antorbital_1_and_first_infraorbital (80):
(0)_antorbital_either_aligned_or_anterior_to_first_infraorbital -->
(1)_anterior_margin_of_antorbital_posterior_to_first_infraorbital
Fourth_infraorbital (90): (0)_present -->
(1)_absent
Fourth_infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals -->
(1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series
Maxillary_teeth (188): (1)_present -->
(0)_absent
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent
Ethmopalatine_cartilage (208):
(1)_present_and_conspicuous -->
(0)_absent_or_reduced_in_size
Ectopterygoid_teeth_row (217): (0)_absent -->
(1)_present

Position_of_longitudinal_cartilage_dorsal_to_ectopterygoid (219):
(0)_bordered_medially_by_mesopterygoid -->
(1)_displaced_laterally_and_separated_from_mesopterygoid
Mesopterygoid_teeth (221): (0)_absent -->
(1)_present

Posterior_extension_of_ventral_process_of_quadrate (233):
(0)_extended_more_than_posterodorsal_process -->
(1)_with_posterodorsal_process_as_posteriormost_region
Anterior_portions_of_branchiostegal_rays (268):
(0)_broad_near_their_articulation_with_ceratohyals -->
(1)_slender_near_their_articulation_with_ceratohyals

Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more

Development_of_transverse_process_of_neural_arch_of_third vertebra (312):

(0)_not_reaching_anterior_margin_of_tripus -->
(1)_well_developed_and_extending_beyond_anterior_margin_of_tripus

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent

Anterior_extension_of_pelvic_bone_along_main_axis (370):

(0)_not_projecting_anterior_of_lateral_and_medial_lamellae -->

(1)_projecting_anterior_of_lateral_and_medial_lamellae_of_pelvic_bone

Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->

(1)_wider_than_primary_axis_of_supraneurals

Relative_position_of_dorsal-fin_anterior_insertion (403):

(1)_posterior_to_vertical_through_pelvic-fin_origin --> (0)_anterior_to_or_at_vertical_through_pelvic-fin_origin

Form_and_length_of_anterior_anal-fin_rays (422): (0)_similar_to_posterior_rays -->

(1)_longer_and_more_compressed_laterally_than_posterior_rays

Caudal-

fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (445): (0)_absent --> (1)_present

Brachyalestes_caroliniae :

Char. 5510: A --> T

Brycon_falcatus :

Char. 535: A --> T

Char. 562: T --> AG

Char. 565: T --> AC

Char. 613: C --> T

Char. 634: A --> T

Char. 670: A --> G

Char. 697: C --> T

Char. 733: T --> C

Char. 757: A --> G

Char. 775: A --> G

Char. 799: A --> G

Char. 838: A --> C

Char. 856: A --> G

Char. 892: T --> C

Char. 916: C --> T

Char. 928: T --> C

Char. 934: C --> T

Char. 937: C --> T

Char. 946: C --> A

Char. 988: C --> T

Char. 1003: C --> T

Char. 1014: C --> T

Char. 1057: C --> T

Char. 1063: A --> G

Char. 1081: A --> C

Char. 1084: C --> T

Char. 1085: C --> T

Char. 1093: C --> T

Char. 1096: C --> T

Char. 1159: C --> T

Char. 1165: C --> T

Char. 1168: C --> T

Char. 1171: C --> T

Char. 1186: C --> A

Char. 1201: A --> G

Char. 1210: C --> T

Char. 1258: A --> G

Char. 1261: C --> T

Char. 1271: C --> T

Char. 1279: A --> T

Char. 1295: G --> T

Char. 1307: C --> T

Char. 1333: C --> T

Char. 1354: A --> G

Char. 1379: G --> A

Char. 1381: C --> T

Char. 1426: C --> T

Char. 1438: T --> C

Char. 1462: T --> C

Char. 1467: C --> T

Char. 1468: A --> G

Char. 1469: C --> T

Char. 2214: G --> C

Char. 2287: T --> C

Char. 2441: G --> T

Char. 4871: C --> T

Char. 4920: G --> A

Char. 5040: C --> T

Char. 5151: C --> T

Char. 5241: T --> A

Char. 5250: C --> G

Char. 5409: G --> C

Char. 5559: T --> G

Char. 6176: T --> C

Char. 6253: A --> G

Char. 6298: T --> C

Char. 6299: A --> G

Char. 6300: G --> A

Char. 6324: C --> A

Char. 6377: T --> C

Char. 6425: G --> A

Char. 6446: C --> T

Char. 6475: T --> C

Char. 6508: A --> G

Char. 6513: C --> T

Char. 6622: A --> T

Char. 6623: T --> C

Brycon_gouldingi :

Char. 521: A --> T

Char. 525: T --> A

Char. 528: C --> G

Char. 529: A --> C

Char. 532: A --> G

Char. 533: C --> G

Char. 534: T --> G

Char. 536: T --> A

Char. 546: T --> C

Char. 556: C --> T

Char. 558: C --> G

Char. 562: C --> G

Char. 564: T --> G

Char. 573: C --> G

Char. 577: T --> C

Char. 679: C --> T

Char. 709: C --> T

Char. 712: A --> T

Char. 796: A --> G

Char. 919: A --> G

Char. 1075: C --> A

Char. 1084: C --> T

Char. 1093: C --> T

Char. 1108: A --> G

Char. 1153: C --> T

Char. 1156: C --> T

Char. 1171: C --> A

Char. 1201: A --> G

Char. 1261: A --> G

Char. 1307: C --> T

Char. 1358: T --> A

Char. 1359: T --> A

Char. 1373: G --> T

Char. 1390: C --> T

Char. 1396: A --> G

Char. 1399: A --> G

Char. 1431: T --> A

Char. 1440: G --> T

Char. 1443: A --> C

Char. 1446: T --> C

Char. 1447: C --> A

Char. 1448: G --> C

Char. 1468: A --> C

Char. 1479: T --> A

Char. 1480: C --> A

Char. 1483: T --> C

Char. 1485: A --> G

Char. 1486: C --> T

Char. 1487: C --> T

Char. 1488: C --> T

Char. 1489: C --> T

Char. 1501: A --> G

Char. 1506: A --> C

Char. 1507: A --> C

Char. 1509: A --> C

Char. 3449: G --> A

Char. 3450: T --> G

Char. 3452: T --> A

Char. 3455: A --> G

Char. 3457: C --> T

Char. 3458: T --> G

Char. 3466: C --> G

Char. 3467: G --> A

Char. 3468: T --> G

Char. 3469: A --> G

Char. 3470: G --> T

Char. 3475: C --> G

Char. 3476: A --> G

Char. 3477: T --> A

Char. 3478: C --> T

Char. 5388: A --> G

Char. 5396: C --> A

Char. 6417: G --> A

Char. 6463: G --> A

Char. 6513: C --> T

Char. 6515: C --> A

Brycon_orbignyanus :

Char. 559: C --> T

Char. 595: C --> T

Char. 622: T --> C

Char. 679: C --> T

Char. 685: T --> C

Char. 778: G --> A

Char. 805: C --> A

Char. 868: A --> T

Char. 937: C --> T

Char. 1024: T --> C

Char. 1066: C --> T

Char. 1099: C --> T

Char. 1123: T --> C

Char. 1126: C --> A

Char. 1129: A --> T

Char. 1171: C --> A

Char. 1252: A --> G

Char. 1255: A --> G

Char. 1271: C --> T

Char. 1300: T --> C

Char. 1307: C --> T

Char. 1525: T --> C

Char. 1618: T --> C

Char. 1796: C --> T

Char. 1840: T --> G

Char. 1912: T --> C

Char. 1915: C --> A

Char. 1936: T --> C

Char. 2029: A --> G

Char. 2074: A --> G

Char. 2102: C --> T

Char. 2140: C --> T

Char. 2152: T --> C

Char. 2353: T --> C

Char. 5158: C --> A

Char. 6513: C --> T

Brycon_pesu :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Frontal_fontanel (28): (0)_present -->

(1)_totally_occluded_by_frontals

Dorsal_expansion_of_rhinospheoid (35):

(0)_absent -->

(1)_present_and_forming_a_bony_wall_between_olfactory_nerves

Position_of_foramen anteromedial_to_auditory_foramen (57):

(0)_more_distant_than anterolateral_foramen_from_auditory_foramen -->

(1)_as_close_as anterolateral_foramen_from_auditory_foramen

Parietal_fontanel_in_adult_specimens (59):

(0)_present --> (1)_absent

Foramen_on_ventral_lamella_of_supraoccipital (63): (0)_absent -->

(1)_with_a_large_foramen_or_concavity_posteriorly_open

Ventral_extent_of_third_infraorbital (88):

(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly -->

(0)_reaching_horizontal_arm_of_preopercle

Posterior_pore_of_apterotic_canal (119):
(0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal -->
(1)_in_a_vertical_line_through_ventral_apterotic_pore
Total_number_of_vertebrae (326):
(1)_41_or_more --> (0)_40_or_fewer
Positional_of_ventral_end_of_posttemporal (336):
(1)_posterior_to_lateral_margin_of_epioccipital -->
(0)_anterior_or_lateral_to_lateral_margin_of_epioccipital
Anterior_tip_of_pelvic_bone (379):
(1)_posterior_to_fifth_rib -->
(0)_anterior_to_fifth_rib
Scales_covering_supraoccipital_spine (463):
(0)_absent -->
(1)_present_and_completely_covering_supraoccipital_spine
Char. 577: T --> C
Char. 643: C --> T
Char. 742: A --> T
Char. 743: C --> T
Char. 784: CT --> A
Char. 808: T --> C
Char. 871: A --> CT
Char. 925: T --> C
Char. 949: T --> C
Char. 952: A --> G
Char. 970: A --> T
Char. 979: C --> A
Char. 982: C --> A
Char. 1006: C --> T
Char. 1075: C --> AG
Char. 1078: T --> C
Char. 1126: C --> GT
Char. 1135: C --> G
Char. 1156: C --> T
Char. 1157: A --> T
Char. 1162: C --> A
Char. 1168: C --> T
Char. 1192: T --> C
Char. 1222: C --> T
Char. 1243: A --> CT
Char. 1258: A --> GT
Char. 1270: A --> T
Char. 1273: A --> CT
Char. 1328: G --> A
Char. 1331: C --> T
Char. 1345: C --> A
Char. 1351: C --> A
Char. 1369: A --> T
Char. 1378: A --> CT
Char. 1381: C --> GT
Char. 1426: C --> T
Char. 1483: T --> A
Char. 1540: A --> G
Char. 1546: T --> G
Char. 1594: G --> C
Char. 1633: T --> C
Char. 1642: T --> C
Char. 1678: A --> G
Char. 1684: T --> C
Char. 1711: C --> A
Char. 1712: C --> T
Char. 1738: C --> T
Char. 1774: A --> T
Char. 1777: C --> A
Char. 1787: C --> T
Char. 1807: T --> C
Char. 1810: G --> A
Char. 1819: A --> T
Char. 1831: A --> T
Char. 1852: T --> A
Char. 1861: A --> C
Char. 1870: C --> A
Char. 1892: T --> C
Char. 1894: A --> C
Char. 1897: C --> T
Char. 1933: T --> C
Char. 1957: A --> C
Char. 1969: C --> T
Char. 1978: C --> T

Char. 1981: A --> C
Char. 1987: C --> A
Char. 2002: A --> G
Char. 2014: C --> A
Char. 2068: A --> G
Char. 2092: A --> G
Char. 2107: C --> T
Char. 2140: C --> T
Char. 2284: A --> G
Char. 2398: A --> G
Char. 2518: A --> C
Char. 2539: T --> C
Char. 2728: A --> G
Char. 2749: T --> AG
Char. 2842: A --> G
Char. 3484: G --> C
Char. 3604: A --> C
Char. 3619: G --> C
Char. 3625: T --> C
Char. 3790: A --> T
Char. 3826: G --> T
Char. 3913: A --> G
Char. 3943: C --> T
Char. 3979: C --> T
Char. 4180: C --> T
Char. 4222: A --> G
Char. 4375: A --> G
Char. 4471: A --> G
Char. 4555: C --> T
Char. 4627: C --> T
Char. 4716: G --> T
Char. 4725: T --> C
Char. 4902: C --> T
Char. 4917: G --> A
Char. 4924: A --> T
Char. 5184: T --> A
Char. 5304: T --> C
Char. 5442: C --> T
Char. 6161: G --> A
Char. 6182: G --> A
Char. 6254: T --> A
Char. 6286: A --> T
Char. 6295: A --> G
Char. 6300: G --> A
Char. 6322: T --> A
Char. 6326: A --> T
Char. 6330: A --> C
Char. 6331: A --> CT
Char. 6333: A --> CT
Char. 6378: C --> A
Char. 6381: G --> CT
Char. 6382: C --> A
Char. 6414: A --> C
Char. 6424: C --> T
Char. 6441: C --> A
Char. 6446: C --> T
Char. 6461: G --> A
Char. 6463: G --> CT
Char. 6468: C --> T
Char. 6485: C --> T
Char. 6493: A --> T
Char. 6523: C --> T
Char. 6525: A --> G
Char. 6541: T --> C
Brycon polylepis :
Laterosensory_canal_of_first_infraorbital (96):
(1)_absent_or_does_not_project_dorsally -->
(0)_projects_dorsally_from_main_body_of_first_infraorbital
Alignment_of_cusps_of_medial_teeth_on_inner_premaxillary_row (179):
(1)_forming_shallow_arch_or_aligned_in_straight_series -->
(0)_forming_anteriorly_concave_semicycle_from_ventral_view
Contact_between_ectopterygoid_and_anterodorsal_region_of_quadrate (220): (0)_present -->
(1)_absent
Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):

(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Knodus_tanaothoros :
Scales_covering_caudal-fin_lobes (470):
(1)_covering_one-third_of_their_length -->
(0)_covering_only_their_base
Char. 1564: C --> T
Char. 1570: C --> T
Char. 1744: C --> T
Char. 1819: C --> T
Char. 1828: A --> G
Char. 1843: C --> T
Char. 1876: G --> A
Char. 1984: T --> C
Char. 1987: T --> C
Char. 2047: T --> G
Char. 2048: C --> T
Char. 2068: A --> G
Char. 2083: G --> A
Char. 2092: A --> G
Char. 2125: T --> C
Char. 2134: G --> A
Char. 2141: C --> A
Char. 2338: T --> C
Char. 2662: G --> A
Char. 2740: A --> C
Char. 3646: T --> C
Char. 3760: C --> T
Char. 5019: G --> A
Char. 5244: A --> T
Char. 5402: G --> T
Char. 5756: T --> C
Char. 5968: T --> C
Char. 6023: A --> G
Char. 6298: A --> G
Char. 6326: T --> C
Char. 6343: A --> T
Char. 6357: A --> G
Char. 6515: A --> G
Bryconaeithiops_macrops :
Char. 1669: T --> G
Char. 1747: A --> G
Char. 1885: A --> G
Bryconamericus_agna :
Horizontal_process_of_anguloarticular (161):
(0)_laterally_covered_by_dentary_only_anteriorly -->
(1)_broadly_covered_by_dentary_to_tip_of_Meckelian_cartilage
Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Number_of_maxillary_teeth (190):
(1)_four_or_more --> (0)_up_to_three
Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
Bony_hooks_on_last_pelvic-fin_ray_of_adult_males (447):
(1)_as_numerous_as_in_other_rays -->
(0)_absent_or_reduced_in_number
Distribution_of_bony_hooks_on_pelvic-fin_branched_rays_of_males (449):
(0)_on_all_branches -->
(1)_restricted_to_medial_branches
Distribution_of_bony_hooks_on_pelvic-fin_segments_of_adult_males (450):
(0)_bilateral_at_least_in_some_segments -->
(1)_unpaired_oriented_medially
Char. 1598: C --> T
Char. 1642: C --> T
Char. 1879: A --> G
Char. 1924: A --> G
Char. 2084: C --> T
Char. 2120: G --> A
Char. 2123: C --> A
Char. 2125: G --> A
Char. 2137: A --> G
Char. 2156: C --> A
Bryconamericus_uporas :

Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps --> (1)_five_or_more_cusps

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more

Number_of_supraneurals (394): (0)_six_or_fewer --> (1)_seven_or_more

Char. 2836: C --> T

Char. 3385: G --> A

Char. 3388: G --> C

Char. 4291: G --> A

Char. 4509: G --> A

Char. 6292: A --> G

Hemibrycon_caucanus :

Char. 1783: C --> T

Char. 1852: A --> G

Char. 2006: T --> C

Char. 2014: A --> G

Char. 5730: C --> T

Char. 6005: C --> T

Bryconamericus_cf_iheringii :

Fused_gill_filaments_associated_with_gland_cells (511): (0)_absent --> (1)_present

Char. 1672: A --> G

Char. 2287: T --> A

Char. 3973: C --> A

Bryconamericus_iheringii :

Relative_length_of_palatine (209): (1)_distinctly_longer_than_one_half_length_of_ectopterygoid --> (0)_approximately_one_half_length_of_ectopterygoid_or_less

Char. 1897: A --> T

Bryconamericus_ikaka :

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (303): (0)_17_or_fewer --> (1)_18_or_more

Eretmobrycon_emperador :

Position_of_lateralmost_tooth_from_outer_premaxillary_row (176): (1)_aligned_with_remaining_teeth_of_that_row --> (0)_anteriorly_displaced_relative_to_remaining_teeth_of_that_row

Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present

Transitional_vertebrae_with_haemal_canal (332): (0)_absent_or_just_one --> (1)_two_or_more

Haemal_prezygapophysis_on_anterior_caudal_vertebrae (333): (0)_present --> (1)_completely_absent

Position_of_ventral_end_of_posttemporal (336): (1)_posterior_to_lateral_margin_of_epioccipital --> (0)_anterior_or_lateral_to_lateral_margin_of_epioccipital

Char. 3659: G --> A

Char. 3848: T --> A

Char. 4364: C --> A

Char. 5935: T --> C

Char. 6345: A --> G

Char. 6402: G --> A

Bryconamericus_exodon :

Alignment_of_teeth_on_outer_premaxillary_row (172): (0)_aligned --> (1)_not_aligned_with_one_or_two_teeth_situated_anteriorly

Char. 1576: A --> G

Char. 1618: C --> T

Char. 1624: T --> C

Char. 1678: A --> T

Char. 1849: C --> T

Char. 1852: A --> C

Char. 1903: C --> T

Char. 1912: C --> T

Char. 1918: T --> C

Char. 1927: T --> A

Char. 1934: T --> C

Char. 2047: T --> A

Char. 2059: C --> T

Char. 2095: C --> T

Char. 2131: A --> C

Char. 2159: C --> T

Char. 2641: G --> A

Char. 3178: G --> AC

Char. 3229: G --> AC

Char. 3361: A --> G

Char. 3373: G --> A

Char. 3382: G --> A

Char. 3394: T --> C

Char. 5053: G --> A

Char. 5112: G --> A

Char. 5235: C --> T

Char. 6048: C --> T

Char. 6326: T --> C

Char. 6446: A --> T

Bryconamericus_mennii :

Bony_hooks_on_fin_rays (440): (1)_present_in_adult_males --> (0)_absent

Eretmobrycon_peruanus :

Number_of_dentary_teeth_on_outer_row (198): (1)_ten_or_more --> (0)_eight_or_fewer

Char. 3970: G --> T

Char. 4081: A --> G

Char. 4128: G --> A

Char. 4364: C --> A

Char. 4417: G --> A

Bryconamericus_rubropictus :

Anguloarticular_laterosensory_canal (105): (0)_present --> (1)_absent

Distribution_of_bony_hooks_on_pelvic_fin_segments_of_adult_males (450): (0)_bilateral_at_least_in_some_segments --> (1)_unpaired_oriented_medially

Distribution_of_bony_hooks_on_anal_fin_branches_of_adult_males (453): (1)_restricted_or_almost_restricted_to_posterior_primary_branch --> (0)_on_all_branches

Sclerotic_bones (508): (0)_single_anteroventrally_open_bone --> (1)_two_bones_separated_by_cartilages

Char. 2315: C --> A

Char. 2408: C --> T

Char. 3388: G --> C

Eretmobrycon_scleropariis :

Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps

Bryconamericus_stramineus :

Development_of_sagittal_capsule (69): (0)_not_reaching_posterior_margin_of_lagenar_capsule --> (1)_reaching_or_surpassing_posterior_margin_of_lagenar_capsule

Frontal_and_pterotic_laterosensory_canals (118): (1)_with_an_angle_on_pore_receiving_infraorbital_canal --> (0)_without_a_discernible_angle_between_them

Palatine_foramen (210): (0)_absent_or_reduced_in_size --> (1)_present_and_very_conspicuous

Char. 1558: T --> C

Char. 1580: T --> C

Char. 1741: C --> T

Char. 1786: C --> T

Char. 1852: A --> G

Char. 1945: C --> T

Char. 2008: A --> G

Char. 2011: T --> C

Char. 2014: T --> C

Char. 2125: G --> A

Char. 3520: G --> T

Char. 4087: C --> T

Char. 4373: T --> A

Char. 4785: T --> G

Char. 4938: T --> C

Char. 6253: A --> C

Char. 6332: C --> T

Piabina_thomasi :

Anterior_margin_of_lamellar_region_of_vomer (16): (1)_as_wide_as_posterior_margin_of_anterior_region --> (0)_narrower_than_anterior_region

Foramen_on_ventral_lamella_of_supraoccipital (63): (1)_with_a_large_foramen_or_concavity_posteriorly_open --> (0)_absent

Canal_of_lateral_line_on_caudal_fin_membrane (125): (1)_present --> (0)_absent

Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one_third_of_length_of_nasal --> (1)_reaching_just_anterior_end_of_nasal

Form_of_anterior_expansion_of_basihyal (260): (0)_slender_with_anterior_margin_less_than_two-thirds_of_its_length --> (1)_expanded_anterior_margin_with_two-thirds_or_more_of_its_length

Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two

Anal-fin_position (416): (1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray --> (0)_posterior_or_at_vertical_through_base_of_last_dorsal-fin_ray

Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more

Bryconexodon_juruena : Dorsolateral_processes_of_vomer (15): (0)_absent --> (1)_present

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40): (0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids

Anterior_paired_projections_of_parasphenoid (43): (0)_absent --> (1)_present

Temporal_fossa (51): (1)_absent_or_much_reduced --> (0)_well_developed

Laterosensory_pore_just_anterior_to_dilatator_fossa (115): (1)_lateroventral_to_laterosensory_canal --> (0)_dorsomedial_to_laterosensory_canal

Large_medial_foramen_on_hyomandibula (241): (0)_absent --> (1)_present_communicating_with_hyomandibular_canal

Bryconops_affinis :

Anterior_tip_of_pelvic_bone (377): (1)_posterior_to_third_rib --> (0)_anterior_to_third_rib

Anterior_tip_of_pelvic_bone (378): (1)_posterior_to_fourth_rib --> (0)_anterior_to_fourth_rib

Char. 6344: A --> G

Char. 6374: A --> G

Char. 6498: A --> G

Bryconops_melanurus :

Articulation_between_second_and_third_infraorbitals (86): (0)_vertical --> (2)_posteroventrally_angled

Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps --> (1)_five_or_more_cusps

Articulation_between_quadrate_and_anguloarticular (238): (0)_anterior_to_or_at_vertical_through_middle_eye --> (1)_posterior_to_middle_eye

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (0)_11_or_more --> (1)_ten_or_fewer

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (304): (0)_24_or_fewer --> (1)_25_or_more

Char. 6253: A --> G

Char. 6254: A --> C

Char. 6412: A --> G
Carlana_eigenmanni :

Concavity_on_posterior_margin_of_orbitosphenoid (42): (0)_absent_or_reduced -->
(1)_very_pronounced_reaching_articulation_with_pterosphenoid
Foramen_on_ventral_lamella_of_supraoccipital (63): (0)_absent -->
(1)_with_a_large_foramen_or_concavity_posteriorly_open
Number_of_rows_of_premaxillary_teeth (170):
(1)_two_or_three --> (0)_one
Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Bony_hooks_on_fin_rays (440): (0)_absent -->
(1)_present_in_adult_males
Carlastyanax_aurocaudatus :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present
Posterior_extension_of_supraoccipital_spine (62):
(1)_reaching_only_to_anterior_limit_of_neural_complex -->
(0)_reaching_at_least_to_middle_length_of_neural_complex
Fourth_infraorbital (90): (0)_present -->
(1)_absent
Fourth_infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals -->
(1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series
Length_of_laterosensory_canal_of_dentary (103):
(0)_piercing_almost_entire_length_of_dentary -->
(1)_reduced_or_absent
Canal_of_lateral_line_on_caudal_fin_membrane (125): (1)_present --> (0)_absent

Alignment_of_cusps_of_medial_teeth_on_inner_premaxillary_row (179):
(1)_forming_shallow_arch_or_aligned_in_straight_series -->
(0)_forming_anteriorly_concave_semicircle_from_ventral_view
Form_of_third_dentary_tooth (200):
(0)_similar_to_remaining_teeth_of_dentary -->
(1)_strongly_decurved_posteriorly
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Rows_of_gill_rakers_on_first_epibranchial (302): (1)_two --> (0)_one

Development_of_transverse_process_of_neural_arc_of_third vertebra (312):
(0)_not_reaching_anterior_margin_of_tripus -->
(1)_well_developed_and_extending_beyond_anterior_margin_of_tripus
Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioccipital -->
(1)_posterior_to_lateral_margin_of_epioccipital
Posterior_margin_of_cleithrum (341):
(1)_with_concavity_ventral_to_first_postcleithrum -->
(0)_without_concavity_ventral_to_first_postcleithrum
Anterior_tip_of_pelvic_bone (377):
(1)_posterior_to_third_rib -->
(0)_anterior_to_third_rib
Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more --> (0)_six_or_less
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Char. 1594: C --> T
Char. 1609: T --> C

Char. 1726: C --> A
Char. 1798: A --> G
Char. 1804: A --> T
Char. 1831: A --> G
Char. 1855: T --> A
Char. 1861: A --> T
Char. 1864: C --> T
Char. 1870: A --> C
Char. 1879: A --> G
Char. 1891: C --> T
Char. 1892: C --> T
Char. 1906: A --> G
Char. 1909: T --> C
Char. 1939: G --> T
Char. 1969: T --> C
Char. 1990: A --> C
Char. 2014: T --> A
Char. 2017: A --> G
Char. 2044: T --> C
Char. 2047: C --> A
Char. 2053: A --> T
Char. 2080: A --> T
Char. 2275: T --> C
Char. 2395: C --> T
Char. 2587: G --> A
Char. 2649: G --> C
Char. 2686: G --> A
Char. 2704: G --> A
Char. 2923: A --> G
Char. 3229: G --> A
Char. 3275: A --> C
Char. 3364: C --> T
Char. 3385: G --> A
Char. 3487: C --> T
Char. 3560: C --> T
Char. 3565: A --> T
Char. 3601: G --> T
Char. 3830: C --> A
Char. 3844: G --> A
Char. 3921: G --> A
Char. 3931: G --> A
Char. 4006: C --> T
Char. 4072: C --> T
Char. 4090: A --> G
Char. 4093: G --> A
Char. 4132: C --> T
Char. 4349: C --> A
Char. 4432: C --> T
Char. 4467: C --> T
Char. 4577: G --> A
Char. 5079: C --> T
Char. 5177: G --> A
Char. 5183: G --> A
Char. 5190: G --> A
Char. 5248: A --> G
Char. 5310: C --> T
Char. 5528: T --> A
Char. 5623: C --> T
Char. 5655: G --> C
Char. 5664: C --> T
Char. 5909: T --> A
Char. 6041: G --> A
Char. 6048: C --> T
Char. 6299: G --> A
Char. 6377: C --> T
Char. 6402: G --> A
Char. 6413: T --> C
Char. 6444: A --> T
Char. 6511: C --> T
Carnegiella_strigata :
Char. 904: C --> T
Char. 910: C --> T
Char. 911: C --> T
Char. 1024: C --> T
Char. 1054: A --> T
Char. 1060: C --> T
Char. 1087: C --> GT
Char. 1088: A --> G
Char. 1129: A --> T
Char. 1132: C --> T
Char. 1162: C --> A
Char. 1171: C --> T
Char. 1240: C --> T

Char. 1250: C --> T
Char. 1297: A --> C
Char. 1300: T --> C
Char. 1333: T --> A
Char. 1345: T --> A
Char. 1387: A --> G
Char. 1450: C --> T
Char. 1474: C --> T
Char. 1483: T --> C
Char. 3984: A --> T
Char. 4156: G --> A
Char. 4376: A --> G
Char. 4541: C --> A
Char. 4588: C --> T
Char. 4621: A --> G
Char. 5718: C --> T
Char. 6321: A --> T
Char. 6352: C --> T
Char. 6353: A --> T
Char. 6355: A --> G
Char. 6356: A --> CT
Char. 6403: C --> A
Char. 6413: T --> AC
Char. 6444: T --> A
Char. 6446: T --> C
Char. 6456: T --> C
Chalceus_macrolepidotus :
Char. 676: C --> T
Char. 1552: A --> G
Char. 1600: A --> G
Char. 1624: T --> C
Char. 1693: T --> C
Char. 1723: A --> T
Char. 1732: C --> T
Char. 1738: C --> T
Char. 1753: T --> C
Char. 1759: A --> G
Char. 1765: C --> T
Char. 1771: T --> C
Char. 1783: C --> T
Char. 1796: C --> T
Char. 1798: A --> G
Char. 1801: C --> T
Char. 1822: G --> A
Char. 1828: A --> G
Char. 1837: A --> G
Char. 1843: T --> C
Char. 1849: C --> A
Char. 1852: T --> A
Char. 1861: A --> C
Char. 1867: T --> A
Char. 1888: T --> C
Char. 1912: C --> T
Char. 1948: T --> C
Char. 1966: T --> C
Char. 2008: A --> G
Char. 2035: T --> C
Char. 2056: A --> G
Char. 2074: A --> G
Char. 2119: T --> C
Char. 2131: A --> G
Char. 2149: T --> C
Char. 5268: T --> G
Char. 6573: C --> T
Characidium_zebra_gr. :
Char. 1006: T --> C
Char. 1073: C --> T
Char. 1207: C --> T
Char. 1246: T --> C
Char. 1888: T --> C
Char. 2048: C --> T
Char. 2116: C --> T
Char. 2147: T --> C
Char. 2152: T --> C
Characidium_rachovii :
Char. 1525: T --> C
Char. 1540: A --> G
Char. 1552: A --> G
Char. 1561: T --> C
Char. 1579: G --> A
Char. 1594: A --> C
Char. 1606: T --> A
Char. 1624: C --> T

Char. 1642: T --> C
Char. 1663: T --> C
Char. 1712: C --> T
Char. 1789: A --> T
Char. 1804: C --> T
Char. 1807: A --> C
Char. 1810: G --> A
Char. 1828: A --> G
Char. 1849: A --> T
Char. 1885: C --> G
Char. 1888: T --> C
Char. 1921: T --> C
Char. 1987: C --> T
Char. 1996: C --> T
Char. 1999: A --> G
Char. 2020: G --> A
Char. 2047: A --> G
Char. 2059: T --> C
Char. 2080: A --> G
Char. 2143: A --> G
Char. 2146: T --> C
Char. 2147: T --> C
Char. 2152: T --> C

Charax_leticiae :
Char. 6298: A --> T
Char. 6329: T --> C
Char. 6345: A --> G
Char. 6410: A --> T
Char. 6515: A --> T

Charax_stenopterus :
Anterior_extension_of_nasal (11):
(1)_projecting_mesethmoid_wing_longer_than_nasal_width -->
(0)_extending_slightly_anterior_to_mesethmoid_wing

Anguloarticular_laterosensory_canal (105):
(0)_present --> (1)_absent

Lateral_line (123): (0)_complete -->
(1)_interrupted

Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent

Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one-third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal

Position_of_longitudinal_cartilage_dorsal_to_ectopterygoid (219):
(1)_displaced_laterally_and_separated_from_mesopterygoid -->
(0)_bordered_medially_by_mesopterygoid

Median_predorsal_scales (465):
(0)_covering_entire_predorsal_region -->
(1)_leaving_naked_area_anterior_to_dorsal_fin

Char. 2738: A --> T
Char. 3478: C --> T
Char. 3532: C --> A
Char. 3850: C --> T
Char. 4192: C --> T
Char. 4351: A --> G
Char. 4445: C --> A
Char. 4705: C --> A
Char. 5009: C --> T
Char. 5047: T --> A
Char. 5181: C --> T
Char. 5476: T --> A
Char. 6162: A --> G
Char. 6182: G --> A
Char. 6229: G --> A
Char. 6247: C --> T
Char. 6302: C --> T
Char. 6325: C --> T
Char. 6329: T --> A
Char. 6347: A --> G
Char. 6373: G --> A
Char. 6432: C --> T
Char. 6508: A --> T
Char. 6525: A --> G
Char. 6528: A --> G

Cheirodon_interruptus :
Char. 646: A --> C
Char. 679: C --> T
Char. 682: C --> T

Char. 787: T --> C
Char. 793: A --> G
Char. 853: C --> T
Char. 913: A --> G
Char. 952: A --> G
Char. 967: C --> T
Char. 973: A --> G
Char. 997: A --> G
Char. 1228: C --> T
Char. 1255: A --> G
Char. 1289: C --> T
Char. 3931: G --> A
Char. 3946: T --> A
Char. 4346: G --> C
Char. 6254: T --> A

Coptobrycon_bilineatus :
Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more --> (0)_four_or_fewer

Number_of_dentary_teeth_on_outer_row (198):
(1)_ten_or_more --> (0)_eight_or_fewer

Adipose_fin (512): (0)_present --> (1)_absent

Char. 2225: G --> A
Char. 2226: T --> G
Char. 2241: A --> G
Char. 2252: C --> T
Char. 2275: A --> T
Char. 2302: C --> T
Char. 2305: C --> A
Char. 2311: A --> T
Char. 2329: C --> A
Char. 2362: T --> C
Char. 2368: A --> G
Char. 2389: T --> G
Char. 2401: A --> C
Char. 2449: G --> A
Char. 2455: C --> T
Char. 2467: T --> C
Char. 2470: G --> A
Char. 2473: C --> A
Char. 2485: C --> A
Char. 2497: G --> C
Char. 2527: C --> T
Char. 2569: A --> G
Char. 2594: T --> C
Char. 2596: A --> T
Char. 2626: T --> G
Char. 2671: T --> A
Char. 2703: A --> G
Char. 2706: A --> C
Char. 2728: A --> G
Char. 2738: A --> T
Char. 2773: G --> A
Char. 2818: C --> A
Char. 2820: A --> G
Char. 2830: T --> A
Char. 2839: C --> G
Char. 3559: A --> T
Char. 3775: A --> G
Char. 3802: C --> A
Char. 3808: G --> A
Char. 3847: G --> C
Char. 3865: C --> T
Char. 3905: G --> T
Char. 3955: A --> T
Char. 4006: C --> T
Char. 4025: A --> G
Char. 4087: T --> C
Char. 4135: G --> C
Char. 4167: C --> G
Char. 4192: C --> T
Char. 4375: G --> A
Char. 4441: C --> T
Char. 4514: G --> T
Char. 4594: T --> C
Char. 4626: G --> A
Char. 4630: C --> T
Char. 4663: C --> T
Char. 4806: C --> T
Char. 4814: G --> A
Char. 4842: A --> G
Char. 4863: A --> G
Char. 4993: T --> C
Char. 5026: A --> G

Char. 5034: A --> G
Char. 5043: C --> T
Char. 5343: G --> A
Char. 5394: C --> A
Char. 5645: A --> G
Char. 5713: C --> A
Char. 6347: T --> C
Char. 6408: G --> A
Char. 6413: C --> T
Char. 6493: A --> T
Char. 6516: G --> A

Creagrutus_anary :
Length_of_sphenotic_spine (47):
(0)_not_reaching_to_anterodorsal_angle_of_hyomandibula -->
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula

Development_of_sagittal_capsule (69):
(0)_not_reaching_posterior_margin_of_lagenar_capsule -->
(1)_reaching_or_surpassing_posterior_margin_of_lagenar_capsule

Relative_length_of_palatine (209):
(0)_approximately_one-half_length_of_ectopterygoid_or_less -->
(1)_distinctly_longer_than_one-half_length_of_ectopterygoid

Ventral_exit_of_hyomandibular_nerve (242):
(0)_on_lateral_surface_of_bone_through_an_ovate_foramen --> (1)_on_posterior_margin_of_bone

Relative_position_of_hyomandibular_condyle (243):
(0)_aligned_with_base_of_neurocranium_or_dorsal_to_it --> (1)_ventral_to_base_of_neurocranium

Teeth_on_third_pharyngobranchial (282):
(1)_absent --> (0)_present

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (1)_ten_or_fewer -->
(0)_11_or_more

Position_of_ventral_margin_of_posttemporal (335):
(1)_lateral_or_posterior_to_lateral_margin_of_epioccipital -->
(0)_anterior_to_lateral_margin_of_epioccipital

Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals

Pelvic-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (442): (1)_present --> (0)_absent

Contact_between_dorsal_margin_of_adductor_mandibulae_and_ventral_margin_of_dilatator_operculi (480): (1)_present --> (0)_absent

Creagrutus_atrisignum :
Overlap_of_maxilla_by_second_infraorbital (85): (0)_absent --> (1)_present

Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage

Length_of_medial_bony_ridge_of_opercle (254): (1)_less_than_50%_of_opercular_length -->
(0)_60%_or_greater_than_opercular_length

Teeth_on_third_pharyngobranchial (282):
(1)_absent --> (0)_present

Denticles_on_gill_rakers (300): (1)_absent -->
(0)_present

Rows_of_gill_rakers_on_first_epibranchial (302): (1)_two --> (0)_one

Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioccipital -->
(1)_posterior_to_lateral_margin_of_epioccipital

Anterior_projection_of_mesocoracoid (355):
(0)_absent_or_reduced -->
(1)_present_projected_anterior_to_margin_of_cleithrum

Number_of_ventral_procurrent_caudal-fin_rays (433): (1)_12_or_more --> (0)_11_or_fewer

Bony_hooks_on_base_of_pelvic-fin_rays_of_adult_males (446): (1)_as_numerous_as_on_segmented_portion_of_rays --> (0)_absent_or_in_small_number_compared_to_on_segmented_portion
Humeral_spot (492): (0)_absent_or_vertically-elongate --> (1)_horizontally-ovate
Creagrutus_cracentis :

Ventral_projection_of_mesethmoid_spine,_forming_a_keel_between_premaxillae (2): (1)_present --> (0)_absent
Premaxillary_dentition (168): (1)_with_a_recognizable_triad_of_larger_teeth_within_the_base --> (0)_one_or_more_series_of_similar_teeth
Creagrutus_gephyrus :

Ventral_projection_of_mesethmoid_spine,_forming_a_keel_between_premaxillae (2): (1)_present --> (0)_absent

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Form_of_posterodorsal_portion_of_angularoarticular (163): (0)_vertical --> (1)_anterodorsally_angled
Number_of_maxillary_teeth (190): (0)_up_to_three --> (1)_four_or_more

Extent_of_implantation_of_teeth_along_maxilla (191): (0)_not_reaching_middle_of_maxillary_lamella --> (1)_extending_across_almost_entire_maxillary_lamella
Number_of_dentary_teeth_on_outer_row (198): (0)_eight_or_fewer --> (1)_ten_or_more
Number_of_cusps_of_anterior_dentary_teeth (201): (0)_three_or_fewer --> (1)_five_or_more
Posterior_development_of_mesopterygoid (222): (1)_separate_from_metapterygoid --> (0)_overlapping_metapterygoid

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Creagrutus_meridionalis :
Form_of_anterior_process_of_lateral_ethmoid (20): (1)_slender_and_separated_from_vomer --> (0)_broad_in_ventral_view,_contacting_vomer_in_its_entire_length
Posterior_extension_of_supraoccipital_spine (62): (1)_reaching_only_to_anterior_limit_of_neural_complex --> (0)_reaching_at_least_to_middle_length_of_neural_complex
Ventromedial_opening_of_posttemporal_fossa (67): (0)_absent --> (1)_present
Dorsal_extension_of_antorbital (81): (0)_leaving_a_broad_space_with_frontal --> (1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Overlap_of_maxilla_by_second_infraorbital (85): (0)_absent --> (1)_present
Ventral_extent_of_third_infraorbital (88): (0)_reaching_horizontal_arm_of_preopercle --> (1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly

Position_of_opening_on_neurocranium_communicating_with_laterosensory_canal_of_sixth_infraorbital (101): (1)_in_frontal --> (0)_between_frontal_and_pterotic
Number_of_supraneurals (392): (1)_five_or_more --> (0)_four_or_fewer
Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small --> (1)_wider_than_primary_axis_of_supraneurals
Creagrutus_muelleri :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Overlap_of_maxilla_by_second_infraorbital (85): (0)_absent --> (1)_present

Branching_of_laterosensory_canals_of_fourth_or_fifth_infraorbitals (97): (0)_absent --> (1)_present

Gap_between_medial_two_teeth_from_outer_premaxillary_row (175): (1)_equal_to_gap_between_remaining_teeth --> (0)_distinctly_greater_than_gap_between_remaining_teeth
Palatine_foramen (210): (0)_absent_or_reduced_in_size --> (1)_present_and_very_conspicuous
Length_of_medial_bony_ridge_of_opercle (254): (1)_less_than_50%_of_opercular_length --> (0)_60%_or_greater_than_opercular_length
Bony_hooks_on_fin_rays (440): (1)_present_in_adult_males --> (0)_absent
Char. 1580: C --> T
Char. 1588: A --> G
Char. 1708: T --> C
Char. 1729: A --> C
Char. 1828: A --> G
Char. 1849: A --> C
Char. 1879: A --> G
Char. 1909: T --> C
Char. 1912: C --> T
Char. 1921: G --> A
Char. 1987: T --> C
Char. 1999: A --> G
Char. 2005: T --> C
Char. 2050: A --> G
Char. 2056: T --> C
Char. 2083: A --> G
Char. 2594: C --> A
Char. 2596: A --> G
Char. 2660: T --> C
Char. 2686: G --> A
Char. 2965: T --> C
Char. 3079: T --> C
Char. 3088: A --> G
Char. 3106: T --> C
Char. 3328: T --> C
Char. 3467: G --> T
Char. 3493: C --> G
Char. 3880: G --> A
Char. 3967: T --> C
Char. 3985: C --> T
Char. 4104: T --> A
Char. 4222: A --> G
Char. 4282: T --> C
Char. 4398: A --> T
Char. 4663: A --> C
Char. 4993: T --> A
Char. 5010: A --> C
Char. 5945: A --> G
Char. 6326: T --> C
Char. 6347: A --> G
Char. 6356: A --> T
Char. 6516: G --> A
Creagrutus_peruanus :

Gap_between_medial_two_teeth_from_outer_premaxillary_row (175): (1)_equal_to_gap_between_remaining_teeth --> (0)_distinctly_greater_than_gap_between_remaining_teeth
First_postcleithrum (361): (0)_present --> (1)_absent
Bony_hooks_on_fin_rays (440): (1)_present_in_adult_males --> (0)_absent
Char. 2275: T --> A
Char. 2481: A --> G
Char. 2530: C --> T
Char. 2686: G --> A
Char. 3479: G --> A
Char. 3784: G --> A
Char. 3865: C --> T
Char. 4081: A --> G
Char. 4135: G --> A
Char. 4587: G --> T
Char. 4705: C --> T

Char. 5043: C --> G
Char. 5184: T --> C
Char. 5472: A --> T
Char. 5719: G --> A
Char. 5722: T --> A
Char. 6306: C --> T
Char. 6326: T --> C
Char. 6343: A --> G
Char. 6347: A --> G
Char. 6357: A --> G
Char. 6379: A --> G
Char. 6514: A --> G
Creagrutus_taphorni :

Anterior_convergence_of_ventral_diverging_lamellae_with_nasal_septum_of_mesethmoid (8): (1)_confluent_at_posterior_end_of_nasal_septum --> (0)_absent,_or_confluent_near_anterior_end_of_nasal_septum
Foramen_on_ventral_lamella_of_supraoccipital (63): (0)_absent --> (1)_with_a_large_foramen_or_concavity_posteriorly_open
Ventral_extent_of_third_infraorbital (88): (0)_reaching_horizontal_arm_of_preopercle --> (1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly
Relative_length_of_palatine (209): (0)_approximately_one_half_length_of_ectopterygoid,_or_less --> (1)_distinctly_longer_than_one_half_length_of_ectopterygoid
Relative_position_of_hyomandibular_condyle (243): (0)_aligned_with_base_of_neurocranium_or_dorsal_to_it --> (1)_ventral_to_base_of_neurocranium
Length_of_medial_bony_ridge_of_opercle (254): (1)_less_than_50%_of_opercular_length --> (0)_60%_or_greater_than_opercular_length
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Anterior_projection_of_mesocoracoid (355): (0)_absent_or_reduced --> (1)_present,_projected_anterior_to_margin_of_cleithrum

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Anterior_tip_of_pelvic_bone (377): (1)_posterior_to_third_rib --> (0)_anterior_to_third_rib
Relative_position_of_dorsal-fin_anterior_insertion (403): (0)_anterior_to_or_at_vertical_through_pelvic-fin_origin --> (1)_posterior_to_vertical_through_pelvic-fin_origin
Bony_hooks_on_last_pelvic-fin_ray_of_adult_males (447): (0)_absent_or_reduced_in_number --> (1)_as_numerous_as_in_other_rays
Anterior_extension_of_adductor_arcus_palatini (481): (0)_covering_most_of_dorsal_surface_of_mesopterygoid --> (1)_covering_only_half_of_dorsal_surface_of_mesopterygoid
Ctenobrycon_hauxwellianus :
Anterior_extension_of_nasal (11): (0)_extending_slightly_anterior_to_mesethmoid_wing --> (1)_projecting_mesethmoid_wing_longer_than_nasal_width

Articulation_between_second_and_third_infraorbitals (86): (0)_vertical --> (1)_anteroventrally_angled

Dorsal_end_of_laterosensory_canal_of_preopercle_and_suprapreopercle (108): (0)_not_overlapping_anterodorsal_process_of_opercle --> (1)_overlapping_anterodorsal_process_of_opercle

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
 Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
 Urohyal_lateral_processes (305):
 (1)_as_expanded_as_anterior_region_of_bone_or_less --> (0)_well_developed
 Position_of_ventral_end_of_posttemporal (336):
 (0)_anterior_or_lateral_to_lateral_margin_of_epioccipital -->
 (1)_posterior_to_lateral_margin_of_epioccipital
 Cartilage-filled_space_anterior_to_scapular_foramen (360):
 (0)_present_wider_than_anterior_process_of_scapula -->
 (1)_much_reduced_by_expansions_of_coracoid_and_d_cleithrum
 Anterior_tip_of_pelvic_bone (377):
 (1)_posterior_to_third_rib -->
 (0)_anterior_to_third_rib
 Position_of_last_supraneural (398):
 (0)_two_or_fewer_vertebrae_in_front_of_first_dorsal_pterygiophore -->
 (1)_more_than_two_vertebrae_in_front_of_first_dorsal_pterygiophore
 Sclerotic_bones (508):
 (0)_single_anteroventrally_open_bone -->
 (1)_two_bones_separated_by_cartilages
 Char. 2644: G --> A
 Char. 3169: C --> A
 Char. 3238: G --> C
 Char. 3253: G --> A
 Diapoma_uruguayense :
 Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
 Char. 6413: C --> T
 Cyanogaster_noctivaga :
 Concavity_on_posterior_margin_of_orbitosphenoid (42): (0)_absent_or_reduced -->
 (1)_very_pronounced_reaching_articulation_with_pterosphenoid
 Large_foramen_on_pterosphenoid (45):
 (0)_absent --> (1)_present_well_developed
 Length_of_sphenotic_spine (47):
 (0)_not_reaching_to_anterodorsal_angle_of_hyomandibula -->
 (1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula
 Maxillary_teeth (188): (1)_present -->
 (0)_absent
 Number_of_maxillary_teeth (189):
 (1)_two_or_more --> (0)_only_one_or_absent
 Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present
 Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33
 First_postcleithrum (361): (0)_present -->
 (1)_absent
 Number_of_scales_in_lateral_series (467):
 (0)_33_or_more --> (1)_32_or_fewer
 Cynopotamus_argenteus :
 Position_of_sphenotic_spine_relative_to_the_orbit (50):
 (0)_bordering_orbit_aligned_with_anterior_margin_of_infraorbitals -->
 (1)_distinctly_posterior_to_orbital_margin
 Position_of_anterior_margin_of_supraoccipital (60):
 (0)_behind_vertical_through_posterior_orbital_margin -->
 (1)_anterior_to_vertical_through_posterior_orbital_margin
 Length_of_anterior_branch_of_laterosensory_canal_of_sixth_infraorbital (100):
 (1)_longer_than_dorsal_branch -->
 (0)_as_long_as_dorsal_branch_or_shorter
 Frontal_and_pterotic_laterosensory_canals (118):
 (1)_with_an_angle_on_pore_receiving_infraorbital_canal -->
 (0)_without_a_discernible_angle_between_them
 Inner_row_of_minute_dentary_teeth (203):
 (1)_present_from_anterior_region_of_dentary -->
 (0)_absent_or_restricted_to_lateral_region_of_dentary
 Dorsal_lamella_of_symplectic (239):
 (0)_absent_or_reduced -->
 (1)_developed_overlapping_laterally_quadrate_and_metapterygoid
 Bony_lamellae_between_second_and_third_basibranchials (274): (0)_absent --> (1)_present
 Form_of_anterior_gill_rakers_on_first_ceratobranchial (297): (0)_not_fused -->
 (1)_with_fused_bases_forming_plates
 Form_of_posterior_margin_of_cleithrum (340):
 (0)_convex_or_slightly_sinuous_just_dorsal_to_pectoral-fin_insertion -->
 (1)_with_notch_just_anterior_to_pectoral-fin_insertion
 Anterior_tip_of_pelvic_bone (375):
 (1)_posterior_to_first_rib -->
 (0)_anterior_to_first_rib
 Number_of_anal_pterygiophores_anterior_to_first_haemal_spine (412): (0)_three_or_fewer -->
 (1)_four_or_more
 Char. 1517: T --> C
 Char. 1537: T --> C
 Char. 1558: CT --> A
 Char. 1565: C --> T
 Char. 1573: G --> A
 Char. 1633: T --> G
 Char. 1657: T --> C
 Char. 1666: A --> G
 Char. 1669: A --> G
 Char. 1675: T --> C
 Char. 1684: T --> C
 Char. 1687: G --> A
 Char. 1699: T --> C
 Char. 1703: C --> T
 Char. 1705: T --> A
 Char. 1706: A --> G
 Char. 1708: T --> C
 Char. 1723: C --> T
 Char. 1729: T --> C
 Char. 1738: T --> C
 Char. 1762: C --> T
 Char. 1765: C --> T
 Char. 1789: T --> C
 Char. 1804: A --> G
 Char. 1822: A --> G
 Char. 1825: A --> T
 Char. 1858: A --> G
 Char. 1859: G --> A
 Char. 1870: A --> T
 Char. 1879: A --> G
 Char. 1888: A --> G
 Char. 1891: T --> C
 Char. 1909: T --> C
 Char. 1927: T --> C
 Char. 1939: GC --> A
 Char. 1942: T --> C
 Char. 1948: C --> T
 Char. 1960: T --> C
 Char. 1963: T --> C
 Char. 1966: T --> C
 Char. 1969: T --> C
 Char. 2005: T --> C
 Char. 2023: C --> T
 Char. 2035: T --> C
 Char. 2047: T --> C
 Char. 2053: T --> A
 Char. 2054: T --> C
 Char. 2056: A --> T
 Char. 2062: C --> T
 Char. 2071: T --> C
 Char. 2087: T --> C
 Char. 2095: C --> T
 Char. 2119: T --> C
 Char. 2146: T --> C
 Cyphocharax spilotos :
 Char. 533: C --> T

Foramina_for_glossopharyngeal_and_vagus_nerves

Char. 539: T --> C
Char. 544: C --> T
Char. 565: C --> T
Char. 571: C --> T
Char. 577: C --> T
Char. 595: T --> C
Char. 601: T --> C
Char. 604: T --> C
Char. 637: T --> C
Char. 655: C --> T
Char. 661: T --> C
Char. 667: C --> T
Char. 674: C --> T
Char. 733: T --> C
Char. 743: C --> T
Char. 751: G --> C
Char. 760: A --> G
Char. 781: C --> T
Char. 820: C --> T
Char. 832: C --> T
Char. 841: T --> C
Char. 862: T --> C
Char. 934: C --> T
Char. 958: A --> G
Char. 964: C --> T
Char. 970: C --> T
Char. 1015: T --> C
Char. 1019: T --> C
Char. 1021: A --> G
Char. 1060: T --> C
Char. 1072: C --> T
Char. 1081: C --> A
Char. 1084: T --> C
Char. 1106: A --> G
Char. 1111: C --> T
Char. 1114: A --> G
Char. 1135: T --> C
Char. 1136: C --> T
Char. 1168: C --> T
Char. 1174: C --> A
Char. 1177: C --> T
Char. 1210: C --> T
Char. 1222: C --> T
Char. 1225: C --> T
Char. 1240: C --> T
Char. 1243: A --> T
Char. 1271: C --> T
Char. 1273: A --> G
Char. 1282: C --> T
Char. 1288: C --> T
Char. 1289: C --> T
Char. 1294: A --> G
Char. 1295: C --> T
Char. 1300: C --> T
Char. 1315: C --> T
Char. 1357: C --> T
Char. 1367: A --> G
Char. 1384: A --> G
Char. 1441: C --> T
Char. 1447: C --> G
Char. 1453: C --> T
Char. 1465: C --> T
Char. 1489: A --> C
Char. 1492: A --> G
Char. 1495: A --> G
Char. 1502: C --> T
Char. 1558: C --> A
Char. 1723: G --> A
Char. 1735: A --> G
Char. 1741: T --> C
Char. 1798: A --> G
Char. 1828: AT --> G
Char. 1855: C --> A
Char. 1861: C --> T
Char. 1892: C --> T
Char. 1933: T --> C
Char. 2131: C --> AT
Char. 2158: C --> T
Char. 2269: C --> T
Char. 2364: G --> C
Char. 2530: T --> C
Char. 2536: C --> T
Char. 2572: T --> C

Char. 2608: T --> C
Char. 2744: G --> T
Char. 2809: T --> C
Char. 6253: A --> T
Char. 6456: C --> T
Char. 6562: C --> T
Char. 6588: G --> A
Deuterodon_iguape :
Char. 1630: A --> G
Char. 1668: T --> G
Char. 1678: A --> T
Char. 1690: A --> T
Char. 1723: C --> T
Char. 1732: C --> T
Char. 1798: A --> G
Char. 1828: A --> G
Char. 1861: A --> G
Char. 2128: G --> A
Deuterodon_langei :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Branching_of_laterosensory_canals_of_fourth_or_fifth_infraorbitals (97): (0)_absent --> (1)_present

Expansion_of_lamellar_portion_of_maxilla_just_posterior_to_toothed_region (141): (0)_absent_or_not_pronounced --> (1)_very_pronounced

Articulation_between_ventral_margin_of_metapterygoid_and_posterodorsal_margin_of_quadrate (229): (0)_absent --> (1)_present
Distribution_of_denticles_on_gill_rakers (301): (0)_restricted_to_margins_or_absent --> (1)_along_entire_surface_of_gill_rakers
Transitional_vertebrae_with_haemal_canal (332): (0)_absent_or_just_one --> (1)_two_or_more
Posterior_margin_of_cleithrum (341): (1)_with_concavity_ventral_to_first_postcleithrum --> (0)_without_concavity_ventral_to_first_postcleithrum

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Number_of_supraneurals (392): (1)_five_or_more --> (0)_four_or_fewer
Deuterodon_sp. :
Relative_length_of_frontal_fontanel (29): (0)_up_to_2/3_length_of_parietal_fontanel --> (1)_3/4_or_more_of_length_of_parietal_fontanel
Margins_of_toothed_region_of_maxilla (140): (1)_dorsally_divergent --> (0)_roughly_parallel

Ventral_margin_of_horizontal_process_of_angular_rticular (162): (0)_posterovertrally_angled_relative_to_dentary_laterosensory_canal --> (1)_perpendicular_to_laterosensory_canal_of_dentary
Number_of_maxillary_teeth (190): (1)_four_or_more --> (0)_up_to_three
Number_of_dentary_teeth_on_outer_row (198): (1)_ten_or_more --> (0)_eight_or_fewer
Bony_hooks_on_fin_rays (440): (0)_absent --> (1)_present_in_adult_males
Diapoma_speculiferum :
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex,_straight,_or_slightly_concave --> (1)_distinctly_concave,_forming_an_angle_of_45°

Rows_of_gill_rakers_on_second_ceratobranchial (292): (1)_two --> (0)_one
Position_of_ventral_margin_of_posttemporal (335): (1)_lateral_or_posterior_to_lateral_margin_of_epioccipital --> (0)_anterior_to_lateral_margin_of_epioccipital
Position_of_last_supraneural (398): (0)_two_or_fewer_vertebrae_in_front_of_first_dors

al_pterygiophore -->
(1)_more_than_two_vertebrae_in_front_of_first_dorsal_pterygiophore
Char. 1693: C --> T
Char. 1822: A --> G
Char. 1990: A --> T
Char. 2062: A --> G
Char. 2065: G --> A
Char. 2149: T --> C
Char. 2161: C --> T
Char. 2368: G --> A
Char. 2419: C --> T
Char. 3562: A --> G
Char. 3608: C --> A
Char. 3685: A --> G
Char. 3697: G --> A
Char. 3865: C --> T
Char. 3979: C --> A
Char. 4132: C --> T
Char. 4432: C --> T
Char. 4441: C --> T
Char. 4476: C --> T
Char. 6327: A --> G
Char. 6342: G --> A
Char. 6440: A --> G
Char. 6508: A --> G
Diapoma_terofali :
Char. 1777: A --> G
Distichodus_maculatus :
No autapomorphies
Ectreptopterus_uruguayensis :
Posterior_extension_of_vomer (18): (0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection --> (1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection

Prootic_foramen_anteromedial_to_auditory_foramen (56): (0)_visible_as_a_pore_lateral_to_myodome --> (1)_an_oblique_canal_near_anterior_margin_of_prootic

Articulation_between_second_and_third_infraorbitals (86): (0)_vertical --> (2)_posterovertrally_angled
Posterior_pore_of_pterotic_canal (119): (1)_in_a_vertical_line_through_ventral_pterotic_pore --> (0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal
Number_of_teeth_on_inner_premaxillary_row (182): (0)_five_or_fewer --> (1)_six_or_more
Number_of_maxillary_teeth (190): (0)_up_to_three --> (1)_four_or_more
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Number_of_supraneurals (392): (0)_four_or_fewer --> (1)_five_or_more
Zigzag_lines_between_rows_of_scales (497): (0)_absent --> (1)_present
Chevron-shaped_lines_following_myosepta (498): (0)_absent --> (1)_present
Char. 1558: A --> G
Char. 1561: C --> T
Char. 1585: C --> T
Char. 1591: C --> T
Char. 1594: A --> G
Char. 1606: C --> T
Char. 1627: T --> G
Char. 1636: T --> C
Char. 1675: C --> A
Char. 1696: A --> G
Char. 1711: A --> T
Char. 1712: C --> T
Char. 1732: C --> T
Char. 1741: C --> T
Char. 1759: A --> G
Char. 1771: C --> T
Char. 1783: T --> C
Char. 1819: T --> A
Char. 1849: C --> A
Char. 1873: C --> T

Char. 1894: A --> T
Char. 1913: C --> T
Char. 1921: T --> G
Char. 1987: C --> T
Char. 1999: A --> G
Char. 2038: T --> A
Char. 2053: A --> T
Char. 2059: A --> G
Char. 2074: A --> G
Char. 2087: C --> T
Char. 2125: T --> A

Engraulisoma taeniatum :
Form_of_orbitosphenoid (39):
(0)_slender,_relatively_small,_and_separate_from_parasphenoid -->
(1)_massive,_almost_reaching_parasphenoid_ventrally
Development_of_sagittal_capsule (69):
(0)_not_reaching_posterior_margin_of_lagenar_capsule -->
(1)_reaching_or_surpassing_posterior_margin_of_lagenar_capsule

Foramina_for_glossopharyngeal_and_vagus_nerves (73): (1)_two_well_separated_foramina -->
(0)_a_single_foramen_or_two_contiguous_foramina

Extent_of_expansion_of_first_infraorbital_lateral_trochlear_maxilla (83):
(0)_covering_less_than_one_half_length_of_maxilla -->
(1)_covering_most_of_maxilla
Anguloarticular_laterosensory_canal (105):
(0)_present --> (1)_absent

Ligament_from_maxilla_to_distal_tip_of_premaxillary_alveolar_arm (137):
(0)_weak,_premaxilla_moderately_bifurcated_in_its_attachment_point -->
(1)_strong,_premaxilla_deeply_bifurcated_in_its_attachment_point
Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more --> (0)_four_or_fewer
Maxillary_teeth (188): (1)_present -->
(0)_absent
Lateroventral_expansion_of_ectopterygoid (214):
(0)_absent,_articulating_almost_exclusively_with_cartilage_of_palatine -->
(1)_present,_expanded_twice_length_of_palatine_cartilage

Contact_between_ectopterygoid_and_anterodorsal_region_of_quadrate (220): (0)_present -->
(1)_absent
Number_of_branchiostegal_rays (266):
(1)_four_or_five --> (0)_three
Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (303): (1)_18_or_more -->
(0)_17_or_fewer
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone,_or_less
Interhyal (306): (0)_present --> (1)_absent
Fusion_of_second_to_fourth_vertebrae (311):
(0)_absent --> (1)_present
Transitional_vertebrae_with_haemal_canal (331): (0)_present --> (1)_absent

Bony_ridge_of_coracoid_between_base_of_mesocoracoid_and_ventral_margin_of_interosseous_space (348): (1)_present --> (0)_absent
Number_of_supraneurals (393):
(1)_six_or_more --> (0)_five_or_fewer
Number_of_supraneurals (394):
(1)_seven_or_more --> (0)_six_or_fewer
Number_of_supraneurals (395):
(1)_eight_or_more --> (0)_seven_or_fewer

Position_of_last_supraneural (398):
(0)_two_or_fewer_vertebrae_in_front_of_first_dorsal_pterygiophore -->
(1)_more_than_two_vertebrae_in_front_of_first_dorsal_pterygiophore
Posterior_margin_of_hypural_3 (431):
(1)_deeper_than_posterior_margin_of_hypural_4 -->
(0)_equal_to_or_narrower_than_posterior_margin_of_hypural_4
Sheath_of_scales_covering_anal-fin_base (469): (1)_covering_3/4_of_anal-fin_base_or_more --> (0)_reaching_half_length_of_anal-fin_base_or_less

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Char. 649: C --> T
Char. 655: C --> T
Char. 664: C --> T
Char. 673: C --> T
Char. 676: C --> T
Char. 746: C --> T
Char. 749: C --> T
Char. 754: A --> G
Char. 757: A --> C
Char. 763: A --> G
Char. 766: C --> T
Char. 772: T --> C
Char. 781: C --> T
Char. 796: A --> T
Char. 802: A --> G
Char. 811: A --> G
Char. 820: A --> C
Char. 835: C --> T
Char. 841: C --> A
Char. 889: C --> A
Char. 892: C --> T
Char. 895: CT --> A
Char. 916: A --> T
Char. 941: C --> T
Char. 961: A --> G
Char. 964: A --> T
Char. 980: C --> T
Char. 982: C --> G
Char. 991: C --> T
Char. 997: A --> T
Char. 1000: C --> G
Char. 1006: C --> T
Char. 1015: C --> A
Char. 1024: C --> T
Char. 1027: A --> G
Char. 1033: A --> G
Char. 1054: A --> T
Char. 1075: T --> G
Char. 1078: A --> C
Char. 1088: A --> G
Char. 1100: A --> C
Char. 1102: A --> G
Char. 1129: C --> T
Char. 1132: C --> T
Char. 1162: C --> T
Char. 1186: A --> G
Char. 1207: C --> T
Char. 1219: A --> G
Char. 1225: C --> T
Char. 1237: C --> T
Char. 1249: A --> G
Char. 1258: A --> T
Char. 1276: C --> T
Char. 1295: C --> T
Char. 1312: C --> T
Char. 1329: G --> C
Char. 1331: C --> T
Char. 1339: C --> T
Char. 1348: C --> T
Char. 1360: A --> G
Char. 1381: C --> T
Char. 1387: A --> T

Char. 1388: A --> G
Char. 1390: T --> G
Char. 1405: A --> A
Char. 1408: A --> G
Char. 2209: T --> A
Char. 2224: T --> A
Char. 2239: A --> C
Char. 2248: C --> A
Char. 2254: G --> T
Char. 2269: C --> T
Char. 2299: C --> G
Char. 2323: C --> T
Char. 2335: T --> C
Char. 2338: T --> C
Char. 2347: T --> C
Char. 2356: T --> C
Char. 2386: A --> C
Char. 2392: C --> T
Char. 2405: C --> T
Char. 2449: G --> A
Char. 2455: C --> T
Char. 2470: G --> A
Char. 2474: T --> C
Char. 2509: G --> T
Char. 2512: G --> A
Char. 2521: T --> C
Char. 2527: C --> T
Char. 2530: T --> C
Char. 2533: T --> C
Char. 2569: A --> T
Char. 2584: C --> T
Char. 2596: A --> G
Char. 2608: T --> C
Char. 2641: G --> A
Char. 2674: C --> A
Char. 2686: T --> A
Char. 2695: A --> G
Char. 2738: A --> T
Char. 2794: G --> A
Char. 2806: C --> T
Char. 2812: A --> G
Char. 2818: C --> A
Char. 4747: A --> G
Char. 4776: G --> A
Char. 4782: C --> T
Char. 4807: G --> A
Char. 4847: A --> T
Char. 4983: G --> A
Char. 4999: G --> A
Char. 5022: C --> T
Char. 5136: C --> G
Char. 5272: A --> G
Char. 5396: C --> A
Char. 5412: C --> T
Char. 5424: C --> T
Char. 5449: A --> C
Char. 5492: C --> T
Char. 5679: C --> T
Char. 5736: C --> T
Char. 6183: A --> G
Char. 6191: C --> T
Char. 6194: A --> T
Char. 6204: C --> T
Char. 6209: C --> T
Char. 6216: G --> A
Char. 6252: A --> C
Char. 6253: A --> C
Char. 6255: A --> T
Char. 6276: T --> A
Char. 6286: A --> T
Char. 6294: T --> C
Char. 6295: A --> C
Char. 6298: A --> T
Char. 6301: T --> C
Char. 6302: C --> T
Char. 6333: A --> C
Char. 6342: A --> T
Char. 6343: A --> T
Char. 6347: T --> A
Char. 6353: A --> G
Char. 6355: A --> G
Char. 6373: G --> A
Char. 6374: A --> G

Char. 6376: C --> T
Char. 6383: G --> A
Char. 6388: C --> A
Char. 6406: G --> A
Char. 6412: A --> G
Char. 6423: A --> G
Char. 6436: G --> A
Char. 6442: A --> T
Char. 6445: A --> C
Char. 6448: C --> A
Char. 6450: A --> T
Char. 6462: G --> T
Char. 6467: C --> A
Char. 6476: C --> T
Char. 6477: A --> G
Char. 6480: G --> A
Char. 6484: C --> A
Char. 6485: A --> T
Char. 6487: C --> T
Char. 6490: A --> G
Char. 6493: A --> T
Char. 6496: A --> C
Char. 6508: A --> C
Char. 6514: T --> G
Char. 6523: C --> T
Char. 6530: C --> A
Char. 6563: C --> T
Char. 6575: A --> C
Char. 6588: G --> A
Exodon_paradoxus :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Position_of_foramen_anteromedial_to_auditory_foramen (57):
(0)_more_distant_than anterolateral_foramen_from_auditory_foramen -->
(1)_as_close_as anterolateral_foramen_from_auditory_foramen

Articulation_between_second_and_third_infraorbitals (86): (1)_anteroventrally_angled -->
(2)_posteroventrally_angled

Morphology_of_premaxillary_maxillary_and_dentary_teeth (165):
(1)_some_teeth_multicuspidate_or_molariform -->
(0)_all_teeth_conical_caniniform_or_mamilliform

Position_of_longitudinal_cartilage_dorsal_to_ectopterygoid (219):
(0)_bordered_medially_by_mesopterygoid -->
(1)_displaced_laterally_and_separated_from_mesopterygoid
Form_of_quadrate (231):
(0)_with_ventral_portion_longer_than_anterodorsal_region -->
(1)_with_anterodorsal_portion_equal_or_longer_than_ventral_region
Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33
Transitional_vertebrae_with_haemal_canal (332): (0)_absent_or_just_one --> (1)_two_or_more
Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Relative_position_of_dorsal-fin_anterior_insertion (403):
(1)_posterior_to_vertical_through_pelvic-fin_origin --> (0)_anterior_to_or_at_vertical_through_pelvic-fin_origin
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Circuli_on_posterior_field_of_scales (456):
(1)_absent --> (0)_present
Galeocharax_humeralis :

Bony_lamellae_bordering_sensory_canal_of_nasal (12):
(0)_absent_or_more_slender_than_tubular_region --> (1)_wider_than_tubular_region_at_some_point

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (80):
(0)_antorbital_either_aligned_or_anterior_to_first_infraorbital -->
(1)_anterior_margin_of_antorbital_posterior_to_first_infraorbital
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial

Form_of_anterior_gill_rakers_on_first_ceratobranchial (297): (0)_not_fused -->
(1)_with_fused_bases_forming_plates

Pointed_projection_dorsal_to_anterior_axis_of_neural_complex (308): (1)_present --> (0)_absent
Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Char. 1534: A --> G
Char. 1549: T --> G
Char. 1594: A --> C
Char. 1598: T --> C
Char. 1600: A --> T
Char. 1630: T --> C
Char. 1712: C --> T
Char. 1744: C --> T
Char. 1768: A --> G
Char. 1783: C --> A
Char. 1843: A --> G
Char. 1852: T --> C
Char. 1865: C --> T
Char. 1870: A --> G
Char. 1915: A --> G
Char. 1918: C --> T
Char. 1990: A --> T
Char. 2038: C --> T
Char. 2048: C --> T
Char. 2050: C --> A
Char. 2126: G --> T
Galeocharax_gulo :

Ventral_projection_of_lagenar_capsule (70):
(0)_not_reaching_to_plane_through_parasphenoid_dorsal_margin -->
(1)_ventral_to_plane_through_parasphenoid_dorsal_margin

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (80):
(0)_antorbital_either_aligned_or_anterior_to_first_infraorbital -->
(1)_anterior_margin_of_antorbital_posterior_to_first_infraorbital
Lateral_lamella_of_pelvic_bone (373):
(1)_present_and_reaching_two_thirds_of_bone -->
(0)_absent_or_reduced_to_posterior_third_of_bone
Anal-fin_position (415):
(1)_extended_anteriorly_ventral_to_dorsal_fin -->
(0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray
Posterior_region_oflevator_arcus_palatini (482):
(0)_limited_by_adductor_mandibulae_and_adductor_arcus_palatini -->

(1)_limited_by_A2_and_A3_sections_of_adductor_mandibulae
Char. 1534: A --> G
Char. 1549: T --> C
Char. 1594: A --> GT
Char. 1598: T --> C
Char. 1600: A --> CT
Char. 1630: T --> C
Char. 1712: C --> T
Char. 1744: C --> T
Char. 1768: A --> G
Char. 1783: C --> A
Char. 1852: T --> C
Char. 1865: C --> T
Char. 1915: A --> G
Char. 1918: C --> T
Char. 1990: A --> T
Char. 2038: C --> T
Char. 2048: C --> T
Char. 2050: C --> A
Char. 2512: G --> A
Char. 2530: C --> T
Char. 2611: G --> A
Char. 2653: G --> A
Char. 2755: G --> A
Char. 4830: G --> A
Char. 4881: T --> C
Char. 5316: A --> G
Char. 5343: G --> A
Char. 5505: G --> A
Char. 5506: C --> A
Char. 5514: C --> G
Char. 5539: G --> T
Char. 5563: A --> G
Char. 5565: A --> C
Char. 5739: T --> C
Char. 6182: G --> T
Char. 6183: A --> G
Char. 6301: C --> T
Char. 6306: C --> T
Char. 6317: A --> G
Char. 6323: C --> T
Char. 6325: C --> T
Char. 6334: A --> G
Char. 6342: G --> A
Char. 6343: G --> A
Char. 6345: A --> T
Char. 6346: T --> G
Char. 6355: T --> C
Char. 6382: C --> T
Char. 6445: A --> C
Char. 6446: A --> T
Char. 6458: C --> T
Char. 6463: G --> A
Char. 6484: C --> T
Char. 6485: A --> T
Char. 6512: T --> C
Char. 6514: CT --> A
Char. 6515: A --> G
Char. 6528: A --> G
Gnathocharax_steindachneri :
Posterior_extension_of_supraoccipital_spine (61):
(1)_dorsal_of_one_half_or_less_of_extent_of_neural_complex -->
(0)_dorsal_of_entire_neural_complex_of>Weberian_apparatus
Supraorbital (75): (0)_present --> (1)_absent

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (80):
(0)_antorbital_either_aligned_or_anterior_to_first_infraorbital -->
(1)_anterior_margin_of_antorbital_posterior_to_first_infraorbital

Bony_lamellae_bordering_laterosensory_canal_of_first_infraorbital (82): (0)_present --> (1)_absent

Extent_of_expansion_of_first_infraorbital_lateral_to_maxilla (83):
(0)_covering_less_than_one_half_length_of_maxilla --> (1)_covering_most_of_maxilla

Fourth_infraorbital (90): (0)_present --> (1)_absent

Fourth_infraorbital (91): (0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals --> (1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series

Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94): (0)_almost_complete,_at_least_in_its_ventral_border --> (1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa

Parietal_branch_of_laterosensory_canal (116): (0)_present,_reaching_parietal_bone_or_not --> (1)_completely_absent

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal --> (1)_not_reaching_parietal_or_absent

Lateral_line (123): (0)_complete --> (1)_interrupted

Form_of_maxillary_lamella (144): (0)_not_distally_curved_and_far_from_anguloarticular_socket --> (1)_distally_angled_and_reaching_anguloarticular_socket

Anterior_development_of_basihyal (258): (1)_broadly_extending_beyond_anterior_margin_of_hypohyals --> (0)_slightly_surpassing_anterior_margin_of_hypohyals

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent

Teeth_on_third_pharyngobranchial (282): (0)_present --> (1)_absent

Number_of_gill_rakers_on_first_hypobranchial_and_deratobranchial (295): (0)_11_or_more --> (1)_ten_or_fewer

Development_of_medial_lamella_of_coracoid (346): (0)_not_expanded --> (1)_expanded_as_a_keel

Second_postcleithrum (362): (0)_present --> (1)_absent

Anterior_extension_of_pelvic_bone_along_main_axis (370): (0)_not_projecting_anterior_of_lateral_and_medial_lamellae --> (1)_projecting_anterior_of_lateral_and_medial_lamellae_of_pelvic_bone

Anterior_tip_of_pelvic_bone (376): (1)_posterior_to_second_rib --> (0)_anterior_to_second_rib

Number_of_dorsal_pterygiophores (400): (1)_10_or_more --> (0)_nine_or_fewer

Number_of_branched_rays_on_dorsal_fin (409): (1)_nine_or_more --> (0)_eight_or_fewer

Anal-fin_position (415): (0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray --> (1)_extended_anteriorly_ventral_to_dorsal_fin

Distance_between_bases_of_caudal-fin_rays_10_and_11 (437): (1)_equal_or_shorter_than_posterior_margin_of_third_hypural --> (0)_longer_than_posterior_margin_of_third_hypural

Dorsal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (444): (0)_absent --> (1)_present

Posterior_region_oflevator_arcus_palatini (482): (0)_limited_by_adductor_mandibulae_and_adductor_arcus_palatini --> (1)_limited_by_A2_and_A3_sections_of_adductor_mandibulae

Char. 2194: T --> C
Char. 2407: G --> C
Char. 2551: A --> G

Char. 2597: G --> T
Char. 2626: T --> C
Char. 2695: G --> A
Char. 2800: A --> G
Char. 3457: T --> C
Char. 3487: C --> T
Char. 3577: A --> G
Char. 3596: A --> G
Char. 3610: G --> A
Char. 3628: C --> T
Char. 3769: T --> G
Char. 3813: A --> T
Char. 3889: C --> T
Char. 3913: A --> C
Char. 3925: G --> A
Char. 3937: T --> C
Char. 3964: T --> C
Char. 4012: G --> A
Char. 4033: C --> T
Char. 4051: C --> T
Char. 4097: C --> A
Char. 4132: T --> C
Char. 4153: T --> C
Char. 4186: T --> G
Char. 4252: G --> A
Char. 4276: C --> T
Char. 4324: A --> G
Char. 4340: A --> T
Char. 4396: G --> A
Char. 4438: G --> C
Char. 4453: G --> A
Char. 4462: T --> C
Char. 4486: G --> A
Char. 4521: G --> A
Char. 4522: A --> G

Grundulus_bogotensis :
Posterior_extension_of_vomer (18): (1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection --> (0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection

Dorsal_margin_of_lateral_ethmoids (23): (0)_aligned --> (1)_oblique_in_dorsal_view,_converging_in_an_anterior_angle

Foramen_on_lateral_ethmoid (24): (0)_complete --> (1)_open_medially

Contact_between_frontals_anterior_to_frontal_fontanel (27): (1)_present --> (0)_absent

Rhinospheoid (34): (1)_present --> (0)_absent

Length_of_sphenotic_spine (47): (1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula --> (0)_not_reaching_to_anterodorsal_angle_of_hyomandibula

Anterior_articulation_of_epioccipital_bridge (65): (0)_with_both_parietal_and_apterotic --> (1)_only_with_parietal

Foramina_for_glossopharyngeal_and_vagus_nerves (73): (0)_a_single_foramen_or_two_contiguous_foramina --> (1)_two_well_separated_foramina

Ventral_extent_of_third_infraorbital (88): (0)_reaching_horizontal_arm_of_preopercle --> (1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly

Length_of_laterosensory_canal_of_dentary (103): (0)_piercing_almost_entire_length_of_dentary --> (1)_reduced_or_absent

Morphology_of_premaxillary,_maxillary,_and_dentary_teeth (165): (1)_some_teeth_multicuspidate_or_molariform --> (0)_all_teeth_conical,_caniniform_or_mamilliform

Number_of_teeth_on_inner_premaxillary_row (184): (0)_seven_or_fewer --> (1)_eight_or_more

Extent_of_implantation_of_teeth_along_maxilla (191): (0)_not_reaching_middle_of_maxillary_lamella -->

(1)_extending_across_almost_entire_maxillary_lamella

Number_of_cusps_of_anterior_maxillary_teeth (192): (1)_three_or_more_cusps --> (0)_conical,_a_single_cusp

Foramen_on_articular_condyle_of_quadrate (230): (0)_absent --> (1)_present

Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two

Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two

Denticles_on_gill_rakers (300): (0)_present --> (1)_absent

Ventral_expansion_of_lateral_lamella_of_cleithrum (345): (0)_covering_part_of_scapular_foramen_from_lateral_view --> (1)_following_dorsal_margin_of_scapular_foramen_from_lateral_view

Ventral_extension_of_coracoid_lamella (350): (0)_reaching_ventral_margin_of_cleithrum --> (1)_falling_short_of_ventral_margin_of_cleithrum

Anterior_tip_of_pelvic_bone (377): (0)_anterior_to_third_rib --> (1)_posterior_to_third_rib

Anterior_tip_of_pelvic_bone (378): (0)_anterior_to_fourth_rib --> (1)_posterior_to_fourth_rib

Anterior_tip_of_pelvic_bone (379): (0)_anterior_to_fifth_rib --> (1)_posterior_to_fifth_rib

Number_of_supraneurals (393): (0)_five_or_fewer --> (1)_six_or_more

Number_of_supraneurals (394): (0)_six_or_fewer --> (1)_seven_or_more

Number_of_supraneurals (395): (0)_seven_or_fewer --> (1)_eight_or_more

Number_of_branched_anal-fin_rays (419): (1)_18_or_more --> (0)_17_or_fewer

Median_predorsal_scales (465): (0)_covering_entire_predorsal_region --> (1)_leaving_naked_area_anterior_to_dorsal_fin

Medial_apophysis_of_sclerotic (509): (0)_cartilaginous,_with_sclerotic_as_an_incomplete_ring --> (1)_present_as_a_bony_projection_oriented_medially_to_eye

Nostrils (510): (0)_rounded_and_divided_only_by_skin_fold --> (1)_nostrils_distinctly_separate

Adipose_fin (512): (0)_present --> (1)_absent

Char. 533: C --> T
Char. 563: A --> G
Char. 571: A --> T
Char. 595: C --> T
Char. 613: T --> C
Char. 616: C --> T
Char. 620: A --> G
Char. 631: C --> T
Char. 640: C --> T
Char. 676: C --> G
Char. 679: C --> T
Char. 697: C --> T
Char. 703: C --> T
Char. 710: C --> T
Char. 712: C --> A
Char. 778: C --> T
Char. 781: T --> C
Char. 826: T --> C
Char. 853: T --> C
Char. 862: T --> C
Char. 863: G --> A
Char. 864: C --> T
Char. 865: A --> G
Char. 880: T --> C
Char. 886: G --> T
Char. 895: T --> C
Char. 913: A --> T
Char. 922: C --> T
Char. 931: C --> T
Char. 961: A --> G

Char. 976: C --> T
Char. 988: C --> T
Char. 994: A --> G
Char. 997: A --> T
Char. 1005: A --> G
Char. 1065: A --> T
Char. 1075: T --> C
Char. 1091: C --> T
Char. 1100: G --> A
Char. 1101: C --> T
Char. 1105: C --> A
Char. 1106: A --> G
Char. 1120: A --> G
Char. 1125: C --> T
Char. 1126: C --> T
Char. 1129: T --> A
Char. 1162: C --> T
Char. 1177: T --> A
Char. 1183: A --> C
Char. 1192: T --> C
Char. 1261: C --> A
Char. 1267: A --> C
Char. 1270: T --> C
Char. 1286: G --> A
Char. 1306: C --> T
Char. 1315: A --> T
Char. 1321: A --> G
Char. 1326: A --> G
Char. 1331: C --> T
Char. 1336: A --> G
Char. 1369: C --> A
Char. 1375: T --> C
Char. 1385: A --> G
Char. 1386: T --> C
Char. 1420: A --> G
Char. 1462: C --> T
Char. 1465: C --> T
Char. 1480: C --> T
Char. 1483: T --> C
Char. 1485: A --> G
Char. 1501: A --> C
Char. 1502: G --> A
Char. 1507: A --> G
Char. 1510: C --> T
Char. 1546: T --> C
Char. 1585: C --> T
Char. 1594: A --> C
Char. 1597: T --> A
Char. 1630: A --> G
Char. 1639: A --> C
Char. 1645: C --> T
Char. 1648: C --> T
Char. 1651: T --> C
Char. 1660: T --> C
Char. 1675: C --> T
Char. 1678: A --> T
Char. 1696: A --> G
Char. 1705: A --> C
Char. 1726: C --> A
Char. 1729: A --> C
Char. 1738: C --> T
Char. 1741: C --> T
Char. 1747: A --> G
Char. 1774: C --> T
Char. 1780: A --> G
Char. 1783: T --> A
Char. 1828: A --> G
Char. 1846: C --> T
Char. 1849: C --> A
Char. 1864: C --> T
Char. 1879: A --> G
Char. 1882: T --> C
Char. 1900: T --> C
Char. 1906: A --> C
Char. 1918: C --> T
Char. 1939: G --> A
Char. 1945: T --> C
Char. 1951: T --> C
Char. 1969: T --> C
Char. 1978: C --> T
Char. 1999: A --> G
Char. 2014: T --> A
Char. 2020: T --> C

Char. 2032: A --> T
Char. 2044: T --> C
Char. 2048: C --> T
Char. 2056: C --> T
Char. 2059: A --> G
Char. 2077: T --> C
Char. 2125: T --> C
Char. 6195: A --> G
Char. 6211: A --> G
Char. 6253: A --> G
Char. 6286: A --> T
Char. 6358: T --> A
Char. 6381: A --> T
Char. 6413: C --> T
Char. 6432: A --> T
Char. 6443: T --> A
Char. 6461: G --> A
Char. 6462: G --> A
Char. 6467: C --> T
Char. 6468: C --> T
Char. 6498: A --> T
Char. 6562: C --> T
Char. 6589: G --> A
Char. 6636: C --> T

Gymnocharacinus bergii :
Length_of_sphenotic_spine (47):
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula -->
(0)_not_reaching_to_anterodorsal_angle_of_hyomandibula

Position_of_sphenotic_spine_relative_to_the_orbit (50):
(0)_bordering_orbit_aligned_with_anterior_margin_of_infraorbitals -->
(1)_distinctly_posterior_to_orbital_margin
Posterior_extension_of_supraoccipital_spine (62):
(0)_reaching_at_least_to_middle_length_of_neural_complex -->
(1)_reaching_only_to_anterior_limit_of_neural_complex

Foramina_for_glossopharyngeal_and_vagus_nerves (73):
(0)_a_single_foramen_or_two_contiguous_foramina -->
(1)_two_well_separated_foramina

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base

Position_of_opening_on_neurocranium_communicating_with_laterosensory_canal_of_sixth_infraorbital (101): (0)_between_frontal_and_pterotic -->
(1)_in_frontal
Premaxillary_maxillary_and_dentary_teeth (166):
(0)_not_pedunculate_or_pedunculate_only_in_some_of_these_bones -->
(1)_pedunculate_and_uniformly_shaped
Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch -->
(1)_with_cusps_aligned_in_straight_series
Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more -->
(0)_four_or_fewer
Number_of_dentary_teeth_on_outer_row (198):
(1)_ten_or_more -->
(0)_eight_or_fewer
Lateroventral_expansion_of_ectopterygoid (214):
(0)_absent_articulating_almost_exclusively_with_cartilage_of_palatine -->
(1)_present_expanded_twice_length_of_palatine_cartilage

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present -->
(0)_absent
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present -->
(1)_absent

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial
Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one -->
(1)_two

Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one -->
(1)_two
Denticles_on_gill_rakers (300): (0)_present -->
(1)_absent
Transitional_vertebrae_with_haemal_canal (332): (0)_absent_or_just_one -->
(1)_two_or_more

Ventral_expansion_of_lateral_lamella_of_cleithrum (345):
(0)_covering_part_of_scapular_foramen_from_lateral_view -->
(1)_following_dorsal_margin_of_scapular_foramen_from_lateral_view
Ventral_extension_of_coracoid_lamella (350):
(0)_reaching_ventral_margin_of_cleithrum -->
(1)_falling_short_of_ventral_margin_of_cleithrum

Articulation_between_ventral_process_of_mesocoracoid_and_dorsal_margin_of_scapula (356):
(0)_absent_or_small -->
(1)_present_and_broad
Form_of_third_postcleithrum (364):
(1)_with_a_posterior_lamella -->
(0)_slender_without_associated_lamella
Dorsal_development_of_third_postcleithrum (365):
(0)_projects_dorsally_to_posterior_region_of_scapula -->
(1)_not_projects_dorsally_to_posterior_region_of_scapula
Anterior_tip_of_pelvic_bone (377):
(0)_anterior_to_third_rib -->
(1)_posterior_to_third_rib
Anterior_tip_of_pelvic_bone (378):
(0)_anterior_to_fourth_rib -->
(1)_posterior_to_fourth_rib
Anterior_tip_of_pelvic_bone (379):
(0)_anterior_to_fifth_rib -->
(1)_posterior_to_fifth_rib
Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more -->
(0)_six_or_less
Number_of_supraneurals (394):
(0)_six_or_fewer -->
(1)_seven_or_more
Number_of_supraneurals (395):
(0)_seven_or_fewer -->
(1)_eight_or_more
Bony_lamellae_associated_with_supraneurals (397):
(1)_wider_than_primary_axis_of_supraneurals -->
(0)_absent_or_small
Position_of_last_supraneural (398):
(0)_two_or_fewer_vertebrae_in_front_of_first_dorsal_pterygiophore -->
(1)_more_than_two_vertebrae_in_front_of_first_dorsal_pterygiophore
Number_of_branched_anal-fin_rays (419):
(1)_18_or_more -->
(0)_17_or_fewer
Anterior_development_of_first_uroneural (428): (0)_reaching_anterior_half_of_urostyle -->
(1)_restricted_to_posterior_half_of_urostyle
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males -->
(0)_absent

Median_predorsal_scales (465):
(0)_covering_entire_predorsal_region -->
(1)_leaving_naked_area_anterior_to_dorsal_fin

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half

Adipose_fin (512): (0)_present --> (1)_absent
Gymnocorymbus_ternetzi :
Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more --> (0)_six_or_less
Second_humeral_spot (494):
(0)_absent_or_diffuse -->
(1)_present_as_a_conspicuous_vertical_bar

Char. 2299: C --> A
Char. 2329: C --> G
Char. 2803: C --> G
Char. 3490: C --> T
Char. 3595: C --> A
Char. 4033: G --> A
Char. 4205: C --> A
Char. 4252: G --> A
Char. 4273: C --> T
Char. 4651: G --> A
Char. 4663: C --> A
Char. 4690: C --> T
Char. 5064: C --> T
Char. 5151: C --> T
Char. 5275: G --> A
Char. 5697: C --> T
Char. 6229: A --> G
Char. 6328: A --> T
Char. 6345: A --> G
Char. 6443: C --> A

Hasemania_nana :
Char. 1564: G --> T
Char. 1606: T --> C
Char. 1696: A --> G
Char. 1759: A --> G
Char. 1777: C --> T
Char. 1783: T --> A
Char. 1843: T --> C
Char. 1879: G --> A
Char. 2023: C --> T
Char. 2062: T --> C
Char. 2083: A --> G
Char. 2122: C --> T
Char. 2149: T --> A

Hasemania_crenuchooides :
Char. 1537: T --> C
Char. 1684: T --> C
Char. 1705: T --> A
Char. 1894: C --> T
Char. 2027: A --> G

Hemibrycon_dariensis :
No autapomorphies

Hemibrycon_surinamensis :
Char. 1567: T --> C
Char. 1666: A --> G
Char. 1712: C --> T
Char. 1753: T --> C
Char. 1804: A --> C
Char. 1813: T --> C
Char. 1822: A --> C
Char. 1825: A --> C
Char. 1828: G --> A
Char. 1834: T --> A
Char. 1837: A --> G
Char. 1843: T --> G
Char. 1849: A --> C
Char. 1852: A --> T
Char. 1855: C --> T
Char. 1870: A --> GC
Char. 1873: T --> C
Char. 1879: G --> AT
Char. 1906: A --> C
Char. 1933: T --> C
Char. 1934: T --> C
Char. 1936: A --> T
Char. 1942: A --> T

Char. 1945: C --> T
Char. 1948: T --> C
Char. 1954: T --> C
Char. 1957: T --> A
Char. 1963: T --> C
Char. 1966: T --> C
Char. 2005: T --> C
Char. 2011: T --> C
Char. 2014: C --> A
Char. 2020: T --> C
Char. 2023: T --> C
Char. 2026: A --> C
Char. 2027: A --> T
Char. 2028: T --> G
Char. 2029: T --> C
Char. 2030: A --> T
Char. 2031: C --> T
Char. 2032: A --> G
Char. 2041: T --> C
Char. 2053: A --> C
Char. 2056: C --> G

Hemigrammus_bleheri :
Foramen_on_ventral_lamella_of_supraoccipital (63): (0)_absent -->
(1)_with_a_large_foramen_or_concavity_posteriorly_open
Position_of_coronomeckelian (159):
(0)_situated_mainly_lateral_to_Meckelian_cartilage -->
(1)_situated_mainly_dorsal_to_Meckelian_cartilage

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial
Transitional_vertebrae_with_haemal_canal (332): (0)_absent_or_just_one --> (1)_two_or_more
Anterior_tip_of_pelvic_bone (377):
(0)_anterior_to_third_rib -->
(1)_posterior_to_third_rib
Hemigrammus_erythrozonus :
Fourth_infraorbital (90): (0)_present -->
(1)_absent

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent
Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one-third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal
Position_of_coronomeckelian (159):
(0)_situated_mainly_lateral_to_Meckelian_cartilage -->
(1)_situated_mainly_dorsal_to_Meckelian_cartilage

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch -->
(1)_with_cusps_aligned_in_straight_series
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Abrupt_decrease_in_size_of_dentary_teeth (207): (1)_present --> (0)_absent

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Lateral_lamella_of_pelvic_bone (373):
(0)_absent_or_reduced_to_posterior_third_of_bone -->
(1)_present_and_reaching_two-thirds_of_bone
Bony_hooks_on_fin_rays (440): (0)_absent -->
(1)_present_in_adult_males

Pseudotympanum_lateral_to_anterior_four_vertebrae (484): (0)_absent_or_reduced -->
(1)_developed_limited_by_epaxial_musculature_or_obliquus_superioris
Char. 1567: A --> G

Char. 1591: C --> T
Char. 1603: A --> G
Char. 1711: A --> G
Char. 1774: T --> A
Char. 1876: A --> G
Char. 1879: G --> A
Char. 1894: A --> T
Char. 1913: C --> T
Char. 2014: T --> A
Char. 2053: A --> T
Char. 2098: A --> T
Char. 2134: A --> G
Char. 2146: T --> C
Char. 2177: C --> A
Char. 2251: T --> C
Char. 2317: G --> A
Char. 2408: T --> C
Char. 2530: C --> T
Char. 2803: G --> C
Char. 2812: G --> A
Char. 4722: C --> T
Char. 4842: A --> G
Char. 4974: A --> G
Char. 5160: A --> G
Char. 5235: C --> T
Char. 5460: C --> T
Char. 5466: C --> T
Char. 5505: G --> T
Char. 6165: A --> G
Char. 6324: C --> A
Char. 6347: A --> T
Char. 6493: A --> T
Char. 6499: C --> T

Hemigrammus_marginatus :
Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Char. 562: T --> C
Char. 589: C --> T
Char. 691: C --> T
Char. 694: A --> G
Char. 778: A --> G
Char. 889: A --> G
Char. 916: A --> G
Char. 961: G --> A
Char. 1006: T --> C
Char. 1021: A --> G
Char. 1033: A --> G
Char. 1051: C --> T
Char. 1057: C --> T
Char. 1073: C --> T
Char. 1117: C --> T
Char. 1118: C --> T
Char. 1144: T --> C
Char. 1175: G --> A
Char. 1189: T --> C
Char. 1237: T --> C
Char. 1246: T --> C
Char. 1258: A --> T
Char. 1294: A --> T
Char. 1300: A --> G
Char. 1385: G --> T
Char. 1390: T --> C
Char. 1399: A --> G
Char. 1480: C --> T
Char. 1501: A --> C
Char. 2311: A --> C
Char. 4075: C --> T
Char. 4681: C --> T
Char. 4985: A --> C
Char. 5554: C --> T
Char. 5574: A --> G

Hemigrammus_ulreyi :
Prootic_foramen_anteromedial_to_auditory_foramen (56): (0)_visible_as_a_pore_lateral_to_myodome -->
(1)_an_oblique_canal_near_anterior_margin_of_prootic
Posterior_extension_of_supraoccipital_spine (62):
(1)_reaching_only_to_anterior_limit_of_neural_complex -->

(0)_reaching_at_least_to_middle_length_of_neural_complex
 Frontal_and_pterotic_laterosensory_canals
 (118):
 (0)_without_a_discernible_angle_between_them -->
 (1)_with_an_angle_on_pore_receiving_infraorbital_canal
 Lateral_lamella_of_pelvic_bone (373):
 (0)_absent_or_reduced_to_posterior_third_of_bone --> (1)_present_and_reaching_two_thirds_of_bone
 Char. 535: A --> T
 Char. 565: C --> T
 Char. 568: C --> A
 Char. 622: A --> G
 Char. 632: C --> T
 Char. 643: C --> T
 Char. 709: C --> T
 Char. 739: A --> C
 Char. 757: A --> T
 Char. 796: A --> C
 Char. 811: A --> G
 Char. 886: G --> C
 Char. 892: T --> C
 Char. 901: C --> T
 Char. 913: A --> G
 Char. 931: C --> T
 Char. 958: A --> G
 Char. 967: C --> T
 Char. 970: C --> T
 Char. 997: C --> T
 Char. 1013: G --> A
 Char. 1066: C --> T
 Char. 1072: C --> T
 Char. 1087: A --> G
 Char. 1114: A --> G
 Char. 1174: A --> G
 Char. 1249: A --> G
 Char. 1303: C --> A
 Char. 1315: A --> G
 Char. 1321: A --> G
 Char. 1342: A --> G
 Char. 1346: C --> T
 Char. 1348: AT --> C
 Char. 1358: C --> T
 Char. 1370: T --> C
 Char. 1384: G --> A
 Char. 1385: G --> A
 Char. 1399: A --> G
 Char. 1405: A --> C
 Char. 1471: A --> C
 Char. 1478: A --> G
 Char. 1479: T --> C
 Char. 1483: T --> C
 Char. 1498: C --> A
 Char. 2171: A --> C
 Char. 2435: C --> T
 Char. 3559: G --> A
 Char. 3619: G --> A
 Char. 3733: T --> C
 Char. 3934: G --> C
 Char. 4205: C --> A
 Char. 4273: C --> T
 Char. 4540: C --> T
 Char. 4598: C --> T
 Char. 4603: C --> T
 Char. 4606: T --> C
 Char. 4618: C --> T
 Char. 4860: G --> T
 Char. 5160: A --> G
 Char. 5234: A --> C
 Char. 5235: C --> A
 Char. 5373: T --> C
 Char. 5427: T --> G
 Char. 5504: C --> T
 Char. 5517: C --> T
 Char. 5730: C --> A
 Char. 6176: T --> C
 Char. 6181: G --> A
 Char. 6211: G --> A
 Char. 6229: G --> A
 Char. 6247: C --> T
 Char. 6322: C --> G
 Char. 6330: T --> C
 Char. 6333: A --> T
 Char. 6361: G --> A
 Char. 6381: A --> C
 Char. 6409: A --> C
 Char. 6441: G --> T
 Char. 6445: C --> T
 Char. 6497: A --> T
 Char. 6502: T --> C
 Char. 6514: T --> A
 Char. 6523: C --> T
 Hemigrammus_unilineatus :
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Char. 6314: T --> A
 Char. 6329: A --> G
 Char. 6362: C --> T
 Char. 6513: T --> C
 Hemiodus_thayeria :
 Char. 1537: C --> T
 Char. 1561: C --> T
 Char. 1648: C --> T
 Char. 1657: T --> C
 Char. 1675: A --> G
 Char. 1693: C --> T
 Char. 1717: G --> A
 Char. 1738: A --> C
 Char. 1786: C --> T
 Char. 1798: A --> G
 Char. 1810: G --> C
 Char. 1819: T --> C
 Char. 1831: T --> A
 Char. 1882: T --> C
 Char. 1885: C --> A
 Char. 1891: C --> T
 Char. 1930: A --> T
 Char. 1933: T --> C
 Char. 1936: A --> T
 Char. 1945: T --> C
 Char. 1963: T --> C
 Char. 1993: A --> G
 Char. 2008: G --> C
 Char. 2050: C --> T
 Char. 2119: T --> C
 Char. 2140: C --> T
 Heterocharax_macrolepis :
 Extent_of_expansion_of_first_infraorbital_lateral_tro_maxilla (83):
 (0)_covering_less_than_one_half_length_of_maxilla --> (1)_covering_most_of_maxilla
 Epiphyseal_branch_of_corresponding_supraorbital_canals (112):
 (0)_both_aligned_with_epiphyseal_bar -->
 (1)_oriented_obliquely,_opening_posteriorly_to_epiphyseal_bar
 Transitional_vertebrae_with_haemal_canal (331): (1)_absent --> (0)_present
 Transitional_vertebrae_with_haemal_canal (332): (0)_absent_or_just_one --> (1)_two_or_more
 Coracoid_foramen (353):
 (0)_absent_or_reduced_to_small_pore -->
 (1)_well_developed
 Main_axis_of_supraneurals (396):
 (0)_not_bifurcated -->
 (1)_at_least_some_of_them_distally_bifurcated
 Char. 6163: A --> G
 Char. 6211: A --> G
 Char. 6224: G --> A
 Char. 6302: C --> T
 Char. 6311: T --> C
 Char. 6317: A --> G
 Char. 6319: A --> G
 Char. 6325: C --> A
 Char. 6346: T --> C
 Char. 6352: C --> T
 Char. 6356: A --> T
 Char. 6373: G --> A
 Char. 6377: C --> T
 Char. 6432: A --> G
 Char. 6438: A --> T
 Char. 6445: A --> T
 Char. 6475: T --> C
 Char. 6592: G --> T
 Heterocheirodon_yatai :
 Posterior_portion_of_mesethmoid_spine (5):
 (0)_relatively_slender -->
 (1)_as_broad_as_lateral_wings_of_mesethmoid
 Fourth_infraorbital (90): (0)_present -->
 (1)_absent
 Fourth_infraorbital (91):
 (0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals -->
 (1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series
 Length_of_laterosensory_canal_of_dentary (103):
 (0)_piercing_almost_entire_length_of_dentary -->
 (1)_reduced_or_absent
 Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more --> (0)_four_or_fewer
 Relative_length_of_palatine (209):
 (1)_distinctly_longer_than_one_half_length_of_ectopterygoid -->
 (0)_approximately_one_half_length_of_ectopterygoid_or_less
 Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (294): (1)_15_or_fewer -->
 (0)_16_or_more
 Anterior_tip_of_pelvic_bone (377):
 (0)_anterior_to_third_rib -->
 (1)_posterior_to_third_rib
 Number_of_supraneurals (393):
 (0)_five_or_fewer --> (1)_six_or_more
 Number_of_supraneurals (394):
 (0)_six_or_fewer --> (1)_seven_or_more
 Anal-fin_position (416):
 (0)_posterior_of_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
 (1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
 Position_of_anal-fin_bony_hooks_of_adult_males (451):
 (0)_paired_and_ordered_laterally_or_posterolaterally -->
 (1)_medially_positioned_and_oriented_posteriorly
 Char. 542: G --> T
 Char. 545: A --> C
 Char. 589: A --> G
 Char. 607: A --> G
 Char. 646: A --> C
 Char. 673: T --> C
 Char. 706: C --> A
 Char. 740: G --> A
 Char. 742: A --> C
 Char. 796: A --> G
 Char. 862: T --> C
 Char. 874: A --> G
 Char. 880: T --> C
 Char. 904: T --> C
 Char. 949: T --> C
 Char. 952: A --> G
 Char. 955: T --> C
 Char. 958: A --> G
 Char. 991: C --> T
 Char. 1018: A --> G
 Char. 1030: C --> T
 Char. 1087: A --> G
 Char. 1088: G --> A
 Char. 1094: C --> A
 Char. 1172: C --> T
 Char. 1192: T --> C
 Char. 1195: A --> G
 Char. 1216: T --> C
 Char. 1345: C --> T
 Char. 1374: T --> A
 Char. 1393: T --> C
 Char. 1459: T --> A
 Char. 1465: T --> C
 Char. 1498: C --> T
 Char. 2266: C --> T
 Char. 2284: A --> T
 Char. 2305: C --> G
 Char. 2479: C --> T

Char. 2767: A --> G
Char. 2785: A --> G
Char. 2791: T --> G
Char. 2836: T --> C
Char. 3718: T --> A
Char. 3862: G --> A
Char. 3931: G --> A
Char. 4318: C --> T
Char. 4432: C --> T
Char. 4466: G --> T
Char. 4666: C --> T
Char. 4836: G --> A
Char. 4860: G --> T
Char. 5313: G --> A
Char. 5372: G --> A
Char. 5631: C --> T
Char. 6311: T --> C
Char. 6321: G --> A
Char. 6362: A --> G
Char. 6414: A --> T

Hollandichthys multifasciatus :
Char. 1567: A --> G
Char. 1726: C --> T
Char. 1907: C --> T
Char. 1909: T --> AG
Char. 1924: T --> C
Char. 2161: A --> G
Char. 2185: C --> A
Char. 2225: G --> A
Char. 2435: C --> T
Char. 2530: C --> T
Char. 2596: A --> T
Char. 2671: T --> C
Char. 2716: G --> A
Char. 2746: T --> G
Char. 2818: C --> T
Char. 3571: T --> A
Char. 3609: G --> A
Char. 3691: C --> T
Char. 3736: G --> T
Char. 3919: T --> C
Char. 4060: C --> T
Char. 4291: G --> A
Char. 4492: T --> A
Char. 4651: G --> A
Char. 4877: G --> C
Char. 4950: G --> A
Char. 5229: C --> A
Char. 5278: T --> G
Char. 5319: G --> A
Char. 5352: G --> A
Char. 5559: G --> A
Char. 5628: C --> T
Char. 5676: A --> G
Char. 5739: T --> C
Char. 5864: T --> C
Char. 6024: G --> A

Hoplias cf. malabaricus :
No autapomorphies

Hoplocharax goethei :
Supraorbital (75): (0)_present --> (1)_absent
Fourth infraorbital (90): (0)_present -->
(1)_absent
Fourth infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals -->
(1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series

Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94):
(0)_almost_complete,_at_least_in_its_ventral_border -->
(1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa
Lateral_line (123): (0)_complete -->
(1)_interrupted

Contact_between_lamella_on_anterior_portion_of_first_basibranchial_with_lamella_on_posterior_portion_of_second_basibranchial (273): (1)_present -->
(0)_absent

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two

Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two
Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more --> (0)_six_or_less
Number_of_dorsal_ptyerygiophores (400):
(1)_10_or_more --> (0)_nine_or_fewer
Number_of_branched_rays_on_dorsal_fin (409): (1)_nine_or_more --> (0)_eight_or_fewer
Ventral_procurrent-caudal-fin_rays_of_adult_males (434):
(0)_not_projecting_through_musculature_and_skin_of_peduncle -->
(1)_projecting_ventrally_through_peduncle_musculature_and_skin
Char. 6182: G --> T
Char. 6205: C --> G
Char. 6245: A --> G
Char. 6254: A --> T
Char. 6290: C --> T
Char. 6294: T --> A
Char. 6314: C --> A
Char. 6328: A --> G
Char. 6331: A --> T
Char. 6334: A --> G
Char. 6361: G --> T
Char. 6362: C --> A
Char. 6383: G --> A
Char. 6402: G --> A
Char. 6414: A --> G
Char. 6423: A --> G
Char. 6425: G --> A
Char. 6440: A --> G
Char. 6497: C --> T
Char. 6528: A --> G
Char. 6562: C --> T
Char. 6565: C --> T
Char. 6589: G --> A

Hypheobrycon anisitsi :
Lateral_line (123): (0)_complete -->
(1)_interrupted
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Cusps_of_teeth_on_outer_premaxillary_row (177): (1)_five_or_more_cusps -->
(0)_one_to_three_cusps
Number_of_dentary_teeth_on_outer_row (198):
(1)_ten_or_more --> (0)_eight_or_fewer
Large_medial_foramen_on_hyomandibula (241):
(1)_present,_communicating_with_hyomandibular_canal --> (0)_absent
Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33
Anterior_tip_of_pelvic_bone (376):
(1)_posterior_to_second_rib -->
(0)_anterior_to_second_rib
Main_axis_of_supraneurals (396):
(1)_at_least_some_of_them_distally_bifurcated -->
(0)_not_bifurcated
Char. 1657: C --> T
Char. 1669: C --> T
Char. 1744: T --> A
Char. 1771: C --> G
Char. 1810: G --> C
Char. 1825: A --> G
Char. 1894: C --> T
Char. 1948: T --> C
Char. 2026: G --> C
Char. 2050: C --> A
Char. 2053: A --> C
Char. 2071: T --> C
Char. 2131: G --> A

Hypheobrycon bifasciatus :
Second_humeral_spot (494):
(0)_absent_or_diffuse -->
(1)_present_as_a_conspicuous_vertical_bar
Hypheobrycon compressus :

Relative_length_of_frontal_fontanel (29):
(1)_3/4_or_more_of_length_of_parietal_fontanel -->
(0)_up_to_2/3_length_of_parietal_fontanel

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(0)_contacting,_or_almost_contacting,_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Median_predorsal_scales (465):
(0)_covering_entire_predorsal_region -->
(1)_leaving_naked_area_anterior_to_dorsal_fin
Hypheobrycon elachys :
Posterior_extension_of_vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection
Ethmopalatine_cartilage (208):
(0)_absent_or_reduced_in_size -->
(1)_present_and_conspicuous
Position_of_ventral_margin_of_posttemporal (335):
(1)_lateral_or_posterior_to_lateral_margin_of_epiccipital -->
(0)_anterior_to_lateral_margin_of_epiccipital
Dorsal-fin_rays_articulating_with_first_dorsal_ptyerygiophore (404): (1)_three_or_four --> (0)_two
Anterior_rays_of_dorsal_fin_of_adult_males (406): (0)_not_elongate -->
(1)_elongate_and_reaching_posteriorly_close_to_a_dipose_fin

Contact_between_dorsal_margin_of_adductor_mandibulae_and_ventral_margin_of_dilatator_operculi (480): (1)_present --> (0)_absent
Hypheobrycon eques :
Foramen_on_articular_condyle_of_quadrate (230): (0)_absent --> (1)_present
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present,_communicating_with_hyomandibular_canal
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone,_or_less
Anal-fin_position (416):
(0)_posterior_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Char. 1513: C --> G
Char. 1516: T --> C
Char. 1519: A --> G
Char. 1546: T --> A
Char. 1552: A --> G
Char. 1556: C --> T
Char. 1558: A --> G
Char. 1591: C --> T
Char. 1594: A --> G
Char. 1600: A --> C
Char. 1606: C --> T
Char. 1612: C --> T
Char. 1633: C --> T
Char. 1666: A --> G
Char. 1678: A --> G
Char. 1690: C --> T
Char. 1705: A --> G
Char. 1708: T --> C
Char. 1729: A --> T
Char. 1774: A --> G
Char. 1786: T --> C
Char. 1825: T --> C
Char. 1828: A --> G
Char. 1834: A --> G
Char. 1837: A --> G
Char. 1867: A --> G
Char. 1978: C --> T
Char. 2011: T --> C
Char. 2032: A --> G

Char. 2035: C --> T
Char. 2047: C --> T
Char. 2048: C --> T
Char. 2062: C --> T
Char. 2065: A --> G
Char. 2074: A --> G
Char. 2077: T --> C
Char. 2083: G --> A
Char. 2086: A --> C
Char. 2092: A --> T
Char. 2095: C --> T
Char. 2111: T --> G
Char. 2128: A --> G
Char. 2140: T --> C
Char. 2146: C --> T
Char. 6209: C --> T
Char. 6324: C --> T
Char. 6328: A --> C
Char. 6344: A --> G
Char. 6409: A --> C
Char. 6485: T --> C
Hyphessobrycon_herbertaxelrodi :
Posterior_extension_of_vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection
Ventral_ridge_of_prootic (55): (0)_absent -->
(1)_present_from_anterior_margin_of_prootic_to_auditory_foramen
Number_of_teeth_on_inner_premaxillary_row (182): (0)_five_or_fewer --> (1)_six_or_more
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Denticles_on_gill_rakers (300): (0)_present -->
(1)_absent
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_less
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_d_cleithrum
Pelvic-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (442): (0)_absent --> (1)_present
Number_of_2n_chromosomes (518):
(0)_50_or_fewer --> (1)_52_or_more
Char. 1522: A --> G
Char. 1540: A --> T
Char. 1546: T --> G
Char. 1576: A --> T
Char. 1585: C --> T
Char. 1594: A --> T
Char. 1601: C --> T
Char. 1618: A --> T
Char. 1624: T --> C
Char. 1627: T --> C
Char. 1639: A --> C
Char. 1642: T --> C
Char. 1660: T --> C
Char. 1663: T --> C
Char. 1669: A --> T
Char. 1684: T --> C
Char. 1687: A --> G
Char. 1696: A --> G
Char. 1699: C --> T
Char. 1705: T --> C
Char. 1712: C --> T
Char. 1720: T --> C
Char. 1723: T --> C
Char. 1768: A --> G
Char. 1796: C --> T
Char. 1807: T --> A
Char. 1828: A --> T
Char. 1843: T --> C
Char. 1864: C --> T
Char. 1879: A --> G
Char. 1882: T --> C
Char. 1888: A --> T
Char. 1906: A --> C
Char. 1936: A --> C
Char. 1984: C --> A
Char. 1999: A --> G
Char. 2006: C --> T
Char. 2032: A --> G
Char. 2035: T --> A
Char. 2050: A --> T
Char. 2063: C --> T
Char. 2083: A --> G
Char. 2087: C --> T
Char. 2110: C --> G
Char. 2116: C --> T
Char. 2131: G --> T
Char. 2159: T --> C
Hyphessobrycon_megalopterus :
Synchondral_articulation_between_lateral_ethmoid_and_anterodorsal_border_of_orbitosphenoid (37):
(1)_absent_with_orbitosphenoid_distant_from_lateral_ethmoid --> (0)_present
Anterior_paired_projections_of_parasphenoid (43): (1)_present --> (0)_absent
Articulation_between_second_and_third_infraorbital (86): (0)_vertical --> (1)_anteroventrally_angled
Fourth_infraorbital (90): (0)_present -->
(1)_absent
Length_of_laterosensory_canal_of_dentary (103):
(0)_piercing_almost_entire_length_of_dentary -->
(1)_reduced_or_absent
Dorsal_end_of_laterosensory_canal_of_preopercle_and_suprapercle (108):
(0)_not_overlapping_anterodorsal_process_of_opercle -->
(1)_overlapping_anterodorsal_process_of_opercle
Number_of_teeth_on_inner_premaxillary_row (183): (0)_six_or_fewer --> (1)_seven_or_more
Number_of_teeth_on_inner_premaxillary_row (184): (0)_seven_or_fewer --> (1)_eight_or_more
Extent_of_implantation_of_teeth_along_maxilla (191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella
Size_and_number_of_anterior_dentary_teeth (199):
(0)_four_or_five_relatively_broad_teeth_at_front_of_dentary -->
(1)_eight_or_more_small_and_slender_teeth_at_front_of_dentary
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Dorsal_lamella_of_symplectic (239):
(0)_absent_or_reduced -->
(1)_developed_overlapping_laterally_quadrate_and_d_metapterygoid
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_d_cleithrum
Lateral_lamella_of_pelvic_bone (373):
(0)_absent_or_reduced_to_posterior_third_of_bone --> (1)_present_and_reaching_two_thirds_of_bone
Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Anterior_rays_of_dorsal_fin_of_adult_males (406): (0)_not_elongate -->
(1)_elongate_and_reaching_posteriorly_close_to_a_dipose_fin
Proximal_and_medial_radials_of_anal_fins (413): (0)_fused_on_anterior_five_pterygiophores -->
(1)_fused_in_most_pterygiophores
Fusion_of_hypural_2_to_compound_centrum (429): (1)_present --> (0)_absent
Fusion_between_hypurals_1_and_2 (430):
(0)_absent --> (1)_present
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Radii_on_scales (458):
(1)_present_and_numerous_on_most_scales -->
(0)_absent_or_reduced_in_number
Char. 1606: C --> T
Char. 1616: G --> A
Char. 1693: T --> C
Char. 1714: A --> G
Char. 1729: A --> G
Char. 1735: G --> A
Char. 1759: A --> G
Char. 1789: CT --> A
Char. 1819: T --> C
Char. 1963: T --> C
Char. 2017: A --> G
Char. 2024: C --> T
Char. 2029: A --> T
Char. 2122: C --> T
Char. 2149: T --> C
Char. 4718: C --> A
Char. 4857: G --> A
Char. 4878: C --> T
Char. 5136: C --> T
Char. 5910: T --> C
Char. 5911: A --> T
Char. 5978: G --> C
Char. 6255: A --> G
Char. 6373: G --> A
Char. 6376: C --> T
Char. 6514: T --> C
Hyphessobrycon_meridionalis :
Position_of_intercalar (71):
(1)_on_articulation_between_pterotic_and_exoccipital -->
(0)_on_middle_ventral_surface_of_exoccipital
Length_of_laterosensory_canal_of_dentary (103):
(0)_piercing_almost_entire_length_of_dentary -->
(1)_reduced_or_absent
Number_of_cusps_of_first_maxillary_tooth (194): (0)_five_or_fewer --> (1)_seven_or_more
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present_communicating_with_hyomandibular_canal
Haemal_prezygapophysis_on_anterior_caudal_vertebrae (333): (0)_present --> (1)_completely_absent
Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more --> (0)_six_or_less
Pelvic-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (442): (1)_present --> (0)_absent
Pectoral-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (443): (0)_absent --> (1)_present
Dorsal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (444): (0)_absent --> (1)_present
Caudal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (445): (0)_absent --> (1)_present
Position_of_anal-fin_bony_hooks_of_adult_males (451):
(0)_paired_and_ordered_laterally_or_posterolaterally -->
(2)_asymmetrically_disposed_and_irregularly_arranged

Distribution_of_bony_hooks_on_anal-
fin_branches_of_adult_males (453):
(1)_restricted_or_almost_restricted_to_posterior_
primary_branch --> (0)_on_all_branches
Hyphessobrycon_pulchripinnis :
Posterior_extension_of_vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_
posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_
posterior_projection

Contact_between_frontals_anterior_to_frontal_font
anel (27): (0)_absent --> (1)_present
Transverse_ridge_on_parasphenoid (44):
(0)_absent -->
(1)_present_bordering_infraparasphenoid_cartilage_
posteriorly
Posterior_extension_of_supraoccipital_spine
(62):
(0)_reaching_at_least_to_middle_length_of_neural_
complex -->
(1)_reaching_only_to_anterior_limit_of_neural_co
mplex
Fourth_infraorbital (90): (0)_present -->
(1)_absent

Lateral_coverage_of_dilatator_fossa_by_infraorbita
l_series (94):
(1)_leaving_a_conspicuous_naked_area_in_anterio
r_region_of_fossa -->
(0)_almost_complete_at_least_in_its_ventral_bord
er
Number_of_cusps_of_first_maxillary_tooth
(194): (0)_five_or_fewer --> (1)_seven_or_more
Relative_length_of_palatine (209):
(0)_approximately_one-
half_length_of_ectopterygoid_or_less -->
(1)_distinctly_longer_than_one-
half_length_of_ectopterygoid
Cartilage-
filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scap
ula -->
(1)_much_reduced_by_expansions_of_coracoid_an
d_cleithrum

Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent

Char. 1520: A --> G
Char. 1561: C --> T
Char. 1573: G --> A
Char. 1579: A --> G
Char. 1582: T --> G
Char. 1615: A --> G
Char. 1642: T --> C
Char. 1651: T --> A
Char. 1687: A --> G
Char. 1702: A --> G
Char. 1703: C --> T
Char. 1723: T --> C
Char. 1735: G --> A
Char. 1783: T --> C
Char. 1795: C --> T
Char. 1804: A --> G
Char. 1810: T --> G
Char. 1813: T --> C
Char. 1855: T --> A
Char. 1865: C --> T
Char. 1885: T --> C
Char. 1906: A --> C
Char. 1909: T --> C
Char. 1913: C --> T
Char. 1921: T --> G
Char. 1922: G --> A
Char. 1924: C --> T
Char. 1954: T --> C
Char. 1984: C --> T
Char. 2006: C --> T
Char. 2024: C --> T
Char. 2056: C --> T
Char. 2063: T --> C
Char. 2113: A --> G
Char. 2122: C --> T
Char. 2125: T --> A

Char. 2137: T --> C
Char. 2149: T --> C
Char. 2155: A --> G
Char. 2161: A --> G
Hyphessobrycon_socolofi :
Char. 1672: A --> G
Char. 1783: T --> C
Char. 1897: C --> T
Char. 2150: T --> A
Hyphessobrycon_wajaj :

Anterior_convergence_of_ventral_diverging_lamell
ae_with_nasal_septum_of_mesethmoid (8):
(1)_confluent_at_posterior_end_of_nasal_septum --
>
(0)_absent_or_confluent_near_anterior_end_of_na
sal_septum
Posterior_extension_of_vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_
posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_
posterior_projection
Form_of_fourth_infraorbital (92):
(0)_square_or_more_developed_longitudinally_tha
n_dorsoventrally -->
(1)_longer_dorsoventrally_than_longitudinally
Anguloarticular_laterosensory_canal (105):
(0)_present --> (1)_absent

Rows_of_gill_rakers_on_second_ceratobranchial
(292): (1)_two --> (0)_one
Iguanodectes_geisleri :
Posterior_projection_of_pterotic_spine (53):
(0)_posterior_to_attachment_site_of_ligament_fro
m_hyomandibula -->
(1)_restricted_to_attachment_region_of_hyomandi
bular_ligament
Frontal_and_pterotic_laterosensory_canals
(118):
(0)_without_a_discernible_angle_between_them --
>
(1)_with_an_angle_on_pore_receiving_infraorbital_
canal
Medial_anteroventral_notch_of_dentary (153):
(0)_absent --> (1)_present
Maxillary_teeth (188): (1)_present -->
(0)_absent
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent
Number_of_dentary_teeth_on_outer_row (198):
(1)_ten_or_more --> (0)_eight_or_fewer

Number_of_gill_rakers_on_first_hypobranchial_an
d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Posterior_margin_of_cleithrum (342):
(0)_with_concavity_poorly_pronounced_or_lackin
g -->
(1)_with_markedly_concave_margin_almost_form
ing_straight_angle
Number_of_unbranched_anal-fin_rays (417):
(1)_four_or_more --> (0)_three_or_fewer

Char. 538: C --> T
Char. 539: C --> T
Char. 553: C --> T
Char. 564: T --> C
Char. 583: A --> T
Char. 595: C --> T
Char. 620: A --> T
Char. 622: T --> C
Char. 625: T --> C
Char. 655: C --> T
Char. 676: C --> A
Char. 703: C --> A
Char. 709: C --> T
Char. 769: A --> C
Char. 820: C --> T
Char. 832: C --> T
Char. 838: C --> A
Char. 852: A --> T
Char. 862: C --> T
Char. 863: A --> G
Char. 883: A --> G

Char. 892: C --> T
Char. 910: C --> T
Char. 940: C --> T
Char. 952: T --> C
Char. 973: T --> G
Char. 986: C --> T
Char. 1048: C --> T
Char. 1051: C --> T
Char. 1075: T --> C
Char. 1085: A --> C
Char. 1094: C --> T
Char. 1106: G --> A
Char. 1107: C --> T
Char. 1109: T --> A
Char. 1123: T --> C
Char. 1129: C --> A
Char. 1153: C --> T
Char. 1162: C --> G
Char. 1165: C --> A
Char. 1171: C --> T
Char. 1189: C --> T
Char. 1195: A --> G
Char. 1198: T --> G
Char. 1201: A --> G
Char. 1234: A --> C
Char. 1315: C --> A
Char. 1330: C --> A
Char. 1331: C --> T
Char. 1336: A --> C
Char. 1342: A --> C
Char. 1351: C --> T
Char. 1354: A --> G
Char. 1390: T --> C
Char. 1447: C --> T
Char. 1454: G --> A
Char. 1456: C --> T
Char. 1489: C --> A
Char. 1490: C --> A
Char. 1495: C --> A
Char. 1502: C --> T
Char. 3569: G --> A
Char. 3589: G --> A
Char. 3604: A --> G
Char. 3611: G --> A
Char. 3655: G --> A
Char. 3658: A --> G
Char. 3706: A --> T
Char. 3712: A --> G
Char. 3718: T --> G
Char. 3751: A --> C
Char. 4006: T --> C
Char. 4081: A --> G
Char. 4099: A --> G
Char. 4138: A --> T
Char. 4142: C --> A
Char. 4150: C --> G
Char. 4159: A --> G
Char. 4186: T --> C
Char. 4192: G --> C
Char. 4204: T --> C
Char. 4219: C --> G
Char. 4249: C --> A
Char. 4253: C --> T
Char. 4264: G --> T
Char. 4270: T --> G
Char. 4273: C --> T
Char. 4284: C --> A
Char. 4287: C --> G
Char. 4294: C --> A
Char. 4303: A --> C
Char. 4312: T --> G
Char. 4332: A --> T
Char. 4333: G --> T
Char. 4336: A --> G
Char. 4338: C --> A
Char. 4366: C --> A
Char. 4367: T --> A
Char. 4375: A --> G
Char. 4376: G --> C
Char. 4378: C --> T
Char. 4411: G --> A
Char. 4432: T --> C
Char. 4438: C --> G

Char. 4445: C --> A
Char. 4451: C --> T
Char. 4480: G --> T
Char. 4498: A --> C
Char. 4567: T --> C
Char. 4577: G --> A
Char. 4598: C --> T
Char. 4600: C --> A
Char. 4612: C --> T
Char. 4627: C --> G
Char. 4630: C --> G
Char. 4648: T --> C
Char. 4651: A --> G
Char. 6230: C --> T
Char. 6306: C --> T
Char. 6315: A --> C
Char. 6323: T --> A
Char. 6324: T --> C
Char. 6346: C --> T
Char. 6365: A --> C
Char. 6377: C --> T
Char. 6379: A --> G
Char. 6381: A --> G
Char. 6413: C --> A
Char. 6415: A --> C
Char. 6423: A --> G
Char. 6438: A --> G
Char. 6567: A --> G
Char. 6573: C --> T

Inpaichthys_kerri :
Posterior_extension_of_ethmoid_cartilage (19):
(0)_only_to_middle_horizontal_length_of_orbitosphenoid_or_less -->
(1)_to_articulation_of_orbitosphenoid_and_pterosphenoid

Synchondral_articulation_between_lateral_ethmoid_and_anterodorsal_border_of_orbitosphenoid (37):
(1)_absent_with_orbitosphenoid_distant_from_lateral_ethmoid --> (0)_present
Antorbital (77): (0)_present -->
(1)_absent_or_fused_with_first_infraorbital
Fourth_infraorbital (90): (0)_present -->
(1)_absent
Fourth_infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals -->
(1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series
Frontal_and_pterotic_laterosensory_canals (118):
(0)_without_a_discernible_angle_between_them -->
(1)_with_an_angle_on_pore_receiving_infraorbital_canal

Fossa_for_inner_row_of_replacement_premaxillary_teeth (187): (0)_absent --> (1)_present
Abrupt_posterior_expansion_of_interopercle (250): (0)_absent --> (1)_present
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (303): (1)_18_or_more -->
(0)_17_or_fewer
Transitional_vertebrae_with_haemal_canal (331): (0)_present --> (1)_absent
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_d_cleithrum
Anal-fin_position (416):
(0)_posterior_of_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray

Contact_between_dorsal_margin_of_adductor_mandibulae_and_ventral_margin_of_dilatator_operculi (480): (1)_present --> (0)_absent
Number_of_2n_chromosomes (518):
(0)_50_or_fewer --> (1)_52_or_more
Char. 529: T --> C
Char. 532: A --> G
Char. 535: A --> C
Char. 538: T --> C
Char. 544: C --> T
Char. 580: C --> T
Char. 604: T --> C
Char. 625: C --> T
Char. 646: A --> T
Char. 661: T --> C
Char. 706: C --> A
Char. 742: T --> C
Char. 745: T --> C
Char. 757: A --> T
Char. 763: A --> G
Char. 785: C --> T
Char. 796: A --> G
Char. 808: C --> T
Char. 811: A --> G
Char. 814: G --> T
Char. 817: T --> A
Char. 820: A --> C
Char. 829: A --> G
Char. 838: C --> T
Char. 847: C --> A
Char. 850: C --> T
Char. 859: A --> T
Char. 868: A --> C
Char. 874: A --> G
Char. 892: T --> C
Char. 904: C --> T
Char. 925: T --> C
Char. 941: C --> T
Char. 949: T --> C
Char. 953: A --> G
Char. 967: C --> G
Char. 970: C --> T
Char. 985: C --> T
Char. 1006: C --> T
Char. 1012: A --> T
Char. 1032: C --> T
Char. 1036: C --> T
Char. 1042: T --> C
Char. 1048: C --> T
Char. 1054: A --> T
Char. 1057: C --> T
Char. 1060: C --> T
Char. 1072: C --> T
Char. 1078: T --> G
Char. 1084: T --> C
Char. 1094: C --> T
Char. 1096: T --> A
Char. 1117: C --> A
Char. 1135: C --> T
Char. 1141: A --> C
Char. 1144: C --> T
Char. 1159: C --> T
Char. 1165: C --> T
Char. 1168: C --> T
Char. 1186: A --> T
Char. 1204: A --> G
Char. 1211: C --> T
Char. 1219: C --> T
Char. 1225: T --> A
Char. 1237: T --> C
Char. 1243: A --> T
Char. 1258: C --> G
Char. 1283: C --> T
Char. 1285: T --> A
Char. 1289: C --> T
Char. 1291: T --> A
Char. 1303: C --> T
Char. 1309: T --> A
Char. 1312: C --> T
Char. 1330: C --> A
Char. 1339: C --> T
Char. 1345: C --> T

Char. 1346: C --> T
Char. 1367: A --> G
Char. 1370: C --> T
Char. 1423: C --> T
Char. 1453: C --> A
Char. 1455: T --> C
Char. 1456: T --> C
Char. 1481: C --> T
Char. 6152: T --> C
Char. 6176: T --> C
Char. 6210: T --> C
Char. 6227: C --> T
Char. 6247: T --> C
Char. 6310: G --> T
Char. 6315: A --> T
Char. 6316: A --> T
Char. 6317: A --> T
Char. 6324: C --> T
Char. 6325: C --> T
Char. 6326: T --> A
Char. 6328: A --> T
Char. 6330: T --> A
Char. 6343: G --> A
Char. 6344: A --> G
Char. 6345: A --> C
Char. 6346: T --> A
Char. 6347: A --> T
Char. 6350: A --> G
Char. 6355: A --> C
Char. 6361: G --> A
Char. 6362: C --> T
Char. 6368: C --> A
Char. 6385: C --> T
Char. 6408: G --> A
Char. 6419: C --> T
Char. 6426: T --> C
Char. 6433: T --> A
Char. 6435: G --> A
Char. 6441: T --> C
Char. 6442: A --> T
Char. 6445: T --> C
Char. 6447: C --> T
Char. 6449: T --> C
Char. 6450: A --> T
Char. 6452: A --> G
Char. 6458: C --> T
Char. 6497: A --> T
Char. 6565: C --> T
Char. 6566: C --> T

Jupiaba_mucronata :
Uroneurals (427): (0)_absent_or_just_one_pair --> (1)_two_pairs
Jupiaba_scologaster :
Anterior_paired_projections_of_parasphenoid (43): (1)_present --> (0)_absent

Prootic_foramen_anteromedial_to_auditory_foramen (56): (0)_visible_as_a_pore_lateral_to_myodome -->
(1)_an_oblique_canal_near_anterior_margin_of_prootic

Laterosensory_pore_just_anterior_to_dilatator_fossa (115): (0)_dorsomedial_to_laterosensory_canal --> (1)_lateroventral_to_laterosensory_canal

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Jupiaba_acanthogaster :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wing -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Lateral_line (123): (1)_interrupted -->
(0)_complete
Canal_of_lateral_line_on_caudal-fin_membrane (125): (0)_absent --> (1)_present

Expansion_of_lamellar_portion_of_maxilla_just_posterior_to_toothed_region (141):
(0)_absent_or_not_pronounced -->
(1)_very_pronounced
Position_of_coronomeckelian (159):
(0)_situated_mainly_lateral_to_Meckelian_cartilage -->
(1)_situated_mainly_dorsal_to_Meckelian_cartilage
Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Number_of_cusps_of_first_maxillary_tooth (194): (0)_five_or_fewer --> (1)_seven_or_more

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more

Posterior_extent_of_ventral_process_of_quadrate (234):
(1)_falling_short_of_posterior_margin_of_symplectic -->
(0)_reaching_vertical_through_posterior_margin_of_symplectic
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex,_straight,_or_slightly_concave -->
(1)_distinctly_concave,_forming_an_angle_of_45°
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial

Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer

Anterior_projection_of_dorsal_process_of_scapula (358): (0)_reaching_medial_lamella_of_cleithrum -->
(1)_separated_from_medial_lamella_of_cleithrum
Main_axis_of_supraneurals (396):
(0)_not_bifurcated -->
(1)_at_least_some_of_them_distally_bifurcated

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Jupiaba_anteroides :
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_than_dorsoventrally

Branching_of_laterosensory_canals_of_fourth_or_fifth_infraorbitals (97): (0)_absent --> (1)_present
Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present
Length_of_medial_bony_ridge_of_opercle (254): (1)_less_than_50%_of_opercular_length -->
(0)_60%_or_greater_than_opercular_length

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (304): (0)_24_or_fewer -->
(1)_25_or_more
Number_of_supraneurals (392):
(0)_four_or_fewer --> (1)_five_or_more
Number_of_branched_anal-fin_rays (420):
(0)_24_or_fewer --> (1)_25_or_more
Uroneurals (427): (0)_absent_or_just_one_pair --> (1)_two_pairs

Char. 4782: C --> T
Char. 4806: C --> T
Char. 4820: G --> T
Char. 4836: G --> A
Char. 4901: G --> A
Char. 4950: G --> A
Char. 4966: A --> G
Char. 5088: G --> A
Char. 5100: A --> T
Char. 5148: C --> T
Char. 5282: C --> T
Char. 5337: G --> A
Char. 5347: G --> A
Char. 5355: G --> T
Char. 5456: G --> A
Char. 5457: C --> T
Char. 5544: T --> C
Char. 5673: A --> G
Char. 5679: C --> T
Char. 6210: T --> C
Char. 6211: G --> A
Char. 6253: A --> G
Char. 6309: T --> C
Char. 6310: G --> A
Char. 6329: T --> A
Char. 6342: G --> T
Char. 6344: A --> G
Char. 6347: A --> C
Char. 6368: C --> A
Char. 6381: A --> G
Char. 6382: C --> A
Char. 6444: T --> A
Char. 6445: T --> C
Char. 6458: C --> T
Char. 6477: A --> T
Char. 6485: T --> C
Char. 6584: A --> G
Jupiaba_polylepis :

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base
Ventral_extent_of_third_infraorbital (88):
(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly -->
(0)_reaching_horizontal_arm_of_preopercle
Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_than_dorsoventrally

Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94):
(1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa -->
(0)_almost_complete,_at_least_in_its_ventral_border
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone,_or_less

Development_of_transverse_process_of_neural_arch_of_third vertebra (312):
(0)_not_reaching_anterior_margin_of_tripus -->
(1)_well_developed_and_extending_beyond_anterior_margin_of_tripus
Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33
Circuli_on_posterior_field_of_scales (456):
(1)_absent --> (0)_present
Median_predorsal_scales (465):
(0)_covering_entire_predorsal_region -->
(1)_leaving_naked_area_anterior_to_dorsal_fin

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->

(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Knodus_breviceps :
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Anterior_projection_of_mesocoracoid (355):
(0)_absent_or_reduced -->
(1)_present,_projected_anterior_to_margin_of_cleithrum
Char. 1540: A --> G
Char. 1783: T --> C
Char. 1849: C --> T
Char. 1855: T --> C
Char. 2080: A --> G
Char. 2083: G --> A
Char. 2107: T --> C
Char. 6255: A --> C
Char. 6323: T --> C
Char. 6343: A --> G
Knodus_gamma :
Anterior_margin_of_lamellar_region_of_vomer (16): (0)_narrower_than_anterior_region -->
(1)_as_wide_as_posterior_margin_of_anterior_region
Anterior_tip_of_pelvic_bone (377):
(1)_posterior_to_third_rib -->
(0)_anterior_to_third_rib
Knodus_heteresthes :
Frontal_and_pterotic_laterosensory_canals (118):
(1)_with_an_angle_on_pore_receiving_infraorbital_canal -->
(0)_without_a_discernible_angle_between_them
Palatine_foramen (210):
(0)_absent_or_reduced_in_size -->
(1)_present_and_very_conspicuous

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Distribution_of_bony_hooks_on_pelvic-fin_segments_of_adult_males (450):
(0)_bilateral,_at_least_in_some_segments -->
(1)_unpaired,_oriented_medially
Knodus_meridae :
Char. 1930: T --> AC
Char. 4000: C --> G
Char. 4963: C --> T
Bryconacidnus_pectinatus :
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Char. 6294: C --> T
Char. 6295: A --> G
Char. 6307: T --> C
Char. 6321: A --> G
Char. 6357: A --> G
Char. 6412: A --> G
Char. 6445: A --> G
Char. 6493: A --> G
Char. 6528: A --> G
Leporinus_striatus :
Ventral_extent_of_third_infraorbital (88):
(0)_reaching_horizontal_arm_of_preopercle -->
(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly
Posterior_pore_of_pterotic_canal (119):
(0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal -->
(1)_in_a_vertical_line_through_ventral_pterotic_pore
Profile_of_posterodorsal_margin_of_opercle (251): (0)_straight_or_convex --> (1)_concave
Lateral_lamella_of_pelvic_bone (373):
(1)_present_and_reaching_two_thirds_of_bone -->
(0)_absent_or_reduced_to_posterior_third_of_bone
Char. 620: T --> C
Char. 643: C --> T
Char. 649: C --> T

Char. 655: C --> T
 Char. 658: T --> C
 Char. 667: C --> T
 Char. 766: C --> T
 Char. 814: AG --> T
 Char. 859: A --> GC
 Char. 940: C --> T
 Char. 953: A --> G
 Char. 991: C --> T
 Char. 1000: A --> C
 Char. 1060: C --> T
 Char. 1066: C --> T
 Char. 1076: C --> T
 Char. 1081: A --> C
 Char. 1084: T --> C
 Char. 1096: T --> C
 Char. 1219: C --> T
 Char. 1234: A --> G
 Char. 1240: T --> C
 Char. 1243: T --> AC
 Char. 1270: A --> G
 Char. 1276: C --> T
 Char. 1291: T --> C
 Char. 1300: C --> T
 Char. 1333: C --> T
 Char. 1346: A --> T
 Char. 1348: C --> A
 Char. 1358: C --> T
 Char. 1375: C --> AG
 Char. 1517: T --> C
 Char. 1546: T --> C
 Char. 1561: C --> T
 Char. 1594: G --> A
 Char. 1600: T --> C
 Char. 1609: T --> C
 Char. 1676: A --> G
 Char. 1693: C --> T
 Char. 1708: A --> GC
 Char. 1756: C --> T
 Char. 1759: A --> G
 Char. 1787: C --> T
 Char. 1789: T --> A
 Char. 1807: C --> T
 Char. 1819: C --> G
 Char. 1822: A --> G
 Char. 1825: C --> T
 Char. 1843: T --> C
 Char. 1852: A --> C
 Char. 1873: C --> T
 Char. 1882: C --> T
 Char. 1892: C --> T
 Char. 1894: A --> G
 Char. 1934: C --> T
 Char. 1936: T --> A
 Char. 2024: C --> T
 Char. 2104: T --> C
 Char. 2143: A --> C
 Char. 2422: T --> A
 Char. 3550: T --> C
 Char. 3634: T --> C
 Char. 3650: A --> G
 Char. 3760: C --> T
 Char. 3766: G --> A
 Char. 3976: T --> C
 Char. 4072: C --> T
 Char. 4486: G --> T
 Char. 5100: A --> T
 Char. 5451: G --> A
 Char. 5460: G --> A
 Char. 5496: T --> C
 Char. 5583: A --> G
 Char. 6210: T --> C
 Char. 6307: C --> T
 Char. 6344: A --> G
 Char. 6374: G --> A
 Char. 6467: T --> C
 Char. 6475: T --> C
 Char. 6497: A --> T
 Char. 6566: C --> T
 Lignobrycon myersi :
 Posterior_extension_of_supraoccipital_spine
 (62):
 (1)_reaching_only_to_anterior_limit_of_neural_co

mplex -->
 (0)_reaching_at_least_to_middle_length_of_neural
 _complex
 Degree_of_ventral_curvature_of_lateral_line
 (122): (0)_straight_or_only_slightly_curved -->
 (1)_distinctly_curved_and_ventrally_situated

Form_of_teeth_of_inner_premaxillary_tooth_row
 (180):
 (0)_with_cusps_forming_anteriorly_concave_arch -
 -> (1)_with_cusps_aligned_in_straight_series
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more

Extent_of_implantation_of_teeth_along_maxilla
 (191):
 (0)_not_reaching_middle_of_maxillary_lamella -->
 (1)_extending_across_almost_entire_maxillary_lam
 ella
 Abrupt_decrease_in_size_of_dentary_teeth
 (207): (0)_absent --> (1)_present
 Ventral_margin_of_anterior_ceratothyal (263):
 (0)_smooth_and_without_notches -->
 (1)_with_notches_for_articulation_of_branchiosteg
 al_rays
 Total_number_of_transitional_vertebrae (330):
 (0)_four_or_more --> (1)_three_or_fewer
 Transitional_vertebrae_with_haemal_canal
 (331): (0)_present --> (1)_absent
 Transitional_vertebrae_with_haemal_canal
 (332): (1)_two_or_more --> (0)_absent_or_just_one
 Sheath_of_scales_covering_anal-fin_base
 (469): (1)_covering_3/4_of_anal-fin_base_or_more
 --> (0)_reaching_half_length_of_anal-
 fin_base_or_less

Horizontal_line_of_chromatophores_just_dorsal_to
 _anal-fin_base (499): (0)_absent --> (1)_present
 Sclerotic_bones (508):
 (1)_two_bones_separated_by_cartilages -->
 (0)_single_anteroventrally_open_bone
 Char. 526: A --> T
 Char. 538: C --> T
 Char. 547: A --> G
 Char. 553: C --> T
 Char. 595: C --> T
 Char. 622: T --> G
 Char. 634: A --> C
 Char. 658: C --> T
 Char. 685: C --> G
 Char. 688: A --> G
 Char. 700: T --> C
 Char. 766: C --> T
 Char. 775: A --> G
 Char. 787: C --> T
 Char. 814: CT --> A
 Char. 823: CT --> G
 Char. 832: C --> T
 Char. 838: C --> T
 Char. 841: C --> T
 Char. 850: A --> C
 Char. 871: A --> G
 Char. 883: A --> G
 Char. 886: G --> C
 Char. 910: C --> T
 Char. 916: A --> C
 Char. 922: C --> T
 Char. 928: C --> T
 Char. 946: A --> T
 Char. 951: C --> T
 Char. 969: T --> C
 Char. 991: C --> T
 Char. 1006: C --> T
 Char. 1048: C --> T
 Char. 1072: C --> T
 Char. 1078: A --> C
 Char. 1096: T --> C
 Char. 1177: T --> A
 Char. 1189: C --> T
 Char. 1213: A --> G
 Char. 1234: A --> C
 Char. 1270: A --> G
 Char. 1273: A --> C

Char. 1288: C --> T
 Char. 1294: A --> G
 Char. 1303: C --> T
 Char. 1309: A --> C
 Char. 1329: G --> C
 Char. 1408: A --> G
 Char. 1414: A --> C
 Char. 1447: A --> G
 Char. 1468: A --> C
 Char. 1483: T --> C
 Char. 2221: A --> T
 Char. 2222: A --> T
 Char. 2260: C --> T
 Char. 2353: G --> C
 Char. 2374: T --> A
 Char. 2479: C --> T
 Char. 2480: A --> G
 Char. 2644: G --> A
 Char. 2741: G --> A
 Char. 2799: G --> A
 Char. 2800: A --> C
 Char. 2801: C --> T
 Char. 3499: A --> G
 Char. 3520: A --> G
 Char. 3569: A --> G
 Char. 3572: C --> T
 Char. 3583: A --> G
 Char. 3604: A --> C
 Char. 3631: C --> T
 Char. 3632: A --> G
 Char. 3670: A --> G
 Char. 3826: T --> C
 Char. 3991: A --> G
 Char. 4090: A --> T
 Char. 4192: G --> C
 Char. 4276: T --> C
 Char. 4387: G --> A
 Char. 4403: T --> C
 Char. 4432: T --> C
 Char. 4504: G --> C
 Char. 4597: A --> G
 Char. 4663: C --> T
 Char. 4678: T --> A
 Char. 6299: G --> A
 Char. 6325: C --> A
 Char. 6336: A --> C
 Char. 6361: G --> A
 Char. 6415: A --> G
 Char. 6432: A --> G
 Char. 6462: G --> A
 Char. 6466: A --> C
 Char. 6514: T --> C

Lonchogenys ilisha :
 Development_of_sagittal_capsule (69):
 (0)_not_reaching_posterior_margin_of_lagenar_ca
 psule -->
 (1)_reaching_or_surpassing_posterior_margin_of_l
 agenar_capsule
 Base_of_second_pectoral_ray (368):
 (1)_similar_in_form_and_size_to_base_of_posterior
 r_rays -->
 (0)_large_and_partially_medially_overlapping_bas
 e_of_first_pectoral_ray
 Median_predorsal_scales (465):
 (0)_covering_entire_predorsal_region -->
 (1)_leaving_naked_area_anterior_to_dorsal_fin
 Markiana nigripinnis :
 Dorsolateral_processes_of_vomer (15):
 (0)_absent --> (1)_present
 Dorsal_margin_of_lateral_ethmoids (23):
 (1)_oblique_in_dorsal_view_converging_in_an_an
 terior_angle --> (0)_aligned

Branching_of_laterosensory_canals_of_fourth_or_f
 ifth_infraorbitals (97): (0)_absent --> (1)_present
 Laterosensory_canal_of_sixth_infraorbital (99):
 (0)_not_branched --> (1)_branched

Lateral_surface_of_vertical_canal_of_preopercle
 (107):
 (0)_canal_uncovered_posterior_to_musculature_an
 d_infraorbitals -->
 (1)_covered_by_musculature_and/or_infraorbitals

Frontal_and_pterotic_laterosensory_canals (118):
(0)_without_a_discernible_angle_between_them -->
(1)_with_an_angle_on_pore_receiving_infraorbital_canal

Tubules_for_passage_of_blood_vessels_on_lamella_r_portion_of_maxilla (142):

(1)_with_anterior_branch_running_parallel_to_anterior_margin_of_maxilla -->

(2)_anastomosed_tubules

Horizontal_process_of_anguloarticular (161):

(0)_laterally_covered_by_dentary_only_anteriorly -->

(1)_broadly_covered_by_dentary_to_tip_of_Meckelian_cartilage

Maxillary_teeth (188): (1)_present -->

(0)_absent

Number_of_maxillary_teeth (189):

(1)_two_or_more --> (0)_only_one_or_absent

Relative_length_of_palatine (209):

(0)_approximately_one-

half_length_of_ectopterygoid_or_less -->

(1)_distinctly_longer_than_one-

half_length_of_ectopterygoid

Suprapreopercle (244): (0)_fused_to_preopercle --> (1)_autogenous,_separated_from_preopercle

Bony_lamellae_bordering_laterosensory_canal_of_suprapreopercle (245): (0)_absent --> (1)_present

Profile_of_posterodorsal_margin_of_opercle

(251): (1)_concave --> (0)_straight_or_convex

Laminar_base_of_epibranchial_gill_rakers

(290):

(0)_absent_or_not_reaching_posterior_margin_of_epibranchial -->

(1)_reaching_or_projecting_from_posterior_margin_of_epibranchial

Cartilage-

filled_space_anterior_to_scapular_foramen (360):

(0)_present,_wider_than_anterior_process_of_scapula -->

(1)_much_reduced_by_expansions_of_coracoid_and_cleithrum

Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->

(1)_wider_than_primary_axis_of_supraneurals

Number_of_branched_anal-fin_rays (421):

(0)_34_or_fewer --> (1)_35_or_more

Pelvic-

fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (442): (1)_present --> (0)_absent

Anterior_margin_of_scales (455):

(0)_uniformly_curved_or_slightly_undulated -->

(1)_with_conspicuous_undulations

Radii_on_scales (458):

(1)_present_and_numerous_on_most_scales -->

(0)_absent_or_reduced_in_number

Scales_covering_anal-fin_base (468):

(0)_one_or_two_rows_of_scales_covering_anal-fin_base -->

(1)_several_rows_covering_basal_third_of_anal_fin

Sheath_of_scales_covering_anal-fin_base

(469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more

Scales_covering_caudal-fin_lobes (470):

(0)_covering_only_their_base -->

(1)_covering_one-third_of_their_length

Anterior_extension_of_adductor_arcus_palatini

(481):

(1)_covering_only_half_of_dorsal_surface_of_mesopterygoid -->

(0)_covering_most_of_dorsal_surface_of_mesopterygoid

Zigzag_lines_between_rows_of_scales (497):

(0)_absent --> (1)_present

Papillae_on_tongue (506): (0)_not_aligned -->

(1)_forming_longitudinal_rows_anteriorly

Char. 1567: A --> T

Char. 1573: A --> T

Char. 1591: C --> G

Char. 1600: A --> G

Char. 1612: T --> C

Char. 1621: T --> C

Char. 1624: T --> C

Char. 1666: A --> G

Char. 1669: A --> T

Char. 1687: AG --> T

Char. 1696: A --> G

Char. 1723: T --> C

Char. 1735: G --> A

Char. 1744: C --> G

Char. 1774: A --> T

Char. 1789: T --> A

Char. 1795: C --> T

Char. 1804: C --> T

Char. 1810: G --> T

Char. 1819: T --> A

Char. 1858: C --> T

Char. 1867: T --> A

Char. 1876: A --> G

Char. 1892: C --> T

Char. 1934: T --> C

Char. 1942: A --> T

Char. 1948: T --> C

Char. 1957: T --> A

Char. 1960: T --> C

Char. 1963: T --> C

Char. 1972: G --> A

Char. 1978: C --> T

Char. 1981: A --> T

Char. 1988: T --> A

Char. 1990: A --> C

Char. 1996: T --> C

Char. 2002: A --> T

Char. 2023: C --> A

Char. 2024: C --> T

Char. 2029: T --> A

Char. 2038: T --> C

Char. 2059: A --> T

Char. 2065: A --> G

Char. 2227: C --> T

Char. 2237: G --> A

Char. 2425: T --> C

Char. 2512: G --> A

Char. 2569: A --> G

Char. 2632: A --> T

Char. 2644: G --> A

Char. 2806: C --> T

Char. 2815: G --> A

Char. 2885: C --> T

Char. 2938: C --> T

Char. 2947: G --> T

Char. 2959: C --> T

Char. 2968: A --> G

Char. 2974: T --> C

Char. 3118: C --> T

Char. 3131: C --> T

Char. 3151: G --> A

Char. 3178: G --> A

Char. 3376: C --> A

Char. 3469: A --> G

Char. 3478: C --> T

Char. 3622: G --> A

Char. 3652: T --> A

Char. 3673: T --> C

Char. 3694: C --> T

Char. 3709: A --> C

Char. 3739: A --> G

Char. 3890: G --> T

Char. 3901: T --> C

Char. 3931: G --> A

Char. 3985: C --> T

Char. 4051: C --> G

Char. 4072: C --> T

Char. 4117: C --> A

Char. 4147: G --> A

Char. 4174: T --> G

Char. 4204: T --> C

Char. 4205: C --> A

Char. 4219: C --> T

Char. 4354: G --> A

Char. 4471: G --> A

Char. 4501: G --> A

Char. 4527: T --> G

Char. 4534: G --> A

Char. 4558: C --> T

Char. 4621: G --> C

Char. 4624: A --> G

Char. 4645: C --> T

Char. 4648: T --> A

Char. 4672: C --> T

Char. 4675: G --> A

Char. 4740: T --> C

Char. 4758: C --> T

Char. 4908: C --> A

Char. 4968: T --> C

Char. 5013: C --> A

Char. 5016: G --> A

Char. 5212: C --> G

Char. 5247: C --> A

Char. 5292: C --> T

Char. 5343: A --> G

Char. 5352: G --> A

Char. 5380: C --> A

Char. 5418: A --> G

Char. 5502: T --> C

Char. 5505: G --> A

Char. 5544: T --> C

Char. 5622: A --> G

Char. 5634: G --> C

Char. 6294: T --> C

Char. 6299: A --> G

Char. 6302: C --> T

Char. 6306: C --> A

Char. 6317: A --> T

Char. 6323: C --> T

Char. 6325: C --> T

Char. 6326: T --> A

Char. 6327: AG --> T

Char. 6334: G --> A

Char. 6343: G --> A

Char. 6362: T --> A

Char. 6373: G --> A

Char. 6388: C --> T

Char. 6432: A --> G

Char. 6434: G --> A

Char. 6440: A --> G

Char. 6456: C --> T

Char. 6462: G --> A

Char. 6463: G --> A

Char. 6493: A --> T

Char. 6532: A --> T

Char. 6541: T --> C

Char. 6565: C --> T

Char. 6566: C --> T

Char. 6567: A --> G

Char. 6573: C --> T

Metymnis_mola :

Char. 559: A --> G

Char. 565: C --> T

Char. 601: A --> T

Char. 616: C --> T

Char. 667: C --> T

Char. 700: C --> T

Char. 739: A --> T

Char. 742: C --> A

Char. 775: T --> C

Char. 799: A --> G

Char. 814: A --> G

Char. 854: G --> A

Char. 859: A --> G

Char. 860: G --> A

Char. 868: A --> C

Char. 940: C --> T

Char. 950: G --> A

Char. 951: C --> T

Char. 956: A --> G

Char. 958: T --> G

Char. 1072: C --> T

Char. 1099: A --> C

Char. 1105: T --> A

Char. 1177: C --> T

Char. 1183: C --> T

Char. 1189: C --> T

Char. 1240: C --> T

Char. 1279: A --> G
Char. 1285: C --> T
Char. 1286: A --> G
Char. 1288: C --> T
Char. 1293: T --> C
Char. 1307: C --> T
Char. 1321: A --> G
Char. 1333: C --> T
Char. 1373: G --> A
Char. 1399: A --> G
Char. 1438: C --> T
Char. 1454: G --> A
Char. 1457: C --> T
Char. 1471: A --> T
Char. 3493: C --> T
Char. 3994: C --> T
Char. 4330: C --> T
Char. 4339: C --> T
Char. 4391: C --> T
Char. 4444: C --> T
Char. 4721: G --> A
Char. 4806: C --> T
Char. 4857: G --> T
Char. 4966: G --> T
Char. 5053: G --> A
Char. 5266: A --> G
Char. 5267: C --> T
Char. 5275: G --> A
Char. 5481: G --> A
Char. 5706: C --> T
Char. 6253: C --> T
Char. 6321: G --> A
Char. 6331: A --> T
Char. 6333: A --> T
Char. 6412: A --> G
Char. 6424: C --> A
Char. 6528: G --> A

Micralestes_stormsi :
No autapomorphies

Microgenys_minuta :
Development_of_sagittal_capsule (69):
(0)_not_reaching_posterior_margin_of_lagenar_capsule -->
(1)_reaching_or_surpassing_posterior_margin_of_lagenar_capsule
Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one_third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage
Lateroventral_expansion_of_ectopterygoid (214):
(1)_present_expanded_twice_length_of_palatine_cartilage -->
(0)_absent_articulating_almost_exclusively_with_cartilage_of_palatine
Anterior_extension_of_interopercle (249):
(0)_extending_anteriorly_beyond_tip_of_horizontal_arm_of_preopercle -->
(1)_not_extending_anteriorly_beyond_anterior_tip_of_preopercle

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Number_of_branched_anal-fin_rays (418):
(1)_11_or_more --> (0)_ten_or_fewer
Fusion_of_hypural_2_to_compound_centrum (429): (1)_present --> (0)_absent

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (475):
(0)_ventral_to_Meckelian_cartilage -->
(1)_anterior_to_Meckelian_cartilage
Microschemobrycon_casiquiare :
Epiphyseal_branch_of_supraorbital_canal (111): (0)_present --> (1)_absent

Contact_between_ectopterygoid_and_anterodorsal_region_of_quadrate (220): (0)_present --> (1)_absent
Anterior_portions_of_branchiostegal_rays (268):
(1)_slender_near_their_articulation_with_ceratohyals -->
(0)_broad_near_their_articulation_with_ceratohyals

Development_of_transverse_process_of_neural_arch_of_third_vertebra (312):
(0)_not_reaching_anterior_margin_of_tripus -->
(1)_well_developed_and_extending_beyond_anterior_margin_of_tripus
Char. 2587: G --> A
Char. 2591: C --> T
Char. 2788: T --> C
Char. 6182: G --> T
Char. 6205: T --> C
Char. 6209: T --> C
Char. 6252: A --> T
Char. 6309: T --> C
Char. 6319: A --> T
Char. 6327: A --> G
Char. 6357: A --> G
Char. 6377: C --> T
Char. 6433: T --> C
Char. 6440: A --> T
Char. 6444: A --> T
Char. 6484: C --> T
Char. 6530: C --> T

Mimagoniates_rheocharis :
Number_of_branched_rays_on_dorsal_fin (409): (0)_eight_or_fewer --> (1)_nine_or_more
Anal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (441): (1)_present --> (0)_absent
Char. 2155: A --> G
Moenkhausia_ceros :

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_than_dorsoventrally
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent
Foramen_on_articular_condyle_of_quadrate (230): (0)_absent --> (1)_present

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (294): (1)_15_or_fewer --> (0)_16_or_more
Posterior_margin_of_cleithrum (342):
(0)_with_concavity_poorly_pronounced_or_lacking -->
(1)_with_markedly_concave_margin_almost_forming_straight_angle

Anterior_projection_of_dorsal_process_of_scapula (358): (0)_reaching_medial_lamella_of_cleithrum -->
(1)_separated_from_medial_lamella_of_cleithrum

Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Relative_position_of_dorsal-fin_anterior_insertion (403):
(1)_posterior_to_vertical_through_pelvic-fin_origin --> (0)_anterior_to_or_at_vertical_through_pelvic-fin_origin
Number_of_branched_anal-fin_rays (419):
(1)_18_or_more --> (0)_17_or_fewer

Parallel_longitudinal_ridges_on_posterior_field_of_scales (457): (0)_absent --> (1)_present
Char. 544: C --> A
Char. 577: C --> T
Char. 580: C --> T
Char. 607: G --> T
Char. 649: A --> T
Char. 688: A --> C
Char. 691: C --> A
Char. 692: C --> T
Char. 694: T --> G
Char. 700: T --> C
Char. 730: T --> C
Char. 736: C --> G
Char. 745: T --> A
Char. 746: C --> T
Char. 763: A --> G
Char. 769: A --> G
Char. 781: T --> C
Char. 805: A --> T
Char. 814: G --> T
Char. 826: C --> T
Char. 862: T --> C
Char. 863: A --> T
Char. 866: C --> T
Char. 871: A --> C
Char. 892: C --> T
Char. 901: C --> T
Char. 903: A --> G
Char. 922: C --> T
Char. 941: C --> T
Char. 950: G --> A
Char. 962: G --> A
Char. 963: C --> T
Char. 982: C --> T
Char. 988: A --> C
Char. 991: C --> T
Char. 1006: C --> T
Char. 1024: C --> T
Char. 1028: G --> A
Char. 1029: A --> G
Char. 1048: T --> C
Char. 1063: T --> A
Char. 1085: G --> A
Char. 1089: T --> C
Char. 1093: A --> C
Char. 1099: C --> A
Char. 1114: A --> G
Char. 1132: C --> T
Char. 1144: C --> T
Char. 1172: C --> T
Char. 1174: T --> A
Char. 1177: T --> C
Char. 1192: T --> C
Char. 1249: A --> G
Char. 1273: A --> C
Char. 1291: T --> C
Char. 1295: T --> C
Char. 1297: A --> G
Char. 1303: C --> A
Char. 1307: C --> T
Char. 1309: C --> A
Char. 1354: A --> G
Char. 1360: A --> G
Char. 1370: T --> C
Char. 1390: T --> C
Char. 1426: C --> A
Char. 1435: T --> C
Char. 1438: T --> C
Char. 1455: T --> C
Char. 1466: A --> C
Char. 1474: C --> T

Char. 1489: A --> C
Char. 1510: C --> T
Char. 2602: C --> T
Char. 5837: T --> C
Char. 5857: C --> T
Char. 5867: C --> T
Char. 5909: A --> T
Char. 5910: T --> C
Char. 5929: G --> A
Char. 5933: T --> A
Char. 5941: C --> T
Char. 5970: T --> C
Char. 5973: G --> A
Char. 5978: G --> A
Char. 6005: C --> T
Char. 6020: A --> G
Char. 6024: G --> A
Char. 6037: C --> T
Char. 6046: C --> T
Char. 6097: A --> C
Char. 6098: C --> T
Char. 6099: C --> T
Char. 6251: A --> GT
Char. 6362: C --> G
Char. 6363: A --> T
Char. 6441: T --> G
Char. 6442: A --> T
Char. 6443: T --> A
Char. 6444: T --> C
Char. 6511: T --> A
Moenkhausia_cotinho :
Number_of_teeth_on_inner_premaxillary_row
(182): (1)_six_or_more --> (0)_five_or_fewer
Abrupt_decrease_in_size_of_dentary_teeth
(207): (0)_absent --> (1)_present
Char. 2311: A --> C
Char. 2329: C --> T
Char. 2503: T --> C
Char. 2845: A --> G
Char. 3767: A --> G
Char. 4034: C --> T
Char. 4420: G --> T
Char. 4651: A --> G
Char. 4657: A --> G
Char. 4678: T --> A
Char. 4737: G --> A
Char. 4851: G --> A
Char. 4866: G --> A
Char. 5053: G --> A
Char. 5151: C --> T
Char. 5175: C --> T
Char. 5361: T --> C
Char. 5370: A --> T
Char. 5380: C --> T
Char. 5491: G --> T
Char. 5493: A --> C
Char. 5508: C --> T
Char. 5680: G --> C
Char. 5682: C --> T
Char. 5688: C --> T
Char. 5706: C --> T
Char. 5742: C --> T
Char. 5743: T --> G
Char. 6168: T --> C
Char. 6207: T --> C
Char. 6222: T --> C
Char. 6227: C --> T
Char. 6252: A --> T
Char. 6254: T --> A
Char. 6255: A --> T
Char. 6294: T --> A
Char. 6326: T --> A
Char. 6330: T --> A
Char. 6345: A --> C
Char. 6348: A --> C
Char. 6355: A --> G
Char. 6368: C --> T
Char. 6390: A --> G
Char. 6400: T --> C
Char. 6410: A --> C
Char. 6434: A --> G
Char. 6435: A --> G
Char. 6436: G --> A
Char. 6443: T --> A
Char. 6444: A --> C
Char. 6446: T --> C
Char. 6447: C --> T
Char. 6463: C --> T
Char. 6515: A --> G
Char. 6528: G --> A
Moenkhausia_bonita :
Char. 533: C --> T
Char. 535: A --> C
Char. 536: T --> G
Char. 539: T --> C
Char. 544: T --> G
Char. 556: C --> G
Char. 673: C --> T
Char. 676: C --> T
Char. 700: T --> C
Char. 715: T --> C
Char. 742: T --> C
Char. 832: C --> T
Char. 844: A --> G
Char. 868: A --> G
Char. 871: A --> G
Char. 1106: G --> A
Char. 1129: C --> A
Char. 1150: A --> G
Char. 1228: C --> T
Char. 1295: G --> A
Char. 1306: T --> C
Char. 1385: G --> A
Char. 1510: C --> T
Char. 2302: T --> C
Char. 4291: G --> A
Char. 4297: C --> T
Char. 4681: C --> G
Char. 5130: G --> A
Char. 5619: A --> G
Char. 5717: C --> G
Char. 6443: T --> C
Char. 6589: G --> A
Moenkhausia_dichroua :
Laterosensorial_pore_just_anterior_to_dilatator_fos
sa (115): (0)_dorsomedial_to_laterosensory_canal -
-> (1)_lateroventral_to_laterosensory_canal
Canal_of_lateral_line_on_caudal-
fin_membrane (125): (0)_absent --> (1)_present
Alignment_of_cusps_of_medial_teeth_on_inner_pr
emaxillary_row (179):
(1)_forming_shallow_arch_or_aligned_in_straight-
series -->
(0)_forming_anteriorly_concave_semicircle_from-
ventral_view
Rows_of_gill_rakers_on_second_ceratobranchial
(292): (0)_one --> (1)_two
Number_of_gill_rakers_on_first_hypobranchial_an
d_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more
Transitional_vertebrae_with_haemal_canal
(331): (1)_absent --> (0)_present
Base_of_second_pectoral_ray (368):
(1)_similar_in_form_and_size_to_base_of_posterio
r_rays -->
(0)_large_and_partially_medially_overlapping_bas
e_of_first_pectoral_ray
Bony_lamellae_associated_with_supraneurals
(397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Uroneurals (427): (0)_absent_or_just_one_pair
--> (1)_two_pairs
Parallel_longitudinal_ridges_on_posterior_field_of
_scales (457): (0)_absent --> (1)_present
Char. 631: C --> T
Char. 632: T --> C
Char. 664: C --> T
Char. 670: T --> C
Char. 733: T --> C
Char. 742: T --> C
Char. 772: T --> C
Char. 793: A --> G
Char. 802: A --> G
Char. 805: C --> T
Char. 817: T --> C
Char. 913: A --> G
Char. 964: A --> T
Char. 1048: C --> T
Char. 1063: C --> A
Char. 1072: C --> T
Char. 1126: C --> T
Char. 1183: C --> T
Char. 1333: A --> T
Char. 1346: C --> T
Char. 1444: A --> G
Char. 1462: C --> T
Char. 2386: A --> T
Char. 3490: C --> T
Char. 3640: G --> A
Char. 3850: C --> T
Char. 4375: G --> A
Char. 4417: G --> C
Char. 4860: G --> A
Char. 4866: G --> A
Char. 5334: G --> A
Char. 5688: C --> T
Moenkhausia_heikoi :
Anterior_paired_projections_of_parasphenoid
(43): (1)_present --> (0)_absent
Protoic_foramen_anteromedial_to_auditory_forame
n (56): (0)_visible_as_a_pore_lateral_to_myodome
-->
(1)_an_oblique_canal_near_anterior_margin_of_pr
ootic
Number_of_maxillary_teeth (189):
(0)_only_one_or_absent --> (1)_two_or_more
Bony_lamella_dorsal_to_fourth_basibranchial
(275): (0)_present --> (1)_absent
Number_of_gill_rakers_on_first_hypobranchial_an
d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Moenkhausia_jamesi :
Contact_between_frontals_anterior_to_frontal_font
anel (27): (0)_absent --> (1)_present
Position_of_anterior_margin_of_supraoccipital
(60):
(0)_behind_vertical_through_posterior_orbital_mar
gin -->
(1)_anterior_to_vertical_through_posterior_orbital-
margin
Posterior_extension_of_supraoccipital_spine
(61):
(1)_dorsal_of_one_half_or_less_of_extent_of_neur
al_complex -->
(0)_dorsal_of_entire_neural_complex_of>Weberian
_apparatus
Position_of_coronomeckelian (159):
(0)_situated_mainly_lateral_to>Meckelian_cartilag
e -->
(1)_situated_mainly_dorsal_to>Meckelian_cartilag
e
Alignment_of_cusps_of_medial_teeth_on_inner_pr
emaxillary_row (179):
(1)_forming_shallow_arch_or_aligned_in_straight-
series -->
(0)_forming_anteriorly_concave_semicircle_from-
ventral_view
Profile_of_posterodorsal_margin_of_opercle
(252):
(1)_distinctly_concave,_forming_an_angle_of_45°
--> (0)_convex,_straight,_or_slightly_concave
Rows_of_gill_rakers_on_second_ceratobranchial
(292): (0)_one --> (1)_two
Gill_filaments_attached_to_leading_edge_of_first

ceratobranchial (303): (1)_18_or_more --> (0)_17_or_fewer
Transitional_vertebrae_with_haemal_canal (331): (0)_present --> (1)_absent
Lateral_lamella_of_pelvic_bone (373): (0)_absent_or_reduced_to_posterior_third_of_bone --> (1)_present_and_reaching_two_thirds_of_bone
Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474): (0)_on_vertical_through_Meckelian_cartilage_posterior_half --> (1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Moenkhausia_lata :
Tubules_for_passage_of_blood_vessels_on_lamellar_portion_of_maxilla (142): (0)_a_single_tubule_parallel_to_dorsal_margin_of_maxilla --> (1)_with_anterior_branch_running_parallel_to_anterior_margin_of_maxilla
Relative_position_of_dorsal-fin_anterior_insertion (403): (1)_posterior_to_vertical_through_pelvic-fin_origin --> (0)_anterior_to_or_at_vertical_through_pelvic-fin_origin
Char. 2188: G --> A
Char. 2392: C --> T
Char. 2395: C --> T
Char. 2530: C --> T
Char. 2686: G --> A
Char. 5010: G --> A
Char. 5077: G --> A
Char. 5368: A --> C
Char. 5471: T --> C
Char. 6152: C --> T
Char. 6161: A --> G
Char. 6190: G --> A
Char. 6206: T --> C
Char. 6210: C --> T
Char. 6216: A --> G
Char. 6227: C --> T
Char. 6251: A --> G
Char. 6254: T --> A
Char. 6321: A --> C
Char. 6330: T --> A
Char. 6381: A --> G
Char. 6382: C --> T
Char. 6454: A --> G
Char. 6528: A --> G
Moenkhausia_sanctaeofilomenae :
Char. 3637: C --> T
Char. 3904: T --> C
Char. 4375: A --> C
Char. 4707: A --> C
Char. 4710: T --> A
Moenkhausia_xinguensis :
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex_straight_or_slightly_concave --> (1)_distinctly_concave_forming_an_angle_of_45°
Posterior_margin_of_cleithrum (341): (1)_with_concavity_ventral_to_first_postcleithrum --> (0)_without_concavity_ventral_to_first_postcleithrum
Lateral_lamella_of_pelvic_bone (373): (0)_absent_or_reduced_to_posterior_third_of_bone --> (1)_present_and_reaching_two_thirds_of_bone
Relative_position_of_dorsal-fin_anterior_insertion (403): (1)_posterior_to_vertical_through_pelvic-fin_origin --> (0)_anterior_to_or_at_vertical_through_pelvic-fin_origin
Parallel_longitudinal_ridges_on_posterior_field_of_scales (457): (0)_absent --> (1)_present
Radii_of_scales (461): (0)_not_converging_at_focus --> (1)_converging_at_focus
Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-

fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more
Char. 2392: C --> T
Char. 2557: A --> G
Char. 2698: C --> T
Char. 2785: A --> T
Char. 2833: A --> G
Char. 2866: A --> G
Char. 6254: T --> C
Char. 6294: T --> A
Char. 6304: C --> T
Char. 6317: A --> C
Char. 6324: C --> T
Char. 6330: T --> C
Char. 6342: G --> T
Char. 6343: G --> A
Char. 6344: A --> G
Char. 6345: A --> G
Char. 6346: T --> C
Char. 6378: A --> G
Char. 6414: A --> G
Char. 6432: A --> G
Char. 6441: T --> A
Myxiops_aphos :
Anterior_paired_projections_of_parasphenoid (43): (1)_present --> (0)_absent
Length_of_sphenotic_spine (47): (1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula --> (0)_not_reaching_toanterodorsal_angle_of_hyomandibula
Dorsal_process_of_apterotic_where_tendon_from_epaxial_musculature_attach (52): (0)_absent --> (1)_present_projecting_dorsally_from_tube_for_semicircular_canal
Fourth_infraorbital (90): (0)_present --> (1)_absent
Fourth_infraorbital (91): (0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals --> (1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series
Margins_of_toothed_region_of_maxilla (140): (0)_roughly_parallel --> (1)_dorsally_divergent
Posterior_extent_of_ventral_process_of_quadrate (234): (1)_falling_short_of_posterior_margin_of_symplectic --> (0)_reaching_vertical_through_posterior_margin_of_symplectic
Main_axis_of_supraneurals (396): (0)_not_bifurcated --> (1)_at_least_some_of_them_distally_bifurcated
Nantis_indefessus :
Foramen_on_lateral_ethmoid (24): (0)_complete --> (1)_open_medially
Rhinosphenoid (34): (1)_present --> (0)_absent
Ventral_extent_of_third_infraorbital (88): (0)_reaching_horizontal_arm_of_preopercle --> (1)_not_reaching_horizontal_arm_of_preopercle_at_least_anteriorly
Anguloarticular_laterosensory_canal (105): (0)_present --> (1)_absent
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Ventral_margin_of_horizontal_process_of_anguloarticular (162): (1)_perpendicular_to_laterosensory_canal_of_dentary --> (0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal
Number_of_teeth_on_inner_premaxillary_row (181): (0)_four_or_fewer --> (1)_five_or_more
Number_of_cusps_of_anterior_maxillary_teeth (193): (1)_five_or_more_cusps --> (0)_up_to_three
Number_of_dentary_teeth_on_outer_row (198): (0)_eight_or_fewer --> (1)_ten_or_more
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer

Number_of_branched_anal-fin_rays (419): (1)_18_or_more --> (0)_17_or_fewer
Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474): (1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half --> (0)_on_vertical_through_Meckelian_cartilage_posterior_half
Char. 1732: C --> T
Char. 1735: A --> G
Char. 1750: A --> G
Char. 1984: C --> T
Char. 1987: C --> T
Char. 2041: C --> T
Char. 2045: C --> T
Char. 3145: G --> A
Char. 3382: G --> T
Char. 4963: C --> T
Char. 5110: G --> A
Char. 5133: G --> A
Char. 5837: T --> C
Char. 5910: C --> T
Char. 5911: T --> C
Char. 5915: T --> C
Char. 6001: A --> G
Char. 6004: C --> T
Char. 6020: A --> G
Char. 6253: G --> T
Char. 6299: G --> T
Char. 6317: A --> G
Char. 6329: A --> T
Char. 6334: G --> A
Char. 6355: G --> A
Char. 6379: A --> C
Char. 6412: G --> A
Nematobrycon_palmeri :
Anterior_paired_projections_of_parasphenoid (43): (0)_absent --> (1)_present
Parietal_branch_of_laterosensory_canal (116): (0)_present_reaching_parietal_bone_or_not --> (1)_completely_absent
Position_of_coronomeckelian (159): (0)_situated_mainly_lateral_to_Meckelian_cartilage --> (1)_situated_mainly_dorsal_to_Meckelian_cartilage
Ventral_margin_of_horizontal_process_of_anguloarticular (162): (0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal --> (1)_perpendicular_to_laterosensory_canal_of_dentary
Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more --> (0)_four_or_fewer
Dorsal-fin_rays_articulating_with_first_dorsal_pterygiophore (404): (1)_three_or_four --> (0)_two
Adipose_fin (512): (0)_present --> (1)_absent
Char. 544: C --> T
Char. 559: T --> A
Char. 580: C --> T
Char. 604: T --> C
Char. 631: C --> T
Char. 661: T --> C
Char. 682: T --> C
Char. 691: C --> T
Char. 692: C --> T
Char. 697: C --> T
Char. 706: C --> T
Char. 712: C --> T
Char. 745: T --> A
Char. 752: C --> T
Char. 760: A --> G
Char. 805: T --> C
Char. 853: T --> C
Char. 886: G --> A
Char. 904: C --> T
Char. 928: C --> T
Char. 958: A --> T
Char. 967: C --> T
Char. 970: C --> T

Char. 979: C --> T
Char. 1006: C --> T
Char. 1019: T --> C
Char. 1021: A --> T
Char. 1024: C --> T
Char. 1045: C --> T
Char. 1063: T --> A
Char. 1105: C --> T
Char. 1106: A --> T
Char. 1118: T --> C
Char. 1123: T --> C
Char. 1129: T --> C
Char. 1136: T --> C
Char. 1138: A --> T
Char. 1156: T --> C
Char. 1165: C --> T
Char. 1171: C --> T
Char. 1219: C --> T
Char. 1270: T --> C
Char. 1367: A --> G
Char. 1368: C --> T
Char. 1369: C --> T
Char. 1375: T --> C
Char. 1441: C --> A
Char. 1510: C --> T
Char. 1519: G --> T
Char. 1531: C --> T
Char. 1564: T --> G
Char. 1582: T --> A
Char. 1601: C --> T
Char. 1663: T --> C
Char. 1684: T --> C
Char. 1708: T --> C
Char. 1780: A --> T
Char. 1804: A --> T
Char. 1810: G --> C
Char. 1843: T --> A
Char. 1936: A --> T
Char. 1945: T --> C
Char. 2017: A --> G
Char. 2053: C --> T
Char. 2062: A --> CT
Char. 2104: T --> A
Char. 2110: C --> T
Char. 2122: C --> T
Char. 2125: T --> G
Char. 2168: A --> T
Char. 2239: A --> C
Char. 2245: G --> A
Char. 2293: C --> A
Char. 2449: G --> A
Char. 2458: C --> T
Char. 2591: C --> T
Char. 2596: A --> T
Char. 2686: G --> A
Char. 2713: T --> A
Char. 2722: G --> A
Char. 2812: G --> C
Char. 2866: A --> G
Char. 3583: G --> A
Char. 6315: A --> T
Char. 6328: A --> C
Char. 6344: A --> T
Char. 6368: C --> T
Char. 6445: T --> A
Char. 6463: C --> T
Char. 6514: T --> A
Nematocharax venustus :
Lateral_line (123): (0)_complete -->
(1)_interrupted
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Extent_of_implantation_of_teeth_along_maxilla
(191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lam
ella
Abrupt_decrease_in_size_of_dentary_teeth
(207): (1)_present --> (0)_absent
Number_of_gill_rakers_on_first_hypobranchial_an
d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Bony_hooks_on_fin_rays (440): (0)_absent -->
(1)_present_in_adult_males
Char. 1567: A --> C
Char. 1573: G --> A
Char. 1600: C --> T
Char. 1642: T --> C
Char. 1645: T --> C
Char. 1720: T --> C
Char. 1741: C --> T
Char. 1786: C --> T
Char. 1798: A --> G
Char. 1804: A --> C
Char. 1816: A --> G
Char. 1840: C --> T
Char. 1846: C --> T
Char. 1859: G --> A
Char. 1915: A --> C
Char. 1921: T --> A
Char. 2023: G --> A
Char. 2024: C --> T
Char. 2036: G --> A
Char. 2074: A --> T
Char. 2107: C --> T
Char. 2125: G --> A
Char. 2128: A --> C
Char. 2134: A --> G
Char. 2149: T --> C
Char. 2257: G --> A
Char. 2431: T --> C
Char. 2584: T --> C
Char. 3703: C --> T
Char. 3727: G --> A
Char. 3748: T --> C
Char. 3778: G --> A
Char. 3787: A --> T
Char. 3865: C --> T
Char. 3901: T --> C
Char. 3985: C --> T
Char. 4018: G --> A
Char. 4060: C --> T
Char. 4132: C --> T
Char. 4252: G --> A
Char. 4286: A --> T
Char. 4309: G --> A
Char. 4325: A --> G
Char. 4351: A --> G
Char. 4358: C --> A
Char. 4567: T --> G
Char. 4582: A --> G
Char. 4645: C --> G
Char. 4648: T --> C
Char. 4684: C --> T
Char. 4721: A --> T
Char. 4785: T --> A
Char. 4851: G --> A
Char. 5022: C --> T
Char. 5060: C --> A
Char. 5079: C --> T
Char. 5235: C --> T
Char. 5406: T --> C
Char. 5463: G --> A
Char. 5505: G --> A
Char. 5643: C --> A
Char. 6183: A --> G
Char. 6253: A --> G
Char. 6307: T --> C
Char. 6314: C --> A
Char. 6317: A --> T
Char. 6322: C --> T
Char. 6330: T --> A
Char. 6353: A --> T
Char. 6361: A --> G
Char. 6362: C --> T
Char. 6363: T --> A
Char. 6377: T --> C
Char. 6378: G --> T
Char. 6388: C --> T
Char. 6408: G --> A
Char. 6420: C --> T
Char. 6438: A --> T
Char. 6462: G --> A
Char. 6508: A --> G
Char. 6589: G --> A
Char. 6636: C --> T
Odontostilbe microcephala :
Laterosensory_canal_of_sixth_infraorbital (99):
(0)_not_branched --> (1)_branched
Lateroventral_expansion_of_ectopterygoid
(214):
(0)_absent_articulating_almost_exclusively_with_
cartilage_of_palatine -->
(1)_present_expanded_twice_length_of_palatine_c
artilage
Number_of_notches_along_ventral_border_of_ante
rior_ceratohyal (264): (0)_zero_to_two -->
(1)_three
Rows_of_gill_rakers_on_first_ceratobranchial
(291): (0)_one --> (1)_two
Odontostilbe paraguayensis :
Number_of_vertebrae (325): (1)_34_or_more --
> (0)_up_to_33
Char. 559: C --> T
Char. 562: C --> A
Char. 691: C --> T
Char. 730: T --> C
Char. 751: C --> A
Char. 886: T --> C
Char. 1258: A --> G
Char. 1261: C --> T
Char. 1336: A --> G
Char. 1441: C --> T
Char. 2233: G --> A
Char. 2237: G --> T
Char. 2284: A --> G
Char. 2395: C --> T
Char. 2444: G --> A
Char. 2791: T --> G
Char. 3458: G --> T
Char. 3466: C --> T
Char. 3467: G --> A
Char. 3523: G --> A
Char. 3652: T --> C
Char. 3814: A --> G
Char. 3901: T --> A
Char. 4262: C --> T
Char. 4366: C --> T
Char. 4484: G --> C
Char. 4555: C --> T
Char. 4630: C --> G
Char. 4679: A --> T
Char. 4684: C --> T
Char. 4700: C --> T
Char. 4902: T --> C
Char. 5367: C --> A
Char. 5421: C --> T
Char. 6122: G --> A
Char. 6251: T --> A
Char. 6306: C --> T
Char. 6307: C --> T
Char. 6342: G --> A
Char. 6352: T --> C
Char. 6402: G --> A
Char. 6413: C --> T
Char. 6453: A --> G
Char. 6457: G --> A
Char. 6462: A --> G
Char. 6485: T --> A
Holoshesthes pequiria :
Length_of_maxilla_relative_to_dentary (145):
(1)_maxilla_not_reaching_posterior_end_of_Meck
elian_cartilage -->
(0)_maxilla_reaching_posterior_end_of_Meckelian
_cartilage
Odontostoechus lethostigmus :
Paired_foramina_on_anterior_process_of_mesethm
oid (4): (0)_absent --> (1)_present
Anterior_convergence_of_ventral_diverging_lamell
ae_with_nasal_septum_of_mesethmoid (8):
(1)_confluent_at_posterior_end_of_nasal_septum --
>

(0)_absent_or_confluent_near_anterior_end_of_nasal_septum
 Margins_of_toothed_region_of_maxilla (140):
 (0)_roughly_parallel --> (1)_dorsally_divergent

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
 (0)_with_cusps_forming_anteriorly_concave_arch --> (1)_with_cusps_aligned_in_straight_series
 Char. 1598: C --> T
 Char. 1687: G --> A
 Char. 1690: C --> A
 Char. 1825: A --> G
 Char. 1861: G --> A
 Char. 1913: T --> C
 Char. 1972: A --> G
 Char. 2035: C --> T
 Char. 2083: G --> A
 Char. 2098: A --> G
 Char. 2110: C --> T
 Char. 2140: C --> T
 Char. 2794: A --> G
 Char. 3712: A --> G
 Char. 4093: G --> A
 Char. 4288: A --> T
 Char. 4642: G --> T
 Char. 4646: A --> T
 Char. 4663: A --> G
 Char. 4679: A --> C
 Char. 6301: T --> C
 Char. 6361: C --> A
 Char. 6441: T --> C
 Char. 6511: C --> T
 Oligosarcus_bolivianus :

Anterior_extension_of_anguloarticular_laterosensory_canal (106):
 (1)_reaching_vertical_through_Meckelian_cartilage -->
 (0)_not_reaching_vertical_through_Meckelian_cartilage
 Cartilage-filled_space_anterior_to_scapular_foramen (360):
 (0)_present_wider_than_anterior_process_of_scapula -->
 (1)_much_reduced_by_expansions_of_coracoid_and_cleithrum
 Anterior_tip_of_pelvic_bone (376):
 (1)_posterior_to_second_rib -->
 (0)_anterior_to_second_rib
 Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more
 Oligosarcus_itaui :

Posterior_branch_of_posttemporal_laterosensory_canal (120): (1)_absent --> (0)_present
 Oligosarcus_jenynsii :

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
 (0)_attached_to_middle_region_of_second_pharyngobranchial -->
 (1)_attached_near_anterior_margin_of_second_pharyngobranchial
 Main_axis_of_supraneurals (396):
 (1)_at_least_some_of_them_distally_bifurcated -->
 (0)_not_bifurcated
 Oligosarcus_longirostris :

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
 (0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids
 Foramen_on_articular_condyle_of_quadrate (230): (0)_absent --> (1)_present
 Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent

Form_and_degree_of_ossification_of_first_ceratobranchial_gill_rakers (299):
 (0)_laminar_and_not_ossified_distally -->

(1)_rather_thick_and_completely_ossified_distal_region
 Rows_of_gill_rakers_on_first_epibranchial (302): (1)_two --> (0)_one
 Transitional_vertebrae_with_haemal_canal (332): (0)_absent_or_just_one --> (1)_two_or_more
 Form_of_third_postcleithrum (364):
 (1)_with_a_posterior_lamella -->
 (0)_slender_without_associated_lamella
 Anterior_tip_of_pelvic_bone (377):
 (0)_anterior_to_third_rib -->
 (1)_posterior_to_third_rib
 Number_of_supraneurals (394):
 (0)_six_or_fewer --> (1)_seven_or_more
 Oligosarcus_menezesi :

Articulation_between_ventral_margin_of_metapterygoid_and_posterodorsal_margin_of_quadrate (229): (0)_absent --> (1)_present
 Urohyal_lateral_processes (305):
 (0)_well_developed -->
 (1)_as_expanded_as_anterior_region_of_bone_or_less
 Oligosarcus_pintoi :
 Anterior_extension_of_nasal (11):
 (1)_projecting_mesethmoid_wing_longer_than_nasal_width -->
 (0)_extending_slightly_anterior_to_mesethmoid_wing
 Temporal_fossa (51): (0)_well_developed -->
 (1)_absent_or_much_reduced

Position_of_longitudinal_cartilage_dorsal_to_ectopterygoid (219):
 (1)_displaced_laterally_and_separated_from_mesopterygoid -->
 (0)_bordered_medially_by_mesopterygoid
 Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
 Number_of_branched_anal-fin_rays (420):
 (0)_24_or_fewer --> (1)_25_or_more
 Uroneurals (427): (1)_two_pairs -->
 (0)_absent_or_just_one_pair
 Char. 1777: C --> T
 Char. 1921: A --> G
 Char. 2065: A --> G
 Orthospinus_franciscensis :
 Relative_length_of_frontal_fontanel (29):
 (1)_3/4_or_more_of_length_of_parietal_fontanel --> (0)_up_to_2/3_length_of_parietal_fontanel

Alignment_of_cusps_of_medial_teeth_on_inner_premaxillary_row (179):
 (1)_forming_shallow_arch_or_aligned_in_straight_series -->
 (0)_forming_anteriorly_concave_semicircle_from_ventral_view
 Posterior_margin_of_cleithrum (341):
 (0)_without_concavity_ventral_to_first_postcleithrum -->
 (1)_with_concavity_ventral_to_first_postcleithrum

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
 Char. 2224: T --> G
 Char. 2248: C --> T
 Char. 2344: G --> A
 Char. 3490: C --> T
 Char. 3703: C --> T
 Char. 3715: G --> A
 Char. 4033: G --> T
 Char. 4243: G --> A
 Char. 4375: A --> G
 Char. 4417: G --> A
 Char. 4555: G --> A
 Char. 4782: C --> T
 Char. 4926: C --> T
 Char. 5358: C --> T
 Char. 5361: T --> A
 Char. 5362: G --> A
 Char. 5364: T --> A
 Char. 5373: T --> C
 Char. 5514: C --> T

Char. 5580: C --> A
 Char. 5601: T --> C
 Char. 5672: A --> G
 Char. 6299: A --> G
 Char. 6326: T --> A
 Char. 6328: A --> G
 Char. 6334: A --> G
 Char. 6343: C --> T
 Char. 6382: T --> C
 Char. 6408: A --> G
 Char. 6432: A --> T
 Char. 6443: C --> T
 Char. 6444: T --> C
 Char. 6445: C --> T
 Char. 6458: C --> T
 Char. 6493: A --> T
 Char. 6499: G --> A
 Char. 6567: G --> A
 Paleotetra_entrecorregos :
 No autapomorphies
 Paleotetra_aiuruoca :
 No autapomorphies
 Paracheirodon_axelrodi :
 Foramen_ventral_lamella_of_supraoccipital (63): (0)_absent -->
 (1)_with_a_large_foramen_or_concavity_posteriorly_open

Expansion_of_lamellar_portion_of_maxilla_just_posterior_to_toothed_region (141):
 (0)_absent_or_not_pronounced -->
 (1)_very_pronounced
 Number_of_maxillary_teeth (189):
 (1)_two_or_more --> (0)_only_one_or_absent
 Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
 Char. 620: A --> G
 Char. 637: C --> T
 Char. 658: C --> T
 Char. 679: C --> T
 Char. 739: A --> G
 Char. 742: C --> T
 Char. 772: C --> T
 Char. 805: C --> T
 Char. 817: C --> T
 Char. 832: C --> T
 Char. 850: C --> A
 Char. 854: A --> G
 Char. 931: C --> T
 Char. 943: T --> C
 Char. 949: T --> C
 Char. 951: T --> C
 Char. 982: A --> T
 Char. 1009: C --> T
 Char. 1013: G --> A
 Char. 1018: C --> T
 Char. 1066: C --> T
 Char. 1090: T --> C
 Char. 1120: A --> G
 Char. 1171: C --> T
 Char. 1216: T --> C
 Char. 1237: A --> G
 Char. 1249: A --> G
 Char. 1255: C --> T
 Char. 1270: T --> C
 Char. 1276: C --> T
 Char. 1288: A --> G
 Char. 1331: T --> C
 Char. 1339: C --> T
 Char. 1345: C --> T
 Char. 1355: T --> C
 Char. 1357: C --> T
 Char. 1372: A --> G
 Char. 1385: A --> G
 Char. 1386: T --> C
 Char. 1441: C --> G
 Char. 1453: C --> A
 Char. 1454: G --> A
 Char. 1503: T --> A
 Char. 1504: A --> C

Char. 1505: G --> A
Char. 1513: T --> C
Char. 1618: T --> C
Char. 1621: T --> C
Char. 1702: A --> G
Char. 1703: C --> T
Char. 1711: A --> G
Char. 1712: C --> T
Char. 1723: T --> C
Char. 1732: T --> C
Char. 1792: T --> AG
Char. 1804: A --> C
Char. 1822: G --> A
Char. 1828: A --> T
Char. 1849: C --> A
Char. 1897: T --> C
Char. 1918: C --> T
Char. 1934: C --> T
Char. 1954: T --> C
Char. 1957: A --> G
Char. 1996: C --> T
Char. 2026: A --> CT
Char. 2053: A --> G
Char. 2074: A --> T
Char. 2095: C --> T
Char. 2098: A --> T
Char. 2110: C --> T
Char. 5049: C --> T
Char. 5364: T --> C
Char. 5452: G --> A
Char. 5484: A --> G
Char. 5697: C --> T
Char. 5864: T --> C
Char. 5866: C --> T
Char. 5902: G --> A
Char. 5911: A --> T
Char. 5938: C --> A
Char. 5978: G --> A
Char. 6005: C --> T
Char. 6016: C --> T
Char. 6048: T --> C
Char. 6049: A --> G
Char. 6294: C --> T
Char. 6408: G --> A

Paragoniates_alburnus :
Number_of_teeth_on_inner_premaxillary_row
(182): (1)_six_or_more --> (0)_five_or_fewer

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial

Neural_prezygapophyses_of_fifth vertebra
(329): (0)_not_reaching_fourth_vertebra -->
(1)_reaching_fourth_vertebra

Development_of_medial_lamella_of_coracoid
(346): (0)_not_expanded -->
(1)_expanded_as_a_keel

Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-fin_base -->
(1)_several_rows_covering_basal_third_of_anal_fin

Char. 580: C --> A
Char. 583: C --> A
Char. 604: T --> C
Char. 625: C --> T
Char. 634: A --> T
Char. 649: C --> T
Char. 676: AC --> T
Char. 709: C --> T
Char. 733: T --> C
Char. 739: A --> T
Char. 844: A --> T
Char. 886: G --> T
Char. 895: T --> A
Char. 928: C --> A
Char. 958: A --> G
Char. 967: C --> T
Char. 982: A --> C
Char. 1000: C --> T

Char. 1012: A --> C
Char. 1021: A --> T
Char. 1027: A --> T
Char. 1051: C --> T
Char. 1054: C --> G
Char. 1090: T --> A
Char. 1094: C --> A
Char. 1098: C --> T
Char. 1099: A --> T
Char. 1100: G --> T
Char. 1101: C --> T
Char. 1106: G --> A
Char. 1107: C --> T
Char. 1111: C --> A
Char. 1138: T --> C
Char. 1174: T --> C
Char. 1216: T --> C
Char. 1219: C --> T
Char. 1267: C --> T
Char. 1318: T --> C
Char. 1324: A --> G
Char. 1333: A --> T
Char. 1345: C --> T
Char. 1348: T --> A
Char. 1357: C --> T
Char. 1396: A --> C
Char. 1405: A --> G
Char. 1414: C --> T
Char. 2239: A --> T
Char. 2629: C --> T
Char. 2761: C --> T
Char. 2791: T --> C
Char. 2794: G --> A
Char. 2839: C --> G
Char. 3501: C --> T
Char. 3530: A --> G
Char. 3574: G --> A
Char. 3598: G --> A
Char. 3712: A --> G
Char. 3715: G --> A
Char. 3796: C --> T
Char. 3802: C --> T
Char. 3859: T --> C
Char. 3994: C --> A
Char. 4018: G --> A
Char. 4082: C --> A
Char. 4180: T --> C
Char. 4205: C --> A
Char. 4279: C --> T
Char. 4318: T --> A
Char. 4376: G --> A
Char. 4398: A --> G
Char. 4417: G --> A
Char. 4474: A --> G
Char. 4477: G --> A
Char. 4517: C --> T
Char. 4519: G --> A
Char. 4576: A --> T
Char. 4618: C --> T
Char. 4645: C --> T
Char. 4720: C --> T
Char. 4722: C --> T
Char. 4732: C --> T
Char. 4818: A --> G
Char. 4871: C --> T
Char. 4899: T --> A
Char. 5031: C --> T
Char. 5043: C --> T
Char. 5217: A --> C
Char. 5259: C --> A
Char. 5619: A --> G
Char. 5628: C --> T
Char. 5669: G --> T
Char. 5740: C --> G
Char. 6183: A --> G
Char. 6209: C --> T
Char. 6227: C --> T
Char. 6245: A --> G
Char. 6331: A --> T
Char. 6357: A --> G
Char. 6379: T --> C
Char. 6383: G --> T
Char. 6402: G --> A

Char. 6424: T --> C
Char. 6433: T --> C
Char. 6446: A --> T
Char. 6452: A --> G
Char. 6463: G --> A

Parecbasis_cyclolepis :
Anterior_extension_of_nasal (11):
(1)_projecting_mesethmoid_wing_longer_than_nasal_width -->
(0)_extending_slightly_anterior_to_mesethmoid_wing

Articulation_between_second_and_third_infraorbitals (86): (0)_vertical --> (1)_anteroventrally_angled

Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_than_dorsoventrally

Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94):
(1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa -->
(0)_almost_complete,_at_least_in_its_ventral_border

Anterior_extension_of_anguloarticular_laterosensory_canal (106):
(0)_not_reaching_vertical_through_Meckelian_cartilage -->
(1)_reaching_vertical_through_Meckelian_cartilage

Posterior_pore_of_apterotic_canal (119):
(1)_in_a_vertical_line_through_ventral_apterotic_pore -->
(0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal

Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage

Lateral_ridge_of_anguloarticular (160):
(0)_absent --> (1)_present

Number_of_rows_of_premaxillary_teeth (170):
(1)_two_or_three --> (0)_one

Number_of_teeth_on_inner_premaxillary_row (183): (0)_six_or_fewer --> (1)_seven_or_more

Number_of_teeth_on_inner_premaxillary_row (184): (0)_seven_or_fewer --> (1)_eight_or_more

Number_of_dentary_teeth_on_outer_row (198):
(1)_ten_or_more --> (0)_eight_or_fewer

Size_and_number_of_anterior_dentary_teeth (199):
(0)_four_or_five_relatively_broad_teeth_at_front_of_dentary -->
(1)_eight_or_more_small_and_slender_teeth_at_front_of_dentary

Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer

Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two

Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two

Transitional vertebrae_with_haemal_canal (332): (0)_absent_or_just_one --> (1)_two_or_more

Lateral_lamella_of_pelvic_bone (373):
(0)_absent_or_reduced_to_posterior_third_of_bone --> (1)_present_and_reaching_two_thirds_of_bone

Main_axis_of_supraneurals (396):
(0)_not_bifurcated -->
(1)_at_least_some_of_them_distally_bifurcated

Parodon_nasus :

Ventral_expansion_of_lateral_lamella_of_cleithrum (345):
(0)_covering_part_of_scapular_foramen_from_lateral_view -->
(1)_following_dorsal_margin_of_scapular_foramen_from_lateral_view

Char. 586: A --> G
Char. 637: C --> T
Char. 649: C --> T

Char. 658: C --> T
Char. 694: C --> G
Char. 712: C --> T
Char. 721: A --> G
Char. 745: A --> G
Char. 772: C --> T
Char. 775: G --> T
Char. 781: C --> T
Char. 793: A --> G
Char. 808: C --> T
Char. 856: A --> G
Char. 859: A --> T
Char. 862: C --> T
Char. 871: A --> G
Char. 943: A --> G
Char. 967: A --> G
Char. 988: C --> T
Char. 1015: A --> G
Char. 1054: C --> T
Char. 1066: C --> T
Char. 1078: A --> G
Char. 1084: T --> C
Char. 1102: C --> T
Char. 1132: C --> T
Char. 1207: C --> T
Char. 1264: A --> T
Char. 1288: AC --> G
Char. 1306: A --> G
Char. 1318: A --> C
Char. 1354: A --> G
Char. 1360: A --> G
Char. 1459: C --> G
Char. 1504: A --> G
Char. 1570: T --> C
Char. 1657: T --> C
Char. 1675: A --> G
Char. 1684: T --> C
Char. 1702: A --> G
Char. 1714: A --> C
Char. 1729: C --> G
Char. 1735: G --> A
Char. 1753: T --> C
Char. 1864: C --> T
Char. 1865: C --> T
Char. 1915: T --> G
Char. 1918: C --> A
Char. 1933: T --> C
Char. 1963: T --> C
Char. 1987: C --> T
Char. 2002: C --> T
Char. 2026: A --> G
Char. 2032: A --> G
Char. 2089: A --> G
Char. 2119: T --> C
Char. 2128: A --> G
Char. 2152: C --> T
Char. 2275: C --> T
Char. 2527: C --> T
Char. 2582: A --> T
Char. 2722: G --> A
Char. 2752: C --> T
Char. 2782: T --> G
Char. 3581: T --> A
Char. 3640: T --> C
Char. 3657: T --> C
Char. 3661: C --> G
Char. 4435: G --> C
Char. 4459: C --> T
Char. 6321: A --> G
Char. 6329: T --> C
Char. 6345: A --> G
Char. 6415: A --> G
Char. 6424: T --> C
Char. 6515: A --> G
Char. 6565: C --> T

Petitella georgiae :
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage
Number_of_teeth_on_inner_premaxillary_row (182): (0)_five_or_fewer --> (1)_six_or_more

Number_of_teeth_on_inner_premaxillary_row (183): (0)_six_or_fewer --> (1)_seven_or_more
Number_of_teeth_on_inner_premaxillary_row (184): (0)_seven_or_fewer --> (1)_eight_or_more
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer

Contact_between_dorsal_margin_of_adductor_mandibulae_and_ventral_margin_of_dilatator_operculi (480): (1)_present --> (0)_absent
Phenacogaster franciscoensis :
Relative_length_of_frontal_fontanel (29):
(1)_3/4_or_more_of_length_of_parietal_fontanel --> (0)_up_to_2/3_length_of_parietal_fontanel

Longitudinal_ridge_covering_laterosensory_pores_of_dentary (157): (0)_absent --> (1)_present

Posterior_extent_of_ventral_process_of_quadrate (234):
(1)_falling_short_of_posterior_margin_of_symplectic -->
(0)_reaching_vertical_through_posterior_margin_of_symplectic

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_cleithrum
Char. 1521: T --> C
Char. 1525: T --> C
Char. 1552: A --> C
Char. 1594: A --> G
Char. 1684: T --> C
Char. 1699: C --> T
Char. 1717: A --> G
Char. 1765: C --> T
Char. 1786: C --> T
Char. 1822: A --> G
Char. 1846: C --> T
Char. 1915: A --> G
Char. 1957: A --> G
Char. 2038: C --> T
Char. 2074: A --> G
Char. 2092: A --> T
Char. 2137: A --> G

Phenacogaster tegatus :
Lateral_line (123): (0)_complete -->
(1)_interrupted
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_less

Haemal_prezygapophysis_on_anterior_caudal_vertebrae (333): (0)_present --> (1)_completely_absent
Number_of_supraneurals (392):
(0)_four_or_fewer --> (1)_five_or_more
Main_axis_of_supraneurals (396):
(0)_not_bifurcated -->
(1)_at_least_some_of_them_distally_bifurcated
Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Number_of_branched_anal-fin_rays (421):
(0)_34_or_fewer --> (1)_35_or_more
Pelvic-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (442): (1)_present --> (0)_absent
Pectoral-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (443): (0)_absent --> (1)_present
Phenagoniates macrolepis :

Foramen_on_ventral_lamella_of_supraoccipital (63): (0)_absent -->
(1)_with_a_large_foramen_or_concavity_posteriorly_open

Position_of_opening_on_neurocranium_communicating_with_laterosensory_canal_of_sixth_infraorbital (101): (1)_in_frontal -->
(0)_between_frontal_and_pterotic
Parietal_branch_of_laterosensory_canal (116):
(0)_present_reaching_parietal_bone_or_not -->
(1)_completely_absent

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent

Cartilage_from_second_epibranchial_to_third_pharyngobranchial (279):
(0)_attached_to_middle_region_of_third_pharyngobranchial -->
(1)_attached_to_anterior_margin_of_third_pharyngobranchial
Anterior_development_of_first_uroneural (428): (0)_reaching_anterior_half_of_urostyle -->
(1)_restricted_to_posterior_half_of_urostyle
Circuli_on_posterior_field_of_scales (456):
(1)_absent --> (0)_present
Radii_on_scales (458):
(1)_present_and_numerous_on_most_scales -->
(0)_absent_or_reduced_in_number
Adipose_fin (512): (0)_present --> (1)_absent
Char. 2225: G --> A
Char. 2481: A --> G
Char. 2512: G --> A
Char. 2635: A --> G
Char. 2662: G --> A
Char. 2704: G --> A
Char. 2738: A --> T
Char. 3487: C --> T
Char. 3640: A --> T
Char. 3844: A --> G
Char. 3851: C --> A
Char. 3988: C --> T
Char. 4036: G --> A
Char. 4045: G --> A
Char. 4051: C --> T
Char. 4096: G --> T
Char. 4255: A --> C
Char. 4651: G --> A
Char. 4887: C --> T
Char. 4890: C --> T
Char. 5076: A --> T
Char. 5130: T --> G
Char. 5169: C --> A
Char. 5214: C --> T
Char. 5220: T --> C
Char. 5257: G --> A
Char. 5496: T --> C
Char. 5553: C --> G
Char. 5742: C --> T
Char. 6302: C --> T
Char. 6306: C --> T
Char. 6310: G --> A
Char. 6321: A --> T
Char. 6322: C --> G
Char. 6329: T --> C
Char. 6332: A --> C
Char. 6342: G --> T
Char. 6345: C --> G
Char. 6348: A --> T
Char. 6352: C --> A
Char. 6353: A --> C
Char. 6373: G --> T
Char. 6403: C --> T
Char. 6412: A --> G
Char. 6435: G --> A
Char. 6436: G --> A
Char. 6446: A --> C
Char. 6448: C --> T
Char. 6531: C --> A
Char. 6641: C --> A
Piabarchus analis :

Lateral expansion of middle region of ectopterygoid (215):
(0)_not_expanded_lateral_to_lateral_ethmoid -->
(1)_expanded_lateral_to_lateral_ethmoid_and_reaching_infraorbitals

Bony lamellae between second and third basibranchials (274): (1)_present --> (0)_absent
Bony lamella dorsal to fourth basibranchial (275): (0)_present --> (1)_absent

Cartilage from first epibranchial to second pharyngobranchial (278):
(0)_attached_to_middle_region_of_second_pharyngobranchial -->
(1)_attached_near_anterior_margin_of_second_pharyngobranchial
Number of branched pelvic-fin rays (384):
(1)_seven_or_more --> (0)_six_or_less
Position of last supraneural (398):
(0)_two_or_fewer_vertebrae_in_front_of_first_dorsal_ptyerygiophore -->
(1)_more_than_two_vertebrae_in_front_of_first_dorsal_ptyerygiophore
Anal-fin position (415):
(0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray -->
(1)_extended_anteriorly_ventral_to_dorsal_fin
Number of branched anal-fin rays (420):
(0)_24_or_fewer --> (1)_25_or_more
Anal-fin hooks in adult males of species bearing hooks on fins (441): (1)_present --> (0)_absent

Fused gill filaments associated with gland cells (511): (1)_present --> (0)_absent
Char. 3469: A --> G
Char. 3592: C --> T
Char. 3778: A --> C
Char. 3826: G --> A
Char. 3901: G --> A
Char. 3925: G --> A
Char. 4109: C --> T
Char. 4297: C --> T
Char. 4333: G --> A
Char. 4597: A --> G
Char. 5346: T --> C
Char. 5405: G --> C
Char. 5742: C --> T
Piabina argentea :

Ventral projection of mesethmoid spine, forming a keel between premaxillae (2): (0)_absent -->
(1)_present

Anterior convergence of ventral diverging lamellae with nasal septum of mesethmoid (8):
(1)_confluent_at_posterior_end_of_nasal_septum -->
(0)_absent_or_confluent_near_anterior_end_of_nasal_septum
Anterior extension of nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_width -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width

Position of sphenotic spine relative to hyomandibula (49):
(0)_rather_aligned_with_anterior_margin_of_hyomandibula -->
(1)_displaced_anteriorly_relative_to_anterior_margin_of_hyomandibula
Development of sagittal capsule (69):
(0)_not_reaching_posterior_margin_of_lagenar_capsule -->
(1)_reaching_or_surpassing_posterior_margin_of_lagenar_capsule
Fourth infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals -->

(1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series

Ligament from maxilla to distal tip of premaxillary alveolar arm (137):
(0)_weak_premaxilla_moderately_bifurcated_in_its_attachment_point -->
(1)_strong_premaxilla_deeply_bifurcated_in_its_attachment_point
Premaxillary dentition (168):
(0)_one_or_more_series_of_similar_teeth -->
(1)_with_a_recognizable_triad_of_larger_teeth_within_rounded_base
Number of rows of premaxillary teeth (171):
(0)_one_or_two --> (1)_three

Position of lateralmost tooth from outer premaxillary row (176):
(1)_aligned_with_remaining_teeth_of_that_row -->
(0)_anteriorly_displaced_relative_to_remaining_teeth_of_that_row

Alignment of cusps of medial teeth on inner premaxillary row (179):
(1)_forming_shallow_arch_or_aligned_in_straight_series -->
(0)_forming_anteriorly_concave_semicircle_from_ventral_view
Number of cusps of anterior dentary teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Relative length of palatine (209):
(1)_distinctly_longer_than_one_half_length_of_ectopterygoid -->
(0)_approximately_one_half_length_of_ectopterygoid_or_less

Contact between lamella on anterior portion of first basibranchial with lamella on posterior portion of second basibranchial (273): (0)_absent -->
(1)_present

Relative length of dentigerous regions of fourth and fifth epibranchials (286):
(1)_that_of_fourth_epibranchial_longer -->
(0)_about_same_length_or_that_of_fifth_epibranchial_longer

Number of gill rakers on first hypobranchial and ceratobranchial (295): (1)_ten_or_fewer -->
(0)_11_or_more
Denticles on gill rakers (300): (0)_present -->
(1)_absent
Neural prezygapophyses of fifth vertebra (329): (0)_not_reaching_fourth_vertebra -->
(1)_reaching_fourth_vertebra
Transitional vertebrae with haemal canal (331): (0)_present --> (1)_absent
Posterior margin of cleithrum (342):
(0)_with_concavity_poorly_pronounced_or_lacking -->
(1)_with_markedly_concave_margin_almost_forming_straight_angle
Squamation of isthmus (464):
(1)_with_only_one_row_or_a_triad_of_scales -->
(0)_with_two_or_more_rows_of_scales

Longitudinal position of insertion of mandibular accessory tendon (475):
(0)_ventral_to_Meckelian_cartilage -->
(1)_anterior_to_Meckelian_cartilage
Posterior region of levator arcus palatini (482):
(0)_limited_by_adductor_mandibulae_and_adductor_arcus_palatini -->
(1)_limited_by_A2_and_A3_sections_of_adductor_mandibulae
Char. 5864: T --> C
Char. 5866: T --> C
Char. 5925: A --> G
Char. 6003: A --> G
Char. 6048: C --> T
Char. 6306: C --> T
Char. 6377: C --> T

Char. 6493: A --> T
Char. 6528: A --> G
Piabucus melanostoma :
Posterior extension of vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection

Posterior laminar expansion of epiphyseal bar (33): (0)_absent --> (1)_present
Posterior extension of supraoccipital spine (62):
(1)_reaching_only_to_anterior_limit_of_neural_complex -->
(0)_reaching_at_least_to_middle_length_of_neural_complex
Posterior extent of third infraorbital (89):
(0)_covering_angle_of_preopercle -->
(1)_reduced_angle_of_preopercle_covered_partially_by_fourth_one
Number of rows of premaxillary teeth (170):
(1)_two_or_three --> (0)_one
Number of teeth on inner premaxillary row (182): (0)_five_or_fewer --> (1)_six_or_more

Bony lamellae between second and third basibranchials (274): (1)_present --> (0)_absent
Form of posterior margin of cleithrum (340):
(0)_convex_or_slightly_sinuous_just_dorsal_to_pectoral-fin_insertion -->
(1)_with_notch_just_anterior_to_pectoral-fin_insertion
Development of medial lamella of coracoid (346): (0)_not_expanded -->
(1)_expanded_as_a_keel
Third postcleithrum (363): (0)_present -->
(1)_absent

Anterior extension of pelvic bone along main axis (370):
(0)_not_projecting_anterior_of_lateral_and_medial_lamellae -->
(1)_projecting_anterior_of_lateral_and_medial_lamellae_of_pelvic_bone
Position of anteriormost epineurals (388):
(0)_lateral_to_fourth_or_fifth_vertebrae -->
(1)_reaching_to_cranium
Number of dorsal pterygiophores (400):
(1)_10_or_more --> (0)_nine_or_fewer
Number of branched rays on dorsal fin (409): (1)_nine_or_more --> (0)_eight_or_fewer
Anal-fin position (415):
(0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray -->
(1)_extended_anteriorly_ventral_to_dorsal_fin
Anal-fin position (416):
(0)_posterior_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Number of branched anal-fin rays (421):
(0)_34_or_fewer --> (1)_35_or_more
Sheath of scales covering anal-fin base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more

Contact between dorsal margin of adductor mandibulae and ventral margin of dilatator operculi (480): (1)_present --> (0)_absent
Char. 523: T --> C
Char. 529: A --> T
Char. 535: A --> C
Char. 544: C --> A
Char. 586: A --> T
Char. 587: G --> A
Char. 604: C --> T
Char. 609: A --> G
Char. 612: A --> G
Char. 616: C --> A
Char. 631: C --> T
Char. 640: C --> A

Char. 643: C --> T
Char. 712: A --> T
Char. 724: A --> C
Char. 736: A --> C
Char. 757: A --> T
Char. 763: A --> G
Char. 778: C --> A
Char. 781: C --> T
Char. 787: C --> T
Char. 790: A --> T
Char. 796: A --> C
Char. 802: A --> G
Char. 844: T --> C
Char. 847: C --> A
Char. 850: A --> C
Char. 871: A --> T
Char. 880: T --> C
Char. 889: A --> G
Char. 946: A --> C
Char. 958: A --> T
Char. 961: A --> T
Char. 964: A --> C
Char. 982: A --> T
Char. 997: A --> C
Char. 1012: A --> T
Char. 1018: C --> G
Char. 1081: A --> T
Char. 1096: A --> T
Char. 1105: A --> G
Char. 1117: C --> T
Char. 1118: C --> T
Char. 1126: C --> A
Char. 1132: C --> T
Char. 1138: A --> T
Char. 1156: T --> C
Char. 1174: A --> T
Char. 1180: A --> T
Char. 1204: A --> G
Char. 1210: C --> T
Char. 1237: C --> A
Char. 1240: C --> T
Char. 1243: T --> C
Char. 1249: A --> G
Char. 1255: A --> T
Char. 1258: A --> T
Char. 1291: T --> C
Char. 1297: A --> T
Char. 1303: C --> A
Char. 1309: T --> C
Char. 1333: A --> G
Char. 1345: A --> T
Char. 1346: A --> C
Char. 1369: C --> T
Char. 1375: C --> A
Char. 1378: A --> G
Char. 1384: A --> C
Char. 1385: T --> G
Char. 1393: A --> G
Char. 1402: T --> C
Char. 1411: A --> G
Char. 1432: T --> C
Char. 1450: A --> G
Char. 1453: C --> T
Char. 1455: T --> C
Char. 1457: C --> A
Char. 1462: C --> T
Char. 1474: C --> T
Char. 1477: C --> A
Char. 1483: C --> T
Char. 1492: A --> G
Char. 3451: G --> C
Char. 3464: A --> G
Char. 3493: C --> G
Char. 3505: T --> C
Char. 3508: A --> G
Char. 3523: A --> G
Char. 3532: C --> T
Char. 3619: C --> T
Char. 3625: T --> C
Char. 3650: A --> T
Char. 3652: T --> C
Char. 3733: T --> C
Char. 3748: T --> C

Char. 3877: C --> T
Char. 3889: C --> G
Char. 3892: C --> T
Char. 3896: T --> C
Char. 3904: T --> C
Char. 3949: G --> C
Char. 4003: T --> C
Char. 4036: G --> T
Char. 4123: T --> C
Char. 4132: T --> C
Char. 4231: T --> G
Char. 4288: T --> C
Char. 4315: G --> A
Char. 4321: C --> A
Char. 4360: G --> A
Char. 4363: C --> T
Char. 4401: A --> C
Char. 4447: A --> G
Char. 4502: G --> A
Char. 4543: C --> T
Char. 4588: C --> T
Char. 4606: T --> C
Char. 4621: G --> A
Char. 4663: C --> T
Char. 4687: C --> T
Char. 4690: T --> A
Char. 4702: G --> C
Char. 6119: T --> C
Char. 6161: G --> A
Char. 6168: T --> C
Char. 6181: G --> T
Char. 6183: A --> G
Char. 6194: A --> T
Char. 6205: T --> C
Char. 6253: A --> T
Char. 6286: A --> T
Char. 6298: A --> C
Char. 6300: G --> C
Char. 6301: T --> C
Char. 6326: A --> C
Char. 6327: A --> G
Char. 6329: T --> C
Char. 6334: A --> G
Char. 6374: A --> G
Char. 6382: C --> T
Char. 6471: T --> C
Char. 6475: T --> A
Char. 6484: C --> T
Char. 6485: A --> T
Char. 6493: T --> C
Char. 6513: C --> AG
Char. 6514: T --> C
Char. 6515: A --> C
Char. 6523: C --> T
Char. 6531: C --> T
Char. 6541: T --> A
Char. 6575: A --> C
Piaractus_mesopotamicus :
Char. 796: A --> G
Char. 1088: A --> G
Char. 1895: A --> G
Char. 1898: A --> G
Char. 1917: C --> G
Poptella_paraguayensis :
No autapomorphies
Prionobrama_filigera :
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Anterior_projection_of_dorsal_process_of_scapula
(358): (0)_reaching_medial_lamella_of_cleithrum -
->
(1)_separated_from_medial_lamella_of_cleithrum
Pelvic-
fin_bony_hooks_in_adult_males_of_species_bearin
g_hooks_on_fins (442): (1)_present --> (0)_absent
Char. 640: T --> A
Char. 664: T --> C
Char. 712: T --> G
Char. 752: C --> T
Char. 793: A --> G
Char. 832: C --> T

Char. 838: C --> T
Char. 847: A --> G
Char. 853: C --> T
Char. 862: T --> C
Char. 874: A --> G
Char. 898: A --> T
Char. 911: C --> T
Char. 967: C --> T
Char. 971: C --> T
Char. 979: C --> T
Char. 994: A --> G
Char. 1024: C --> T
Char. 1039: A --> G
Char. 1042: C --> T
Char. 1069: A --> G
Char. 1072: C --> T
Char. 1081: C --> T
Char. 1103: C --> T
Char. 1105: T --> G
Char. 1129: C --> T
Char. 1165: C --> T
Char. 1195: A --> G
Char. 1201: A --> G
Char. 1228: C --> T
Char. 1229: C --> T
Char. 1234: A --> C
Char. 1261: C --> T
Char. 1279: A --> T
Char. 1288: C --> G
Char. 1307: C --> T
Char. 1312: C --> T
Char. 1323: A --> G
Char. 1348: T --> A
Char. 1367: A --> G
Char. 1368: C --> T
Char. 1384: A --> T
Char. 1405: A --> G
Char. 1408: A --> G
Char. 2312: G --> T
Char. 3562: A --> T
Char. 4498: T --> C
Char. 4675: G --> A
Char. 5358: C --> T
Char. 5461: T --> C
Char. 6293: T --> C
Prionobrama_paraguayensis :
Number_of_teeth_on_inner_premaxillary_row
(184): (0)_seven_or_fewer --> (1)_eight_or_more
Form_and_degree_of_ossification_of_first_ceratob
ranchial_gill_rakers (299):
(0)_laminar_and_not_ossified_distally -->
(1)_rather_thick_and_completely_ossified_distal_r
egion
Number_of_dorsal_pterygiophores (400):
(1)_10_or_more --> (0)_nine_or_fewer
Number_of_branched_rays_on_dorsal_fin
(408): (1)_eight_or_more --> (0)_seven_or_fewer
Number_of_branched_rays_on_dorsal_fin
(409): (1)_nine_or_more --> (0)_eight_or_fewer
Number_of_epurals (425): (1)_two_or_three -->
(0)_one
Contact_between_dorsal_margin_of_adductor_man
dibulae_and_ventral_margin_of_dilatator_operculi
(480): (1)_present --> (0)_absent
Char. 889: T --> AC
Char. 949: T --> C
Char. 961: A --> CT
Char. 988: T --> G
Char. 1063: T --> C
Char. 1135: A --> C
Char. 1211: T --> C
Char. 1213: A --> C
Char. 1216: T --> C
Char. 1231: A --> C
Char. 1237: A --> C
Char. 1240: T --> C
Char. 1246: T --> C
Char. 1258: A --> C
Char. 1285: A --> C
Char. 1318: T --> C
Char. 1321: A --> G

Char. 1324: A --> G
Char. 1326: A --> G
Char. 1336: A --> C
Char. 1342: A --> C
Char. 1346: C --> A
Char. 1360: A --> G
Char. 1375: C --> G
Char. 1417: A --> C
Char. 1420: A --> G
Char. 2380: T --> G
Char. 3556: C --> T
Char. 3877: C --> T
Char. 5559: C --> T
Char. 6194: A --> G
Char. 6251: A --> G
Char. 6285: T --> A
Pristella_maxillaris :

Synchondral_articulation_between_lateral_ethmoid_and_anterodorsal_border_of_orbitosphenoid (37):
(1)_absent_with_orbitosphenoid_distant_from_lateral_ethmoid --> (0)_present

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(1)_distant_from_lateral_ethmoids -->
(0)_contacting_or_almost_contacting_lateral_ethmoids
Anterior_paired_projections_of_parasphenoid (43): (1)_present --> (0)_absent
Ventral_ridge_of_prootic (55): (0)_absent -->
(1)_present_from_anterior_margin_of_prootic_to_auditory_foramen

Prootic_foramen_anteromedial_to_auditory_foramen (56): (0)_visible_as_a_pore_lateral_to_myodome -->
(1)_an_oblique_canal_near_anterior_margin_of_prootic

Foramina_for_glossopharyngeal_and_vagus_nerves (73):
(0)_a_single_foramen_or_two_contiguous_foramina --> (1)_two_well_separated_foramina
Anguloarticular_laterosensory_canal (105):
(0)_present --> (1)_absent

Dorsal_end_of_laterosensory_canal_of_preopercle_and_suprapercle (108):
(0)_not_overlapping_anterodorsal_process_of_opercle -->
(1)_overlapping_anterodorsal_process_of_opercle
Number_of_cusps_of_anterior_maxillary_teeth (192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Abrupt_decrease_in_size_of_dentary_teeth (207): (1)_present --> (0)_absent
Metapterygoid_foramen (228):
(0)_a_well_defined_transverse_foramen -->
(1)_as_a_canal_oblique_to_metapterygoid

Articulation_between_ventral_margin_of_metapterygoid_and_posterodorsal_margin_of_quadrate (229): (0)_absent --> (1)_present
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex_straight_or_slightly_concave -->
(1)_distinctly_concave_forming_an_angle_of_45°

Form_and_degree_of_ossification_of_first_ceratranchial_gill_rakers (299):
(0)_laminar_and_not_ossified_distally -->
(1)_rather_thick_and_completely_ossified_distal_region
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_less
Lateral_lamella_of_pelvic_bone (373):
(0)_absent_or_reduced_to_posterior_third_of_bone --> (1)_present_and_reaching_two_thirds_of_bone

Contact_between_dorsal_margin_of_adductor_mandibulae_and_ventral_margin_of_dilatator_operculi (480): (1)_present --> (0)_absent
Dark_conspicuous_spot_on_dorsal_fin (496):
(0)_absent --> (1)_present
Number_of_2n_chromosomes (518):
(0)_50_or_fewer --> (1)_52_or_more
Char. 613: C --> T
Char. 631: C --> T
Char. 649: A --> C
Char. 692: C --> T
Char. 709: C --> T
Char. 721: A --> G
Char. 724: A --> G
Char. 730: C --> T
Char. 742: T --> A
Char. 748: T --> G
Char. 775: A --> G
Char. 832: C --> T
Char. 868: A --> G
Char. 880: T --> C
Char. 886: G --> A
Char. 895: T --> C
Char. 904: T --> C
Char. 910: C --> T
Char. 934: C --> T
Char. 941: C --> T
Char. 946: A --> G
Char. 953: A --> G
Char. 985: C --> T
Char. 997: A --> G
Char. 1015: C --> A
Char. 1021: A --> G
Char. 1048: C --> T
Char. 1066: C --> T
Char. 1087: A --> T
Char. 1108: A --> G
Char. 1213: A --> G
Char. 1219: C --> T
Char. 1228: C --> T
Char. 1231: T --> C
Char. 1258: A --> G
Char. 1261: C --> G
Char. 1267: A --> C
Char. 1297: A --> T
Char. 1332: T --> C
Char. 1336: A --> T
Char. 1345: C --> T
Char. 1346: C --> T
Char. 1370: T --> C
Char. 2530: C --> T
Char. 3490: T --> A
Char. 3559: G --> A
Char. 3862: G --> T
Char. 4000: C --> G
Char. 4495: T --> C
Char. 4504: G --> A
Char. 4517: C --> T
Char. 4672: C --> T
Char. 4814: G --> A
Char. 4836: G --> T
Char. 4962: A --> T
Char. 4974: A --> G
Char. 4977: C --> A
Char. 5238: G --> T
Char. 5244: A --> T
Char. 5289: G --> A
Char. 5382: T --> C
Char. 5394: A --> G
Char. 5577: G --> A
Char. 5718: C --> T
Char. 6207: T --> C
Char. 6211: G --> A
Char. 6253: A --> G
Char. 6299: A --> G
Char. 6304: T --> C
Char. 6321: A --> C
Char. 6377: T --> C
Char. 6382: T --> C
Char. 6441: A --> CT
Char. 6463: T --> C
Char. 6575: T --> A

Probolodus_heterostomus :
Char. 1699: C --> T
Char. 1825: A --> T
Char. 1834: G --> A
Char. 2023: A --> G
Char. 2024: T --> G
Char. 2029: A --> G
Char. 2128: G --> A
Prochilodus_lineatus :
Char. 941: C --> T
Char. 1129: A --> G
Char. 1465: C --> T
Char. 4247: A --> C
Char. 4466: T --> G
Char. 5050: T --> A
Prodontocharax_melanotus :
Premaxillary_maxillary_and_dentary_teeth (166): (1)_pedunculate_and_uniformly_shaped -->
(0)_not_pedunculate_or_pedunculate_only_in_some_of_these_bones
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Number_of_cusps_of_first_maxillary_tooth (194): (1)_seven_or_more --> (0)_five_or_fewer
Orientation_of_anterior_dentary_teeth (197):
(0)_oriented_dorsally_or_anterodorsally -->
(1)_oriented_anteriorly_almost_parallel_to_main_axis_of_dentary
Number_of_dentary_teeth_on_outer_row (198):
(0)_eight_or_fewer --> (1)_ten_or_more
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (1)_six_or_more --> (0)_five_or_fewer
Relative_length_of_first_pelvic_fin_ray_of_adult_males (383):
(0)_not_extending_beyond_margin_of_other_rays -->
(1)_extending_beyond_margin_of_other_rays
Bony_hooks_on_last_pelvic_fin_ray_of_adult_males (447):
(1)_as_numerous_as_in_other_rays -->
(0)_absent_or_reduced_in_number
Char. 679: C --> T
Char. 689: G --> T
Char. 691: C --> G
Char. 772: T --> C
Char. 778: C --> T
Char. 805: C --> T
Char. 862: T --> C
Char. 937: C --> T
Char. 950: G --> A
Char. 952: A --> T
Char. 988: A --> T
Char. 1018: A --> C
Char. 1066: C --> T
Char. 1087: A --> T
Char. 1093: A --> G
Char. 1118: C --> T
Char. 1144: C --> T
Char. 1153: C --> T
Char. 1156: C --> T
Char. 1282: T --> C
Char. 1318: T --> C
Char. 1358: C --> T
Char. 1363: T --> C
Char. 1367: G --> A
Char. 1385: A --> C
Char. 1405: A --> G
Char. 1408: A --> T
Char. 1426: C --> T
Char. 2194: C --> T
Char. 2237: G --> A
Char. 2474: T --> C
Char. 2524: T --> C
Char. 2569: A --> G
Char. 2607: A --> G
Char. 3464: A --> G
Char. 3481: C --> T
Char. 3501: C --> T
Char. 3508: A --> T
Char. 3523: A --> G
Char. 3535: T --> C

Char. 3907: A --> G
Char. 3913: A --> G
Char. 3985: C --> T
Char. 4078: C --> G
Char. 4084: A --> T
Char. 4252: G --> A
Char. 4288: A --> G
Char. 4348: T --> C
Char. 4375: G --> T
Char. 4521: G --> A
Char. 4568: A --> T
Char. 4636: G --> C
Char. 4646: A --> T
Char. 4926: C --> T
Char. 5421: C --> T
Char. 5664: C --> T
Char. 5688: C --> T
Char. 6298: A --> G
Char. 6302: C --> T
Char. 6328: C --> T
Char. 6352: C --> T
Char. 6373: G --> A
Char. 6413: C --> T
Char. 6426: T --> C
Char. 6443: T --> A
Char. 6445: A --> T
Char. 6508: A --> T
Char. 6512: T --> A

Psellogrammus kennedyi :

Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94):
(0)_almost_complete,_at_least_in_its_ventral_border -->
(1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa

Maxillary_teeth (188): (1)_present -->
(0)_absent

Posterior_extent_of_ventral_process_of_quadrate (234):
(0)_reaching_vertical_through_posterior_margin_of_symplectic -->
(1)_falling_short_of_posterior_margin_of_symplectic

Anterior_tip_of_pelvic_bone (375):
(1)_posterior_to_first_rib -->
(0)_anterior_to_first_rib

Sheath_of_scales_covering_anal-fin_base (469): (1)_covering_3/4_of_anal-fin_base_or_more --> (0)_reaching_half_length_of_anal-fin_base_or_less
Char. 679: C --> T
Char. 736: T --> C
Char. 1015: C --> T
Char. 1054: A --> T
Char. 1057: C --> T
Char. 1084: T --> C
Char. 1087: A --> G
Char. 1093: A --> G
Char. 1112: C --> T
Char. 1129: C --> T
Char. 1177: T --> C
Char. 1198: A --> G
Char. 1222: C --> T
Char. 1258: A --> G
Char. 1262: C --> T
Char. 2731: T --> C
Char. 4009: G --> A
Char. 4785: G --> C
Char. 4935: G --> A
Char. 5013: C --> A
Char. 5061: C --> T
Char. 5112: G --> A
Char. 5469: T --> C
Char. 6346: T --> C

Pseudochalceus kyburzi :

Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer

Ethmopalatine_cartilage (208):
(1)_present_and_conspicuous -->
(0)_absent_or_reduced_in_size

Form_of_quadrate (231):
(0)_with_ventral_portion_longer_than_anterodorsal_region -->
(1)_with_anterodorsal_portion_equal_or_longer_than_ventral_region

Length_of_interhyal (307):
(0)_shorter_than_one-third_of_symplectic_length -->
(1)_equal_to_or_longer_than_one-half_of_symplectic_length

Margin_of_first_pectoral_ray_in_adult_specimens (366): (0)_not_serrated -->
(1)_conspicuously_serrated
Char. 1540: G --> T
Char. 1582: T --> C
Char. 1612: C --> T
Char. 1645: C --> T
Char. 1666: A --> G
Char. 1696: A --> G
Char. 1699: C --> T
Char. 1723: C --> T
Char. 1792: T --> C
Char. 1807: T --> C
Char. 1810: G --> A
Char. 1918: C --> T
Char. 2045: C --> T
Char. 2047: C --> A
Char. 2054: C --> T
Char. 2077: T --> C
Char. 2087: C --> T
Char. 2140: C --> T
Char. 2143: C --> T
Char. 6286: A --> T
Char. 6294: T --> C
Char. 6426: T --> C

Pseudocorynopoma doriae :

Position_of_foramen_anteromedial_to_auditory_foramen (57):
(0)_more_distant_than_anterolateral_foramen_from_auditory_foramen -->
(1)_as_close_as_anterolateral_foramen_from_auditory_foramen

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent

Palatine_foramen (210):
(1)_present_and_very_conspicuous -->
(0)_absent_or_reduced_in_size

Form_of_anterior_expansion_of_basihyal (260):
(0)_slender,_with_anterior_margin_less_than_two-thirds_of_its_length -->
(1)_expanded_anterior_margin,_with_two-thirds_or_more_of_its_length

Anterior_rays_of_dorsal_fin_of_adult_males (406): (0)_not_elongate -->
(1)_elongate_and_reaching_posteriorly_close_to_a_dipose_fin

Number_of_branched_rays_on_dorsal_fin (409): (0)_eight_or_fewer --> (1)_nine_or_more

Proximal_and_medial_radials_of_anal_fins (413): (0)_fused_on_anterior_five_pterygiophores --> (1)_fused_in_most_pterygiophores

Pelvic-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (442): (1)_present --> (0)_absent
Char. 1639: A --> G
Char. 1729: C --> T
Char. 1777: C --> A
Char. 1786: C --> T
Char. 1789: T --> C
Char. 1810: G --> A
Char. 1849: C --> T
Char. 1867: T --> A
Char. 1879: G --> A
Char. 1972: A --> G
Char. 1978: T --> G
Char. 2005: C --> T
Char. 2024: T --> C
Char. 2032: A --> G
Char. 2128: A --> C

Char. 2134: A --> G
Char. 2137: A --> G
Char. 2507: C --> T
Char. 4033: G --> T
Char. 4267: C --> T
Char. 4466: G --> A
Char. 4468: G --> A
Char. 5380: C --> T
Char. 5536: G --> A
Char. 5540: G --> C
Char. 5681: C --> T
Char. 6255: A --> T
Char. 6343: G --> A
Char. 6403: C --> A

Pseudocorynopoma heterandria :

Number_of_teeth_on_inner_premaxillary_row (183): (0)_six_or_fewer --> (1)_seven_or_more

Anteromedial_process_of_third_epibranchial (280):
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial

Relative_length_of_anterior_dorsal-fin_rays (410):
(1)_reaching_tip_of_posterior_rays_when_addressed -->
(0)_not_reaching_tip_of_posterior_rays_when_addressed
Char. 1582: A --> G
Char. 1594: A --> C
Char. 1645: A --> G
Char. 1768: A --> G
Char. 1780: A --> C
Char. 1798: A --> G
Char. 1843: T --> A
Char. 1915: T --> C
Char. 1924: G --> A
Char. 2014: A --> G
Char. 2071: C --> T
Char. 2143: A --> C
Char. 2155: A --> G
Char. 2839: G --> C
Char. 3452: T --> C
Char. 3479: G --> C
Char. 4408: G --> A
Char. 4564: C --> T
Char. 4663: A --> G
Char. 4701: T --> A
Char. 5022: T --> C
Char. 5079: C --> T
Char. 5177: G --> A
Char. 5322: A --> T
Char. 5586: G --> C
Char. 5667: T --> A
Char. 6325: C --> T
Char. 6334: G --> A
Char. 6381: A --> G
Char. 6402: G --> A
Char. 6462: G --> A

Pyrrhulina australis :

Char. 1525: C --> T
Char. 1531: C --> T
Char. 1540: AG --> C
Char. 1552: C --> T
Char. 1561: C --> T
Char. 1564: G --> A
Char. 1567: A --> CT
Char. 1588: A --> G
Char. 1591: C --> A
Char. 1598: C --> T
Char. 1603: A --> G
Char. 1606: T --> G
Char. 1627: T --> A
Char. 1636: T --> C
Char. 1651: T --> A
Char. 1675: A --> T
Char. 1676: A --> G
Char. 1678: T --> A
Char. 1690: C --> AG
Char. 1708: T --> A
Char. 1712: T --> C
Char. 1723: A --> T

Char. 1726: C --> T
Char. 1732: C --> T
Char. 1735: A --> G
Char. 1777: C --> A
Char. 1798: G --> A
Char. 1810: G --> C
Char. 1825: T --> C
Char. 1831: A --> T
Char. 1834: G --> A
Char. 1870: C --> A
Char. 1876: C --> T
Char. 1879: A --> G
Char. 1900: T --> C
Char. 1909: T --> C
Char. 1913: C --> T
Char. 1915: A --> G
Char. 1918: C --> A
Char. 1924: T --> C
Char. 1969: C --> T
Char. 1984: C --> G
Char. 1996: T --> C
Char. 2008: A --> C
Char. 2014: T --> A
Char. 2054: C --> T
Char. 2065: A --> T
Char. 2068: CT --> A
Char. 2074: A --> C
Char. 2125: C --> T
Char. 2152: C --> T
Char. 2158: C --> T
Char. 3523: A --> T
Char. 3556: G --> T
Char. 3580: C --> T
Char. 3605: C --> T
Char. 3609: G --> A
Char. 3613: G --> A
Char. 3622: G --> A
Char. 3658: G --> A
Char. 3670: A --> T
Char. 3673: T --> C
Char. 3694: C --> T
Char. 3706: A --> T
Char. 3751: A --> T
Char. 3805: C --> T
Char. 3820: C --> T
Char. 3826: T --> A
Char. 3849: G --> C
Char. 3892: C --> A
Char. 3925: T --> A
Char. 3946: T --> C
Char. 3964: T --> C
Char. 3984: T --> A
Char. 3997: A --> G
Char. 4000: C --> T
Char. 4033: A --> T
Char. 4058: A --> G
Char. 4090: A --> G
Char. 4096: T --> G
Char. 4102: C --> T
Char. 4120: C --> T
Char. 4126: A --> G
Char. 4150: C --> A
Char. 4177: C --> T
Char. 4186: T --> C
Char. 4201: G --> A
Char. 4213: A --> G
Char. 4225: C --> G
Char. 4279: C --> T
Char. 4303: A --> C
Char. 4315: G --> A
Char. 4338: A --> T
Char. 4363: A --> C
Char. 4364: C --> A
Char. 4366: C --> A
Char. 4375: A --> G
Char. 4402: G --> A
Char. 4448: C --> A
Char. 4468: T --> C
Char. 4469: G --> A
Char. 4490: G --> A
Char. 4492: T --> A
Char. 4521: A --> C
Char. 4568: A --> T

Char. 4579: C --> A
Char. 4585: C --> T
Char. 4648: C --> G
Char. 4724: A --> G
Char. 4738: T --> G
Char. 4740: T --> C
Char. 4759: C --> A
Char. 4777: C --> A
Char. 4806: C --> A
Char. 4826: G --> A
Char. 4827: G --> A
Char. 4875: A --> C
Char. 4893: C --> T
Char. 4926: A --> G
Char. 4995: T --> C
Char. 5019: G --> A
Char. 5094: C --> T
Char. 5163: A --> C
Char. 5197: T --> A
Char. 5259: C --> T
Char. 5262: T --> C
Char. 5367: C --> T
Char. 5370: A --> T
Char. 5372: G --> A
Char. 5376: G --> A
Char. 5412: C --> A
Char. 5415: C --> T
Char. 5436: T --> C
Char. 5512: T --> A
Char. 5587: T --> C
Char. 5589: T --> C
Char. 5598: C --> T
Char. 5682: C --> A
Char. 5697: T --> C
Char. 6163: A --> G
Char. 6168: T --> C
Char. 6210: T --> C
Char. 6251: A --> T
Char. 6252: A --> T
Char. 6253: A --> T
Char. 6254: A --> T
Char. 6295: A --> C
Char. 6306: C --> A
Char. 6325: C --> T
Char. 6335: A --> T
Char. 6345: T --> G
Char. 6365: A --> T
Char. 6406: G --> A
Char. 6420: C --> T
Char. 6445: A --> T
Char. 6449: T --> C
Char. 6452: A --> T
Char. 6528: A --> G
Rhaphiodon_vulpinus :
Char. 526: A --> T
Char. 541: A --> G
Char. 553: C --> T
Char. 565: C --> T
Char. 598: C --> T
Char. 646: A --> G
Char. 706: C --> T
Char. 708: A --> T
Char. 763: A --> G
Char. 790: A --> T
Char. 808: C --> T
Char. 820: C --> T
Char. 829: A --> C
Char. 976: C --> T
Char. 982: A --> T
Char. 1019: C --> T
Char. 1031: G --> T
Char. 1045: A --> C
Char. 1048: C --> T
Char. 1063: C --> A
Char. 1075: C --> T
Char. 1099: A --> C
Char. 1103: C --> T
Char. 1111: C --> T
Char. 1112: C --> T
Char. 1133: C --> T
Char. 1186: A --> T
Char. 1189: C --> T
Char. 1213: A --> G

Char. 1229: C --> T
Char. 1237: A --> T
Char. 1243: C --> A
Char. 1246: C --> T
Char. 1294: A --> G
Char. 1297: A --> C
Char. 1306: C --> G
Char. 1345: C --> T
Char. 1346: C --> T
Char. 1348: C --> A
Char. 1351: C --> T
Char. 1357: C --> T
Char. 1370: C --> T
Char. 1390: C --> T
Char. 1432: T --> C
Char. 1480: C --> T
Char. 1490: C --> T
Char. 1522: A --> G
Char. 1540: A --> G
Char. 1549: C --> G
Char. 1588: A --> G
Char. 1600: A --> T
Char. 1657: T --> C
Char. 1705: A --> G
Char. 1759: A --> G
Char. 1765: C --> T
Char. 1801: C --> T
Char. 1810: A --> C
Char. 1853: C --> T
Char. 1858: C --> G
Char. 1864: C --> T
Char. 1882: C --> T
Char. 1892: C --> T
Char. 1969: C --> T
Char. 1999: A --> G
Char. 2042: C --> T
Char. 2063: C --> T
Char. 2098: A --> T
Char. 2104: A --> G
Char. 2107: C --> T
Char. 2143: A --> T
Char. 2159: C --> T
Char. 2287: C --> T
Char. 2374: T --> C
Char. 2392: C --> T
Char. 2494: G --> A
Char. 2575: C --> A
Char. 2578: T --> C
Char. 2674: C --> A
Char. 2905: G --> A
Char. 3544: C --> T
Char. 3656: G --> T
Char. 3717: C --> T
Char. 3719: G --> A
Char. 3742: C --> T
Char. 3772: A --> G
Char. 3796: C --> T
Char. 3800: A --> T
Char. 3808: G --> A
Char. 3905: G --> C
Char. 3952: C --> T
Char. 4171: C --> T
Char. 4201: G --> T
Char. 4210: C --> G
Char. 4219: C --> G
Char. 4249: C --> T
Char. 4351: A --> T
Char. 4390: G --> A
Char. 4465: G --> C
Char. 4581: G --> A
Char. 4624: A --> G
Char. 4681: C --> T
Char. 4705: C --> T
Char. 4746: C --> T
Char. 4751: A --> T
Char. 4770: T --> C
Char. 4782: C --> T
Char. 4800: A --> T
Char. 4807: G --> A
Char. 4827: A --> G
Char. 4836: A --> G
Char. 4845: C --> T
Char. 4884: G --> A

Char. 4902: T --> C
Char. 4904: T --> G
Char. 4914: C --> G
Char. 4926: A --> T
Char. 4932: T --> C
Char. 4935: T --> C
Char. 4944: T --> A
Char. 4953: T --> C
Char. 4983: G --> A
Char. 4986: C --> T
Char. 4993: A --> T
Char. 4999: G --> A
Char. 5010: A --> G
Char. 5032: C --> T
Char. 5040: T --> C
Char. 5055: T --> G
Char. 5076: G --> A
Char. 5079: T --> C
Char. 5091: C --> T
Char. 5100: A --> G
Char. 5133: T --> G
Char. 5136: C --> G
Char. 5158: C --> A
Char. 5164: G --> C
Char. 5214: C --> G
Char. 5217: C --> G
Char. 5227: A --> G
Char. 5229: G --> C
Char. 5247: T --> C
Char. 5269: C --> T
Char. 5278: C --> T
Char. 5283: T --> C
Char. 5295: C --> G
Char. 5304: T --> A
Char. 5343: C --> T
Char. 5364: A --> T
Char. 5367: C --> G
Char. 5414: G --> A
Char. 5445: G --> A
Char. 5456: G --> A
Char. 5523: A --> T
Char. 5551: G --> A
Char. 5634: G --> C
Char. 5679: C --> A
Char. 5688: C --> G
Char. 5730: C --> T
Char. 5746: T --> C
Char. 5768: T --> C
Char. 5859: C --> T
Char. 5901: T --> C
Char. 5906: A --> G
Char. 5971: G --> A
Char. 5978: A --> G
Char. 6004: A --> G
Char. 6005: C --> T
Char. 6008: A --> C
Char. 6009: G --> A
Char. 6010: A --> G
Char. 6012: T --> A
Char. 6014: T --> A
Char. 6043: G --> A
Char. 6048: T --> G
Char. 6211: A --> G
Char. 6251: A --> G
Char. 6301: C --> T
Char. 6315: A --> C
Char. 6343: A --> G
Char. 6348: A --> T
Char. 6351: A --> C
Char. 6374: G --> A
Char. 6376: C --> T
Char. 6413: C --> T
Char. 6452: A --> G
Char. 6572: T --> C
Char. 6649: A --> G

Rhoadsia altipinna :
Relative_length_of_frontal_fontanel (29):
(0)_up_to_2/3_length_of_parietal_fontanel -->
(1)_3/4_or_more_of_length_of_parietal_fontanel

Dorsal_process_of_apterotic_where_tendon_from_epaxial_musculature_attach (52): (0)_absent -->

(1)_present_projecting_dorsally_from_tube_for_semicircular_canal
Ventral_projection_of_lagenar_capsule (70):
(1)_ventral_to_plane_through_parasphenoid_dorsal_margin -->
(0)_not_reaching_to_plane_through_parasphenoid_dorsal_margin

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base
Fourth_infraorbital (90): (1)_absent -->
(0)_present
Fourth_infraorbital (91):
(1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series -->
(0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals
Margins_of_toothed_region_of_maxilla (140):
(0)_roughly_parallel --> (1)_dorsally_divergent

Posterior_extension_of_ventral_process_of_quadrate (233):
(0)_extended_more_than_posterodorsal_process -->
(1)_with_posterodorsal_process_as_posteriormost_region

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (303): (1)_18_or_more -->
(0)_17_or_fewer

Pointed_projection_dorsal_to_anterior_axis_of_neural_complex (308): (0)_absent --> (1)_present
Roebioxodon guyanensis :

Ventral_projection_of_mesethmoid_spine_forming_a_keel_between_premaxillae (2): (0)_absent -->
(1)_present

Bony_lamellae_bordering_sensory_canal_of_nasal (12):
(0)_absent_or_more_slender_than_tubular_region -->
(1)_wider_than_tubular_region_at_some_point

Lateral_opening_between_ventral_diverging_lamellae_of_mesethmoid_and_anterior_process_of_lateral_ethmoid (22): (0)_broad -->
(1)_reduced_by_mesethmoid_vomer_and_lateral_ethmoid
Form_of_distal_tip_of_sphenotic_spine (48):
(0)_slender_or_somewhat_expanded -->
(1)_notched_limiting_adductor_operculi_anterior_and_dorsally
Retroarticular (164): (0)_present -->
(1)_absent_apparently_fused_with_anguloarticular

Development_of_transverse_process_of_neural_arch_of_third_vertebra (312):
(0)_not_reaching_anterior_margin_of_tripus -->
(1)_well_developed_and_extending_beyond_anterior_margin_of_tripus

Pseudotympanum_between_ribs_of_fifth_and_sixth_vertebrae (485): (0)_absent --> (1)_present
Char. 523: T --> C
Char. 533: C --> T
Char. 535: A --> G
Char. 538: C --> T
Char. 541: A --> G
Char. 550: C --> T
Char. 559: A --> T
Char. 565: C --> T
Char. 632: A --> G
Char. 634: A --> T
Char. 649: C --> T
Char. 655: C --> T
Char. 679: C --> T
Char. 718: A --> G
Char. 739: A --> T
Char. 757: A --> T

Char. 805: C --> T
Char. 808: C --> T
Char. 811: A --> G
Char. 814: T --> C
Char. 835: C --> T
Char. 836: C --> T
Char. 841: C --> T
Char. 860: G --> A
Char. 889: T --> A
Char. 934: C --> T
Char. 1012: A --> C
Char. 1019: C --> T
Char. 1042: C --> T
Char. 1048: C --> T
Char. 1051: C --> T
Char. 1105: T --> C
Char. 1125: C --> A
Char. 1138: A --> G
Char. 1159: C --> G
Char. 1165: C --> T
Char. 1175: G --> A
Char. 1180: A --> T
Char. 1189: T --> C
Char. 1222: C --> T
Char. 1225: C --> A
Char. 1229: C --> T
Char. 1240: T --> C
Char. 1246: C --> T
Char. 1252: A --> T
Char. 1255: A --> C
Char. 1262: C --> T
Char. 1268: C --> T
Char. 1324: A --> G
Char. 1327: A --> G
Char. 1331: C --> A
Char. 1342: A --> G
Char. 1346: A --> C
Char. 1357: C --> T
Char. 1360: A --> C
Char. 1399: A --> G
Char. 1408: A --> C
Char. 1411: A --> G
Char. 1445: A --> G
Char. 1462: C --> T
Char. 1540: A --> T
Char. 1552: A --> G
Char. 1580: C --> T
Char. 1609: T --> C
Char. 1615: A --> G
Char. 1618: T --> C
Char. 1621: T --> C
Char. 1651: A --> T
Char. 1687: A --> C
Char. 1690: C --> A
Char. 1726: C --> T
Char. 1744: C --> T
Char. 1753: T --> C
Char. 1765: C --> T
Char. 1792: T --> C
Char. 1793: C --> T
Char. 1804: A --> G
Char. 1807: A --> T
Char. 1816: A --> G
Char. 1912: C --> T
Char. 1915: T --> C
Char. 1921: G --> A
Char. 1978: C --> T
Char. 1984: C --> T
Char. 2024: C --> T
Char. 2026: A --> G
Char. 2042: C --> T
Char. 2062: T --> C
Char. 2068: A --> G
Char. 2077: T --> C
Char. 2104: A --> T
Char. 2110: C --> T
Char. 2125: C --> T
Char. 2584: C --> T
Char. 2761: C --> T
Char. 3649: C --> T
Char. 4267: C --> T
Char. 4318: T --> C
Char. 4341: A --> C

Char. 4354: G --> T
Char. 4448: C --> A
Char. 4469: G --> A
Char. 4725: T --> C
Char. 4745: T --> C
Char. 4787: G --> A
Char. 5128: C --> T
Char. 5247: C --> A
Char. 5268: T --> G
Char. 5331: G --> A
Char. 5343: G --> A
Char. 5372: G --> A
Char. 5532: G --> T
Char. 5544: T --> A

Roeboides_descalvadensis :
Char. 1570: C --> T
Char. 1627: T --> A
Char. 1657: C --> T
Char. 1708: A --> G
Char. 1711: A --> C
Char. 1712: C --> T
Char. 1828: A --> G
Char. 1837: A --> G
Char. 1843: C --> T
Char. 1907: C --> T
Char. 1927: T --> C
Char. 1933: T --> C
Char. 1939: G --> A
Char. 1942: T --> C
Char. 1948: C --> T
Char. 1957: A --> T
Char. 1987: T --> C
Char. 2035: T --> C
Char. 2038: C --> T
Char. 2047: T --> C
Char. 2054: C --> T
Char. 2056: A --> G
Char. 2131: A --> G

Roeboides_microlepis :
Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present_communicating_with_hyomandibular_canal
Suprapreopercle (244): (0)_fused_to_preopercle --> (1)_autogenous_separated_from_preopercle
Length_of_medial_bony_ridge_of_opercle (254): (1)_less_than_50%_of_opercular_length --> (0)_60%_or_greater_than_opercular_length
Circuli_on_posterior_field_of_scales (456):
(1)_absent --> (0)_present
Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-fin_base -->
(1)_several_rows_covering_basal_third_of_anal-fin
Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more
Humeral_spot (492): (0)_absent_or_vertically-elongate --> (1)_horizontally-ovate
Char. 1579: A --> G
Char. 1618: T --> C
Char. 1630: T --> C
Char. 1687: G --> A
Char. 1714: A --> T
Char. 1810: C --> T
Char. 1913: T --> C
Char. 1921: A --> G
Char. 1945: T --> C
Char. 1954: T --> C
Char. 1960: T --> C
Char. 1978: C --> T
Char. 1984: C --> T
Char. 1999: A --> G
Char. 2002: C --> T

Char. 2032: A --> G
Char. 2044: T --> C
Char. 2102: C --> T
Char. 2107: T --> C
Char. 2137: A --> G

Salminus_brasiliensis :
Form_of_anterior_process_of_lateral_ethmoid (20): (1)_slender_and_separated_from_vomer --> (0)_broad_in_ventral_view_contacting_vomer_in_its_entire_length

Foramen_in_posterior_region_of_metapterygoid (227):
(0)_an_incomplete_arch_bordered_posteriorly_by_hyomandibula -->
(1)_present_encircled_by_metapterygoid_or_bordered_by_cartilage

Articulation_between_ventral_margin_of_metapterygoid_and_posterodorsal_margin_of_quadrate (229): (0)_absent --> (1)_present
Laminar_base_of_epibranchial_gill_rakers (290):
(0)_absent_or_not_reaching_posterior_margin_of_epibranchial -->
(1)_reaching_or_projecting_from_posterior_margin_of_epibranchial
Char. 1675: A --> G
Char. 1849: C --> A
Char. 2149: A --> G
Char. 3844: A --> G
Char. 4539: A --> T
Char. 4562: C --> T
Char. 4563: G --> T
Char. 4565: T --> G
Char. 4566: C --> A
Char. 4567: T --> A
Char. 4569: C --> G
Char. 4570: C --> A
Char. 4571: T --> G
Char. 4573: C --> T
Char. 4574: C --> T
Char. 4587: G --> A
Char. 4588: C --> T
Char. 4606: T --> G
Char. 4611: G --> A
Char. 4612: C --> A
Char. 4625: C --> G
Char. 4627: C --> T
Char. 4632: C --> A
Char. 4639: C --> G
Char. 4640: C --> G
Char. 4643: T --> C
Char. 4644: C --> A
Char. 4645: C --> T
Char. 4647: C --> A
Char. 4663: C --> A
Char. 4697: A --> G
Char. 4698: C --> A
Char. 4702: G --> T
Char. 4704: C --> G
Char. 5704: G --> T
Char. 5706: C --> T

Salminus_hilarii :
Ventral_projection_of_lagenar_capsule (70):
(0)_not_reaching_to_plane_through_parasphenoid_dorsal_margin -->
(1)_ventral_to_plane_through_parasphenoid_dorsal_margin
Laterosensory_canal_in_antorbital (95):
(0)_absent --> (1)_present
Number_of_dorsal_pterygiophores (401):
(0)_10_or_fewer --> (1)_11_or_more
Char. 1756: C --> T
Char. 1897: C --> T
Char. 1972: A --> G
Char. 2065: A --> G
Char. 3452: T --> A
Char. 3454: C --> T
Char. 3455: A --> C
Char. 3456: G --> C
Char. 3457: C --> G
Char. 3463: G --> C

Char. 3464: A --> T
Char. 3467: G --> A
Char. 3470: G --> A
Char. 3471: G --> C
Char. 3474: T --> C
Char. 3476: A --> T
Char. 3479: G --> C
Char. 3480: G --> T
Char. 3481: T --> G
Char. 3483: G --> T
Char. 3485: C --> A
Char. 3487: C --> A
Char. 3490: T --> G
Char. 3494: T --> A
Char. 3501: C --> T
Char. 3898: G --> T
Char. 4025: A --> G
Char. 4462: T --> A
Char. 4543: C --> T
Char. 5664: T --> T
Char. 5703: A --> G
Char. 5716: G --> A
Char. 5736: T --> C
Char. 5737: T --> G
Char. 5745: T --> C
Char. 6198: G --> A
Char. 6200: C --> A
Char. 6202: C --> A

Serrapinnus_calliurus :
Form_of_anterior_expansion_of_basihyal (260):
(0)_slender_with_anterior_margin_less_than_two-thirds_of_its_length -->
(1)_expanded_anterior_margin_with_two-thirds_or_more_of_its_length
Char. 778: C --> T
Char. 1554: C --> T
Char. 1570: C --> T
Char. 1720: T --> C
Char. 1909: T --> C
Char. 2048: C --> G
Char. 4249: A --> G
Char. 4381: T --> A
Char. 4394: A --> C
Char. 4612: C --> T
Char. 6253: T --> C
Char. 6333: C --> T

Serrapinnus_notomelas :
Anterior_paired_projections_of_parasphenoid (43): (0)_absent --> (1)_present
Ethmopalatine_cartilage (208):
(0)_absent_or_reduced_in_size -->
(1)_present_and_conspicuous
Main_axis_of_supraneurals (396):
(0)_not_bifurcated -->
(1)_at_least_some_of_them_distally_bifurcated
Char. 610: T --> C
Char. 901: C --> T
Char. 1036: C --> T
Char. 1172: T --> C
Char. 1346: A --> C
Char. 1354: A --> G
Char. 1396: A --> G
Char. 1450: C --> T
Char. 1609: C --> T
Char. 1624: T --> C
Char. 1690: AG --> T
Char. 1705: G --> A
Char. 1795: C --> T
Char. 2014: G --> A
Char. 2125: CT --> G
Char. 3467: G --> A
Char. 4225: G --> T
Char. 4360: T --> G
Char. 4366: C --> T
Char. 4468: C --> T
Char. 4809: C --> T
Char. 4902: T --> C
Char. 5010: AG --> T
Char. 5148: C --> A
Char. 5151: C --> T
Char. 5478: A --> G
Char. 6294: T --> A

Char. 6379: T --> C
Serrasalmus maculatus :
Char. 1810: G --> A
Char. 1870: A --> G
Char. 1915: T --> C
Char. 1984: C --> T
Char. 1993: A --> G
Char. 2008: A --> G
Char. 2014: C --> T
Char. 2032: T --> C
Char. 2041: C --> T
Char. 2080: A --> G
Char. 2089: T --> C
Char. 2149: T --> C
Char. 2599: T --> C
Char. 2653: C --> G
Char. 2782: T --> G
Char. 5299: C --> T
Serrasalmus rhombeus :
Char. 1534: A --> G
Char. 1561: C --> T
Char. 1741: T --> C
Char. 1768: A --> G
Char. 1837: A --> G
Char. 2014: C --> A
Char. 2017: A --> G
Char. 2050: G --> A
Spintherobolus ankoseion :
Size_and_number_of_anterior_dentary_teeth
(199):
(0)_four_or_five_relatively_broad_teeth_at_front_of_dentary -->
(1)_eight_or_more_small_and_slender_teeth_at_front_of_dentary
Profile_of_posterodorsal_margin_of_opercle
(252): (0)_convex_straight_or_slightly_concave -->
(1)_distinctly_concave_forming_an_angle_of_45°
Development_of_transverse_process_of_neural_arch_of_third vertebra (312):
(0)_not_reaching_anterior_margin_of_tripus -->
(1)_well_developed_and_extending_beyond_anterior_margin_of_tripus
Proximal_and_medial_radials_of_anal_fins
(413): (0)_fused_on_anterior_five_pterygiophores -->
(1)_fused_in_most_pterygiophores
Char. 727: A --> G
Char. 740: G --> A
Char. 865: A --> G
Char. 883: A --> G
Char. 946: A --> G
Char. 970: G --> A
Char. 1192: T --> C
Char. 1345: A --> G
Char. 1351: C --> T
Char. 1408: C --> T
Char. 1445: G --> A
Char. 2248: C --> G
Char. 2650: A --> C
Char. 3536: C --> A
Char. 3655: G --> A
Char. 3685: A --> T
Char. 3793: A --> T
Char. 4033: A --> G
Char. 4082: C --> A
Char. 4087: T --> C
Char. 4267: T --> C
Char. 4345: A --> C
Char. 4396: G --> A
Char. 4420: A --> G
Char. 4451: C --> T
Char. 4570: T --> C
Char. 4591: C --> A
Char. 4621: G --> A
Char. 4630: C --> T
Char. 4636: A --> T
Char. 4637: A --> T
Char. 4640: T --> C
Char. 5440: A --> G
Char. 6343: G --> A
Char. 6508: A --> G
Spintherobolus papilliferus :
Number_of_supraneurals (392):
(0)_four_or_fewer --> (1)_five_or_more
Number_of_supraneurals (393):
(0)_five_or_fewer --> (1)_six_or_more
Stethaprion erythroptus :
Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94):
(1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa -->
(0)_almost_complete_at_least_in_its_ventral_border
Distribution_of_denticles_on_gill_rakers (301):
(1)_along_entire_surface_of_gill_rakers -->
(0)_restricted_to_margins_or_absent
Anterior_extension_of_pelvic_bone_along_main_axis (370):
(0)_not_projecting_anterior_of_lateral_and_medial_lamellae -->
(1)_projecting_anterior_of_lateral_and_medial_lamellae_of_pelvic_bone
Lateral_lamella_of_pelvic_bone (373):
(1)_present_and_reaching_two_thirds_of_bone -->
(0)_absent_or_reduced_to_posterior_third_of_bone
Anterior_tip_of_pelvic_bone (376):
(0)_anterior_to_second_rib -->
(1)_posterior_to_second_rib
Number_of_dorsal_pterygiophores (401):
(0)_10_or_fewer --> (1)_11_or_more
Number_of_branched_anal-fin_rays (421):
(0)_34_or_fewer --> (1)_35_or_more
Pelvic-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (442): (1)_present --> (0)_absent
Semicircular_grooves_on_posterior_field_of_scales (462): (0)_absent --> (1)_present
Char. 2530: C --> T
Char. 2890: T --> C
Char. 3685: G --> A
Char. 3829: A --> G
Char. 3896: C --> T
Char. 4066: G --> C
Char. 4108: C --> G
Char. 4143: T --> A
Char. 4147: G --> T
Char. 4148: A --> C
Char. 4152: A --> C
Char. 4159: T --> A
Char. 4160: T --> C
Char. 4168: C --> G
Char. 4170: A --> C
Char. 4181: G --> C
Char. 4191: A --> T
Char. 4192: C --> A
Char. 4196: C --> G
Char. 4197: T --> A
Char. 4208: G --> C
Char. 4214: G --> T
Char. 4215: G --> T
Char. 4216: G --> T
Char. 4224: C --> T
Char. 4228: G --> C
Char. 4230: C --> G
Char. 4233: T --> G
Char. 4242: C --> G
Char. 4248: C --> G
Char. 4253: C --> A
Char. 4267: C --> A
Char. 4285: T --> A
Char. 4289: G --> C
Char. 4291: G --> C
Char. 4294: C --> T
Char. 4298: A --> T
Char. 4300: G --> C
Char. 4304: T --> G
Char. 4306: C --> T
Char. 4308: A --> T
Char. 4313: G --> C
Char. 4318: C --> G
Char. 4319: G --> C
Char. 4364: C --> A
Char. 4365: G --> A
Char. 4366: C --> T
Char. 4371: G --> C
Char. 4376: G --> A
Char. 4377: C --> G
Char. 4383: A --> G
Char. 4394: A --> G
Char. 4396: G --> A
Char. 4451: T --> C
Char. 4467: C --> A
Char. 4470: T --> A
Char. 4509: G --> T
Char. 4515: C --> G
Char. 4517: C --> T
Char. 4526: C --> A
Char. 4571: T --> G
Char. 4585: C --> A
Char. 4586: T --> G
Char. 4587: G --> A
Char. 4590: C --> A
Char. 4591: T --> A
Char. 4597: A --> T
Char. 4601: T --> G
Char. 4612: C --> G
Char. 4619: T --> C
Char. 4629: T --> C
Char. 4632: C --> G
Char. 4637: C --> G
Char. 4647: C --> T
Char. 4649: A --> C
Char. 4650: C --> A
Char. 4658: T --> C
Char. 4660: T --> C
Char. 4661: C --> A
Char. 4662: G --> C
Char. 4663: C --> A
Char. 4685: T --> C
Char. 4699: T --> A
Char. 4700: C --> T
Char. 4711: T --> G
Char. 4713: C --> A
Char. 5214: T --> C
Stichonodon insignis :
Position_of_anterior_margin_of_supraoccipital (60):
(0)_behind_vertical_through_posterior_orbital_margin -->
(1)_anterior_to_vertical_through_posterior_orbital_margin
Posterior_extension_of_supraoccipital_spine (61):
(1)_dorsal_of_one_half_or_less_of_extent_of_neural_complex -->
(0)_dorsal_of_entire_neural_complex_of>Weberian_apparatus
Contact_between_ectopterygoid_and_anterodorsal_region_of_quadrate (220): (0)_present -->
(1)_absent
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present_communicating_with_hyomandibular_canal
Ventral_margin_of_anterior_ceratohyal (263):
(1)_with_notches_for_articulation_of_branchiostegal_rays --> (0)_smooth_and_without_notches
Development_of_transverse_process_of_neural_arch_of_third vertebra (312):
(1)_well_developed_and_extending_beyond_anterior_margin_of_tripus -->
(0)_not_reaching_anterior_margin_of_tripus
Posterior_margin_of_cleithrum (341):
(1)_with_concavity_ventral_to_first_postcleithrum -->
(0)_without_concavity_ventral_to_first_postcleithrum
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_cleithrum

Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more --> (0)_six_or_less
Number_of_supraneurals (391):
(1)_four_or_more --> (0)_three
Number_of_dorsal_pterygiophores (401):
(0)_10_or_fewer --> (1)_11_or_more
Proximal_and_medial_radials_of_anal_fins
(413): (0)_fused_on_anterior_five_pterygiophores -
-> (1)_fused_in_most_pterygiophores
Number_of_branched_anal-fin_rays (420):
(0)_24_or_fewer --> (1)_25_or_more
Uroneurals (427): (0)_absent_or_just_one_pair
--> (1)_two_pairs
Radii_of_scales (461):
(0)_not_converging_at_focus -->
(1)_converging_at_focus
Median_predorsal_scales (465):
(0)_covering_entire_predorsal_region -->
(1)_leaving_naked_area_anterior_to_dorsal_fin
Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-fin
_base -->
(1)_several_rows_covering_basal_third_of_anal_fi
n
Tetragonopterus_argenteus :
Number_of_supraneurals (391): (0)_three -->
(1)_four_or_more
Anal-fin_position (416):
(0)_posterior_ot_or_at_vertical_through_base_of_l
ast_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dors
al-fin_ray
Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-fin
_base -->
(1)_several_rows_covering_basal_third_of_anal_fi
n
Char. 646: G --> A
Char. 667: C --> T
Char. 676: C --> T
Char. 790: C --> A
Char. 832: C --> T
Char. 880: T --> C
Char. 922: C --> T
Char. 988: C --> A
Char. 1024: C --> T
Char. 1111: C --> T
Char. 1219: C --> T
Char. 1258: A --> G
Char. 1446: T --> C
Char. 1462: C --> T
Char. 1469: C --> T
Char. 2738: A --> T
Char. 4009: G --> A
Char. 4054: A --> G
Char. 4081: A --> G
Char. 4335: A --> G
Char. 4901: G --> A
Char. 5151: C --> T
Char. 5202: C --> T
Char. 5227: G --> A
Char. 5322: C --> T
Char. 5475: G --> A
Char. 5505: G --> A
Char. 6252: A --> C
Char. 6294: C --> T
Char. 6325: T --> C
Char. 6347: C --> T
Char. 6440: A --> T
Char. 6515: A --> T
Tetragonopterus_chalceus :
Char. 1054: A --> GT
Char. 1315: A --> G
Char. 1446: T --> C
Char. 1489: C --> AT
Char. 1636: T --> C
Char. 1804: A --> C
Char. 2038: T --> C
Char. 6512: A --> CT
Thayeria_boehlkei :
Length_of_laterosensory_canal_of_dentary
(103):
(0)_piercing_almost_entire_length_of_dentary -->
(1)_reduced_or_absent
Extension_of_parietal_branch_of_laterosensory_ca
nal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent
Char. 5181: G --> A
Char. 5538: G --> A
Thayeria_obliqua :
Contact_between_frontals_anterior_to_frontal_font
anel (27): (0)_absent --> (1)_present
Form_of_anterior_expansion_of_basihyal
(260):
(0)_slender_with_anterior_margin_less_than_two-
thirds_of_its_length -->
(1)_expanded_anterior_margin_with_two-
thirds_or_more_of_its_length
Development_of_transverse_process_of_neural_arc
h_of_third vertebra (312):
(0)_not_reaching_anterior_margin_of_tripus -->
(1)_well_developed_and_extending_beyond_anteri
or_margin_of_tripus
Process_of_scapula_forming_anterior_border_of_s
capular_foramen (359): (0)_present --> (1)_absent
Dorsal-
fin_rays_articulating_with_first_dorsal_pterygioph
ore (404): (1)_three_or_four --> (0)_two
Thoracocharax_stellatus :
Opening_between_orbitosphenoid_and_pterosphen
oid (41): (1)_absent -->
(0)_present_rounded_or_ovate_usually_margined
_by_frontal_dorsally
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than
_antorbital_width
Ventral_extent_of_third_infraorbital (88):
(0)_reaching_horizontal_arm_of_preopercle -->
(1)_not_reaching_horizontal_arm_of_preopercle_a
t_least_anteriorly
Articulation_between_ventral_margin_of_metapter
ygoide_and_posterodorsal_margin_of_quadrate
(229): (0)_absent --> (1)_present
Number_of_branchiostegal_rays (267):
(0)_three_or_four --> (1)_five
First_basibranchial (272):
(1)_well_developed_and_articulating_anteriorly_wi
th_basihyal -->
(0)_absent_or_much_reduced_not_articulating_wit
h_basihyal
Articulation_between_parapophyses_of_second_and
_fourth vertebrae (314): (0)_absent --> (1)_present
Ventral_myorhabdoi (387): (0)_absent -->
(1)_present
Number_of_dorsal_pterygiophores (401):
(0)_10_or_fewer --> (1)_11_or_more
Number_of_dorsal_pterygiophores (402):
(0)_11_or_fewer --> (1)_12_or_more
Number_of_branched_anal-fin_rays (421):
(0)_34_or_fewer --> (1)_35_or_more
Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-fin
_base -->
(1)_several_rows_covering_basal_third_of_anal_fi
n
Anterior_extension_of_adductor_arcus_palatini
(481):
(1)_covering_only_half_of_dorsal_surface_of_mes
opterygoid -->
(0)_covering_most_of_dorsal_surface_of_mesopter
ygoide
Ventral_union_of_gill_membranes (507):
(0)_joined_anteriorly_but_not_covering_isthmus --
->
(1)_joined_along_length_of_isthmus_but_not_attac
hed_to_it
Char. 541: A --> G
Char. 604: C --> T
Char. 674: T --> C
Char. 685: C --> T
Char. 724: A --> T
Char. 740: G --> A
Char. 752: T --> C
Char. 757: A --> T
Char. 766: C --> A
Char. 850: A --> CT
Char. 865: T --> C
Char. 877: A --> G
Char. 916: T --> G
Char. 940: T --> C
Char. 951: C --> T
Char. 1000: C --> T
Char. 1075: T --> C
Char. 1078: A --> G
Char. 1162: C --> A
Char. 1234: A --> C
Char. 1396: A --> C
Char. 1459: T --> AG
Char. 1466: G --> A
Char. 1467: C --> T
Char. 1477: C --> T
Char. 1501: A --> G
Char. 1507: A --> G
Char. 1585: C --> T
Char. 1621: T --> C
Char. 1642: T --> C
Char. 1648: C --> T
Char. 1702: A --> G
Char. 1714: A --> T
Char. 1726: C --> A
Char. 1729: A --> T
Char. 1741: T --> C
Char. 1765: T --> C
Char. 1771: T --> A
Char. 1774: A --> C
Char. 1777: C --> T
Char. 1789: T --> C
Char. 1795: C --> A
Char. 1813: T --> A
Char. 1822: A --> G
Char. 1825: A --> CT
Char. 1840: T --> A
Char. 1858: A --> T
Char. 1876: A --> C
Char. 1894: A --> G
Char. 1913: C --> T
Char. 1936: A --> T
Char. 1942: A --> C
Char. 1972: A --> G
Char. 1978: A --> T
Char. 1990: A --> T
Char. 2014: T --> AG
Char. 2027: A --> G
Char. 2047: T --> C
Char. 2048: C --> T
Char. 2050: C --> A
Char. 2053: A --> T
Char. 2054: C --> T
Char. 2062: C --> T
Char. 2074: T --> C
Char. 2083: G --> A
Char. 2089: A --> T
Char. 2107: C --> T
Char. 2125: T --> A
Char. 2131: A --> G
Char. 2211: C --> T
Char. 2311: A --> T
Char. 2314: A --> C
Char. 2350: C --> A
Char. 2353: G --> T
Char. 2371: T --> C
Char. 2437: A --> T
Char. 2494: G --> A
Char. 2557: A --> G
Char. 2617: T --> C
Char. 2629: C --> T
Char. 2644: G --> A
Char. 2749: T --> C
Char. 2815: G --> A
Char. 3478: C --> T

Char. 3529: C --> T
Char. 3533: T --> A
Char. 3559: G --> A
Char. 3572: C --> T
Char. 3596: A --> T
Char. 3631: C --> T
Char. 3655: G --> A
Char. 3715: A --> T
Char. 3764: A --> T
Char. 3835: C --> A
Char. 3930: A --> C
Char. 4033: G --> T
Char. 4078: C --> T
Char. 4396: G --> A
Char. 5890: C --> T
Char. 5930: G --> A
Char. 5968: T --> A
Char. 6004: A --> T
Char. 6012: T --> A
Char. 6099: C --> T
Char. 6254: A --> CT
Char. 6324: C --> T
Char. 6327: A --> T
Char. 6330: A --> C
Char. 6342: A --> G
Char. 6346: C --> A
Char. 6377: C --> T
Char. 6402: G --> T
Char. 6506: G --> A
Char. 6518: C --> T

Triportheus angulatus :
Rows_of_gill_rakers_on_first_epibranchial
(302): (1)_two --> (0)_one
Number_of_dorsal_pterygiophores (401):
(0)_10_or_fewer --> (1)_11_or_more
Char. 637: T --> C
Char. 646: A --> G
Char. 760: G --> A
Char. 778: G --> A
Char. 1321: A --> G
Char. 3753: T --> G
Char. 3940: C --> G

Triportheus nematurus :
Char. 619: A --> G
Char. 620: A --> G
Char. 850: A --> G
Char. 1132: C --> T
Char. 1141: A --> G
Char. 1213: A --> G
Char. 1234: A --> G
Char. 1270: A --> G
Char. 1276: C --> T
Char. 1279: A --> C
Char. 1306: A --> G
Char. 1312: C --> T
Char. 1339: T --> C
Char. 1423: C --> T
Char. 1432: T --> C
Char. 1435: C --> T
Char. 1444: A --> G
Char. 1453: A --> G
Char. 1464: T --> G
Char. 1466: G --> A
Char. 3850: C --> T
Char. 3877: C --> T
Char. 4116: C --> T
Char. 4118: A --> C
Char. 4119: T --> A
Char. 4120: C --> T
Char. 6343: A --> G
Char. 6412: A --> G
Char. 6444: T --> C

Triportheus pantanensis :
Frontal_and_pterotic_laterosensory_canals
(118):
(0)_without_a_discernible_angle_between_them -->
(1)_with_an_angle_on_pore_receiving_infraorbital_canal
Total_number_of_transitional_vertebrae (330):
(0)_four_or_more --> (1)_three_or_fewer
Char. 616: A --> G
Char. 661: C --> T

Char. 709: C --> T
Char. 835: C --> T
Char. 895: C --> T
Char. 922: C --> T
Char. 1000: G --> C
Char. 1168: T --> C
Char. 1171: A --> G
Char. 1204: A --> G
Char. 5648: A --> C
Char. 5735: G --> C
Char. 6309: T --> C
Char. 6446: T --> C
Char. 6524: A --> G

Xenagoniates bondi :
Number_of_branched_rays_on_dorsal_fin
(408): (1)_eight_or_more --> (0)_seven_or_fewer
Char. 586: G --> A
Char. 633: T --> C
Char. 646: T --> C
Char. 706: C --> T
Char. 714: A --> T
Char. 748: T --> C
Char. 760: A --> G
Char. 781: C --> T
Char. 787: T --> C
Char. 832: C --> T
Char. 838: C --> T
Char. 845: G --> A
Char. 847: A --> T
Char. 853: C --> T
Char. 864: C --> T
Char. 886: G --> C
Char. 892: C --> T
Char. 901: C --> T
Char. 934: C --> T
Char. 963: C --> T
Char. 964: T --> C
Char. 982: A --> T
Char. 1019: C --> T
Char. 1024: C --> T
Char. 1054: C --> T
Char. 1057: C --> T
Char. 1078: C --> T
Char. 1111: C --> T
Char. 1156: C --> T
Char. 1168: C --> T
Char. 1186: A --> G
Char. 1189: T --> C
Char. 1210: C --> T
Char. 1231: A --> G
Char. 1246: T --> C
Char. 1252: A --> G
Char. 1271: C --> T
Char. 1288: C --> A
Char. 1351: C --> A
Char. 1381: C --> T
Char. 1391: C --> T
Char. 1408: C --> G
Char. 1414: C --> A
Char. 1459: A --> T
Char. 1462: C --> T
Char. 1468: A --> G
Char. 1483: A --> C
Char. 1486: C --> T
Char. 2236: T --> C
Char. 2278: T --> C
Char. 2312: G --> T
Char. 4722: C --> T
Char. 4915: A --> C
Char. 5001: G --> A
Char. 5261: T --> C
Char. 5505: G --> A
Char. 5529: C --> T
Char. 5551: G --> A
Char. 5733: G --> A
Char. 6211: G --> A
Char. 6342: G --> A
Char. 6344: A --> G
Char. 6402: G --> A
Char. 6423: A --> G
Char. 6424: T --> C
Char. 6467: C --> T
Char. 6508: C --> T

Deuterodon longirostris :
Posterior_margin_of_subtemporal_fossa (72):
(1)_limited_by_a_well_developed_transverse_pterotic_ridge --> (0)_not_well_delimited_by_pterotic

Articulation_between_ventral_margin_of_metapterygoid_and_posterodorsal_margin_of_quadrate (229): (0)_absent --> (1)_present
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Astyanax intermedius :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wing -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Development_of_sagittal_capsule (69):
(0)_not_reaching_posterior_margin_of_lagenar_capsule -->
(1)_reaching_or_surpassing_posterior_margin_of_lagenar_capsule

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Deuterodon potaroensis :
Frontal_and_pterotic_laterosensory_canals (118):
(0)_without_a_discernible_angle_between_them -->
(1)_with_an_angle_on_pore_receiving_infraorbital_canal
Posterior_pore_of_pterotic_canal (119):
(1)_in_a_vertical_line_through_ventral_pterotic_pore -->
(0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch -->
(1)_with_cusps_aligned_in_straight_series
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more

Posterior_extent_of_ventral_process_of_quadrate (234):
(1)_falling_short_of_posterior_margin_of_symplectic -->
(0)_reaching_vertical_through_posterior_margin_of_symplectic

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial
Transitional_vertebrae_with_haemal_canal (332): (0)_absent_or_just_one --> (1)_two_or_more
Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioccipital -->
(1)_posterior_to_lateral_margin_of_epioccipital

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent

Number_of_supraneurals (392):
(0)_four_or_fewer --> (1)_five_or_more
Little_spot_on_each_scale_of_flanks (502):
(0)_absent --> (1)_present
Deuterodon_rosae :

Branching_of_laterosensory_canals_of_fourth_or_fifth_infracranials (97): (0)_absent --> (1)_present

Expansion_of_lamellar_portion_of_maxilla_just_posterior_to_toothed_region (141):
(0)_absent_or_not_pronounced -->
(1)_very_pronounced

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch --> (1)_with_cusps_aligned_in_straight_series
Relative_position_of_dorsal-fin_anterior_insertion (403):
(0)_anterior_to_or_at_vertical_through_pelvic-fin_origin -->
(1)_posterior_to_vertical_through_pelvic-fin_origin
Uroneurals (427): (1)_two_pairs -->
(0)_absent_or_just_one_pair

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Deuterodon_stigmatatus :

Expansion_of_lamellar_portion_of_maxilla_just_posterior_to_toothed_region (141):
(0)_absent_or_not_pronounced -->
(1)_very_pronounced
Position_of_coronomeckelian (159):
(1)_situated_mainly_dorsal_to_Meckelian_cartilage -->
(0)_situated_mainly_lateral_to_Meckelian_cartilage

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch --> (1)_with_cusps_aligned_in_straight_series
Uroneurals (427): (1)_two_pairs -->
(0)_absent_or_just_one_pair

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Diapoma_guarani :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_width -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Anterior_paired_projections_of_parasphenoid (43): (0)_absent --> (1)_present
Length_of_sphenotic_spine (47):
(0)_not_reaching_to_anterodorsal_angle_of_hyomandibula -->
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula
Relative_length_of_palatine (209):
(1)_distinctly_longer_than_one_half_length_of_ectopterygoid -->
(0)_approximately_one_half_length_of_ectopterygoid_or_less

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(0)_attached_to_middle_region_of_second_pharyngobranchial -->
(1)_attached_near_anterior_margin_of_second_pharyngobranchial

Parapophyses_of_second_vertebra (313):
(1)_wider_than_tripus -->
(0)_not_reaching_lateral_margins_of_tripus
Anal-fin_position (415):
(1)_extended_anteriorly_ventral_to_dorsal_fin -->
(0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray
Radii_on_scales (458):
(1)_present_and_numerous_on_most_scales -->
(0)_absent_or_reduced_in_number
Macropsobrycon_uruguayanae :
Maxillary_teeth (188): (1)_present -->
(0)_absent
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer

Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more
Char. 631: C --> T
Char. 655: C --> T
Char. 682: T --> C
Char. 694: T --> A
Char. 712: A --> G
Char. 745: A --> G
Char. 775: A --> G
Char. 889: C --> T
Char. 892: C --> T
Char. 958: A --> G
Char. 1066: C --> T
Char. 1123: T --> C
Char. 1136: T --> C
Char. 1144: C --> T
Char. 1171: A --> C
Char. 1172: C --> T
Char. 1207: C --> T
Char. 1210: C --> T
Char. 1237: T --> C
Char. 1255: A --> G
Char. 1270: C --> T
Char. 1276: T --> C
Char. 1331: C --> A
Char. 1336: A --> G
Char. 1346: A --> G
Char. 1384: A --> G
Char. 1420: A --> G
Char. 1429: C --> T
Char. 1468: A --> G
Char. 1474: C --> T
Char. 1478: A --> G
Char. 1510: C --> T
Char. 1687: A --> G
Char. 1708: T --> A
Char. 1718: A --> C
Char. 1735: G --> A
Char. 1786: T --> C
Char. 1795: C --> T
Char. 1798: A --> G
Char. 1810: G --> A
Char. 1819: G --> A
Char. 1927: T --> C
Char. 1942: A --> T
Char. 1960: C --> T
Char. 2002: C --> T
Char. 2008: A --> G
Char. 2026: A --> G
Char. 2041: T --> C
Char. 2044: T --> C
Char. 2062: T --> C
Char. 2185: C --> T
Char. 2284: A --> T
Char. 2287: A --> T
Char. 2293: C --> T
Char. 2312: G --> C
Char. 2329: A --> G
Char. 2359: T --> C
Char. 2425: T --> G
Char. 2437: A --> G
Char. 2530: T --> C
Char. 2572: T --> C
Char. 2593: G --> A

Char. 2596: A --> G
Char. 2660: T --> G
Char. 2671: T --> C
Char. 2734: T --> C
Char. 2746: T --> C
Char. 2836: T --> C
Char. 4725: C --> T
Char. 4776: G --> T
Char. 4809: T --> C
Char. 4878: A --> G
Char. 4896: C --> A
Char. 4926: T --> C
Char. 5088: G --> A
Char. 5361: T --> C
Char. 5436: T --> A
Char. 5541: C --> A
Char. 5718: C --> T
Char. 6253: T --> A
Char. 6294: T --> C
Char. 6299: A --> G
Char. 6344: A --> G
Char. 6379: T --> C
Char. 6382: C --> T
Char. 6444: A --> T
Char. 6531: T --> C
Knodus_moenkhausii :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (1)_present --> (0)_absent
Length_of_sphenotic_spine (47):
(0)_not_reaching_to_anterodorsal_angle_of_hyomandibula -->
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula
Palatine_foramen (210):
(0)_absent_or_reduced_in_size -->
(1)_present_and_very_conspicuous
Parapophyses_of_second_vertebra (313):
(1)_wider_than_tripus -->
(0)_not_reaching_lateral_margins_of_tripus
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_cleithrum
First_postcleithrum (361): (0)_present -->
(1)_absent
Number_of_supraneurals (393):
(0)_five_or_fewer --> (1)_six_or_more
Distribution_of_bony_hooks_on_anal-fin_branches_of_adult_males (453):
(1)_restricted_or_almost_restricted_to_posterior_primary_branch --> (0)_on_all_branches
Char. 1684: T --> C
Char. 1702: A --> G
Char. 1714: A --> G
Char. 1717: G --> A
Char. 1807: T --> A
Char. 1825: G --> T
Char. 1894: A --> T
Char. 1903: C --> T
Char. 1906: A --> G
Char. 1912: C --> T
Char. 1924: A --> G
Char. 1933: T --> C
Char. 1936: A --> G
Char. 2047: T --> A
Char. 4648: T --> C
Char. 5325: G --> A
Char. 5346: T --> C
Char. 5837: T --> C
Char. 5909: T --> A
Char. 5938: T --> C
Char. 6099: C --> T
Char. 6440: A --> G
Hyphessobrycon_erythrostroma :

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids

Posterior_extension_of_supraoccipital_spine (61):
(1)_dorsal_of_one_half_or_less_of_extent_of_neural_complex -->
(0)_dorsal_of_entire_neural_complex_of_Weberian_apparatus

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch -->
(1)_with_cusps_aligned_in_straight_series
Number_of_cusps_of_anterior_maxillary_teeth (192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp
Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present

Form_and_degree_of_ossification_of_first_ceratobranchial_gill_rakers (299):
(0)_laminar_and_not_ossified_distally -->
(1)_rather_thick_and_completely_ossified_distal_region

Parapophyses_of_second vertebra (313):
(1)_wider_than_tripus -->
(0)_not_reaching_lateral_margins_of_tripus
Dark_conspicuous_spot_on_dorsal_fin (496):
(1)_present --> (0)_absent
Char. 1555: T --> C
Char. 1564: T --> C
Char. 1591: C --> A
Char. 1600: A --> G
Char. 1633: C --> T
Char. 1657: T --> C
Char. 1666: A --> G
Char. 1678: T --> C
Char. 1687: A --> G
Char. 1696: A --> G
Char. 1708: T --> C
Char. 1771: A --> C
Char. 1772: C --> T
Char. 1774: A --> G
Char. 1780: A --> C
Char. 1828: A --> C
Char. 1837: A --> G
Char. 1913: C --> T
Char. 1924: C --> T
Char. 1948: T --> C
Char. 1960: T --> C
Char. 2023: C --> T
Char. 2084: C --> T
Char. 2113: A --> G
Char. 2149: T --> A
Char. 2152: T --> C

Hemigrammus_rodwayi :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wing -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Ventral_ridge_of_prootic (55): (0)_absent -->
(1)_present_from_anterior_margin_of_prootic_to_auditory_foramen

Posterior_pore_of_pterotic_canal (119):
(1)_in_a_vertical_line_through_ventral_pterotic_pore -->
(0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex_straight_or_slightly_concave -->
(1)_distinctly_concave_forming_an_angle_of_45°
Parapophyses_of_second vertebra (313):
(1)_wider_than_tripus -->
(0)_not_reaching_lateral_margins_of_tripus

Laminar_bony_ridge_on_dorsal_margin_of_abdominal_ribs (321): (0)_absent --> (1)_present
Posterior_margin_of_cleithrum (342):
(0)_with_concavity_poorly_pronounced_or_lacking -->
(1)_with_markedly_concave_margin_almost_forming_straight_angle

Uroneurals (427): (0)_absent_or_just_one_pair --> (1)_two_pairs
Char. 1592: G --> T
Char. 1596: C --> A
Char. 1600: A --> C
Char. 1606: C --> G
Char. 1615: G --> A
Char. 1672: G --> A
Char. 1678: A --> T
Char. 1711: C --> T
Char. 1714: A --> G
Char. 1798: A --> T
Char. 1801: A --> C
Char. 1807: T --> C
Char. 1825: A --> G
Char. 1831: C --> T
Char. 1858: T --> C
Char. 1861: A --> C
Char. 1873: C --> T
Char. 1900: T --> C
Char. 1903: T --> C
Char. 1912: C --> T
Char. 1918: T --> C
Char. 1927: T --> C
Char. 1939: G --> A
Char. 2023: T --> A
Char. 2044: T --> C
Char. 2062: T --> C
Char. 2071: T --> C
Char. 2077: T --> C
Char. 2092: A --> G
Char. 2113: A --> G
Char. 4985: A --> T
Char. 4992: T --> C
Char. 5010: G --> A
Char. 5031: C --> T
Char. 5103: G --> T
Char. 5205: T --> G
Char. 5394: A --> G
Char. 5460: C --> T
Char. 5463: G --> A
Char. 5623: C --> T
Char. 5634: A --> G
Char. 6254: T --> C
Char. 6255: A --> C
Char. 6317: A --> T
Char. 6378: A --> T
Char. 6381: A --> C
Char. 6433: T --> C

Protocheirodon_pi :
Posterior_extension_of_vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection
Posterior_extension_of_supraoccipital_spine (61):
(1)_dorsal_of_one_half_or_less_of_extent_of_neural_complex -->
(0)_dorsal_of_entire_neural_complex_of_Weberian_apparatus
Fourth_infraorbital (90): (0)_present -->
(1)_absent

Dorsal_end_of_laterosensory_canal_of_preopercle_and_suprapreopercle (108):
(0)_not_overlapping_anterodorsal_process_of_opercle -->
(1)_overlapping_anterodorsal_process_of_opercle

Laterosensory_pore_just_anterior_to_dilatator_fossa (115): (1)_lateroventral_to_laterosensory_canal -->
(0)_dorsomedial_to_laterosensory_canal
Number_of_teeth_on_inner_premaxillary_row (183): (0)_six_or_fewer --> (1)_seven_or_more
Number_of_teeth_on_inner_premaxillary_row (184): (0)_seven_or_fewer --> (1)_eight_or_more
Form_of_anterior_portion_of_ectopterygoid (213):
(0)_broad_and_broadly_articulating_with_palatine -->
(1)_slender_and_articulating_only_to_lateral_margin_of_palatine

Foramen_in_posterior_region_of_metapterygoid (227):
(1)_present_encircled_by_metapterygoid_or_bordered_by_cartilage -->
(0)_an_incomplete_arch_bordered_posteriorly_by_hyomandibula
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial

Anterior_projection_of_dorsal_process_of_scapula (358): (0)_reaching_medial_lamella_of_cleithrum -->
(1)_separated_from_medial_lamella_of_cleithrum
Dorsal_development_of_third_postcleithrum (365):
(0)_projects_dorsally_to_posterior_region_of_scapula -->
(1)_not_projects_dorsally_to_posterior_region_of_scapula

Posterior_projection_of_ischiatic_process (374): (0)_well_developed --> (1)_absent
Main_axis_of_supraneurals (396):
(0)_not_bifurcated -->
(1)_at_least_some_of_them_distally_bifurcated
Number_of_branched_anal-fin_rays (421):
(0)_34_or_fewer --> (1)_35_or_more

Char. 649: C --> T
Char. 667: C --> T
Char. 679: C --> T
Char. 697: C --> T
Char. 703: C --> G
Char. 706: C --> T
Char. 709: C --> T
Char. 710: C --> A
Char. 733: T --> C
Char. 739: A --> T
Char. 748: T --> C
Char. 775: A --> G
Char. 790: C --> A
Char. 826: T --> C
Char. 832: C --> T
Char. 835: C --> T
Char. 854: A --> G
Char. 862: T --> C
Char. 889: T --> G
Char. 922: C --> T
Char. 950: G --> A
Char. 952: A --> C
Char. 955: T --> C
Char. 970: C --> T
Char. 971: C --> T
Char. 976: C --> T
Char. 979: C --> A
Char. 986: C --> T
Char. 991: C --> T
Char. 1106: G --> A
Char. 1117: C --> T
Char. 1125: C --> T
Char. 1135: C --> A
Char. 1138: A --> C
Char. 1175: G --> A
Char. 1182: C --> A
Char. 1185: C --> A
Char. 1187: C --> A
Char. 1229: C --> T
Char. 1237: T --> C
Char. 1240: T --> C
Char. 1250: C --> T
Char. 1255: A --> G
Char. 1258: A --> C
Char. 1261: C --> A
Char. 1268: C --> T
Char. 1288: T --> A
Char. 1298: G --> A
Char. 1304: C --> T
Char. 1309: CT --> G

Char. 1357: C --> A
Char. 1363: T --> C
Char. 1384: A --> G
Char. 1391: C --> T
Char. 1408: A --> C
Char. 1422: A --> C
Char. 2233: G --> A
Char. 2236: C --> T
Char. 2407: G --> T
Char. 2497: G --> T
Char. 2563: T --> C
Char. 2590: G --> A
Char. 2594: C --> A
Char. 2607: A --> G
Char. 2641: G --> A
Char. 2716: G --> A
Char. 2854: T --> C
Char. 3467: G --> A
Char. 3478: C --> T
Char. 3487: C --> T
Char. 3498: C --> T
Char. 3526: C --> T
Char. 3571: T --> C
Char. 3631: C --> T
Char. 3633: C --> A
Char. 3709: A --> C
Char. 3715: G --> A
Char. 3767: A --> G
Char. 3798: C --> T
Char. 3839: C --> A
Char. 3844: A --> G
Char. 3877: C --> T
Char. 3889: C --> T
Char. 3907: A --> G
Char. 3922: A --> G
Char. 3934: G --> A
Char. 4003: C --> T
Char. 4012: G --> A
Char. 4047: G --> T
Char. 4072: T --> C
Char. 4081: A --> C
Char. 4124: C --> A
Char. 4177: C --> T
Char. 4201: C --> A
Char. 4237: G --> A
Char. 4251: C --> T
Char. 4291: G --> A
Char. 4306: C --> T
Char. 4339: C --> T
Char. 4390: G --> A
Char. 4391: C --> T
Char. 4405: G --> T
Char. 4432: C --> T
Char. 4441: T --> C
Char. 4448: C --> A
Char. 4449: G --> A
Char. 4504: G --> A
Char. 4579: C --> T
Char. 4588: C --> T
Char. 4615: C --> T
Char. 4656: A --> G
Char. 4679: A --> T
Char. 4767: C --> A
Char. 4773: C --> T
Char. 4782: C --> A
Char. 4783: T --> A
Char. 4887: C --> T
Char. 5004: C --> T
Char. 5055: A --> G
Char. 5088: AG --> C
Char. 5117: G --> C
Char. 5128: C --> T
Char. 5168: G --> A
Char. 5295: G --> A
Char. 5347: G --> A
Char. 5355: G --> A
Char. 5391: A --> T
Char. 5397: A --> G
Char. 5409: G --> A
Char. 5452: G --> A
Char. 5453: G --> A
Char. 5503: G --> A
Char. 5529: C --> T

Char. 5556: A --> C
Char. 5574: A --> G
Char. 5580: C --> T
Char. 5655: G --> T
Char. 5661: C --> T
Char. 5690: A --> T
Char. 6168: T --> C
Char. 6211: G --> A
Char. 6228: T --> C
Char. 6245: A --> G
Char. 6294: T --> C
Char. 6308: A --> G
Char. 6311: T --> C
Char. 6315: A --> C
Char. 6317: A --> T
Char. 6319: A --> T
Char. 6322: C --> A
Char. 6326: T --> C
Char. 6346: C --> T
Char. 6355: A --> T
Char. 6402: G --> A
Char. 6432: A --> T
Char. 6433: T --> A
Char. 6434: G --> T
Char. 6439: T --> C
Char. 6445: A --> T
Char. 6449: T --> C
Char. 6456: C --> T
Char. 6458: C --> A
Char. 6480: G --> A
Char. 6487: C --> T
Char. 6493: A --> T
Char. 6507: C --> T
Char. 6515: A --> G
Char. 6516: G --> A
Char. 6584: A --> G
Odontostilbe_fugitiva :
Anterior_margin_of_lamellar_region_of_vomer
(16): (0)_narrower_than_anterior_region -->
(1)_as_wide_as_posterior_margin_of_anterior_regi
on
Anterior_process_of_contralateral_lateral_ethmoids
(21): (0)_distant_each_other -->
(1)_almost_articulating_each_other_on_middle_lin
e_of_vomer
Relative_position_of_anterior_margin_of_antorbita
l_and_first_infraorbital (80):
(0)_antorbital_either_aligned_or_anterior_to_first_i
nfraorbital -->
(1)_anterior_margin_of_antorbital_posterior_to_fir
st_infraorbital
Number_of_teeth_on_inner_premaxillary_row
(182): (0)_five_or_fewer --> (1)_six_or_more
Number_of_dentary_teeth_on_outer_row (198):
(0)_eight_or_fewer --> (1)_ten_or_more
Posterior_extent_of_ventral_process_of_quadrate
(234):
(1)_falling_short_of_posterior_margin_of_symplec
tic -->
(0)_reaching_vertical_through_posterior_margin_o
f_symplectic
Char. 554: A --> C
Char. 556: A --> C
Char. 584: G --> C
Char. 607: A --> T
Char. 610: T --> C
Char. 757: A --> G
Char. 772: C --> T
Char. 838: C --> A
Char. 889: C --> T
Char. 1045: T --> C
Char. 1075: T --> C
Char. 1078: T --> C
Char. 1117: C --> T
Char. 1118: C --> T
Char. 1192: T --> C
Char. 1198: T --> C
Char. 1234: A --> G
Char. 1309: T --> C
Char. 1495: C --> T

Char. 2185: C --> T
Char. 2312: G --> C
Char. 2593: G --> A
Char. 2596: A --> G
Char. 2785: A --> G
Char. 2839: C --> G
Char. 3457: C --> T
Char. 3541: A --> G
Char. 3745: G --> T
Char. 3751: G --> A
Char. 3853: C --> T
Char. 3946: T --> C
Char. 4039: G --> A
Char. 4045: A --> G
Char. 4150: G --> C
Char. 4270: T --> GC
Char. 4378: C --> T
Char. 4394: A --> C
Char. 4612: C --> T
Char. 5532: G --> A
Char. 6314: C --> T
Odontostilbe_pulchra :
Char. 691: C --> T
Char. 862: T --> C
Char. 1135: C --> T
Char. 1498: C --> T
Char. 2194: C --> T
Char. 2425: C --> G
Char. 2518: G --> C
Char. 3877: C --> T
Char. 4021: A --> G
Char. 4180: C --> T
Char. 4570: C --> T
Char. 5299: C --> T
Char. 5541: C --> A
Pseudocheiroidon_terrabaee :
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Char. 599: C --> T
Char. 600: G --> T
Char. 601: A --> C
Char. 610: C --> G
Char. 614: G --> A
Char. 622: T --> G
Char. 626: C --> T
Char. 649: C --> T
Char. 706: C --> A
Char. 811: A --> G
Char. 862: T --> C
Char. 955: T --> C
Char. 968: A --> G
Char. 1156: C --> T
Char. 1159: C --> T
Char. 1172: C --> T
Char. 1195: A --> G
Char. 1201: A --> G
Char. 1284: T --> A
Char. 1315: A --> G
Char. 1332: T --> A
Char. 1333: A --> G
Char. 1339: C --> T
Char. 1346: A --> G
Char. 1359: T --> A
Char. 1401: T --> C
Char. 1404: G --> A
Char. 1407: G --> A
Char. 1411: A --> G
Char. 1412: C --> A
Char. 1431: T --> C
Char. 1432: T --> C
Char. 1434: T --> A
Char. 1437: T --> A
Char. 1443: A --> C
Char. 1447: C --> T
Char. 1452: C --> T
Char. 1481: C --> T
Char. 1486: C --> T
Char. 1493: G --> A
Char. 1498: C --> G
Char. 1501: A --> G
Char. 2278: T --> C
Char. 2302: T --> C
Char. 2313: T --> C

Char. 2338: T --> C
Char. 2614: T --> C
Char. 2725: T --> A
Char. 2827: G --> A
Char. 3475: C --> T
Char. 3595: C --> T
Char. 3649: C --> T
Char. 4109: C --> T
Char. 4177: C --> T
Char. 4201: C --> A
Char. 4450: G --> A
Char. 4471: G --> A
Char. 4591: A --> T
Char. 4592: G --> A
Char. 4630: C --> T
Char. 4705: C --> T
Char. 5631: C --> T
Char. 5724: C --> T
Compsura_heterura :
Fourth_infraorbital (90): (0)_present -->
(1)_absent
Form_of_anterior_expansion_of_basihyal
(260):
(0)_slender_with_anterior_margin_less_than_two-thirds_of_its_length -->
(1)_expanded_anterior_margin_with_two-thirds_or_more_of_its_length
Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Bony_lamellae_associated_with_supraneurals (397):
(1)_wider_than_primary_axis_of_supraneurals -->
(0)_absent_or_small
Bony_hooks_on_first_pelvic-fin_ray_of_adult_males (448): (0)_absent -->
(1)_present
Hypertrophied_ventral_caudal-peduncle_squamation (472): (0)_absent -->
(1)_present_restricted_to_scales_below_lateral_line
Insemination (514): (0)_absent --> (1)_present
Char. 595: C --> T
Char. 631: C --> T
Char. 664: T --> C
Char. 715: C --> T
Char. 721: A --> G
Char. 743: C --> T
Char. 748: T --> C
Char. 799: A --> G
Char. 817: T --> C
Char. 862: T --> C
Char. 937: C --> T
Char. 952: T --> C
Char. 985: C --> T
Char. 1096: T --> C
Char. 1156: T --> C
Char. 1192: T --> C
Char. 1237: T --> C
Char. 1291: T --> C
Char. 1360: A --> G
Char. 1370: T --> C
Char. 1372: A --> G
Char. 1390: C --> T
Char. 1411: A --> G
Char. 1534: G --> A
Char. 1565: T --> C
Char. 1600: A --> G
Char. 1615: G --> A
Char. 1729: A --> G
Char. 1762: C --> T
Char. 1795: C --> T
Char. 1822: A --> G
Char. 1840: A --> G
Char. 1852: A --> T
Char. 1879: A --> G
Char. 1892: C --> T
Char. 1972: A --> G
Char. 1999: A --> G
Char. 2017: A --> G
Char. 2026: A --> G
Char. 2041: T --> C
Char. 2101: C --> T
Char. 2107: C --> T
Char. 2122: C --> T
Char. 2380: T --> GC
Char. 2510: T --> C
Char. 2566: T --> G
Char. 2596: A --> G
Char. 3814: A --> G
Char. 3919: T --> C
Char. 4381: T --> A
Char. 4394: A --> C
Char. 4555: C --> T
Char. 4612: C --> T
Char. 4887: C --> T
Char. 5151: C --> T
Char. 5563: A --> G
Char. 6333: C --> T
Char. 6345: A --> G
Char. 6347: C --> T
Char. 6379: T --> C
Char. 6382: C --> AT
Char. 6493: G --> A
Amazonspinther_dalmata :
Length_of_laterosensory_canal_of_dentary (103):
(0)_piercing_almost_entire_length_of_dentary -->
(1)_reduced_or_absent
Ventral_margin_of_anterior_ceratohyal (263):
(1)_with_notches_for_articulation_of_branchiostegal_rays --> (0)_smooth_and_without_notches
Anterior_portions_of_branchiostegal_rays (268):
(0)_broad_near_their_articulation_with_ceratohyals -->
(1)_slender_near_their_articulation_with_ceratohyals
Attachment_of_first_branchiostegal_ray (269):
(0)_on_proximal_one-half_length_of_anterior_ceratohyal -->
(1)_posterior_to_one-half_length_of_anterior_ceratohyal
Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_less
Dorsal-fin_rays_articulating_with_first_dorsal_pterygiophore (404): (0)_two --> (1)_three_or_four
Char. 553: C --> T
Char. 565: C --> T
Char. 607: A --> T
Char. 609: A --> T
Char. 625: C --> T
Char. 640: C --> T
Char. 655: C --> T
Char. 668: A --> T
Char. 676: C --> T
Char. 703: C --> A
Char. 736: T --> G
Char. 772: T --> C
Char. 836: C --> T
Char. 850: C --> T
Char. 865: A --> G
Char. 868: A --> T
Char. 922: C --> T
Char. 943: A --> T
Char. 958: A --> G
Char. 960: C --> G
Char. 961: A --> G
Char. 1003: A --> T
Char. 1015: C --> T
Char. 1036: C --> T
Char. 1042: C --> T
Char. 1045: C --> T
Char. 1057: C --> T
Char. 1085: G --> A
Char. 1087: A --> T
Char. 1093: A --> C
Char. 1096: T --> C
Char. 1099: A --> T
Char. 1108: A --> C
Char. 1124: T --> A
Char. 1129: C --> T
Char. 1150: A --> G
Char. 1165: C --> T
Char. 1186: A --> T
Char. 1210: C --> T
Char. 1213: A --> G
Char. 1216: T --> C
Char. 1222: C --> T
Char. 1225: C --> T
Char. 1229: C --> T
Char. 1261: C --> A
Char. 1262: C --> T
Char. 1270: A --> C
Char. 1276: C --> T
Char. 1279: T --> C
Char. 1294: A --> G
Char. 1306: A --> C
Char. 1312: C --> T
Char. 1313: A --> C
Char. 1326: A --> G
Char. 1333: A --> T
Char. 1335: C --> T
Char. 1339: C --> T
Char. 1342: A --> C
Char. 1351: C --> T
Char. 1360: A --> C
Char. 1367: A --> G
Char. 1375: A --> G
Char. 1381: C --> T
Char. 1387: A --> C
Char. 1390: T --> C
Char. 1393: A --> C
Char. 1422: A --> C
Char. 1437: T --> A
Char. 1441: C --> G
Char. 1459: T --> A
Char. 1474: C --> T
Char. 1477: C --> T
Char. 1486: C --> T
Char. 2209: T --> A
Char. 2236: C --> T
Char. 2251: C --> T
Char. 2323: C --> T
Char. 2467: C --> T
Char. 2524: T --> C
Char. 2614: T --> C
Char. 2632: A --> G
Char. 2674: C --> T
Char. 2774: C --> T
Char. 2809: T --> C
Char. 2875: A --> C
Char. 3465: A --> G
Char. 3523: A --> G
Char. 3553: T --> C
Char. 3559: G --> T
Char. 3568: A --> C
Char. 3604: T --> A
Char. 3613: G --> A
Char. 3617: G --> A
Char. 3652: T --> C
Char. 3709: A --> T
Char. 3787: A --> C
Char. 3796: C --> G
Char. 3820: C --> T
Char. 3826: A --> G
Char. 3877: C --> T
Char. 3907: A --> T
Char. 3913: A --> T
Char. 3937: T --> C
Char. 3964: C --> G
Char. 3979: C --> A
Char. 4057: C --> T
Char. 4141: C --> T
Char. 4186: T --> C
Char. 4222: A --> C
Char. 4276: T --> C
Char. 4294: C --> T
Char. 4297: C --> T
Char. 4318: T --> C
Char. 4327: G --> T
Char. 4346: G --> A
Char. 4360: A --> G

Char. 4393: G --> T
Char. 4411: G --> A
Char. 4414: G --> A
Char. 4528: G --> T
Char. 4569: C --> A
Char. 4627: C --> A
Char. 4639: C --> T
Char. 4645: C --> T
Char. 4650: C --> T
Char. 4654: C --> T
Char. 4776: G --> A
Char. 4812: T --> C
Char. 4837: C --> T
Char. 4858: C --> T
Char. 4960: C --> T
Char. 5022: C --> T
Char. 5133: G --> A
Char. 5145: C --> G
Char. 5157: C --> T
Char. 5184: T --> C
Char. 5202: C --> T
Char. 5208: A --> G
Char. 5274: A --> G
Char. 5278: T --> A
Char. 5281: G --> T
Char. 5295: G --> A
Char. 5296: A --> G
Char. 5349: T --> A
Char. 5412: C --> T
Char. 5463: G --> T
Char. 5499: A --> T
Char. 5541: A --> T
Char. 5543: A --> T
Char. 5553: C --> A
Char. 5655: G --> A
Char. 5664: C --> T
Char. 6118: T --> C
Char. 6205: T --> C
Char. 6211: G --> A
Char. 6230: C --> T
Char. 6251: A --> G
Char. 6311: T --> C
Char. 6322: C --> A
Char. 6325: C --> A
Char. 6326: T --> C
Char. 6329: T --> C
Char. 6342: G --> A
Char. 6343: G --> A
Char. 6353: A --> T
Char. 6355: A --> T
Char. 6357: A --> G
Char. 6374: A --> G
Char. 6381: A --> C
Char. 6414: A --> T
Char. 6426: T --> C
Char. 6475: T --> C
Char. 6485: A --> C
Char. 6492: C --> T
Char. 6496: A --> T
Char. 6528: A --> G
Char. 6565: C --> T
Char. 6575: A --> C
Oligosarcus paranensis :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40): (0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids
Posterior_extension_of_supraoccipital_spine (62): (0)_reaching_at_least_to_middle_length_of_neural_complex --> (1)_reaching_only_to_anterior_limit_of_neural_complex
Dorsal_extension_of_antorbital (81): (0)_leaving_a_broad_space_with_frontal --> (1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Length_of_interhyal (307): (0)_shorter_than_one-third_of_symplectic_length --> (1)_equal_to_or_longer_than_one-half_of_symplectic_length

Form_of_third_postcleithrum (364): (1)_with_a_posterior_lamella --> (0)_slender_without_associated_lamella
Char. 1810: G --> A
Hyphessobrycon boulengeri :

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40): (0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids

Contact_between_ectopterygoid_and anterodorsal_region_of_quadrate (220): (0)_present --> (1)_absent
Position_of_ventral_end_of_posttemporal (336): (0)_anterior_or_lateral_to_lateral_margin_of_epioccipital --> (1)_posterior_to_lateral_margin_of_epioccipital
Cartilage-filled_space_anterior_to_scapular_foramen (360): (0)_present_wider_than_anterior_process_of_scapula --> (1)_much_reduced_by_expansions_of_coracoid_and_d_cleithrum
Number_of_supraneurals (393): (0)_five_or_fewer --> (1)_six_or_more
Number_of_supraneurals (394): (0)_six_or_fewer --> (1)_seven_or_more
Anal-fin_position (416): (0)_posterior_of_or_at_vertical_through_base_of_last_dorsal-fin_ray --> (1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Dorsal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (444): (0)_absent --> (1)_present
Char. 2227: C --> G
Char. 2237: G --> A
Char. 2241: A --> G
Char. 2290: G --> A
Char. 2317: A --> G
Char. 2332: T --> C
Char. 2474: T --> C
Char. 2479: C --> T
Char. 2500: G --> T
Char. 2554: A --> G
Char. 2626: T --> C
Char. 2659: A --> G
Char. 2671: T --> C
Char. 2749: T --> A
Char. 2794: G --> A
Char. 2803: C --> G
Char. 3456: G --> C
Char. 3458: T --> A
Char. 3475: C --> G
Char. 3604: T --> C
Char. 3620: T --> C
Char. 3643: A --> C
Char. 3775: A --> G
Char. 4128: G --> A
Char. 4132: C --> T
Char. 4135: G --> C
Char. 4186: T --> A
Char. 4231: T --> A
Char. 4242: C --> T
Char. 4252: G --> A
Char. 4297: C --> T
Char. 4432: C --> T
Char. 4480: G --> A
Char. 4486: G --> T
Char. 4541: C --> A
Char. 4555: G --> A
Char. 4600: G --> C
Char. 4603: C --> T
Char. 4621: G --> A
Char. 4630: C --> T
Char. 4651: G --> A
Char. 4755: T --> A
Char. 4836: G --> A
Char. 4925: C --> G

Char. 4977: C --> G
Char. 5268: T --> G
Char. 5277: C --> C
Char. 5282: C --> G
Char. 5283: T --> C
Char. 5343: G --> A
Char. 5394: C --> A
Char. 5418: G --> A
Char. 5454: T --> A
Char. 5466: C --> G
Char. 5502: T --> G
Char. 5533: C --> G
Char. 5664: C --> T
Char. 5694: T --> G
Char. 6358: C --> T
Char. 6361: G --> A
Char. 6362: C --> T
Char. 6363: A --> T
Char. 6402: A --> G
Char. 6493: A --> T
Char. 6507: C --> T
Char. 6516: G --> A
Hyphessobrycon poeciloides :
Position_of_intercalar (71): (1)_on_articulation_between_pterotic_and_exoccipital --> (0)_on_middle_ventral_surface_of_exoccipital
Overlap_of_maxilla_by_second_infraorbital (85): (0)_absent --> (1)_present
Fourth_infraorbital (91): (0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals --> (1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series
Lateral_line (123): (0)_complete --> (1)_interrupted
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Number_of_teeth_on_inner_premaxillary_row (181): (0)_four_or_fewer --> (1)_five_or_more
Maxillary_teeth (188): (1)_present --> (0)_absent
Number_of_maxillary_teeth (189): (1)_two_or_more --> (0)_only_one_or_absent

Lateral_expansion_of_middle_region_of_ectopterygoid (215): (1)_expanded_lateral_to_lateral_ethmoid_and_reaching_infraorbitals --> (0)_not_expanded_lateral_to_lateral_ethmoid

Contact_between_ectopterygoid_and anterodorsal_region_of_quadrate (220): (0)_present --> (1)_absent
Form_of_anterior_expansion_of_basihyal (260): (0)_slender_with_anterior_margin_less_than_two-thirds_of_its_length --> (1)_expanded_anterior_margin_with_two-thirds_or_more_of_its_length
Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two

Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two
Relative_number_of_precaudal_vertebrae (324): (1)_equal_or_less_numerous_than_caudal_vertebrae --> (0)_exceeding_caudal_vertebrae_in_two_or_more_elements
Anterior_tip_of_pelvic_bone (377): (0)_anterior_to_third_rib --> (1)_posterior_to_third_rib
Number_of_branched_anal-fin_rays (420): (1)_25_or_more --> (0)_24_or_fewer
Dorsal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (444): (0)_absent --> (1)_present
Hemigrammus pulcher :
Parietal_branch_of_laterosensory_canal (116): (1)_completely_absent --> (0)_present_reaching_parietal_bone_or_not

Extension_of_parietal_branch_of_laterosensory_canal (117): (1)_not_reaching_parietal_or_absent --> (0)_reaching_parietal

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (303): (0)_17_or_fewer --> (1)_18_or_more
Hemigrammus_aguaruna :
Horizontal_process_of_anguloarticular (161): (0)_laterally_covered_by_dentary_only_anteriorly --> (1)_broadly_covered_by_dentary_to_tip_of_Meckelian_cartilage

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial --> (0)_attached_to_middle_region_of_second_pharyngobranchial

Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (295): (0)_11_or_more --> (1)_ten_or_fewer
Dorsal-fin_rays_articulating_with_first_dorsal_pterygiophore (404): (1)_three_or_four --> (0)_two
Bryconella_pallidifrons :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present
Fourth_infraorbital (90): (0)_present --> (1)_absent
Fourth_infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals --> (1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch --> (1)_with_cusps_aligned_in_straight_series
Foramen_on_articular_condyle_of_quadrate (230): (0)_absent --> (1)_present

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent

Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (295): (0)_11_or_more --> (1)_ten_or_fewer

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Number_of_supraneurals (392):
(0)_four_or_fewer --> (1)_five_or_more
Number_of_branched_anal-fin_rays (419):
(1)_18_or_more --> (0)_17_or_fewer
Bony_hooks_on_base_of_pelvic-fin_rays_of_adult_males (446):
(0)_absent_or_in_small_number_compared_to_on_segmented_portion --> (1)_as_numerous_as_on_segmented_portion_of_rays
Scales_covering_caudal-fin_lobes (470):
(1)_covering_one-third_of_their_length --> (0)_covering_only_their_base
Sclerotic_bones (508):
(0)_single_anteroventrally_open_bone --> (1)_two_bones_separated_by_cartilages
Char. 619: A --> G
Char. 634: A --> T
Char. 658: C --> T
Char. 712: T --> A
Char. 745: T --> C
Char. 766: C --> T
Char. 784: T --> A
Char. 802: A --> G
Char. 817: C --> T

Char. 823: T --> C
Char. 847: C --> T
Char. 856: A --> G
Char. 860: G --> A
Char. 937: T --> C
Char. 970: C --> T
Char. 979: C --> T
Char. 1006: T --> C
Char. 1012: A --> G
Char. 1019: T --> C
Char. 1078: T --> C
Char. 1081: A --> C
Char. 1084: T --> C
Char. 1093: A --> T
Char. 1105: T --> A
Char. 1120: A --> G
Char. 1132: C --> A
Char. 1138: A --> G
Char. 1177: T --> G
Char. 1195: A --> G
Char. 1198: T --> C
Char. 1204: A --> G
Char. 1207: C --> T
Char. 1222: C --> T
Char. 1279: C --> A
Char. 1289: C --> T
Char. 1291: T --> A
Char. 1303: C --> T
Char. 1356: T --> A
Char. 2257: G --> A
Char. 2266: C --> A
Char. 2312: G --> T
Char. 2563: T --> A
Char. 3778: A --> G
Char. 3785: G --> C
Char. 4081: A --> G
Char. 4144: T --> C
Char. 4157: A --> G
Char. 4186: T --> C
Char. 4235: A --> C
Char. 4306: C --> T
Char. 4342: C --> T
Char. 4348: T --> A
Char. 4567: T --> A
Char. 4573: C --> T
Char. 4654: C --> T
Char. 5010: G --> A
Char. 5202: C --> T
Char. 5250: C --> T
Char. 5496: T --> A
Char. 5563: A --> G
Char. 5580: C --> G
Char. 5700: G --> A
Char. 6254: T --> A
Char. 6257: A --> G
Char. 6314: T --> C
Char. 6322: C --> T
Char. 6328: A --> G
Char. 6332: A --> C
Char. 6333: A --> G
Char. 6345: A --> G
Char. 6368: C --> T
Char. 6415: A --> G
Char. 6436: G --> A
Char. 6452: A --> G
Char. 6457: A --> G

Phycocharax_rasbora :

Laterosensorial_pore_just_anterior_to_dilatator_fossa (115): (1)_lateroventral_to_laterosensory_canal --> (0)_dorsomedial_to_laterosensory_canal

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal --> (1)_not_reaching_parietal_or_absent
Lateral_line (123): (0)_complete --> (1)_interrupted
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent

Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two

Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33
Uroneurals (427): (1)_two_pairs --> (0)_absent_or_just_one_pair
Number_of_scales_in_lateral_series (467): (0)_33_or_more --> (1)_32_or_fewer
Chevron-shaped_lines_following_myosepta (498): (0)_absent --> (1)_present
Hyphessobrycon_montagi :
Ethmopalatine_cartilage (208): (0)_absent_or_reduced_in_size --> (1)_present_and_conspicuous
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex_straight_or_slightly_concave --> (1)_distinctly_concave_forming_an_angle_of_45°
Characidae_n.sp.r :
Parietal_branch_of_laterosensory_canal (116): (0)_present_reaching_parietal_bone_or_not --> (1)_completely_absent
Isolated_pored_scale_in_caudal_peduncle (124): (0)_absent --> (1)_present
Canal_of_lateral_line_on_caudal-fin_membrane (125): (0)_absent --> (1)_present
Number_of_maxillary_teeth (190): (1)_four_or_more --> (0)_up_to_three
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex_straight_or_slightly_concave --> (1)_distinctly_concave_forming_an_angle_of_45°
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Posterior_margin_of_cleithrum (341): (0)_without_concavity_ventral_to_first_postcleithrum --> (1)_with_concavity_ventral_to_first_postcleithrum

Anterior_projection_of_dorsal_process_of_scapula (358): (0)_reaching_medial_lamella_of_cleithrum --> (1)_separated_from_medial_lamella_of_cleithrum
Hyphessobrycon_vanzolini :
Anterior_paired_projections_of_parasphenoid (43): (1)_present --> (0)_absent
Ventral_extent_of_third_infraorbital (88): (1)_not_reaching_horizontal_arm_of_preopercle_at_least_anteriorly --> (0)_reaching_horizontal_arm_of_preopercle
Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps --> (1)_five_or_more_cusps
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Number_of_cusps_of_first_maxillary_tooth (194): (0)_five_or_fewer --> (1)_seven_or_more
Distribution_of_denticles_on_gill_rakers (301): (0)_restricted_to_margins_or_absent --> (1)_along_entire_surface_of_gill_rakers
Bony_hooks_on_fin_rays (440): (1)_present_in_adult_males --> (0)_absent
Sclerotic_bones (508): (0)_single_anteroventrally_open_bone --> (1)_two_bones_separated_by_cartilages
Hemigrammus_haraldi :
Anterior_paired_projections_of_parasphenoid (43): (1)_present --> (0)_absent
Posterior_margin_of_subtemporal_fossa (72): (1)_limited_by_a_well_developed_transverse_otic_ridge --> (0)_not_well_delimited_by_otic_ridge
Erythrocharax_altipinnis :
Form_of_mesethmoid_spine (3): (0)_long_extending_between_premaxillae --> (1)_relatively_short_with_premaxillae_articulating_anteriorly
Foramen_on_lateral_ethmoid (24): (0)_complete --> (1)_open_medially
Dorsal_expansion_of_rhinospheoid (35): (1)_present_and_forming_a_bony_wall_between_olfactory_nerves --> (0)_absent

Length_of_sphenotic_spine (47):
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula -->
(0)_not_reaching_toanterodorsal_angle_of_hyomandibula
Length_of_laterosensory_canal_of_dentary (103):
(0)_piercing_almost_entire_length_of_dentary -->
(1)_reduced_or_absent
Anguloarticular_laterosensory_canal (105):
(0)_present --> (1)_absent
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage
Premaxillary,_maxillary,_and_dentary_teeth (166):
(0)_not_pedunculate,_or_pedunculate_only_in_some_of_these_bones -->
(1)_pedunculate_and_uniformly_shaped
Number_of_rows_of_premaxillary_teeth (170):
(1)_two_or_three --> (0)_one
Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch -->
(1)_with_cusps_aligned_in_straight_series
Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more --> (0)_four_or_fewer
Foramen_in_posterior_region_of_metapterygoid (227):
(1)_present,_encircled_by_metapterygoid_or_bordered_by_cartilage -->
(0)_an_incomplete_arch,_bordered_posteriorly_by_hyomandibula
Anterior_extension_of_interopercle (249):
(0)_extending_anteriorly_beyond_tip_of_horizontal_arm_of_preopercle -->
(1)_not_extending_anteriorly_beyond_anterior_tip_of_preopercle
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial
Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two
Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two
Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Denticles_on_gill_rakers (300): (0)_present -->
(1)_absent
Number_of_vertebrae (325): (0)_up_to_33 -->
(1)_34_or_more
Number_of_supraneurals (392):
(0)_four_or_fewer --> (1)_five_or_more
Pseudotympanum_between_ribs_of_fifth_and_sixth_vertebrae (485): (0)_absent --> (1)_present
Nostrils (510):
(0)_rounded_and_divided_only_by_skin_fold -->
(1)_nostrils_distinctly_separate
Hypheosobrycon_loweae :
Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base
Ventral_extent_of_third_infraorbital (88):
(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly -->
(0)_reaching_horizontal_arm_of_preopercle
Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present
Radii_on_scales (458):
(1)_present_and_numerous_on_most_scales -->
(0)_absent_or_reduced_in_number
Moenkhausia_pirauba :
Relative_length_of_frontal_fontanel (29):
(1)_3/4_or_more_of_length_of_parietal_fontanel -->
(0)_up_to_2/3_length_of_parietal_fontanel
Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_than_dorsoventrally
Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (304): (0)_24_or_fewer -->
(1)_25_or_more
Char. 2299: C --> T
Char. 2380: T --> G
Char. 2389: T --> A
Char. 2599: C --> A
Char. 2665: T --> G
Char. 2674: C --> T
Char. 2744: G --> A
Char. 2745: C --> G
Char. 2902: C --> T
Char. 6119: T --> C
Char. 6162: A --> G
Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
Hemigrammus_cf_lunatus :
Posterior_extension_of_vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection
Ventral_margin_of_horizontal_process_of_anguloarticular (162):
(0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal -->
(1)_perpendicular_to_laterosensory_canal_of_dentary
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex,_straight,_or_slightly_concave -->
(1)_distinctly_concave,_forming_an_angle_of_45°
Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Hypheosobrycon_moniliger :
Parietal_branch_of_laterosensory_canal (116):
(0)_present,_reaching_parietal_bone_or_not -->
(1)_completely_absent
Ethmopalatine_cartilage (208):
(0)_absent_or_reduced_in_size -->
(1)_present_and_conspicuous
Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (303): (1)_18_or_more -->
(0)_17_or_fewer
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_less
Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epicentral -->
(1)_posterior_to_lateral_margin_of_epicentral
Dorsal-fin_rays_articulating_with_first_dorsal_ptyerygiophore (404): (1)_three_or_four --> (0)_two
Bryconetes_enigmaticus :
Temporal_fossa (51):
(1)_absent_or_much_reduced -->
(0)_well_developed
Ventral_extent_of_third_infraorbital (88):
(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly -->
(0)_reaching_horizontal_arm_of_preopercle
Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present
Radii_on_scales (458):
(1)_present_and_numerous_on_most_scales -->
(0)_absent_or_reduced_in_number
Moenkhausia_pirauba :
Relative_length_of_frontal_fontanel (29):
(1)_3/4_or_more_of_length_of_parietal_fontanel -->
(0)_up_to_2/3_length_of_parietal_fontanel
Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_than_dorsoventrally
Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (304): (0)_24_or_fewer -->
(1)_25_or_more
Char. 2299: C --> T
Char. 2380: T --> G
Char. 2389: T --> A
Char. 2599: C --> A
Char. 2665: T --> G
Char. 2674: C --> T
Char. 2744: G --> A
Char. 2745: C --> G
Char. 2902: C --> T
Char. 6119: T --> C
Char. 6162: A --> G
Char. 6168: T --> C
Char. 6206: T --> C
Char. 6309: T --> A
Char. 6314: T --> A
Char. 6319: A --> C
Char. 6354: A --> T
Char. 6355: A --> T
Char. 6361: A --> G
Char. 6365: A --> G
Char. 6368: C --> T
Char. 6381: A --> G
Char. 6424: C --> T
Char. 6458: C --> T
Char. 6511: T --> C
Char. 6573: C --> T
Char. 6589: G --> A
Moenkhausia_lepidura :
Posterior_extension_of_supraoccipital_spine (62):
(0)_reaching_at_least_to_middle_length_of_neural_complex -->
(1)_reaching_only_to_anterior_limit_of_neural_complex
Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base
Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial
Char. 1864: T --> C
Char. 1906: A --> G
Char. 1960: T --> C
Char. 1963: T --> C
Char. 1999: A --> G
Char. 2314: A --> G
Char. 2380: T --> A
Char. 2446: G --> A
Char. 2713: T --> G
Char. 6188: G --> A
Char. 6195: A --> G
Char. 6206: T --> C
Char. 6294: T --> A
Char. 6299: A --> G
Char. 6304: C --> T
Char. 6322: C --> A
Char. 6327: A --> G
Char. 6362: C --> T
Char. 6363: A --> C
Char. 6377: T --> C
Char. 6424: C --> T
Char. 6443: T --> A
Char. 6446: C --> T
Char. 6477: A --> G
Char. 6492: C --> A
Char. 6497: A --> T
Char. 6511: T --> C
Char. 6513: T --> C
Char. 6528: A --> G
Char. 6531: C --> T
Char. 6557: A --> T
Char. 6566: C --> T
Moenkhausia_collettii :
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Char. 533: C --> T
Char. 563: A --> G
Char. 571: A --> G
Char. 586: A --> G
Char. 589: C --> T
Char. 595: C --> T
Char. 628: A --> G
Char. 646: A --> G
Char. 652: A --> C
Char. 661: T --> C
Char. 670: T --> C

Char. 692: C --> T
Char. 697: C --> T
Char. 712: T --> C
Char. 730: C --> T
Char. 736: T --> C
Char. 754: T --> C
Char. 769: A --> G
Char. 778: C --> T
Char. 814: G --> T
Char. 817: C --> T
Char. 823: T --> A
Char. 841: T --> C
Char. 864: C --> T
Char. 865: A --> G
Char. 886: G --> T
Char. 898: T --> A
Char. 910: C --> T
Char. 911: C --> T
Char. 928: C --> T
Char. 946: A --> G
Char. 949: T --> C
Char. 958: A --> T
Char. 976: C --> T
Char. 1021: A --> G
Char. 1033: A --> T
Char. 1036: C --> T
Char. 1069: A --> G
Char. 1096: C --> T
Char. 1101: T --> C
Char. 1126: C --> T
Char. 1129: C --> A
Char. 1135: C --> T
Char. 1165: C --> T
Char. 1171: C --> G
Char. 1177: T --> C
Char. 1186: C --> T
Char. 1189: C --> T
Char. 1207: C --> T
Char. 1213: A --> G
Char. 1279: C --> T
Char. 1294: A --> G
Char. 1300: C --> G
Char. 1309: T --> C
Char. 1330: C --> T
Char. 1342: A --> T
Char. 1351: A --> G
Char. 1375: T --> A
Char. 1376: G --> A
Char. 1377: C --> T
Char. 1417: C --> T
Char. 1450: C --> T
Char. 1454: C --> T
Char. 1465: C --> T
Char. 1469: A --> G
Char. 1501: A --> G
Char. 1510: C --> T
Char. 2284: A --> T
Char. 2329: C --> T
Char. 2362: T --> C
Char. 2632: G --> A
Char. 2896: T --> C
Char. 3620: T --> A
Char. 3817: G --> A
Char. 4075: C --> T
Char. 4246: G --> T
Char. 4372: A --> G
Char. 4445: C --> A
Char. 4750: C --> T
Char. 4752: T --> C
Char. 5052: A --> T
Char. 5055: A --> G
Char. 5346: C --> T
Char. 5468: T --> C
Char. 5589: T --> C
Char. 6140: C --> T
Char. 6165: A --> G
Char. 6245: G --> A
Char. 6255: A --> T
Char. 6295: A --> G
Char. 6300: G --> C
Char. 6301: T --> C
Char. 6355: A --> T
Char. 6414: A --> T

Char. 6436: G --> A
Char. 6457: A --> C
Char. 6557: A --> T
Hyphessobrycon_santae :

Lateral_opening_between_ventral_diverging_lamellae_of_mesethmoid_and_anterior_process_of_lateral_ethmoid (22): (0)_broad -->
(1)_reduced_by_mesethmoid_vomer_and_lateral_ethmoid

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present
Rhinosphenoid (34): (1)_present --> (0)_absent
Dorsal_expansion_of_rhinosphenoid (35):
(1)_present_and_forming_a_bony_wall_between_olfactory_nerves --> (0)_absent
Anterior_paired_projections_of_parasphenoid (43): (1)_present --> (0)_absent
Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_than_dorsoventrally

Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94):
(1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa -->
(0)_almost_complete_at_least_in_its_ventral_border

Epiphyseal_branch_of_corresponding_supraorbital_canals (112):
(0)_both_aligned_with_epiphyseal_bar -->
(1)_oriented_obliquely_opening_posteriorly_to_epiphyseal_bar

Laterosensorial_pore_just_anterior_to_dilatator_fossa (115): (0)_dorsomedial_to_laterosensorial_canal --> (1)_lateroventral_to_laterosensorial_canal

Tubules_for_passage_of_blood_vessels_on_lamellar_portion_of_maxilla (142):
(0)_a_single_tubule_parallel_to_dorsal_margin_of_maxilla -->
(1)_with_anterior_branch_running_parallel_to_anterior_margin_of_maxilla

Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more --> (0)_four_or_fewer
Relative_length_of_palatine (209):
(0)_approximately_one_half_length_of_ectopterygoid_or_less -->
(1)_distinctly_longer_than_one_half_length_of_ectopterygoid

Lateroventral_expansion_of_ectopterygoid (214):
(0)_absent_articulating_almost_exclusively_with_cartilage_of_palatine -->
(1)_present_expanded_twice_length_of_palatine_cartilage

Posterior_extent_of_ventral_process_of_quadrate (234):
(1)_falling_short_of_posterior_margin_of_symplectic -->
(0)_reaching_vertical_through_posterior_margin_of_symplectic
Number_of_branchiostegal_rays (267):
(0)_three_or_four --> (1)_five

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Anterior_tip_of_pelvic_bone (377):
(0)_anterior_to_third_rib -->
(1)_posterior_to_third_rib
Number_of_supraneurals (392):
(0)_four_or_fewer --> (1)_five_or_more

Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Pectoral-
fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (443): (0)_absent --> (1)_present

Char. 1516: T --> C
Char. 1522: A --> C
Char. 1531: C --> T
Char. 1546: T --> C
Char. 1565: T --> C
Char. 1579: A --> G
Char. 1594: A --> G
Char. 1612: C --> T
Char. 1615: A --> G
Char. 1630: A --> G
Char. 1672: A --> G
Char. 1675: C --> T
Char. 1705: A --> G
Char. 1708: T --> C
Char. 1828: A --> G
Char. 1849: C --> A
Char. 1891: C --> T
Char. 1897: T --> A
Char. 1915: A --> G
Char. 1921: T --> G
Char. 1922: G --> A
Char. 1927: T --> C
Char. 1936: A --> T
Char. 1969: T --> C
Char. 1972: A --> G
Char. 2008: A --> G
Char. 2017: A --> G
Char. 2020: T --> A
Char. 2092: A --> T
Char. 2095: C --> T
Char. 2113: A --> C
Char. 2125: T --> C
Char. 2131: A --> C
Char. 2155: A --> G
Serrapinnus_microdon :

Posterior_extension_of_vomer (18):
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection -->
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection

Dorsal_end_of_laterosensorial_canal_of_preopercle_and_suprapreopercle (108):
(1)_overlapping_anterodorsal_process_of_opercle -->
(0)_not_overlapping_anterodorsal_process_of_opercle
Number_of_cusps_of_first_maxillary_tooth (194): (1)_seven_or_more --> (0)_five_or_fewer

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (1)_six_or_more --> (0)_five_or_fewer

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (1)_ten_or_fewer -->
(0)_11_or_more

Number_of_supraneurals (392):
(0)_four_or_fewer --> (1)_five_or_more
Bony_lamellae_associated_with_supraneurals (397):
(1)_wider_than_primary_axis_of_supraneurals -->
(0)_absent_or_small

Bony_hooks_on_first_pelvic-fin_ray_of_adult_males (448): (0)_absent -->
(1)_present

Distribution_of_bony_hooks_on_pelvic-fin_segments_of_adult_males (450):
(0)_bilateral_at_least_in_some_segments -->
(1)_unpaired_oriented_medially

Acinocheirodon_melanogramma :
Caudal-
fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (445): (0)_absent --> (1)_present
Insemination (514): (0)_absent --> (1)_present
Char. 559: C --> A
Char. 562: C --> A
Char. 583: C --> T

Char. 631: C --> T
 Char. 730: T --> C
 Char. 778: C --> A
 Char. 796: A --> G
 Char. 802: A --> G
 Char. 811: A --> G
 Char. 814: T --> G
 Char. 850: C --> T
 Char. 871: C --> T
 Char. 889: C --> G
 Char. 916: C --> T
 Char. 943: T --> C
 Char. 958: A --> G
 Char. 980: C --> T
 Char. 1118: C --> T
 Char. 1126: C --> T
 Char. 1136: T --> C
 Char. 1192: T --> C
 Char. 1252: A --> T
 Char. 1255: A --> G
 Char. 1291: T --> C
 Char. 1294: A --> G
 Char. 1330: C --> T
 Char. 1342: A --> T
 Char. 1411: A --> G
 Char. 1483: A --> G
 Char. 1600: A --> G
 Char. 1609: C --> T
 Char. 1621: T --> C
 Char. 1630: C --> T
 Char. 1735: G --> A
 Char. 1741: T --> C
 Char. 1810: G --> A
 Char. 1813: A --> T
 Char. 1867: T --> C
 Char. 1903: T --> C
 Char. 1939: G --> A
 Char. 1963: T --> C
 Char. 1987: C --> T
 Char. 2008: A --> G
 Char. 2020: C --> T
 Char. 2059: A --> G
 Char. 2077: C --> T
 Char. 2095: T --> C
 Char. 2275: T --> C
 Char. 2584: C --> T
 Char. 3481: C --> T
 Char. 3535: T --> C
 Char. 3538: A --> G
 Char. 3598: G --> A
 Char. 3872: G --> A
 Char. 3973: C --> A
 Char. 4045: G --> A
 Char. 4081: G --> T
 Char. 4318: C --> T
 Char. 4627: G --> C
 Char. 6328: C --> T
 Char. 6467: C --> T
 Aphyocheirodon_hemigrammus :
 Number_of_teeth_on_inner_premaxillary_row
 (184): (0)_seven_or_fewer --> (1)_eight_or_more
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Char. 568: C --> T
 Char. 634: A --> G
 Char. 646: A --> G
 Char. 736: T --> C
 Char. 760: A --> G
 Char. 775: A --> G
 Char. 853: C --> T
 Char. 877: A --> G
 Char. 886: C --> T
 Char. 901: T --> C
 Char. 937: C --> T
 Char. 967: C --> T
 Char. 1015: C --> T
 Char. 1090: A --> G
 Char. 1108: A --> G
 Char. 1114: A --> G
 Char. 1141: A --> G
 Char. 1201: A --> G
 Char. 1288: A --> G
 Char. 1312: C --> T
 Char. 1315: A --> G
 Char. 1333: C --> T
 Char. 1684: T --> C
 Char. 1750: A --> G
 Char. 1804: A --> C
 Char. 1858: A --> T
 Char. 1915: G --> A
 Char. 1930: T --> C
 Char. 1969: T --> C
 Char. 2302: T --> C
 Char. 2313: T --> C
 Char. 2614: T --> C
 Char. 2725: T --> A
 Char. 3547: C --> T
 Char. 3583: G --> A
 Char. 3706: A --> C
 Char. 3859: T --> C
 Char. 3874: T --> C
 Char. 4021: A --> G
 Char. 4469: G --> A
 Char. 4705: C --> T
 Char. 6253: T --> C
 Char. 6327: A --> G
 Char. 6484: C --> T
 Argopleura_chocoensis :
 Char. 3780: G --> A
 Char. 3894: T --> C
 Char. 3973: C --> G
 Char. 4102: C --> T
 Char. 4349: C --> A
 Char. 4426: G --> A
 Char. 4468: G --> A
 Char. 4540: C --> T
 Char. 4570: T --> A
 Char. 4630: C --> T
 Char. 5037: G --> A
 Char. 5154: T --> C
 Char. 5177: G --> A
 Char. 5394: A --> G
 Char. 5505: G --> A
 Char. 6022: C --> T
 Char. 6299: G --> A
 Char. 6377: C --> T
 Char. 6413: C --> T
 Astyanax_aeneus :
 Char. 5007: T --> C
 Char. 5061: C --> T
 Char. 5079: C --> T
 Char. 5715: G --> A
 Char. 5716: A --> C
 Char. 5717: C --> A
 Char. 5718: T --> G
 Char. 5720: G --> A
 Char. 5721: T --> G
 Attonitus_bounites :
 Char. 2237: G --> A
 Char. 2311: T --> A
 Char. 2407: G --> T
 Char. 2497: C --> T
 Char. 2818: G --> T
 Char. 3907: A --> G
 Char. 3937: T --> C
 Char. 4060: C --> T
 Char. 4087: C --> T
 Char. 4093: G --> A
 Char. 4127: A --> G
 Char. 4231: G --> A
 Char. 4312: T --> C
 Char. 4441: C --> T
 Char. 4450: G --> A
 Char. 4517: C --> T
 Char. 5718: T --> G
 Char. 5763: A --> G
 Char. 5774: A --> G
 Char. 5933: T --> C
 Char. 6016: T --> C
 Char. 6026: A --> G
 Char. 6029: A --> G
 Char. 6292: A --> G
 Char. 6300: G --> A
 Char. 6326: T --> C
 Char. 6334: G --> A
 Char. 6361: T --> A
 Char. 6403: C --> A
 Char. 6432: A --> G
 Char. 6485: A --> G
 Char. 6525: A --> G
 Char. 6563: C --> T
 Char. 6565: C --> T
 Attonitus_irisae :
 Char. 1591: T --> C
 Char. 1618: C --> T
 Char. 1648: T --> C
 Char. 1657: T --> C
 Char. 1681: A --> G
 Char. 1687: A --> G
 Char. 1717: G --> A
 Char. 1793: C --> T
 Char. 1846: C --> T
 Char. 1849: C --> A
 Char. 1864: C --> T
 Char. 1865: C --> T
 Char. 1876: A --> G
 Char. 1909: T --> A
 Char. 1951: T --> C
 Char. 1990: A --> G
 Char. 2005: T --> C
 Char. 2017: A --> G
 Char. 2024: C --> T
 Char. 2041: T --> C
 Char. 2044: T --> A
 Char. 2050: A --> C
 Char. 2332: T --> G
 Char. 3016: C --> T
 Char. 3208: G --> C
 Char. 3385: G --> C
 Char. 5013: C --> A
 Char. 5055: G --> A
 Char. 5930: G --> A
 Char. 6005: C --> T
 Char. 6037: T --> C
 Char. 6073: A --> G
 Char. 6089: T --> C
 Char. 6299: G --> A
 Char. 6306: C --> A
 Char. 6319: A --> G
 Char. 6344: A --> T
 Char. 6345: A --> G
 Char. 6348: A --> G
 Char. 6368: C --> T
 Char. 6377: C --> T
 Char. 6410: A --> G
 Char. 6432: A --> T
 Char. 6434: G --> A
 Char. 6452: A --> G
 Char. 6511: A --> T
 Astyanax_baileyi :
 Char. 752: C --> T
 Char. 787: C --> T
 Char. 955: C --> T
 Char. 973: C --> T
 Char. 1076: T --> C
 Char. 1084: T --> C
 Char. 1099: T --> C
 Char. 1699: T --> C
 Char. 2074: A --> T
 Char. 4746: C --> A
 Char. 4749: T --> A
 Char. 4752: T --> A
 Char. 4836: G --> T
 Astyanax_caballeri :
 Char. 712: G --> A
 Char. 1063: C --> A
 Char. 1786: T --> C
 Char. 2242: C --> T
 Char. 2893: G --> A
 Char. 3559: G --> A
 Char. 3774: C --> T
 Char. 5506: C --> A
 Char. 5688: C --> T
 Char. 5723: A --> G
 Eretmobycon_brevirostris :
 No autapomorphies
 Hemibrycon_cristiani :
 Sheath_of_scales_covering_anal-fin_base
 (469): (0)_reaching_half_length_of_anal-

fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more
 Char. 3202: C --> A
 Char. 3235: C --> A
 Char. 3376: C --> A
 Char. 3607: G --> A
 Char. 3613: G --> A
 Char. 3893: A --> G
 Char. 4003: C --> T
 Char. 4096: G --> A
 Char. 6381: G --> A
 Eretmobycon_dahli :
 Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more
 Char. 1735: G --> A
 Char. 1774: A --> T
 Char. 1867: T --> C
 Char. 1876: A --> G
 Char. 1963: T --> C
 Char. 1990: A --> G
 Char. 2041: C --> A
 Char. 2050: T --> C
 Char. 2074: A --> G
 Char. 3817: G --> A
 Char. 3820: C --> G
 Char. 3830: C --> A
 Char. 3893: A --> G
 Char. 4480: G --> T
 Char. 5930: G --> A
 Hemibrycon_loisae :
 Pectoral-
 fin_bony_hooks_in_adult_males_of_species_bearin_g_hooks_on_fins (443): (1)_present --> (0)_absent
 Dorsal-
 fin_bony_hooks_in_adult_males_of_species_bearin_g_hooks_on_fins (444): (1)_present --> (0)_absent
 Char. 1651: A --> G
 Char. 1796: T --> C
 Char. 1972: A --> G
 Char. 2434: G --> A
 Char. 2932: C --> T
 Char. 2989: T --> C
 Char. 3075: T --> C
 Char. 3076: C --> T
 Char. 3142: G --> A
 Char. 3160: C --> T
 Char. 3169: C --> A
 Char. 3211: A --> T
 Char. 3230: C --> A
 Char. 3238: T --> A
 Char. 3289: C --> A
 Char. 3292: C --> T
 Char. 3295: C --> T
 Char. 3340: C --> T
 Char. 3361: G --> A
 Char. 3364: C --> T
 Char. 3467: G --> T
 Char. 3931: G --> A
 Char. 4132: C --> T
 Char. 4243: C --> T
 Char. 4285: T --> G
 Char. 4417: G --> A
 Char. 5010: G --> C
 Char. 5127: C --> T
 Char. 5229: C --> A
 Char. 5911: T --> C
 Knodus_ortegasae :
 Char. 1540: A --> G
 Char. 1609: T --> C
 Char. 1720: T --> C
 Char. 1735: A --> G
 Char. 1741: C --> T
 Char. 1756: C --> T
 Char. 1759: A --> G
 Char. 1879: A --> G
 Char. 1939: G --> A
 Char. 1957: T --> A
 Char. 1990: A --> G
 Char. 1993: A --> G
 Char. 2008: A --> G
 Char. 2056: C --> T
 Char. 2084: C --> T
 Char. 2098: T --> A
 Char. 2101: C --> T
 Char. 2149: T --> C
 Char. 2313: T --> C
 Char. 2749: T --> G
 Char. 3620: T --> C
 Char. 4466: G --> A
 Char. 5253: C --> A
 Char. 5259: C --> T
 Char. 6324: C --> T
 Bryconamericus_pachacuti :
 Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
 Char. 1603: A --> G
 Char. 1615: A --> G
 Char. 1663: T --> C
 Char. 1690: C --> A
 Char. 1759: A --> G
 Char. 1783: T --> A
 Char. 1796: C --> T
 Char. 1810: AG --> T
 Char. 1825: A --> T
 Char. 1852: A --> T
 Char. 1867: A --> T
 Char. 1879: A --> G
 Char. 1939: G --> C
 Char. 1957: T --> C
 Char. 1969: T --> C
 Char. 1975: A --> G
 Char. 1990: A --> C
 Char. 2014: T --> C
 Char. 2035: T --> A
 Char. 2038: T --> C
 Char. 2053: A --> G
 Char. 2056: C --> T
 Char. 2065: A --> G
 Char. 2237: G --> A
 Char. 2311: T --> A
 Char. 2347: T --> C
 Char. 2359: T --> C
 Char. 2507: C --> T
 Char. 2584: C --> T
 Char. 2593: G --> A
 Char. 2595: T --> A
 Char. 2650: A --> G
 Char. 2794: A --> G
 Char. 3901: G --> A
 Char. 4006: C --> T
 Char. 4060: C --> A
 Char. 4096: G --> A
 Char. 4144: T --> C
 Char. 4192: C --> T
 Char. 4318: T --> A
 Char. 4364: C --> T
 Char. 4381: T --> C
 Char. 4462: T --> C
 Char. 4501: G --> T
 Char. 4630: C --> T
 Char. 4633: C --> T
 Char. 4696: G --> A
 Char. 4702: G --> C
 Char. 5259: C --> T
 Char. 5281: G --> A
 Char. 5343: A --> C
 Char. 5433: T --> C
 Char. 5538: A --> G
 Char. 5559: C --> T
 Char. 6163: A --> G
 Char. 6168: T --> C
 Char. 6257: A --> G
 Char. 6290: C --> T
 Char. 6294: C --> T
 Char. 6317: A --> G
 Char. 6357: A --> G
 Char. 6361: T --> C
 Char. 6365: A --> C
 Char. 6423: A --> T
 Char. 6424: T --> C
 Char. 6432: A --> C
 Char. 6444: A --> T
 Char. 6453: A --> T
 Char. 6458: C --> A
 Char. 6514: A --> T
 Char. 6528: A --> G
 Bryconamericus_patriciae :
 Char. 1876: G --> A
 Char. 1894: A --> G
 Char. 1936: A --> G
 Char. 2017: A --> G
 Char. 2125: G --> A
 Char. 2312: C --> T
 Char. 2367: C --> T
 Char. 2584: C --> T
 Char. 4216: G --> A
 Char. 4466: G --> A
 Char. 4825: C --> A
 Char. 5744: C --> T
 Char. 5945: G --> G
 Char. 6511: C --> T
 Hemibrycon_plutarcoi :
 Char. 1645: A --> G
 Char. 1729: C --> T
 Char. 3458: T --> A
 Char. 3467: G --> T
 Char. 3535: C --> T
 Char. 3752: G --> A
 Char. 3961: G --> C
 Char. 4003: C --> T
 Char. 4033: A --> G
 Char. 5184: T --> A
 Eretmobycon_terrabilis :
 Char. 3748: T --> C
 Char. 4992: T --> C
 Char. 5358: C --> T
 Char. 6207: T --> C
 Char. 6244: G --> A
 Char. 6402: G --> A
 Ceratobranchia_obtusirostris :
 Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps --> (1)_five_or_more_cusps
 Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
 Number_of_supraneurals (395): (0)_seven_or_fewer --> (1)_eight_or_more
 Char. 1582: A --> G
 Char. 1598: C --> T
 Char. 1618: C --> T
 Char. 1705: T --> C
 Char. 1720: T --> C
 Char. 1741: T --> C
 Char. 1759: A --> G
 Char. 1769: C --> T
 Char. 1780: A --> G
 Char. 1828: A --> C
 Char. 1843: T --> A
 Char. 1852: A --> G
 Char. 1876: A --> C
 Char. 1906: A --> C
 Char. 1960: T --> C
 Char. 1969: T --> C
 Char. 2014: T --> C
 Char. 2020: T --> C
 Char. 2029: T --> C
 Char. 2056: C --> A
 Char. 2296: C --> T
 Char. 2305: C --> A
 Char. 2329: A --> C
 Char. 2512: G --> C
 Char. 2545: C --> T
 Char. 2590: G --> A
 Char. 2660: T --> C
 Char. 4963: C --> G
 Char. 4985: A --> C
 Char. 5088: G --> C
 Char. 5107: C --> A
 Char. 5238: G --> A
 Char. 5316: A --> G
 Char. 5427: T --> AG
 Char. 5643: C --> T
 Char. 5646: T --> C
 Char. 5700: G --> A
 Char. 5868: T --> C
 Char. 5926: A --> G
 Char. 6040: A --> G

Char. 6253: A --> C
 Char. 6257: A --> G
 Char. 6299: G --> A
 Char. 6323: T --> C
 Char. 6347: A --> G
 Char. 6377: C --> T
 Char. 6413: T --> C
 Char. 6432: A --> C
 Char. 6434: G --> A
 Char. 6458: C --> A
 Char. 6636: C --> T
 Cheirodon_australe :
 Char. 847: A --> G
 Char. 2602: C --> A
 Cheirodon_kilianii :
 Number_of_cusps_of_anterior_maxillary_teeth
 (193): (1)_five_or_more_cusps --> (0)_up_to_three
 Median_predorsal_scales (465):
 (0)_covering_entire_predorsal_region -->
 (1)_leaving_naked_area_anterior_to_dorsal_fin
 Char. 1279: T --> C
 Char. 1441: A --> G
 Char. 6253: T --> C
 Chrysobrycon_myersi :
 Canal_of_lateral_line_on_caudal-
 fin_membrane (125): (1)_present --> (0)_absent
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Teeth_on_third_pharyngobranchial (282):
 (0)_present --> (1)_absent
 Char. 1567: T --> C
 Char. 1723: G --> A
 Char. 1744: C --> T
 Char. 1783: T --> C
 Char. 1807: T --> C
 Char. 1849: C --> A
 Char. 1909: T --> G
 Char. 1927: T --> C
 Char. 1930: T --> C
 Char. 2053: A --> G
 Char. 2248: C --> T
 Char. 2296: C --> T
 Char. 2311: T --> C
 Char. 2368: G --> A
 Char. 2758: T --> C
 Char. 5169: C --> T
 Char. 5316: A --> C
 Char. 5910: C --> T
 Clupeacharax_anchoveoides :
 Relative_position_of_anterior_margin_of_antorbital
 l_and_first_infraorbital (80):
 (0)_antorbital_either_aligned_or_anterior_to_first_i
 nfraorbital -->
 (1)_anterior_margin_of_antorbital_posterior_to_fir
 st_infraorbital
 Fourth_infraorbital (90): (0)_present -->
 (1)_absent
 Number_of_cusps_of_anterior_maxillary_teeth
 (193): (0)_up_to_three --> (1)_five_or_more_cusps
 Number_of_dentary_teeth_on_outer_row (198):
 (1)_ten_or_more --> (0)_eight_or_fewer
 Number_of_branchiostegal_rays (266):
 (1)_four_or_five --> (0)_three
 Number_of_branched_anal-fin_rays (421):
 (0)_34_or_fewer --> (1)_35_or_more
 Char. 525: T --> C
 Char. 559: A --> T
 Char. 580: C --> A
 Char. 586: C --> A
 Char. 588: C --> A
 Char. 592: C --> T
 Char. 601: A --> T
 Char. 610: C --> T
 Char. 612: A --> T
 Char. 616: C --> T
 Char. 628: A --> T
 Char. 655: C --> T
 Char. 664: C --> T
 Char. 667: C --> T
 Char. 685: C --> A
 Char. 688: A --> G
 Char. 703: C --> G
 Char. 710: C --> T
 Char. 712: C --> A
 Char. 724: A --> C
 Char. 743: C --> T
 Char. 745: T --> A
 Char. 769: A --> G
 Char. 775: A --> G
 Char. 787: C --> G
 Char. 811: A --> G
 Char. 835: C --> T
 Char. 841: C --> A
 Char. 844: A --> G
 Char. 868: A --> T
 Char. 871: A --> T
 Char. 886: G --> C
 Char. 907: A --> C
 Char. 910: C --> A
 Char. 916: A --> T
 Char. 940: T --> A
 Char. 949: T --> C
 Char. 951: C --> T
 Char. 961: A --> T
 Char. 967: C --> G
 Char. 976: C --> T
 Char. 980: C --> T
 Char. 982: C --> G
 Char. 988: T --> A
 Char. 997: A --> C
 Char. 1021: A --> C
 Char. 1030: C --> T
 Char. 1039: A --> G
 Char. 1051: C --> T
 Char. 1057: C --> T
 Char. 1066: C --> T
 Char. 1076: C --> G
 Char. 1091: C --> T
 Char. 1096: T --> C
 Char. 1101: T --> C
 Char. 1102: A --> C
 Char. 1120: A --> G
 Char. 1141: A --> C
 Char. 1159: C --> A
 Char. 1174: A --> C
 Char. 1177: T --> C
 Char. 1183: A --> C
 Char. 1198: C --> G
 Char. 1210: C --> T
 Char. 1237: C --> A
 Char. 1243: A --> C
 Char. 1246: C --> T
 Char. 1262: C --> T
 Char. 1294: A --> G
 Char. 1298: G --> A
 Char. 1300: C --> A
 Char. 1304: AC --> T
 Char. 1330: C --> T
 Char. 1346: A --> C
 Char. 1366: A --> G
 Char. 1370: C --> T
 Char. 1375: C --> G
 Char. 1378: A --> C
 Char. 1411: G --> A
 Char. 1414: A --> T
 Char. 1435: C --> T
 Char. 1441: C --> T
 Char. 1453: A --> T
 Char. 1466: G --> A
 Char. 1468: A --> C
 Char. 1481: C --> T
 Char. 1490: C --> T
 Char. 1492: A --> G
 Char. 2170: C --> T
 Char. 3490: T --> C
 Char. 3550: T --> C
 Char. 3685: A --> T
 Char. 3718: T --> C
 Char. 3724: T --> A
 Char. 3736: G --> A
 Char. 3746: T --> A
 Char. 3765: C --> G
 Char. 3772: A --> C
 Char. 3778: A --> C
 Char. 3784: G --> A
 Char. 3790: A --> G
 Char. 3820: C --> T
 Char. 3865: C --> T
 Char. 3877: C --> T
 Char. 3889: C --> T
 Char. 3949: G --> A
 Char. 3952: C --> T
 Char. 3958: T --> C
 Char. 3961: G --> T
 Char. 3982: C --> T
 Char. 3983: T --> G
 Char. 4018: G --> A
 Char. 4030: A --> G
 Char. 4045: A --> T
 Char. 4111: G --> C
 Char. 4117: C --> T
 Char. 4120: C --> T
 Char. 4198: G --> T
 Char. 4225: T --> G
 Char. 4234: C --> T
 Char. 4253: C --> T
 Char. 4255: A --> G
 Char. 4279: C --> A
 Char. 4325: A --> G
 Char. 4330: C --> T
 Char. 4338: A --> G
 Char. 4354: A --> G
 Char. 4363: A --> G
 Char. 4373: T --> G
 Char. 4377: C --> T
 Char. 4378: C --> A
 Char. 4384: C --> T
 Char. 4480: T --> A
 Char. 4526: C --> T
 Char. 4532: G --> C
 Char. 4570: C --> T
 Char. 4581: G --> A
 Char. 4660: T --> C
 Char. 4666: T --> C
 Char. 4669: T --> A
 Char. 4690: C --> A
 Char. 4705: C --> T
 Compsura_gorgonae :
 Lateral_line (123): (0)_complete -->
 (1)_interrupted
 Hypertrophied_ventral_caudal-
 peduncle_squamation (472): (0)_absent -->
 (1)_present_restricted_to_scales_below_lateral_lin
 e
 Char. 568: C --> T
 Char. 609: A --> G
 Char. 610: C --> T
 Char. 637: C --> T
 Char. 691: C --> T
 Char. 754: A --> C
 Char. 847: A --> G
 Char. 889: A --> G
 Char. 892: C --> T
 Char. 983: T --> C
 Char. 985: C --> T
 Char. 1012: A --> T
 Char. 1060: T --> C
 Char. 1153: C --> T
 Char. 1175: G --> A
 Char. 1177: C --> T
 Char. 1186: A --> G
 Char. 1195: A --> G
 Char. 1270: G --> A
 Char. 1282: T --> C
 Char. 1285: G --> A
 Char. 1291: T --> C
 Char. 1300: C --> T
 Char. 1414: C --> T
 Char. 1423: C --> T
 Char. 1438: C --> T
 Char. 1445: A --> G
 Char. 1474: C --> T
 Char. 1477: C --> T
 Char. 1490: T --> C
 Char. 4445: C --> A
 Char. 4663: C --> G
 Char. 5043: C --> T
 Char. 5682: C --> A

Char. 6334: A --> T
Corynopoma_riisei :
Number_of_branched_anal-fin_rays (420):
(1)_25_or_more --> (0)_24_or_fewer
Adipose_fin (512): (0)_present --> (1)_absent
Char. 1594: A --> G
Char. 1741: T --> C
Char. 1852: A --> T
Char. 1867: T --> C
Char. 1894: A --> T
Char. 1927: T --> C
Char. 1990: A --> T
Char. 2023: T --> C
Char. 2024: T --> C
Char. 2038: T --> A
Char. 2044: T --> C
Char. 2050: T --> C
Char. 2065: A --> G
Char. 2077: T --> C
Char. 2386: A --> C
Char. 2401: G --> A
Char. 2437: A --> C
Char. 2530: C --> T
Char. 2578: T --> C
Char. 2590: G --> A
Char. 2635: A --> T
Char. 2662: G --> A
Char. 2992: A --> G
Char. 3016: C --> T
Char. 3061: C --> T
Char. 3160: T --> A
Char. 3169: C --> A
Char. 3268: G --> T
Char. 3364: C --> T
Char. 3418: T --> G
Char. 3484: G --> A
Char. 3501: C --> T
Char. 3609: G --> A
Char. 3769: T --> A
Char. 3793: T --> A
Char. 3835: C --> A
Char. 3877: C --> T
Char. 3982: C --> T
Char. 3991: A --> T
Char. 4093: G --> A
Char. 4165: G --> A
Char. 4373: T --> G
Char. 4396: G --> A
Char. 4411: G --> A
Char. 4469: G --> T
Char. 4588: C --> T
Char. 4630: C --> T
Char. 4788: C --> T
Char. 4860: G --> A
Char. 4926: C --> T
Char. 4959: G --> A
Char. 5037: G --> A
Char. 5260: A --> G
Char. 5289: G --> T
Char. 5298: C --> T
Char. 5397: A --> G
Char. 5439: A --> G
Char. 5445: G --> T
Char. 5499: C --> T
Char. 5505: G --> A
Char. 5559: C --> A
Char. 5605: C --> T
Char. 5616: A --> C
Char. 5716: A --> G
Char. 5718: T --> A
Char. 6049: G --> A
Char. 6300: G --> A
Char. 6325: C --> T
Char. 6333: T --> A
Char. 6334: G --> A
Char. 6346: C --> A
Char. 6376: C --> T
Char. 6484: C --> T
Char. 6515: A --> G
Creagrutus_affinis :

Position_of_opening_on_neurocranium_communicating_with_laterosensory_canal_of_sixth_infraorbit

al (101): (1)_in_frontal -->
(0)_between_frontal_and_pterotic

Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Creagrutus_beni :
Temporal_fossa (51):
(1)_absent_or_much_reduced -->
(0)_well_developed
Char. 1570: C --> T
Char. 1573: A --> G
Char. 1598: C --> T
Char. 1603: A --> G
Char. 1621: C --> T
Char. 1642: T --> C
Char. 1720: C --> T
Char. 1723: T --> C
Char. 1726: C --> T
Char. 1756: C --> T
Char. 1783: A --> C
Char. 1822: G --> A
Char. 1870: A --> T
Char. 1918: C --> T
Char. 1924: A --> G
Char. 1957: T --> C
Char. 1960: T --> A
Char. 1963: T --> C
Char. 2050: A --> G
Char. 2422: T --> C
Char. 2476: A --> G
Char. 2611: C --> G
Char. 2782: GT --> A
Char. 3564: T --> G
Char. 3613: A --> G
Char. 3871: T --> A
Char. 4081: A --> G
Char. 4282: T --> C
Char. 4663: A --> C
Char. 6048: C --> T
Char. 6063: T --> A
Char. 6078: T --> C
Char. 6299: G --> A
Char. 6306: C --> G
Char. 6307: T --> C
Char. 6327: A --> G
Char. 6329: A --> T
Char. 6332: A --> C
Char. 6333: C --> G
Char. 6334: G --> A
Char. 6361: C --> T
Char. 6426: T --> A
Creagrutus_brevipinnis :
Char. 4268: T --> A
Char. 5415: C --> T
Creagrutus_britskii :
Char. 1708: T --> C
Char. 1714: A --> G
Char. 1723: T --> C
Char. 1772: C --> T
Char. 1777: C --> T
Char. 1813: T --> C
Char. 1822: G --> A
Char. 1843: T --> A
Char. 1858: T --> C
Char. 1993: A --> G
Char. 1996: T --> C
Char. 2014: C --> T
Char. 2020: T --> C
Char. 2032: A --> G
Char. 2041: T --> C
Char. 2507: C --> T
Char. 3564: T --> C
Char. 3771: A --> G
Char. 4375: A --> T
Char. 4708: T --> C
Char. 5938: T --> C
Char. 5970: C --> A
Char. 6020: A --> G
Char. 6038: T --> A
Char. 6209: T --> C
Char. 6253: A --> G
Char. 6298: A --> G
Char. 6334: G --> A

Char. 6414: G --> T
Char. 6573: C --> T
Creagrutus_ignotus :
Char. 1633: A --> T
Char. 1642: T --> C
Char. 1663: T --> C
Char. 1759: A --> G
Char. 1768: T --> G
Char. 1774: A --> T
Char. 1796: T --> C
Char. 1825: T --> C
Char. 1846: T --> C
Char. 1849: A --> G
Char. 1855: T --> C
Char. 1888: A --> T
Char. 1903: T --> C
Char. 1909: T --> C
Char. 1921: G --> A
Char. 1924: A --> G
Char. 1933: T --> C
Char. 1972: A --> G
Char. 2005: T --> C
Char. 2011: T --> C
Char. 2050: A --> T
Char. 2056: T --> C
Char. 2065: A --> G
Char. 2481: A --> G
Char. 3088: A --> G
Char. 3148: T --> C
Char. 3508: A --> C
Char. 3830: C --> T
Char. 4006: C --> T
Char. 4171: C --> T
Char. 4364: C --> T
Char. 4621: G --> A
Char. 5911: C --> T
Char. 6074: C --> A
Char. 6329: A --> T
Char. 6379: A --> G
Char. 6440: T --> C
Char. 6445: A --> G
Creagrutus_occidaneus :
Premaxillary_dentition (168):
(1)_with_a_recognizable_triad_of_larger_teeth_with_h_rounded_base -->
(0)_one_or_more_series_of_similar_teeth
Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (1)_ten_or_fewer -->
(0)_11_or_more
Char. 1645: A --> G
Char. 1726: C --> T
Char. 1789: C --> T
Char. 1825: A --> G
Char. 1849: A --> G
Char. 1858: T --> C
Char. 1879: A --> G
Char. 2050: A --> G
Char. 5933: T --> G
Char. 6205: T --> C
Char. 6357: A --> G
Creagrutus_seductus :
Teeth_on_third_pharyngobranchial (282):
(1)_absent --> (0)_present
Creagrutus_phasma :
Char. 2662: G --> A
Char. 2821: G --> A
Char. 3064: T --> C
Char. 3394: C --> T
Char. 5910: C --> T
Char. 5945: A --> G
Char. 6002: T --> C
Char. 6037: T --> C
Char. 6345: A --> G
Char. 6361: C --> T
Char. 6484: T --> C
Char. 6514: A --> G
Creagrutus_maxillaris :

Flexion_on_maxilla_posterior_to_alveolar_premaxillary_arm (138): (1)_pronounced -->
(0)_absent_or_not_pronounced,_maxilla_rather_straight

Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Creagrutus unglus :
Char. 3616: G --> A
Char. 3622: G --> A
Char. 5945: A --> G
Char. 6001: A --> G
Char. 6002: T --> C
Char. 6038: T --> A
Char. 6048: C --> T
Char. 6049: G --> A
Char. 6209: C --> T
Char. 6334: G --> A
Char. 6402: G --> A
Char. 6412: A --> G
Char. 6414: G --> A
Char. 6515: A --> G
Creagrutus pila :
Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Char. 5935: A --> G
Creagrutus changae :
Temporal_fossa (51): (0)_well_developed --> (1)_absent_or_much_reduced
Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
Creagrutus melanzonus :
Gap_between_medial_two_teeth_from_outer_premaxillary_row (175):
(1)_equal_to_gap_between_remaining_teeth --> (0)_distinctly_greater_than_gap_between_remaining_teeth
Number_of_epurals (425): (1)_two_or_three --> (0)_one
Char. 2481: A --> G
Char. 2527: T --> C
Char. 2638: T --> C
Char. 2656: C --> T
Char. 2803: C --> T
Char. 3382: G --> C
Char. 3547: C --> T
Char. 3718: T --> G
Char. 3845: C --> T
Char. 3880: G --> A
Char. 4087: C --> T
Char. 4153: T --> C
Char. 4391: C --> T
Char. 4468: G --> A
Char. 6182: G --> A
Char. 6183: A --> T
Char. 6328: T --> C
Char. 6333: C --> A
Char. 6347: A --> G
Char. 6381: A --> T
Char. 6413: T --> G
Char. 6414: G --> A
Char. 6432: A --> G
Char. 6456: C --> T
Char. 6462: G --> A
Char. 6575: A --> T
Creagrutus barrigai :
Char. 1580: C --> T
Char. 1720: C --> T
Char. 1729: A --> C
Char. 1750: A --> G
Char. 1772: C --> T
Char. 1846: T --> C
Char. 1849: A --> G
Char. 2800: A --> G
Char. 2944: T --> C
Char. 2977: A --> G
Char. 3067: A --> G
Char. 3088: A --> G
Char. 3106: T --> C
Char. 3328: T --> C
Char. 5837: C --> T
Char. 5866: A --> T
Char. 5938: T --> C
Char. 5970: C --> T
Diapoma dicropotamicus :
Char. 1618: C --> T
Char. 1783: C --> T
Char. 1921: G --> A
Char. 5296: A --> G
Char. 5454: T --> C
Char. 5467: A --> G
Char. 5472: A --> T
Char. 6181: G --> T
Char. 6342: G --> A
Char. 6381: A --> G
Char. 6462: G --> A
Diapoma lepiciastus :
Bony_hooks_on_first_pelvic-fin_ray_of_adult_males (448): (0)_absent --> (1)_present
Char. 1789: T --> C
Char. 1865: C --> T
Char. 1906: A --> G
Char. 2047: C --> T
Char. 2119: C --> T
Char. 6333: G --> A
Char. 6345: A --> G
Diapoma tipiaia :
Number_of_maxillary_teeth (190):
(1)_four_or_more --> (0)_up_to_three
Char. 1615: A --> G
Char. 1690: C --> T
Char. 1693: C --> T
Char. 1708: T --> C
Char. 1720: T --> C
Char. 1744: C --> A
Char. 1771: A --> G
Char. 1819: T --> C
Char. 1822: A --> G
Char. 1849: C --> T
Char. 1861: A --> G
Char. 1879: A --> G
Char. 1906: A --> C
Char. 1912: T --> C
Char. 1921: G --> A
Char. 2237: G --> A
Char. 4231: G --> A
Char. 6413: C --> T
Eretmobycon bayano :
Number_of_branched_pelvic-fin_rays (385):
(0)_seven_or_less --> (1)_eight_or_more
Char. 3058: C --> T
Char. 3286: A --> T
Char. 3479: G --> A
Char. 3504: C --> T
Char. 3871: A --> T
Char. 3991: A --> G
Char. 4363: A --> G
Char. 5257: G --> C
Char. 5527: T --> C
Char. 5529: C --> T
Char. 5936: A --> G
Char. 6298: A --> G
Char. 6334: G --> A
Gephyrocharax atracaudatus :
Char. 4466: G --> A
Gephyrocharax chocoensis :
Char. 2419: C --> A
Char. 2422: T --> C
Char. 5703: G --> A
Gephyrocharax valencia :
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Char. 3220: C --> T
Char. 3403: C --> T
Char. 3456: G --> C
Char. 3467: G --> A
Char. 3799: A --> C
Char. 3896: T --> C
Char. 4231: G --> A
Char. 4993: T --> A
Char. 4999: G --> A
Char. 5025: T --> C
Char. 5034: A --> T
Char. 5071: C --> T
Char. 5079: C --> T
Char. 5091: C --> T
Char. 5169: C --> T
Char. 5170: C --> A
Char. 5242: C --> T
Char. 5283: T --> C
Char. 5331: G --> T
Char. 5343: A --> T
Char. 5350: T --> G
Char. 5682: C --> A
Gilbertolus maracaiboensis :
Position_of anteriormost epineurals (388):
(0)_lateral_to_fourth_or_fifth_vertebrae --> (1)_reaching_to_cranium
Char. 524: C --> G
Char. 525: T --> C
Char. 529: A --> T
Char. 535: A --> C
Char. 542: G --> T
Char. 547: A --> G
Char. 553: C --> T
Char. 559: C --> G
Char. 568: C --> A
Char. 577: C --> T
Char. 592: C --> T
Char. 595: C --> T
Char. 632: A --> C
Char. 634: A --> T
Char. 649: C --> T
Char. 658: C --> T
Char. 664: T --> C
Char. 679: C --> T
Char. 702: G --> C
Char. 703: G --> A
Char. 712: C --> T
Char. 739: A --> T
Char. 742: T --> C
Char. 743: C --> T
Char. 775: T --> A
Char. 784: C --> A
Char. 787: C --> T
Char. 833: C --> T
Char. 864: T --> C
Char. 871: A --> C
Char. 886: T --> C
Char. 892: C --> T
Char. 922: C --> T
Char. 943: C --> T
Char. 946: A --> T
Char. 949: T --> C
Char. 961: C --> T
Char. 963: C --> T
Char. 973: C --> T
Char. 976: C --> T
Char. 982: A --> G
Char. 1003: C --> T
Char. 1013: A --> C
Char. 1033: A --> G
Char. 1045: C --> T
Char. 1061: T --> G
Char. 1073: C --> T
Char. 1091: C --> T
Char. 1093: C --> T
Char. 1094: T --> C
Char. 1096: A --> G
Char. 1106: A --> C
Char. 1107: C --> T
Char. 1112: C --> T
Char. 1124: T --> C
Char. 1135: T --> A
Char. 1136: C --> T
Char. 1141: G --> A
Char. 1150: A --> C
Char. 1168: C --> T
Char. 1171: G --> A
Char. 1177: T --> A
Char. 1183: C --> T
Char. 1195: G --> A
Char. 1222: C --> T
Char. 1228: T --> C
Char. 1237: C --> T
Char. 1243: A --> T
Char. 1271: C --> T
Char. 1292: A --> T

Char. 1294: A --> C
Char. 1331: C --> A
Char. 1335: C --> T
Char. 1346: A --> T
Char. 1358: C --> A
Char. 1372: A --> C
Char. 1381: C --> T
Char. 1390: C --> A
Char. 1408: A --> C
Char. 1411: A --> G
Char. 1430: A --> G
Char. 1455: T --> C
Char. 1465: T --> C
Char. 1468: C --> T
Char. 1483: C --> A
Char. 1507: A --> C
Char. 2311: A --> T
Char. 2365: A --> G
Char. 2405: C --> T
Char. 2503: T --> C
Char. 2521: T --> C
Char. 2626: T --> A
Char. 2815: G --> A
Char. 2848: C --> A
Char. 4791: C --> T
Char. 4846: C --> G
Char. 4895: C --> G
Char. 4950: G --> A
Char. 4965: T --> C
Char. 5166: T --> A
Char. 5291: A --> T
Char. 5351: C --> T
Char. 5406: T --> C
Char. 5414: G --> T
Char. 5454: G --> A
Char. 5466: C --> A
Char. 5468: C --> G
Char. 5496: T --> C
Char. 5526: C --> T
Char. 5534: A --> C
Char. 5540: G --> C
Char. 5541: A --> C
Char. 5564: C --> T
Char. 5565: A --> G
Char. 5631: T --> C
Char. 5679: C --> A
Char. 6152: C --> T
Char. 6182: G --> A
Char. 6194: A --> T
Char. 6251: A --> T
Char. 6253: A --> T
Char. 6294: T --> A
Char. 6300: G --> A
Char. 6317: A --> T
Char. 6319: A --> C
Char. 6325: C --> T
Char. 6329: C --> T
Char. 6355: A --> T
Char. 6376: C --> T
Char. 6382: C --> T
Char. 6402: G --> A
Char. 6456: C --> T
Char. 6462: G --> A
Char. 6467: C --> T
Char. 6477: A --> G
Char. 6490: A --> G
Char. 6496: A --> T
Char. 6498: A --> T
Char. 6508: A --> C
Char. 6515: A --> G
Char. 6519: C --> T
Char. 6523: C --> T
Char. 6528: A --> G
Char. 6575: A --> C
Char. 6584: A --> G
Char. 6589: G --> A
Glandulocauda melanopleura :
Number_of_branched_rays_on_dorsal_fin
(408): (1)_eight_or_more --> (0)_seven_or_fewer
Char. 550: C --> T
Char. 568: C --> T
Char. 583: C --> T
Char. 589: A --> T

Char. 604: T --> C
Char. 712: C --> T
Char. 739: T --> G
Char. 745: A --> T
Char. 763: A --> G
Char. 838: C --> T
Char. 862: T --> C
Char. 934: C --> T
Char. 938: C --> T
Char. 949: T --> C
Char. 973: A --> C
Char. 988: T --> C
Char. 991: T --> C
Char. 1033: T --> A
Char. 1075: T --> C
Char. 1090: A --> T
Char. 1118: T --> C
Char. 1133: C --> T
Char. 1136: C --> T
Char. 1174: T --> A
Char. 1183: C --> T
Char. 1195: A --> G
Char. 1198: T --> A
Char. 1207: C --> T
Char. 1219: C --> AG
Char. 1224: C --> T
Char. 1258: A --> G
Char. 1288: T --> C
Char. 1333: A --> G
Char. 1348: C --> T
Char. 1349: G --> A
Char. 1366: A --> G
Char. 1693: T --> C
Char. 1741: T --> C
Char. 1792: T --> C
Char. 1807: T --> C
Char. 1939: G --> A
Char. 1990: A --> G
Char. 2137: A --> G
Char. 2159: C --> T
Char. 2401: G --> A
Char. 2407: G --> T
Char. 2467: C --> T
Char. 2482: T --> C
Char. 2633: C --> G
Char. 2719: A --> G
Char. 2854: T --> C
Char. 3019: T --> G
Char. 3082: C --> A
Char. 3649: C --> T
Char. 3892: C --> T
Char. 3924: C --> G
Char. 3931: G --> A
Char. 3967: T --> A
Char. 4003: C --> T
Char. 4006: C --> T
Char. 4025: A --> T
Char. 4147: G --> C
Char. 4399: G --> A
Char. 4630: C --> T
Char. 4846: C --> T
Char. 4966: G --> T
Char. 5022: T --> C
Char. 5322: A --> T
Char. 5414: G --> C
Char. 5461: T --> A
Char. 5586: G --> C
Char. 5688: C --> T
Char. 6043: G --> A
Char. 6046: C --> T
Char. 6253: A --> G
Char. 6321: A --> C
Char. 6334: G --> A
Char. 6344: T --> G
Char. 6381: A --> G
Char. 6463: G --> A
Char. 6516: G --> A
Hemibrycon beni :
Pectoral-
fin_bony_hooks_in_adult_males_of_species_bearin
g_hooks_on_fins (443): (1)_present --> (0)_absent

Dorsal-
fin_bony_hooks_in_adult_males_of_species_bearin
g_hooks_on_fins (444): (1)_present --> (0)_absent
Char. 1567: T --> C
Char. 1900: T --> C
Char. 2080: A --> G
Char. 4231: G --> A
Char. 4291: G --> A
Char. 4417: G --> A
Char. 4521: G --> A
Char. 4543: C --> T
Char. 4591: G --> A
Char. 4621: G --> A
Char. 4637: C --> A
Char. 4651: G --> A
Char. 4663: A --> C
Char. 4666: C --> T
Char. 6327: A --> G
Hemibrycon boquiae :
No autapomorphies
Hemibrycon brevispini :
Caudal-
fin_bony_hooks_in_adult_males_of_species_bearin
g_hooks_on_fins (445): (0)_absent --> (1)_present
Hemibrycon huambonicus :
Total_number_of_vertebrae (326):
(0)_40_or_fewer --> (1)_41_or_more
Char. 1909: C --> A
Char. 2050: A --> G
Char. 2635: A --> C
Char. 3160: C --> A
Char. 3178: G --> A
Char. 3415: G --> T
Char. 5867: C --> T
Char. 6334: G --> A
Char. 6440: A --> G
Hemibrycon helleri :
Total_number_of_vertebrae (326):
(0)_40_or_fewer --> (1)_41_or_more
Char. 1621: T --> C
Char. 1642: T --> C
Char. 1706: G --> A
Char. 1732: T --> C
Char. 1750: A --> G
Char. 1846: C --> T
Char. 1966: T --> C
Char. 1978: C --> T
Char. 2005: T --> C
Char. 2053: A --> C
Char. 2080: A --> G
Char. 2584: C --> T
Char. 2611: C --> T
Char. 2660: T --> C
Char. 2929: T --> C
Char. 2977: A --> G
Char. 3082: C --> G
Char. 3124: T --> C
Char. 3160: C --> T
Char. 3196: T --> C
Char. 3208: A --> G
Char. 3230: C --> A
Char. 3232: A --> G
Char. 3298: T --> C
Char. 3364: C --> G
Char. 3382: A --> G
Char. 3388: G --> C
Char. 4992: T --> C
Char. 5079: C --> T
Char. 5214: C --> T
Char. 5307: C --> T
Char. 5390: C --> A
Char. 5451: G --> T
Char. 5863: T --> C
Char. 5911: T --> C
Char. 6245: A --> G
Char. 6294: C --> T
Char. 6308: A --> G
Char. 6317: A --> G
Char. 6325: C --> A
Char. 6326: C --> T
Hemibrycon inambari :
Char. 1580: T --> C
Char. 1687: C --> T

Char. 1714: A --> G
 Char. 1729: A --> G
 Char. 1780: A --> C
 Char. 1804: A --> G
 Char. 1822: A --> G
 Char. 1876: A --> G
 Char. 1951: T --> C
 Char. 2008: A --> G
 Char. 2063: C --> T
 Char. 2302: C --> T
 Char. 2482: T --> C
 Char. 2530: C --> T
 Char. 3131: C --> T
 Char. 3340: C --> T
 Char. 3445: A --> G
 Char. 5183: G --> A
 Char. 6004: T --> C
 Char. 6207: T --> C
 Char. 6253: A --> G
 Char. 6276: T --> C
 Char. 6332: A --> G
 Char. 6362: C --> T
 Char. 6515: A --> G
 Hemibrycon_jabonero :
 Char. 1723: T --> C
 Char. 1825: A --> T
 Char. 1846: T --> C
 Char. 1870: A --> G
 Char. 1963: T --> C
 Char. 2797: G --> A
 Char. 3289: C --> T
 Char. 5011: C --> G
 Char. 5349: T --> A
 Char. 5554: C --> T
 Char. 5643: C --> T
 Char. 5664: C --> T
 Char. 5688: C --> T
 Char. 5911: T --> C
 Char. 6003: A --> G
 Hemibrycon_jelskii :
 Cusps_of_teeth_on_outer_premaxillary_row
 (177): (0)_one_to_three_cusps -->
 (1)_five_or_more_cusps
 Maximum_number_of_cusps_of_anterior_dentary_ teeth (202): (0)_five_or_fewer --> (1)_six_or_more
 Char. 1801: C --> T
 Char. 3467: G --> T
 Char. 3478: C --> T
 Char. 3535: C --> T
 Char. 3580: C --> T
 Char. 3617: G --> A
 Char. 3733: T --> A
 Char. 3767: A --> G
 Char. 3896: T --> C
 Char. 4006: C --> T
 Char. 4033: A --> G
 Char. 4057: T --> C
 Char. 4063: T --> C
 Char. 4066: A --> C
 Char. 4132: C --> T
 Char. 4165: G --> A
 Char. 4177: C --> T
 Char. 4225: T --> C
 Char. 4465: G --> A
 Char. 4492: T --> A
 Char. 4519: G --> A
 Char. 4705: C --> T
 Char. 6329: A --> G
 Hemibrycon_quindos :
 No autapomorphies
 Hemibrycon_taeniurus :
 Char. 1630: T --> C
 Char. 1633: A --> G
 Char. 1816: A --> G
 Char. 1822: A --> G
 Char. 1846: C --> T
 Char. 1957: T --> C
 Char. 2053: A --> C
 Char. 3445: A --> G
 Char. 3569: G --> A
 Char. 3617: G --> A
 Char. 4231: G --> A
 Char. 5112: G --> A
 Char. 6016: T --> G
 Char. 6253: A --> C
 Char. 6298: A --> G
 Char. 6300: G --> A
 Char. 6327: A --> C
 Char. 6343: G --> A
 Char. 6362: C --> T
 Char. 6376: C --> T
 Char. 6379: A --> T
 Char. 6413: T --> C
 Char. 6442: A --> T
 Char. 6463: G --> A
 Char. 6511: C --> T
 Hypobrycon_leptorhynchus :
 Char. 4003: C --> T
 Char. 4309: G --> A
 Char. 4442: G --> T
 Char. 4618: C --> T
 Char. 6253: G --> A
 Char. 6294: C --> T
 Char. 6345: A --> G
 Char. 6413: T --> A
 Hypobrycon_maromba :
 Char. 2767: A --> T
 Char. 2794: A --> G
 Char. 2833: A --> G
 Char. 4234: C --> T
 Char. 4477: G --> C
 Char. 4509: G --> A
 Char. 4621: G --> T
 Char. 6454: A --> G
 Knodus_megalops :
 Char. 2237: G --> A
 Char. 2296: C --> T
 Char. 2302: C --> T
 Char. 2305: C --> A
 Char. 2329: A --> G
 Char. 2368: G --> A
 Char. 2422: A --> T
 Char. 2518: A --> C
 Char. 2590: G --> A
 Char. 2632: G --> A
 Char. 2839: G --> A
 Char. 3298: T --> C
 Char. 3445: A --> G
 Char. 5095: C --> T
 Char. 5238: G --> A
 Char. 5264: C --> T
 Char. 5935: A --> G
 Char. 6003: A --> G
 Char. 6072: A --> G
 Char. 6252: A --> G
 Char. 6254: A --> C
 Char. 6319: A --> G
 Char. 6322: T --> C
 Char. 6331: A --> G
 Char. 6357: A --> G
 Char. 6442: A --> C
 Char. 6444: A --> T
 Char. 6475: T --> C
 Char. 6476: C --> A
 Knodus_smithi :
 Char. 1549: C --> T
 Char. 1630: C --> T
 Char. 1639: A --> G
 Char. 1651: G --> A
 Char. 1703: C --> T
 Char. 1772: C --> T
 Char. 1810: A --> G
 Char. 1825: A --> G
 Char. 1861: A --> G
 Char. 1864: C --> T
 Char. 1912: C --> T
 Kolpotocheironon_figueiredoi :
 Char. 556: A --> C
 Char. 562: C --> AT
 Char. 637: C --> T
 Char. 658: C --> T
 Char. 685: T --> C
 Char. 736: C --> T
 Char. 740: G --> A
 Char. 742: A --> C
 Char. 751: C --> A
 Char. 838: C --> T
 Char. 850: C --> T
 Char. 928: C --> T
 Char. 938: C --> T
 Char. 1015: C --> T
 Char. 1060: T --> C
 Char. 1078: C --> A
 Char. 1088: G --> A
 Char. 1094: C --> T
 Char. 1118: C --> T
 Char. 1211: C --> T
 Char. 1255: A --> G
 Char. 1262: C --> T
 Char. 1304: C --> T
 Char. 1318: T --> T
 Char. 1333: C --> T
 Char. 1454: G --> A
 Char. 1468: A --> G
 Char. 2179: A --> G
 Char. 2602: C --> A
 Char. 2694: A --> G
 Char. 3538: A --> G
 Char. 4039: G --> A
 Char. 4045: G --> A
 Char. 4135: G --> C
 Char. 4147: G --> T
 Char. 4490: G --> A
 Char. 6294: T --> A
 Char. 6317: A --> T
 Char. 6325: T --> C
 Char. 6363: T --> C
 Kolpotocheironon_theloura :
 Char. 655: C --> T
 Char. 700: C --> T
 Char. 703: C --> T
 Char. 757: A --> G
 Char. 844: A --> G
 Char. 886: C --> T
 Char. 922: C --> T
 Char. 982: A --> G
 Char. 1021: T --> C
 Char. 1054: C --> T
 Char. 1136: T --> C
 Char. 1141: A --> G
 Char. 1231: A --> G
 Char. 1252: A --> G
 Char. 1270: C --> T
 Char. 1271: C --> T
 Char. 1339: C --> T
 Char. 1357: C --> T
 Char. 1370: T --> C
 Char. 1429: C --> T
 Char. 1432: T --> C
 Char. 1453: C --> T
 Char. 1456: C --> T
 Char. 1466: G --> A
 Char. 1489: C --> T
 Char. 1502: G --> A
 Char. 1510: C --> T
 Char. 2311: G --> A
 Char. 2329: A --> G
 Char. 2338: C --> T
 Char. 2671: T --> C
 Char. 3501: C --> T
 Char. 4003: C --> T
 Char. 4021: A --> G
 Char. 4225: G --> T
 Char. 4264: G --> A
 Char. 4364: C --> T
 Char. 4483: T --> C
 Char. 6304: A --> T
 Char. 6306: C --> A
 Char. 6314: C --> T
 Char. 6344: A --> G
 Char. 6454: A --> G
 Lepidocharax_burnsi :
 No autapomorphies
 Leptagoniates_steindachneri :
 Number_of_teeth_on_inner_premaxillary_row
 (184): (0)_seven_or_fewer --> (1)_eight_or_more
 Char. 562: C --> T
 Char. 568: C --> T

Char. 620: A --> G
Char. 631: T --> C
Char. 634: A --> C
Char. 637: T --> C
Char. 661: T --> C
Char. 664: T --> C
Char. 667: C --> T
Char. 679: C --> T
Char. 694: T --> C
Char. 703: C --> A
Char. 712: T --> C
Char. 739: A --> C
Char. 749: C --> T
Char. 856: A --> T
Char. 862: T --> C
Char. 871: C --> A
Char. 874: A --> G
Char. 889: T --> C
Char. 928: C --> T
Char. 940: T --> C
Char. 950: G --> A
Char. 951: C --> T
Char. 988: T --> C
Char. 1030: C --> T
Char. 1036: C --> T
Char. 1042: C --> T
Char. 1063: T --> C
Char. 1076: C --> T
Char. 1093: A --> G
Char. 1120: A --> C
Char. 1207: C --> T
Char. 1211: T --> C
Char. 1213: A --> C
Char. 1229: C --> T
Char. 1234: A --> G
Char. 1237: T --> A
Char. 1264: A --> G
Char. 1270: T --> C
Char. 1283: C --> T
Char. 1297: A --> G
Char. 1300: C --> T
Char. 1327: A --> G
Char. 1330: C --> T
Char. 1345: C --> A
Char. 1346: C --> A
Char. 1349: G --> A
Char. 1355: T --> C
Char. 1357: C --> A
Char. 1358: T --> C
Char. 1384: A --> C
Char. 1387: A --> C
Char. 1411: A --> G
Char. 1432: T --> C
Char. 1435: T --> C
Char. 1438: T --> C
Char. 1469: G --> A
Char. 2164: T --> A
Char. 2171: A --> C
Char. 2209: T --> G
Char. 2293: C --> T
Char. 2521: T --> C
Char. 2584: C --> T
Char. 2602: C --> A
Char. 2800: A --> G
Char. 2801: C --> G
Char. 2810: C --> T
Char. 2820: A --> G
Char. 2830: T --> A
Char. 2905: G --> A
Char. 4821: C --> T
Char. 4827: G --> T
Char. 4977: C --> G
Char. 5418: A --> G
Char. 5500: G --> A
Char. 6245: A --> G
Char. 6306: C --> A
Char. 6321: A --> C
Char. 6325: C --> T
Char. 6326: T --> C
Char. 6327: A --> G
Char. 6361: T --> C
Char. 6362: T --> A
Char. 6379: T --> C

Char. 6443: A --> T
Char. 6498: T --> C
Lophiobrycon_weitzmani :
Char. 523: C --> T
Char. 533: C --> T
Char. 556: T --> A
Char. 580: C --> A
Char. 592: C --> T
Char. 622: T --> C
Char. 652: A --> C
Char. 688: A --> G
Char. 700: T --> C
Char. 709: C --> T
Char. 772: T --> C
Char. 802: A --> G
Char. 814: T --> G
Char. 829: A --> G
Char. 886: G --> C
Char. 904: C --> T
Char. 907: C --> T
Char. 943: A --> G
Char. 946: A --> T
Char. 955: T --> C
Char. 970: T --> C
Char. 1012: A --> G
Char. 1015: A --> G
Char. 1048: C --> T
Char. 1066: C --> T
Char. 1081: A --> G
Char. 1096: A --> G
Char. 1135: T --> C
Char. 1147: A --> C
Char. 1177: T --> C
Char. 1186: A --> T
Char. 1189: T --> C
Char. 1204: A --> G
Char. 1229: C --> T
Char. 1261: T --> A
Char. 1297: A --> T
Char. 1300: C --> G
Char. 1390: T --> C
Char. 1391: T --> C
Char. 1414: T --> C
Char. 1540: G --> C
Char. 1600: C --> T
Char. 1681: A --> G
Char. 1690: C --> T
Char. 1712: C --> T
Char. 1777: C --> T
Char. 1867: A --> G
Char. 1892: C --> T
Char. 1924: A --> C
Char. 2029: T --> C
Char. 2047: C --> G
Char. 2050: T --> C
Char. 2113: A --> C
Char. 2134: T --> C
Char. 2173: C --> A
Char. 2191: T --> C
Char. 2359: T --> C
Char. 2611: C --> A
Char. 2653: G --> T
Char. 2791: T --> C
Char. 2875: A --> C
Char. 2947: G --> T
Char. 2977: A --> G
Char. 3055: C --> T
Char. 3147: A --> T
Char. 3160: T --> C
Char. 3169: C --> A
Char. 3190: C --> A
Char. 3298: T --> A
Char. 3310: G --> A
Char. 3361: G --> C
Char. 3418: T --> C
Char. 3433: C --> T
Char. 3565: A --> G
Char. 3643: A --> CT
Char. 3673: T --> C
Char. 3730: G --> A
Char. 3764: A --> G
Char. 3919: T --> C
Char. 3921: G --> A

Char. 3922: A --> G
Char. 4033: G --> C
Char. 4096: G --> A
Char. 4097: C --> A
Char. 4231: G --> A
Char. 4282: T --> C
Char. 4345: C --> T
Char. 4347: C --> A
Char. 4468: G --> A
Char. 4568: A --> T
Char. 4585: C --> T
Char. 4591: G --> T
Char. 4734: T --> G
Char. 4755: T --> G
Char. 4937: C --> T
Char. 4978: A --> T
Char. 5008: C --> G
Char. 5009: C --> A
Char. 5016: G --> A
Char. 5055: A --> G
Char. 5343: A --> C
Char. 5513: T --> G
Char. 5554: C --> A
Char. 5625: G --> C
Char. 5925: A --> G
Char. 5938: T --> C
Char. 6037: T --> C
Char. 6254: A --> G
Char. 6299: G --> A
Char. 6377: C --> T
Char. 6413: C --> T
Char. 6514: A --> G
Macropsobrycon_xinguensis :
Lateral_line (123): (0)_complete -->
(1)_interrupted
Number_of_rows_of_premaxillary_teeth (170):
(1)_two_or_three --> (0)_one
Number_of_teeth_on_inner_premaxillary_row
(183): (0)_six_or_fewer --> (1)_seven_or_more
Number_of_cusps_of_anterior_dentary_teeth
(201): (1)_five_or_more --> (0)_three_or_fewer
Dark_spot_covering_the_entire_depth_of_caudal-
fin_base (503): (0)_absent --> (1)_present
Char. 2173: A --> G
Char. 3454: C --> G
Char. 3455: A --> G
Char. 3469: A --> C
Char. 3470: G --> T
Char. 3477: T --> G
Char. 3480: A --> C
Char. 3880: G --> A
Char. 4166: A --> T
Char. 4348: T --> C
Char. 4360: A --> G
Char. 4477: G --> C
Char. 4498: A --> T
Char. 4502: G --> C
Char. 4543: C --> T
Char. 4644: C --> A
Char. 4857: G --> A
Char. 4862: T --> G
Char. 4875: A --> G
Char. 4894: A --> C
Char. 5214: C --> T
Char. 5322: C --> T
Char. 5451: G --> T
Char. 5457: C --> T
Char. 5502: T --> A
Char. 5544: T --> C
Char. 5545: G --> A
Char. 5703: G --> T
Char. 6206: T --> C
Char. 6208: T --> C
Char. 6210: T --> C
Char. 6211: G --> A
Char. 6299: A --> G
Char. 6344: A --> G
Char. 6347: A --> T
Char. 6456: C --> T
Char. 6461: G --> A
Char. 6468: C --> T
Char. 6475: T --> C

Char. 6493: A --> C
 Char. 6507: C --> T
 Char. 6516: G --> A
 Char. 6518: C --> A
 Char. 6567: A --> G
 Char. 6575: A --> C
 Mimagoniates_inequalis :
 Char. 1537: T --> A
 Char. 1606: C --> A
 Char. 1969: C --> T
 Char. 2119: T --> G
 Char. 2120: G --> A
 Mimagoniates_microlepis :
 Char. 539: C --> T
 Char. 565: C --> T
 Char. 610: C --> T
 Char. 631: T --> C
 Char. 637: C --> T
 Char. 640: C --> T
 Char. 655: C --> T
 Char. 697: C --> T
 Char. 955: T --> C
 Char. 1075: T --> C
 Char. 1162: C --> A
 Char. 1385: A --> T
 Char. 1924: A --> G
 Char. 2005: T --> C
 Char. 2167: T --> C
 Char. 2347: T --> C
 Char. 2848: C --> A
 Char. 3813: A --> T
 Char. 4337: G --> A
 Char. 4345: C --> T
 Char. 4366: C --> T
 Char. 4408: G --> A
 Char. 4459: C --> T
 Char. 4935: T --> G
 Char. 4966: G --> T
 Char. 5052: A --> T
 Char. 5205: T --> C
 Char. 5448: A --> G
 Char. 5540: G --> T
 Char. 5658: C --> T
 Char. 5688: C --> A
 Char. 5745: C --> T
 Moenkhausia_agnesae :
 Char. 6254: T --> C
 Char. 6433: T --> C
 Moenkhausia_australe :
 Char. 6129: C --> T
 Moenkhausia_celibela :
 Char. 562: T --> C
 Char. 631: C --> T
 Char. 661: C --> T
 Char. 667: T --> C
 Char. 679: C --> T
 Char. 730: C --> T
 Char. 739: T --> C
 Char. 748: T --> C
 Char. 769: A --> G
 Char. 778: A --> G
 Char. 805: C --> T
 Char. 823: C --> A
 Char. 826: T --> C
 Char. 829: A --> C
 Char. 850: A --> G
 Char. 895: T --> C
 Char. 901: C --> T
 Char. 911: C --> T
 Char. 967: C --> T
 Char. 970: C --> T
 Char. 982: C --> T
 Char. 1000: C --> T
 Char. 1051: C --> T
 Char. 1078: T --> A
 Char. 1084: T --> C
 Char. 1099: C --> G
 Char. 1102: A --> C
 Char. 1111: C --> A
 Char. 1118: C --> T
 Char. 1141: T --> C
 Char. 1172: C --> T
 Char. 1174: A --> G
 Char. 1180: A --> G
 Char. 1183: A --> C
 Char. 1189: T --> C
 Char. 1234: A --> C
 Char. 1240: C --> T
 Char. 1250: C --> T
 Char. 1268: C --> T
 Char. 1288: A --> T
 Char. 1300: A --> G
 Char. 1309: T --> C
 Char. 1330: C --> T
 Char. 1333: A --> G
 Char. 1381: C --> T
 Char. 1402: T --> C
 Char. 1414: A --> C
 Char. 1432: T --> C
 Char. 1438: T --> C
 Char. 1454: G --> A
 Char. 1477: C --> T
 Char. 1483: T --> A
 Char. 1510: C --> T
 Char. 2302: C --> T
 Char. 2312: G --> T
 Char. 2329: C --> T
 Char. 2530: C --> T
 Char. 2671: T --> G
 Char. 2674: C --> T
 Char. 2686: G --> C
 Char. 2815: G --> A
 Char. 2866: A --> T
 Char. 3455: A --> G
 Char. 3508: A --> G
 Char. 3517: G --> A
 Char. 3524: G --> A
 Char. 3529: C --> T
 Char. 3610: A --> G
 Char. 3630: G --> C
 Char. 3657: T --> G
 Char. 3670: A --> T
 Char. 3754: G --> A
 Char. 3776: G --> A
 Char. 3794: G --> A
 Char. 3811: G --> T
 Char. 3827: G --> T
 Char. 3829: A --> T
 Char. 3908: G --> T
 Char. 3921: G --> C
 Char. 3934: G --> A
 Char. 3946: C --> T
 Char. 4000: C --> T
 Char. 4031: G --> C
 Char. 4117: T --> C
 Char. 4124: C --> A
 Char. 4129: C --> T
 Char. 4132: C --> A
 Char. 4155: A --> T
 Char. 4177: C --> T
 Char. 4192: C --> T
 Char. 4195: A --> G
 Char. 4201: G --> T
 Char. 4224: C --> G
 Char. 4252: G --> T
 Char. 4253: T --> A
 Char. 4262: T --> C
 Char. 4294: C --> T
 Char. 4300: G --> T
 Char. 4342: C --> T
 Char. 4410: T --> C
 Char. 4514: G --> C
 Char. 4517: C --> T
 Char. 4565: T --> G
 Char. 4584: A --> C
 Char. 4591: T --> A
 Char. 4598: C --> T
 Char. 4626: G --> T
 Char. 4758: C --> A
 Char. 4857: G --> A
 Char. 4896: C --> T
 Char. 5082: A --> C
 Char. 5172: G --> C
 Char. 5277: C --> T
 Char. 6304: C --> T
 Char. 6348: A --> G
 Char. 6381: A --> G
 Char. 6424: C --> T
 Char. 6441: T --> C
 Char. 6463: C --> T
 Moenkhausia_comma :
 Char. 535: A --> T
 Char. 538: T --> C
 Char. 607: A --> T
 Char. 637: T --> C
 Char. 640: C --> T
 Char. 655: C --> T
 Char. 676: C --> T
 Char. 682: T --> C
 Char. 754: T --> C
 Char. 757: A --> T
 Char. 760: A --> G
 Char. 778: C --> A
 Char. 808: T --> C
 Char. 823: T --> C
 Char. 838: C --> A
 Char. 866: C --> T
 Char. 874: A --> G
 Char. 883: A --> G
 Char. 886: G --> T
 Char. 898: T --> C
 Char. 904: T --> C
 Char. 925: T --> C
 Char. 928: C --> T
 Char. 931: C --> T
 Char. 940: T --> C
 Char. 946: A --> C
 Char. 949: T --> C
 Char. 976: C --> T
 Char. 1018: T --> A
 Char. 1081: A --> G
 Char. 1086: T --> C
 Char. 1088: A --> G
 Char. 1096: C --> T
 Char. 1103: C --> T
 Char. 1105: T --> A
 Char. 1174: A --> G
 Char. 1216: T --> C
 Char. 1219: C --> T
 Char. 1222: C --> T
 Char. 1231: T --> C
 Char. 1237: C --> T
 Char. 1261: C --> T
 Char. 1268: C --> T
 Char. 1270: T --> A
 Char. 1273: A --> G
 Char. 1279: C --> T
 Char. 1282: C --> T
 Char. 1332: T --> C
 Char. 1342: A --> G
 Char. 1369: C --> T
 Char. 1386: T --> C
 Char. 1387: G --> T
 Char. 1408: A --> C
 Char. 1457: C --> T
 Char. 1459: C --> A
 Char. 1466: T --> G
 Char. 2164: T --> C
 Char. 2221: T --> C
 Char. 2236: T --> C
 Char. 2312: G --> T
 Char. 2395: C --> T
 Char. 2420: A --> C
 Char. 2422: A --> T
 Char. 2428: C --> T
 Char. 2443: A --> T
 Char. 2446: G --> A
 Char. 2518: A --> G
 Char. 2659: A --> G
 Char. 2812: A --> G
 Char. 2872: C --> T
 Char. 2875: A --> C
 Char. 2896: T --> A
 Char. 2902: C --> T
 Char. 3949: T --> G
 Char. 4087: T --> A
 Char. 4097: C --> A
 Char. 4189: A --> C
 Char. 4351: A --> T

Char. 4468: T --> A
Char. 4525: G --> A
Char. 4543: T --> G
Char. 4621: G --> A
Char. 4669: T --> C
Char. 4722: C --> T
Char. 4803: T --> C
Char. 5013: C --> T
Char. 5019: G --> A
Char. 5124: C --> T
Char. 5130: G --> A
Char. 5147: C --> T
Char. 5322: C --> A
Char. 5401: A --> G
Char. 5464: A --> G
Char. 5469: T --> G
Char. 6301: T --> C
Char. 6368: C --> T
Char. 6408: A --> G
Char. 6424: C --> T
Char. 6443: T --> C
Char. 6498: A --> G

Moenkhausia copei :

Char. 6323: C --> AT
Char. 6326: T --> A
Char. 6329: A --> T
Char. 6361: G --> CT
Char. 6406: G --> A
Char. 6413: T --> A
Char. 6420: C --> T
Char. 6443: C --> AT

Moenkhausia cosmops :

Char. 2311: A --> T
Char. 2527: C --> T
Char. 2611: C --> A
Char. 2617: T --> C
Char. 3490: G --> A
Char. 3589: G --> A
Char. 3601: G --> A
Char. 3610: A --> G
Char. 3715: G --> T
Char. 3844: A --> C
Char. 3916: G --> A
Char. 3970: T --> C
Char. 4118: A --> G
Char. 4132: C --> T
Char. 4205: C --> A
Char. 4222: A --> C
Char. 4398: T --> C
Char. 4451: T --> C
Char. 4460: C --> A
Char. 4570: C --> T
Char. 4585: C --> T
Char. 4704: C --> T
Char. 4920: G --> A
Char. 5127: C --> A
Char. 5128: C --> T
Char. 5212: C --> A
Char. 5247: A --> G
Char. 5322: C --> A
Char. 5372: A --> G
Char. 5394: C --> T
Char. 5409: G --> C
Char. 5441: G --> C
Char. 5445: G --> A
Char. 5460: C --> T
Char. 5706: C --> T
Char. 6118: T --> A
Char. 6209: C --> T
Char. 6309: T --> C
Char. 6314: T --> C
Char. 6361: G --> A
Char. 6362: C --> T
Char. 6368: C --> A
Char. 6433: T --> C
Char. 6445: T --> A
Char. 6449: C --> T
Char. 6461: G --> A
Char. 6463: C --> T
Char. 6468: C --> T
Char. 6502: T --> C
Char. 6506: G --> A
Char. 6518: C --> T

Char. 6528: G --> A
Moenkhausia costae :

Char. 586: A --> C
Char. 589: C --> T
Char. 670: T --> C
Char. 685: C --> A
Char. 709: C --> T
Char. 730: C --> T
Char. 748: T --> C
Char. 796: A --> G
Char. 856: A --> G
Char. 877: A --> G
Char. 916: A --> C
Char. 973: A --> T
Char. 976: C --> T
Char. 979: C --> A
Char. 985: C --> T
Char. 1003: A --> T
Char. 1013: G --> A
Char. 1033: A --> G
Char. 1048: C --> T
Char. 1060: C --> T
Char. 1063: C --> T
Char. 1093: A --> T
Char. 1141: A --> C
Char. 1162: C --> A
Char. 1213: A --> G
Char. 1231: T --> C
Char. 1252: T --> C
Char. 1261: C --> T
Char. 1270: T --> C
Char. 1354: A --> G
Char. 1355: T --> A
Char. 1386: T --> C
Char. 1393: T --> A
Char. 1468: A --> C
Char. 1478: A --> G
Char. 1483: T --> C
Char. 1493: G --> A
Char. 1495: C --> T
Char. 1562: C --> T
Char. 1579: A --> G
Char. 1609: T --> C
Char. 1612: C --> T
Char. 1616: G --> A
Char. 1618: A --> T
Char. 1627: T --> A
Char. 1639: A --> G
Char. 1648: C --> T
Char. 1651: T --> C
Char. 1705: A --> G
Char. 1708: T --> C
Char. 1711: A --> G
Char. 1765: C --> T
Char. 1774: T --> A
Char. 1783: T --> C
Char. 1792: T --> C
Char. 1804: A --> G
Char. 1810: C --> T
Char. 1825: T --> C
Char. 1828: T --> G
Char. 1831: C --> T
Char. 1861: A --> T
Char. 1865: C --> A
Char. 1866: A --> G
Char. 1873: C --> T
Char. 1927: T --> C
Char. 1987: C --> T
Char. 1990: G --> C
Char. 1996: C --> T
Char. 2005: T --> A
Char. 2020: T --> C
Char. 2041: T --> C
Char. 2047: T --> C
Char. 2065: A --> G
Char. 2068: G --> C
Char. 2071: T --> C
Char. 2116: C --> T
Char. 2122: C --> T
Char. 2131: A --> G
Char. 2155: A --> G
Char. 2161: A --> G
Char. 2311: A --> T

Char. 2563: T --> A
Char. 2668: T --> C
Char. 2698: C --> T
Char. 2812: G --> A
Char. 3469: A --> T
Char. 3484: A --> G
Char. 3688: T --> C
Char. 3691: C --> T
Char. 3961: G --> A
Char. 4018: G --> A
Char. 4132: C --> T
Char. 4163: A --> C
Char. 4192: C --> T
Char. 4393: G --> A
Char. 4466: G --> A
Char. 4474: G --> A
Char. 4621: G --> A
Char. 4710: T --> A
Char. 4719: T --> C
Char. 4773: C --> T
Char. 4779: C --> G
Char. 4851: G --> A
Char. 4869: G --> A
Char. 5380: C --> T
Char. 5505: G --> A
Char. 5565: C --> A
Char. 5589: T --> C
Char. 5598: A --> T
Char. 5664: C --> T
Char. 5682: C --> A
Char. 5688: C --> T
Char. 5721: T --> G
Char. 6162: A --> G
Char. 6170: T --> C
Char. 6251: A --> T
Char. 6511: T --> C
Char. 6514: C --> A

Moenkhausia forestii :

Char. 3522: C --> G
Char. 3526: C --> G
Char. 3527: A --> C
Char. 3535: T --> G
Char. 3555: T --> A
Char. 4487: C --> A
Char. 4517: C --> T
Char. 4752: T --> A
Char. 4773: C --> T
Char. 5183: G --> A
Char. 6441: T --> C

Moenkhausia gracilima :

Char. 565: T --> G
Char. 595: C --> T
Char. 619: A --> G
Char. 620: A --> G
Char. 676: C --> T
Char. 700: C --> T
Char. 712: T --> C
Char. 730: C --> T
Char. 805: C --> T
Char. 877: A --> G
Char. 880: C --> T
Char. 889: A --> G
Char. 895: T --> C
Char. 913: A --> T
Char. 919: A --> C
Char. 931: C --> T
Char. 953: A --> G
Char. 973: A --> T
Char. 1006: T --> C
Char. 1015: A --> G
Char. 1033: A --> G
Char. 1048: C --> T
Char. 1086: T --> C
Char. 1097: T --> C
Char. 1098: C --> T
Char. 1141: T --> A
Char. 1147: A --> C
Char. 1157: A --> T
Char. 1169: C --> G
Char. 1189: T --> C
Char. 1192: T --> C
Char. 1237: T --> A
Char. 1240: C --> T

Char. 1262: T --> C
Char. 1351: A --> G
Char. 1405: A --> G
Char. 1420: A --> G
Char. 1459: T --> C
Char. 1469: C --> G
Char. 1471: G --> A
Char. 2312: G --> C
Char. 2659: A --> G
Char. 2671: T --> G
Char. 2854: T --> C
Char. 3490: C --> T
Char. 3607: G --> T
Char. 3845: C --> A
Char. 3930: A --> G
Char. 4297: C --> T
Char. 4510: C --> A
Char. 4528: G --> A
Char. 4588: C --> T
Char. 4764: A --> T
Char. 4806: C --> T
Char. 5009: C --> T
Char. 5103: G --> T
Char. 5148: C --> T
Char. 5334: G --> A
Char. 5442: C --> T
Char. 5544: T --> G
Char. 6163: A --> G
Char. 6182: A --> G
Char. 6319: A --> T
Char. 6331: A --> T
Char. 6343: G --> C
Char. 6347: A --> C
Char. 6378: G --> A
Char. 6406: G --> A
Char. 6447: C --> A
Char. 6471: T --> A
Char. 6499: C --> A
Char. 6562: T --> C
Char. 6572: T --> G
Moenkhausia_hemigrammoides :
Lateral_line (123): (1)_interrupted -->
(0)_complete
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Char. 6211: G --> A
Char. 6251: A --> G
Char. 6346: C --> T
Char. 6368: C --> T
Char. 6402: A --> G
Moenkhausia_inraii :
Char. 580: C --> T
Char. 598: C --> T
Char. 613: C --> T
Char. 616: C --> T
Char. 620: G --> A
Char. 631: C --> T
Char. 658: C --> T
Char. 661: C --> T
Char. 697: C --> T
Char. 733: T --> C
Char. 745: T --> C
Char. 772: T --> C
Char. 778: C --> A
Char. 817: C --> T
Char. 847: C --> T
Char. 880: T --> C
Char. 916: A --> T
Char. 934: C --> T
Char. 937: T --> C
Char. 941: C --> T
Char. 976: C --> T
Char. 1048: C --> T
Char. 1089: T --> C
Char. 1126: C --> T
Char. 1136: C --> T
Char. 1144: C --> T
Char. 1240: C --> T
Char. 1267: A --> C
Char. 1303: C --> T
Char. 1339: C --> T
Char. 1342: A --> G
Char. 1405: A --> G

Char. 1408: A --> C
Char. 1477: C --> G
Char. 1504: A --> G
Char. 2275: A --> G
Char. 2473: C --> T
Char. 2485: C --> G
Char. 2581: C --> T
Char. 2596: A --> C
Char. 2602: C --> T
Char. 2707: G --> A
Char. 2764: C --> T
Char. 3562: G --> A
Char. 3569: G --> T
Char. 3593: A --> G
Char. 3609: G --> A
Char. 3694: C --> T
Char. 3765: C --> G
Char. 3964: C --> T
Char. 4247: C --> A
Char. 4318: C --> T
Char. 4364: C --> T
Char. 4402: G --> A
Char. 4573: C --> T
Char. 4612: C --> T
Char. 4776: G --> A
Char. 4806: C --> T
Char. 4836: G --> A
Char. 4971: G --> A
Char. 5130: G --> T
Char. 5151: C --> T
Char. 5272: G --> T
Char. 5346: C --> T
Char. 5358: C --> T
Char. 5415: C --> T
Char. 5716: A --> T
Char. 5742: C --> T
Moenkhausia_intermedia :
Char. 577: C --> T
Char. 586: A --> G
Char. 706: C --> T
Char. 850: C --> T
Char. 997: A --> G
Char. 1006: T --> C
Char. 1078: T --> C
Char. 1162: C --> T
Char. 1168: C --> T
Char. 1183: A --> G
Char. 1207: C --> T
Char. 1216: T --> C
Char. 1237: T --> C
Char. 1243: T --> C
Char. 1285: T --> C
Char. 1348: A --> G
Char. 1355: T --> C
Char. 1384: A --> G
Char. 1387: T --> C
Char. 1393: T --> C
Char. 1402: T --> C
Char. 1408: A --> G
Char. 1441: C --> T
Char. 1456: A --> C
Char. 1465: C --> T
Char. 1490: C --> A
Char. 2671: T --> C
Char. 3457: C --> T
Char. 3652: T --> C
Char. 3775: A --> C
Char. 3907: A --> T
Char. 3943: C --> T
Char. 4066: C --> G
Char. 4235: A --> C
Char. 4809: G --> C
Char. 4841: G --> A
Char. 4860: G --> C
Char. 4897: G --> A
Char. 4926: C --> T
Char. 5157: C --> T
Char. 5391: A --> C
Char. 5475: A --> G
Char. 5649: G --> A
Char. 6255: A --> G
Moenkhausia_nigromarginata :

Number_of_scales_in_lateral_series (467):
(0)_33_or_more --> (1)_32_or_fewer
Char. 539: T --> C
Char. 544: T --> C
Char. 550: C --> T
Char. 553: C --> T
Char. 577: C --> T
Char. 592: C --> T
Char. 598: C --> T
Char. 628: A --> G
Char. 634: A --> T
Char. 706: C --> T
Char. 838: C --> T
Char. 862: T --> C
Char. 864: C --> T
Char. 922: C --> T
Char. 985: C --> T
Char. 988: T --> C
Char. 1003: A --> G
Char. 1005: A --> G
Char. 1006: T --> C
Char. 1027: A --> G
Char. 1033: A --> T
Char. 1045: C --> T
Char. 1048: C --> T
Char. 1063: C --> G
Char. 1132: C --> T
Char. 1133: C --> T
Char. 1135: C --> G
Char. 1138: G --> A
Char. 1168: C --> T
Char. 1201: A --> G
Char. 1246: T --> C
Char. 1283: C --> T
Char. 1326: A --> G
Char. 1339: C --> T
Char. 1342: A --> G
Char. 1348: A --> G
Char. 1357: C --> T
Char. 1358: C --> T
Char. 1372: A --> C
Char. 1384: A --> G
Char. 1386: T --> C
Char. 1393: T --> C
Char. 1435: T --> C
Char. 1465: C --> T
Char. 1474: C --> T
Char. 1480: C --> T
Char. 1489: A --> G
Char. 1490: C --> T
Char. 1501: A --> G
Char. 2182: T --> A
Char. 2230: G --> A
Char. 2488: G --> A
Char. 2497: G --> T
Char. 2515: T --> C
Char. 2896: A --> G
Char. 3673: T --> C
Char. 3997: C --> T
Char. 4120: C --> T
Char. 4261: C --> T
Char. 4318: C --> T
Char. 4354: G --> A
Char. 4417: G --> A
Char. 4447: G --> A
Char. 4541: C --> A
Char. 4656: A --> G
Char. 4674: A --> T
Char. 4707: A --> C
Char. 4708: T --> A
Char. 4713: C --> T
Char. 4734: T --> C
Char. 4842: A --> G
Char. 4869: G --> A
Char. 4875: A --> T
Char. 4926: C --> T
Char. 5001: G --> T
Char. 5010: G --> A
Char. 5373: T --> C
Char. 5598: A --> C
Char. 5688: C --> T
Char. 5742: C --> A
Char. 6162: A --> G

Char. 6209: C --> T
Char. 6255: A --> C
Char. 6346: T --> C
Char. 6438: A --> G
Char. 6499: C --> A
Char. 6516: G --> A

Moenkhausia_oligolepis :
Char. 1540: A --> G
Char. 1837: A --> G
Char. 2014: G --> C
Char. 2758: T --> A
Char. 3473: A --> C
Char. 4033: G --> A
Char. 4118: A --> G
Char. 4135: G --> A
Char. 4361: C --> G
Char. 4501: G --> A
Char. 4664: T --> A
Char. 4669: T --> G
Char. 4691: C --> T
Char. 4694: A --> G
Char. 4698: C --> A
Char. 4706: C --> T
Char. 4711: G --> C
Char. 5019: C --> G
Char. 6408: G --> C
Char. 6463: C --> T
Char. 6493: C --> T
Char. 6528: G --> A

Moenkhausia_phaeonota :
Char. 535: A --> T
Char. 539: T --> C
Char. 544: T --> C
Char. 568: T --> C
Char. 586: A --> T
Char. 587: G --> A
Char. 610: C --> T
Char. 613: C --> T
Char. 653: T --> C
Char. 661: C --> T
Char. 697: T --> C
Char. 748: T --> C
Char. 757: T --> C
Char. 766: T --> C
Char. 778: A --> T
Char. 787: C --> T
Char. 790: A --> C
Char. 832: C --> T
Char. 852: A --> T
Char. 854: A --> G
Char. 904: T --> C
Char. 922: C --> T
Char. 928: T --> C
Char. 958: T --> A
Char. 967: C --> T
Char. 1018: C --> T
Char. 1019: C --> T
Char. 1065: A --> T
Char. 1081: A --> G
Char. 1085: G --> A
Char. 1090: C --> G
Char. 1100: A --> G
Char. 1101: C --> T
Char. 1108: A --> C
Char. 1112: C --> T
Char. 1120: A --> T
Char. 1125: C --> T
Char. 1135: T --> C
Char. 1141: T --> C
Char. 1213: A --> G
Char. 1222: C --> T
Char. 1234: A --> T
Char. 1243: A --> T
Char. 1258: A --> G
Char. 1267: A --> C
Char. 1270: T --> C
Char. 1297: A --> C
Char. 1323: A --> G
Char. 1330: C --> T
Char. 1331: C --> A
Char. 1333: A --> G
Char. 1349: A --> G
Char. 1375: T --> C

Char. 1378: A --> G
Char. 1384: T --> C
Char. 1385: G --> A
Char. 1402: T --> C
Char. 1421: C --> A
Char. 1422: A --> G
Char. 1429: C --> T
Char. 1435: T --> C
Char. 1471: G --> T
Char. 1478: A --> G
Char. 1480: C --> A
Char. 1489: A --> G
Char. 1495: T --> C
Char. 2185: C --> T
Char. 2188: G --> A
Char. 2332: T --> C
Char. 2353: C --> T
Char. 2446: G --> A
Char. 2495: C --> T
Char. 2596: A --> T
Char. 2635: A --> G
Char. 2713: T --> C
Char. 2738: A --> T
Char. 3541: A --> T
Char. 3754: G --> A
Char. 3979: C --> T
Char. 4196: C --> T
Char. 4247: C --> A
Char. 4279: C --> A
Char. 4447: G --> A
Char. 4486: G --> C
Char. 4621: G --> C
Char. 4896: C --> T
Char. 4985: A --> C
Char. 5034: A --> T
Char. 5298: C --> T
Char. 5343: G --> A
Char. 5680: G --> A
Char. 6161: A --> G
Char. 6162: A --> G
Char. 6210: C --> T
Char. 6211: A --> G
Char. 6227: C --> T
Char. 6252: A --> C
Char. 6253: A --> T
Char. 6308: G --> A
Char. 6314: T --> C
Char. 6315: A --> T
Char. 6324: C --> T
Char. 6325: T --> A
Char. 6332: A --> C
Char. 6346: T --> A
Char. 6358: C --> T
Char. 6443: T --> A
Char. 6530: C --> A
Char. 6589: G --> A

Moenkhausia_pyrophthalma :
Char. 2164: C --> T
Char. 2420: C --> A
Char. 2422: T --> A
Char. 2446: A --> G
Char. 2620: G --> A
Char. 2632: A --> G
Char. 2641: G --> A
Char. 2785: A --> C
Char. 2794: G --> A
Char. 2812: G --> A
Char. 2896: A --> T
Char. 2902: T --> C
Char. 3456: G --> C
Char. 3508: A --> G
Char. 3685: G --> A
Char. 3830: C --> A
Char. 3844: A --> T
Char. 3862: G --> A
Char. 3940: C --> A
Char. 4042: T --> C
Char. 4081: A --> G
Char. 4120: C --> T
Char. 4186: T --> G
Char. 4210: C --> A
Char. 4243: G --> A
Char. 4324: A --> G

Char. 4330: C --> T
Char. 4398: T --> C
Char. 4453: G --> A
Char. 4465: C --> A
Char. 4471: G --> C
Char. 4486: G --> C
Char. 4513: G --> A
Char. 4618: C --> T
Char. 4636: A --> G
Char. 4651: G --> A
Char. 4663: C --> G
Char. 4678: T --> A
Char. 4866: G --> A
Char. 4925: C --> G
Char. 5022: C --> T
Char. 5052: A --> T
Char. 5055: G --> T
Char. 5088: G --> A
Char. 5091: C --> T
Char. 5101: C --> A
Char. 5145: C --> T
Char. 5151: C --> T
Char. 5190: G --> A
Char. 5460: C --> G
Char. 5476: T --> A
Char. 5533: C --> A
Char. 5736: C --> T
Char. 6109: C --> A
Char. 6110: C --> T
Char. 6111: G --> C
Char. 6114: G --> A
Char. 6115: T --> C
Char. 6119: T --> C
Char. 6132: A --> C
Char. 6134: G --> C
Char. 6151: T --> G
Char. 6152: T --> C
Char. 6168: T --> C
Char. 6177: G --> T
Char. 6180: T --> C
Char. 6227: C --> T
Char. 6251: A --> G
Char. 6254: T --> A
Char. 6300: A --> G
Char. 6315: A --> T
Char. 6376: T --> C
Char. 6382: A --> T
Char. 6443: T --> A
Char. 6444: T --> C
Char. 6445: T --> C
Char. 6458: C --> T
Char. 6463: C --> T

Nanocheiroduon_insignis :
Main_axis_of_supraneurals (396):
(0)_not_bifurcated -->
(1)_at_least_some_of_them_distally_bifurcated
Number_of_branched_anal-fin_rays (419):
(1)_18_or_more --> (0)_17_or_fewer
Ventral_procurrent-caudal-
fin_rays_of_adult_males (432): (0)_slender -->
(1)_laminar
Number_of_ventral_procurrent-caudal-fin_rays
(433): (0)_11_or_fewer --> (1)_12_or_more
Ventral_procurrent-caudal-
fin_rays_of_adult_males (434):
(0)_not_projecting_through_musculature_and_skin
_of_peduncle -->
(1)_projecting_ventrally_through_peduncle_muscul-
ature_and_skin
Char. 2374: C --> T
Char. 2473: C --> A
Char. 2521: T --> C
Char. 2530: T --> C
Char. 2548: C --> G
Char. 2602: C --> A
Char. 2632: A --> T
Char. 4929: C --> T
Char. 5008: A --> C
Char. 5079: C --> T
Char. 5100: G --> A
Char. 5217: A --> C
Char. 5235: C --> T
Char. 5563: A --> G

Char. 6205: T --> C
Char. 6254: A --> T
Char. 6309: C --> A
Char. 6322: C --> T
Char. 6365: A --> T
Char. 6388: C --> T
Char. 6403: C --> T
Char. 6413: C --> A
Char. 6507: C --> T
Char. 6516: G --> A
Char. 6572: T --> C
Odontostilbe_ecuadorensis :
Char. 558: C --> G
Char. 561: A --> G
Char. 570: C --> T
Char. 580: T --> A
Char. 582: C --> T
Char. 587: G --> A
Char. 589: A --> G
Char. 593: A --> G
Char. 609: A --> G
Char. 613: C --> T
Char. 676: C --> T
Char. 694: T --> A
Char. 733: T --> C
Char. 841: C --> T
Char. 1021: T --> C
Char. 1156: T --> C
Char. 1186: A --> G
Char. 1370: T --> C
Char. 1447: C --> A
Char. 1448: G --> T
Char. 1458: T --> G
Char. 1464: T --> G
Char. 1476: T --> G
Char. 1481: T --> A
Char. 1483: A --> T
Char. 2221: T --> C
Char. 3535: T --> C
Char. 3889: C --> T
Char. 3919: T --> C
Char. 4033: G --> C
Char. 4138: A --> T
Char. 4142: C --> A
Char. 4279: C --> G
Char. 4517: C --> T
Char. 4567: T --> C
Char. 4699: A --> C
Char. 4929: C --> A
Char. 5076: A --> T
Char. 5082: C --> A
Char. 5667: C --> T
Char. 5706: C --> T
Char. 5724: C --> T
Char. 6333: C --> T
Char. 6446: A --> T
Odontostilbe_dialeptura :
Number_of_vertebrae (325): (1)_34_or_more --
> (0)_up_to_33
Char. 558: C --> G
Char. 595: C --> A
Char. 598: C --> G
Char. 608: A --> T
Char. 623: A --> C
Char. 624: T --> A
Char. 634: A --> C
Char. 635: C --> A
Char. 636: A --> G
Char. 664: T --> G
Char. 670: T --> C
Char. 676: C --> T
Char. 679: C --> T
Char. 772: T --> C
Char. 877: A --> G
Char. 901: T --> C
Char. 991: C --> T
Char. 1024: C --> T
Char. 1066: C --> T
Char. 1084: C --> T
Char. 1136: T --> C
Char. 1348: T --> C
Char. 1351: T --> C
Char. 1360: A --> G
Char. 1402: T --> C
Char. 1483: C --> T
Char. 1489: C --> A
Char. 1498: C --> A
Char. 1506: A --> C
Char. 4309: G --> A
Char. 4360: G --> T
Char. 5424: C --> T
Char. 5505: G --> A
Char. 5545: G --> C
Char. 5673: A --> T
Char. 6347: T --> C
Char. 6461: G --> A
Char. 6468: C --> T
Odontostilbe_mitoptera :
Char. 553: C --> T
Char. 562: C --> T
Char. 745: T --> C
Char. 1078: C --> T
Char. 1303: C --> T
Char. 1324: A --> G
Char. 1342: A --> G
Char. 1378: A --> C
Char. 1405: A --> G
Char. 1456: C --> T
Char. 1459: T --> C
Char. 5631: C --> T
Char. 6348: A --> G
Odontostilbe_splendida :
Last_unbranched_dorsal-
fin_ray_of_adult_males (407):
(0)_approximately_as_long_as_first_branched_ray
-->
(1)_distinctly_longer_than_first_branched_ray_and
_filamentous
Char. 556: A --> G
Char. 562: C --> T
Char. 1507: A --> C
Char. 2302: T --> C
Char. 2374: C --> T
Char. 2479: C --> A
Char. 2809: T --> C
Char. 3451: G --> C
Char. 3467: G --> T
Char. 3952: C --> T
Char. 4109: C --> T
Char. 4391: C --> T
Char. 4555: C --> T
Char. 4734: T --> C
Char. 4920: G --> A
Char. 4929: C --> A
Char. 4968: T --> A
Char. 6119: T --> C
Char. 6168: T --> G
Char. 6254: A --> G
Char. 6325: T --> C
Char. 6327: A --> G
Char. 6377: C --> T
Char. 6560: C --> T
Char. 6565: C --> T
Char. 6572: T --> C
Char. 6575: A --> G
Char. 6580: G --> A
Char. 6591: G --> A
Cheirodon_stenodon :
Char. 604: T --> C
Char. 616: C --> T
Char. 646: A --> G
Char. 673: T --> C
Char. 679: C --> T
Char. 685: T --> C
Char. 743: C --> T
Char. 757: A --> G
Char. 760: A --> G
Char. 778: C --> AG
Char. 799: A --> G
Char. 808: C --> T
Char. 817: T --> C
Char. 883: A --> G
Char. 925: T --> C
Char. 991: C --> T
Char. 1009: C --> T
Char. 1021: T --> C
Char. 1054: C --> T
Char. 1088: G --> A
Char. 1099: A --> C
Char. 1109: T --> G
Char. 1118: C --> T
Char. 1141: A --> G
Char. 1195: A --> G
Char. 1258: A --> G
Char. 1261: C --> T
Char. 1271: C --> T
Char. 1283: C --> T
Char. 1285: A --> G
Char. 1300: T --> C
Char. 1315: A --> C
Char. 1345: T --> C
Char. 1348: T --> C
Char. 1438: T --> C
Char. 1441: C --> T
Char. 1443: A --> G
Char. 1447: C --> T
Char. 1454: G --> A
Char. 1459: T --> C
Char. 1495: C --> T
Char. 1636: T --> C
Char. 1726: C --> T
Char. 1789: T --> C
Char. 1796: C --> T
Char. 1822: A --> G
Char. 1825: A --> C
Char. 1906: C --> T
Char. 1948: C --> T
Char. 1993: A --> G
Char. 1999: A --> G
Char. 2053: A --> G
Char. 2056: A --> G
Char. 2206: A --> T
Char. 2313: T --> C
Char. 2338: C --> T
Char. 4724: A --> T
Char. 4736: A --> T
Char. 4752: C --> T
Char. 4774: G --> A
Char. 4875: A --> G
Char. 5010: A --> C
Char. 5094: C --> T
Char. 5148: C --> A
Char. 5151: C --> T
Char. 5217: G --> T
Char. 5317: G --> C
Char. 5322: C --> T
Char. 5442: C --> T
Char. 5607: A --> G
Char. 5622: A --> G
Char. 6328: C --> T
Planaltina_britskii :
Abrupt_decrease_in_size_of_dentary_teeth
(207): (0)_absent --> (1)_present
Hypertrophied_ventral-caudal-
peduncle_squamation (472): (0)_absent -->
(1)_present_restricted_to_scales_below_lateral_lin
e
Enlarged_pouch_scale (513):
(0)_absent_or_similar_to_a_regular_lateral-
line_scale -->
(1)_present_and_enlarged_with_numerous_radii
Char. 1603: A --> G
Char. 1750: A --> G
Char. 1774: A --> C
Char. 2047: C --> T
Char. 2122: C --> T
Char. 2158: C --> T
Char. 2530: C --> T
Char. 3501: C --> T
Char. 3673: T --> C
Char. 3826: G --> A
Char. 4033: G --> A
Char. 4636: A --> C
Char. 4639: C --> A
Char. 4642: G --> A
Pseudocheirodon_arnoldi :
Interdigitations_between_dentaries (150):
(1)_present --> (0)_absent
Char. 589: A --> C

Char. 592: C --> T
Char. 604: T --> C
Char. 718: A --> G
Char. 724: A --> C
Char. 814: G --> A
Char. 856: A --> G
Char. 874: A --> G
Char. 892: C --> T
Char. 946: A --> G
Char. 952: A --> T
Char. 1015: C --> A
Char. 1018: A --> G
Char. 1030: C --> T
Char. 1132: C --> T
Char. 1255: A --> G
Char. 1264: A --> G
Char. 1267: A --> G
Char. 1345: C --> T
Char. 1357: C --> A
Char. 1367: G --> A
Char. 1375: A --> G
Char. 1385: A --> G
Char. 1387: A --> G
Char. 1459: T --> C
Char. 1465: T --> C
Char. 1471: A --> T
Char. 1495: C --> T
Char. 1510: C --> T
Char. 2194: C --> T
Char. 2203: T --> C
Char. 2257: G --> A
Char. 2275: T --> C
Char. 2281: T --> A
Char. 2368: A --> G
Char. 2473: C --> T
Char. 2660: T --> C
Char. 2686: G --> A
Char. 2791: T --> C
Char. 3622: G --> A
Char. 3889: C --> T
Rachoviscus_crassiceps :
Char. 1522: G --> A
Char. 1588: G --> A
Char. 1594: G --> C
Char. 1615: G --> A
Char. 1708: A --> G
Char. 1741: C --> T
Char. 1744: A --> C
Char. 1810: G --> A
Char. 1822: A --> G
Char. 1843: T --> A
Char. 1888: A --> G
Char. 1948: T --> C
Char. 2011: C --> T
Char. 2035: T --> C
Char. 2080: T --> A
Char. 2092: A --> G
Char. 2122: C --> T
Char. 4806: C --> T
Char. 4872: T --> G
Char. 5022: C --> T
Char. 5274: A --> T
Char. 5279: C --> G
Char. 5418: G --> A
Char. 5453: G --> C
Char. 5523: C --> T
Char. 5550: C --> T
Char. 5827: G --> A
Char. 5896: T --> C
Char. 5909: A --> G
Char. 5913: A --> G
Char. 5931: A --> G
Char. 5957: G --> A
Char. 5973: G --> A
Char. 5978: G --> A
Char. 6002: T --> C
Char. 6027: C --> A
Char. 6041: G --> A
Char. 6042: T --> C
Char. 6329: T --> C
Char. 6344: A --> G
Char. 6348: C --> T
Char. 6408: G --> A

Char. 6438: A --> G
Char. 6446: T --> C
Char. 6467: C --> T
Char. 6484: C --> T
Char. 6497: A --> T
Char. 6528: G --> A
Char. 6575: T --> C
Rhinobrycon_negrensis :
Char. 1618: C --> T
Char. 1687: A --> G
Char. 1690: C --> G
Char. 1756: C --> T
Char. 1765: C --> T
Char. 1771: A --> T
Char. 1777: C --> T
Char. 1780: A --> C
Char. 1786: C --> T
Char. 1801: C --> A
Char. 1807: T --> C
Char. 1834: T --> C
Char. 1903: C --> T
Char. 1909: T --> C
Char. 1913: C --> T
Char. 1915: A --> G
Char. 1930: T --> A
Char. 1969: T --> C
Char. 2065: A --> G
Roestes_ogilviei :
Char. 539: C --> T
Char. 562: C --> T
Char. 564: T --> C
Char. 566: T --> G
Char. 586: T --> A
Char. 625: T --> C
Char. 631: C --> T
Char. 637: C --> T
Char. 662: A --> G
Char. 676: C --> T
Char. 682: T --> C
Char. 691: C --> T
Char. 709: C --> T
Char. 711: T --> G
Char. 719: G --> C
Char. 730: C --> T
Char. 731: A --> G
Char. 736: A --> C
Char. 745: A --> C
Char. 746: C --> T
Char. 751: A --> T
Char. 769: A --> C
Char. 817: C --> T
Char. 820: C --> T
Char. 823: A --> T
Char. 836: C --> T
Char. 856: T --> G
Char. 901: C --> T
Char. 910: C --> T
Char. 913: A --> C
Char. 940: C --> T
Char. 950: G --> A
Char. 971: C --> A
Char. 977: G --> A
Char. 994: A --> G
Char. 1009: C --> T
Char. 1012: A --> C
Char. 1027: A --> G
Char. 1043: T --> C
Char. 1048: C --> T
Char. 1082: T --> G
Char. 1083: T --> C
Char. 1084: T --> A
Char. 1105: C --> A
Char. 1114: A --> G
Char. 1117: A --> T
Char. 1118: C --> T
Char. 1126: C --> A
Char. 1129: C --> A
Char. 1132: C --> T
Char. 1156: T --> C
Char. 1162: C --> T
Char. 1175: G --> A
Char. 1176: T --> C
Char. 1204: A --> G

Char. 1207: C --> T
Char. 1219: C --> T
Char. 1246: C --> T
Char. 1261: C --> T
Char. 1262: C --> T
Char. 1285: T --> C
Char. 1310: C --> A
Char. 1316: T --> G
Char. 1327: A --> C
Char. 1342: A --> C
Char. 1345: A --> T
Char. 1351: T --> C
Char. 1363: T --> C
Char. 1366: A --> G
Char. 1367: G --> C
Char. 1369: C --> T
Char. 1378: A --> G
Char. 1426: C --> T
Char. 1441: A --> G
Char. 1444: A --> G
Char. 1459: A --> T
Char. 1462: C --> T
Char. 1474: C --> T
Char. 1477: C --> A
Char. 1481: C --> T
Char. 2302: T --> C
Char. 2484: C --> T
Char. 2671: T --> C
Char. 2695: G --> A
Char. 2824: A --> G
Char. 2842: A --> C
Char. 2852: G --> A
Char. 4719: T --> C
Char. 4737: G --> A
Char. 4739: G --> T
Char. 4787: G --> A
Char. 4818: A --> G
Char. 4836: G --> A
Char. 4903: G --> A
Char. 5001: G --> C
Char. 5127: C --> T
Char. 5133: G --> A
Char. 5172: G --> C
Char. 5212: C --> G
Char. 5270: C --> G
Char. 5367: C --> A
Char. 5475: A --> G
Char. 5518: C --> T
Char. 5538: G --> A
Char. 5733: G --> A
Char. 6161: G --> A
Char. 6207: T --> C
Char. 6301: T --> C
Char. 6304: A --> C
Char. 6307: T --> C
Char. 6308: G --> A
Char. 6309: T --> C
Char. 6344: G --> A
Char. 6352: C --> T
Char. 6358: C --> T
Char. 6363: A --> G
Char. 6365: A --> T
Char. 6374: A --> G
Char. 6377: C --> T
Char. 6388: C --> T
Char. 6408: G --> A
Char. 6417: G --> A
Char. 6425: G --> A
Char. 6432: A --> T
Char. 6438: A --> C
Char. 6443: A --> T
Char. 6445: A --> C
Char. 6446: T --> C
Char. 6471: T --> C
Char. 6497: C --> T
Saccoderma_melanostigma :
Hypertrophied_ventral-caudal-
peduncle_squamation (472): (0)_absent -->
(1)_present_restricted_to_scales_below_lateral_line
Char. 577: T --> C
Char. 742: A --> T
Char. 745: T --> C

Char. 754: A --> G
Char. 880: T --> C
Char. 886: C --> T
Char. 952: A --> G
Char. 986: C --> T
Char. 997: A --> G
Char. 1030: C --> T
Char. 1060: T --> C
Char. 1099: A --> G
Char. 1192: T --> C
Char. 1237: C --> T
Char. 1303: C --> T
Char. 1459: T --> C
Char. 2347: T --> C
Char. 2481: A --> G
Char. 2671: T --> C
Char. 4152: A --> C
Char. 4166: A --> G
Char. 4169: A --> T
Char. 4181: G --> C
Char. 4187: G --> A
Char. 4189: A --> C
Char. 4191: A --> T
Char. 4199: C --> A
Char. 4201: C --> A
Char. 4205: C --> A
Char. 4227: A --> C
Char. 4242: C --> T
Char. 4243: C --> G
Char. 4255: A --> C
Char. 4276: T --> A
Char. 4282: T --> G
Char. 4308: A --> T
Char. 4328: T --> G
Char. 4346: G --> T
Char. 4361: C --> A
Char. 4374: C --> T
Char. 4376: G --> C
Char. 4438: C --> G
Char. 4448: C --> T
Char. 4473: A --> G
Char. 4487: C --> T
Char. 4519: G --> A
Char. 4573: C --> T
Char. 4581: G --> A
Char. 4583: G --> A
Char. 4611: G --> T
Char. 4612: C --> T
Char. 4641: T --> C
Char. 4658: T --> C
Char. 4665: A --> C
Char. 4679: A --> T
Char. 4694: A --> G
Char. 4924: A --> T
Char. 4953: C --> T
Char. 5598: A --> C
Char. 5631: C --> T
Char. 6294: T --> A
Char. 6351: A --> G
Char. 6364: A --> T
Char. 6507: C --> T
Char. 6516: G --> A
Stygichthys_typhlops :
Number_of_teeth_on_inner_premaxillary_row
(182): (0)_five_or_fewer --> (1)_six_or_more
Number_of_teeth_on_inner_premaxillary_row
(183): (0)_six_or_fewer --> (1)_seven_or_more
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Maximum_number_of_cusps_of_anterior_dentary_
teeth (202): (1)_six_or_more --> (0)_five_or_fewer
Number_of_branched_rays_on_dorsal_fin
(408): (1)_eight_or_more --> (0)_seven_or_fewer
Number_of_branched_anal-fin_rays (418):
(1)_11_or_more --> (0)_ten_or_fewer
Char. 2236: C --> T
Char. 2326: C --> T
Char. 2435: C --> T
Char. 2587: G --> A
Char. 2591: C --> T
Char. 2593: G --> T
Char. 2707: G --> A

Char. 2722: G --> A
Char. 3478: C --> T
Char. 3490: C --> T
Char. 3589: G --> A
Char. 3595: C --> A
Char. 3703: C --> T
Char. 3805: C --> T
Char. 4243: G --> A
Char. 4346: G --> A
Char. 4360: A --> G
Char. 4364: C --> T
Char. 4374: C --> T
Char. 4555: G --> A
Char. 4666: C --> T
Char. 4744: C --> T
Char. 4835: C --> T
Char. 5085: G --> A
Char. 5118: C --> T
Char. 5372: G --> A
Char. 6140: C --> T
Char. 6182: A --> G
Char. 6194: A --> G
Char. 6251: A --> T
Char. 6307: T --> C
Char. 6315: A --> G
Char. 6328: A --> G
Char. 6342: G --> A
Char. 6345: A --> T
Char. 6361: G --> A
Char. 6382: C --> A
Char. 6424: T --> C
Char. 6445: T --> C
Char. 6463: C --> T
Char. 6575: A --> C
Char. 6584: A --> G
Tetragonopterus_anostomus :
Number_of_gill_rakers_on_first_hypobranchial_an
d_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Number_of_scales_in_lateral_series (467):
(0)_33_or_more --> (1)_32_or_fewer
Char. 1159: C --> T
Char. 1174: T --> C
Char. 1177: T --> C
Char. 1234: A --> G
Char. 1240: T --> C
Char. 1243: T --> C
Char. 1291: T --> C
Char. 1294: A --> G
Char. 1297: A --> C
Char. 1345: C --> T
Char. 1357: C --> T
Char. 1375: T --> C
Char. 1381: C --> T
Char. 1429: C --> T
Char. 1432: T --> C
Char. 1438: T --> C
Char. 1454: A --> G
Char. 1469: C --> T
Char. 2491: G --> A
Char. 3767: G --> A
Char. 3934: G --> A
Char. 4201: A --> T
Char. 4358: C --> A
Char. 4432: C --> T
Char. 4444: C --> T
Char. 4723: G --> A
Char. 5148: C --> T
Char. 6180: T --> C
Char. 6211: G --> A
Char. 6230: C --> T
Char. 6254: T --> C
Char. 6299: A --> G
Char. 6343: G --> A
Char. 6523: C --> T
Tetragonopterus_araguaiensis :
Number_of_gill_rakers_on_first_hypobranchial_an
d_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more

Pelvic-
fin_bony_hooks_in_adult_males_of_species_bearin
g_hooks_on_fins (442): (1)_present --> (0)_absent
Char. 607: A --> C
Char. 631: T --> C
Char. 637: T --> C
Char. 643: C --> T
Char. 679: C --> T
Char. 685: C --> G
Char. 716: A --> C
Char. 727: A --> G
Char. 730: C --> T
Char. 751: T --> C
Char. 784: A --> G
Char. 835: C --> T
Char. 862: T --> C
Char. 886: G --> T
Char. 895: T --> C
Char. 951: C --> T
Char. 976: C --> T
Char. 1042: C --> T
Char. 1060: C --> T
Char. 1096: T --> C
Char. 1100: G --> A
Char. 1101: C --> T
Char. 1132: C --> T
Char. 1156: C --> T
Char. 1165: C --> T
Char. 1201: A --> G
Char. 1225: C --> A
Char. 1240: T --> C
Char. 1252: A --> T
Char. 1255: A --> T
Char. 1264: A --> G
Char. 1312: C --> T
Char. 1333: A --> C
Char. 1345: C --> T
Char. 1348: C --> T
Char. 1357: C --> T
Char. 1358: C --> T
Char. 1368: C --> T
Char. 1387: A --> G
Char. 1447: C --> T
Char. 1450: C --> T
Char. 1471: A --> C
Char. 1474: C --> T
Char. 1478: A --> G
Char. 1483: A --> C
Char. 2359: T --> C
Char. 2437: A --> G
Char. 2481: A --> G
Char. 2660: T --> C
Char. 3733: A --> G
Char. 3736: G --> A
Char. 3845: C --> A
Char. 3964: C --> T
Char. 4057: C --> T
Char. 4120: C --> T
Char. 4132: C --> T
Char. 4195: A --> G
Char. 4216: G --> T
Char. 4252: A --> G
Char. 4258: T --> C
Char. 4324: G --> A
Char. 4330: C --> T
Char. 4381: C --> G
Char. 4860: G --> A
Char. 4986: C --> T
Char. 5211: G --> A
Char. 5229: T --> G
Char. 5281: A --> T
Char. 5301: T --> C
Char. 5349: T --> G
Char. 5353: C --> T
Char. 5466: C --> T
Char. 5504: C --> T
Char. 6211: G --> A
Char. 6229: G --> A
Char. 6245: A --> G
Char. 6247: C --> T
Char. 6299: A --> G
Char. 6334: G --> A
Char. 6344: A --> G

Char. 6346: A --> G
Char. 6362: C --> A
Char. 6413: C --> T
Char. 6415: A --> G
Char. 6417: G --> A
Char. 6433: T --> C
Char. 6436: G --> A
Char. 6445: A --> C
Char. 6447: C --> T
Char. 6475: C --> A
Char. 6480: G --> A
Char. 6484: T --> C
Char. 6485: T --> C
Char. 6487: C --> T
Char. 6512: A --> T
Char. 6513: C --> A
Char. 6523: C --> T
Char. 6565: C --> T
Char. 6630: T --> A

Tetragonopterus_carvalhoi :
Char. 1006: C --> T
Char. 1009: C --> T
Char. 1039: A --> G
Char. 1045: C --> T
Char. 1051: C --> T
Char. 1057: C --> T
Char. 1084: C --> A
Char. 1085: C --> T
Char. 1093: A --> G
Char. 1123: T --> C
Char. 1168: C --> T
Char. 1309: C --> T
Char. 1358: C --> T
Char. 1368: C --> T
Char. 1372: A --> G
Char. 1429: C --> T
Char. 1486: C --> T
Char. 1498: C --> T
Char. 1558: T --> C
Char. 1564: T --> A
Char. 1576: A --> T
Char. 1579: G --> A
Char. 1600: G --> A
Char. 1612: C --> T
Char. 1690: C --> T
Char. 1699: C --> T
Char. 1726: C --> T
Char. 1744: C --> T
Char. 1789: C --> T
Char. 1792: T --> C
Char. 1825: A --> C
Char. 1834: C --> T
Char. 1864: C --> T
Char. 1892: C --> T
Char. 2014: A --> C
Char. 2128: A --> G
Char. 3547: C --> T
Char. 3793: T --> G
Char. 3802: C --> T
Char. 3805: C --> T
Char. 4285: T --> G
Char. 4504: G --> A
Char. 5577: G --> A
Char. 6254: T --> C
Char. 6306: C --> T
Char. 6309: T --> C
Char. 6440: A --> T
Char. 6475: C --> T

Tetragonopterus_denticulatus :
Char. 1000: C --> G
Char. 1012: A --> T
Char. 1072: C --> T
Char. 1175: G --> A
Char. 1225: C --> T
Char. 1228: C --> T
Char. 1255: A --> G
Char. 1262: C --> T
Char. 1268: C --> T
Char. 1282: T --> C
Char. 1300: C --> A
Char. 1303: C --> T
Char. 1312: C --> T
Char. 1315: A --> G

Char. 1348: C --> T
Char. 1351: C --> T
Char. 1358: C --> T
Char. 1369: A --> C
Char. 1426: T --> C
Char. 1462: C --> T
Char. 1466: G --> A
Char. 1481: C --> A
Char. 1483: A --> T
Char. 1503: T --> A
Char. 2572: T --> C
Char. 2578: T --> C
Char. 2660: T --> C
Char. 2794: G --> C
Char. 3613: G --> A
Char. 3807: A --> T
Char. 3814: A --> G
Char. 4132: C --> T
Char. 4138: A --> G
Char. 4222: A --> C
Char. 4315: G --> A
Char. 4402: G --> A
Char. 4881: T --> A
Char. 5208: A --> T
Char. 6245: A --> G
Char. 6322: T --> C
Char. 6355: A --> T
Char. 6361: A --> G
Char. 6402: G --> A
Char. 6426: T --> C
Char. 6441: T --> C
Char. 6442: A --> T
Char. 6450: A --> T
Char. 6530: C --> T
Char. 6636: C --> T

Tetragonopterus_rarus :
Zigzag_lines_between_rows_of_scales (497):
(0)_absent --> (1)_present
Char. 1531: C --> A
Char. 1540: A --> T
Char. 1603: A --> G
Char. 1687: A --> G
Char. 1711: C --> T
Char. 1726: C --> AG
Char. 1771: T --> C
Char. 1813: T --> C
Char. 1855: T --> C
Char. 1882: T --> C
Char. 1900: C --> T
Char. 1909: T --> A
Char. 1922: G --> A
Char. 1954: T --> C
Char. 1999: A --> G
Char. 2038: T --> C
Char. 2086: T --> C
Char. 2104: A --> C
Char. 2134: A --> G
Char. 2143: A --> C
Char. 4815: T --> A
Char. 4830: G --> A
Char. 4857: G --> A
Char. 5151: C --> T
Char. 5211: G --> A
Char. 5217: A --> G
Char. 5406: T --> C
Char. 5409: G --> C
Char. 5589: T --> C
Char. 5703: G --> T
Char. 5718: C --> T
Char. 5745: T --> A
Char. 6168: T --> C
Char. 6182: G --> A
Char. 6254: T --> C
Char. 6334: G --> A
Char. 6346: A --> T
Char. 6413: C --> T
Char. 6441: T --> C
Char. 6446: A --> C
Char. 6462: A --> G

Tytocharax_tambopatensis :
Extent_of_implantation_of_teeth_along_maxilla
(191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella
Char. 1573: A --> G
Char. 1585: C --> T
Char. 1712: C --> T
Char. 1747: A --> C
Char. 1780: A --> C
Char. 1786: C --> T
Char. 1796: C --> T
Char. 1801: C --> T
Char. 1811: G --> A
Char. 1822: A --> T
Char. 1825: A --> C
Char. 1849: C --> T
Char. 1867: T --> A
Char. 1879: G --> A
Char. 1882: T --> C
Char. 1888: A --> T
Char. 1891: C --> T
Char. 1894: A --> T
Char. 1924: A --> T
Char. 1934: T --> C
Char. 1942: A --> T
Char. 1964: A --> G
Char. 1972: G --> A
Char. 1993: A --> G
Char. 2014: C --> T
Char. 2026: A --> T
Char. 2059: A --> T
Char. 2074: A --> C
Char. 2233: G --> A
Char. 2296: C --> T
Char. 2312: C --> T
Char. 2572: T --> C
Char. 2674: C --> A
Char. 2716: G --> A
Char. 2782: T --> G
Char. 2800: A --> G
Char. 3040: G --> C
Char. 3159: C --> A
Char. 3190: C --> T
Char. 3370: G --> A
Char. 3388: G --> A
Char. 3415: G --> C
Char. 3433: C --> T
Char. 3475: C --> A
Char. 3484: G --> A
Char. 3490: T --> A
Char. 3499: A --> T
Char. 3553: T --> C
Char. 3622: G --> A
Char. 3784: G --> A
Char. 3790: A --> T
Char. 3849: G --> C
Char. 3871: T --> G
Char. 3895: C --> A
Char. 3919: T --> C
Char. 3949: G --> C
Char. 3958: T --> C
Char. 3961: G --> T
Char. 3979: C --> G
Char. 3982: C --> T
Char. 4066: C --> G
Char. 4093: G --> A
Char. 4094: T --> G
Char. 4171: C --> T
Char. 4297: C --> T
Char. 4342: C --> T
Char. 4411: G --> A
Char. 4432: C --> T
Char. 4447: A --> G
Char. 4469: G --> A
Char. 4474: G --> A
Char. 4480: G --> C
Char. 4489: G --> T
Char. 4558: C --> G
Char. 4597: A --> G
Char. 4609: C --> T
Char. 4615: C --> T
Char. 4633: T --> A
Char. 4650: C --> T
Char. 5007: T --> C

Char. 5049: C --> T
Char. 5109: A --> T
Char. 5151: A --> T
Char. 5154: T --> C
Char. 5211: A --> T
Char. 5319: G --> A
Char. 5347: G --> A
Char. 5421: C --> T
Char. 5502: T --> C
Char. 5554: C --> A
Char. 5580: C --> G
Char. 5589: T --> C
Char. 5598: A --> T
Char. 5664: C --> T
Char. 5667: T --> C
Char. 5867: C --> A
Char. 5930: G --> A
Char. 5933: T --> A
Char. 5970: C --> T
Char. 6209: C --> T
Char. 6301: T --> C
Char. 6309: T --> C
Char. 6315: A --> T
Char. 6326: A --> C
Char. 6328: C --> A
Char. 6329: A --> CT
Char. 6335: A --> T
Char. 6456: C --> T
Char. 6458: C --> T
Char. 6511: C --> A

Xenurobrycon_heterodon :
Char. 1567: T --> AC
Char. 1663: T --> C
Char. 1741: T --> C
Char. 1885: T --> C
Char. 4180: T --> C
Char. 4207: A --> T
Char. 4349: C --> A
Char. 4381: T --> C
Char. 5554: C --> T
Char. 6168: T --> C
Char. 6194: A --> T
Char. 6355: A --> G
Char. 6361: T --> C
Char. 6432: A --> G
Char. 6452: A --> G

Xenurobrycon_pteropus :
Number_of_branched_pelvic-fin_rays (384):
(0)_six_or_less --> (1)_seven_or_more
Adipose_fin (512): (1)_absent --> (0)_present
Char. 5010: G --> T
Char. 5184: T --> A
Char. 5210: T --> C
Char. 5482: G --> A
Char. 5514: C --> A
Char. 6245: A --> G
Char. 6249: A --> G
Char. 6345: A --> G
Char. 6413: T --> C
Char. 6446: A --> T

Xenurobrycon_polyancistrus :
Char. 5659: A --> C
Char. 6323: T --> C
Char. 6343: A --> G
Char. 6374: A --> G

Paracheirodon_innesi :
Length_of_sphenotic_spine (47):
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula -->
(0)_not_reaching_to_anterodorsal_angle_of_hyomandibula
Epioccipital_bridge_over_posttemporal_fossa (64): (1)_present --> (0)_absent
Fourth_infraorbital (90): (0)_present -->
(1)_absent
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Char. 598: C --> T
Char. 616: C --> T
Char. 634: A --> G
Char. 649: A --> C
Char. 697: C --> T
Char. 703: C --> T

Char. 730: C --> T
Char. 754: C --> G
Char. 784: C --> A
Char. 886: G --> A
Char. 889: C --> G
Char. 961: A --> T
Char. 967: C --> T
Char. 970: T --> C
Char. 973: T --> C
Char. 980: C --> T
Char. 991: C --> T
Char. 1048: C --> T
Char. 1106: A --> G
Char. 1118: C --> T
Char. 1124: T --> A
Char. 1135: C --> T
Char. 1136: C --> T
Char. 1141: A --> T
Char. 1172: C --> T
Char. 1207: C --> T
Char. 1261: C --> T
Char. 1282: C --> T
Char. 1300: C --> G
Char. 1307: C --> T
Char. 1330: C --> T
Char. 1336: A --> C
Char. 1342: A --> C
Char. 1381: C --> T
Char. 1393: T --> C
Char. 1411: A --> G
Char. 1414: A --> C
Char. 1435: T --> C
Char. 1450: C --> T
Char. 1480: T --> C
Char. 1501: G --> C
Char. 1516: T --> C
Char. 1564: T --> C
Char. 1573: G --> A
Char. 1600: A --> G
Char. 1630: A --> G
Char. 1651: T --> C
Char. 1705: A --> T
Char. 1708: T --> C
Char. 1729: C --> T
Char. 1741: C --> T
Char. 1753: T --> C
Char. 1783: T --> C
Char. 1786: T --> C
Char. 1807: T --> A
Char. 1825: T --> C
Char. 1834: G --> T
Char. 1840: T --> C
Char. 1858: T --> C
Char. 1861: C --> T
Char. 1870: A --> G
Char. 1873: C --> T
Char. 1903: C --> T
Char. 1924: T --> A
Char. 1966: T --> C
Char. 1978: C --> T
Char. 2038: T --> C
Char. 2063: C --> T
Char. 2077: T --> C
Char. 2092: A --> G
Char. 2104: A --> G
Char. 2125: G --> A
Char. 4758: C --> G
Char. 4806: C --> T
Char. 4906: G --> C
Char. 5125: T --> G
Char. 5136: C --> T
Char. 5197: C --> T
Char. 5343: G --> A
Char. 5352: G --> A
Char. 5546: C --> T
Char. 5550: A --> C
Char. 5563: A --> G
Char. 5845: T --> A
Char. 5935: A --> T
Char. 6002: T --> C
Char. 6043: C --> T
Char. 6063: T --> C
Char. 6099: C --> T

Phenacogaster_calverti :
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Rows_of_gill_rakers_on_first_epibranchial (302): (1)_two --> (0)_one

Origin_of_A1_section_of_adductor_mandibulae (476):
(0)_principally_on_vertical_arm_of_preopercle -->
(1)_restricted_or_almost_restricted_to_horizontal_arm_of_preopercle
Humeral_spot (492): (0)_absent_or_vertically-elongate --> (1)_horizontally-ovate
Char. 1567: A --> G
Char. 1600: A --> G
Char. 1672: A --> G
Char. 1693: T --> C
Char. 1735: A --> G
Char. 1741: T --> C
Char. 1795: C --> T
Char. 1843: A --> G
Char. 1894: A --> G
Char. 1909: T --> C
Char. 2035: T --> C
Char. 2041: C --> A
Char. 2110: T --> C
Char. 2155: A --> G

Knodus_cinarucoense :
Char. 4964: C --> T
Char. 5175: C --> T
Char. 5240: G --> A
Char. 5241: T --> C

Gymnocorymbus_bondi :
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Char. 2596: A --> T
Char. 4373: T --> G
Char. 4594: T --> C
Char. 4627: C --> T
Char. 4806: C --> T
Char. 5739: T --> C
Char. 6300: G --> A
Char. 6376: C --> T

Gymnocorymbus_thayeri :
Char. 2308: A --> G
Char. 2497: G --> T
Char. 2560: A --> T
Char. 2591: C --> T
Char. 2738: A --> T
Char. 3508: A --> G

Microschemobrycon_melanotus :
Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (1)_ten_or_fewer -->
(0)_11_or_more
Number_of_branched_rays_on_dorsal_fin (409): (1)_nine_or_more --> (0)_eight_or_fewer
Number_of_scales_in_lateral_series (467):
(0)_33_or_more --> (1)_32_or_fewer
Dark_conspicuous_spot_on_dorsal_fin (496):
(0)_absent --> (1)_present
Char. 2226: G --> T
Char. 2312: G --> T
Char. 2371: T --> C
Char. 2405: C --> T
Char. 2791: T --> AC
Char. 2827: G --> C
Char. 6244: G --> A
Char. 6245: A --> G
Char. 6251: A --> T
Char. 6362: T --> C
Char. 6432: C --> T
Char. 6445: A --> G
Char. 6493: A --> T

Hemibrycon_galvisi :
Char. 5010: G --> A
Char. 5313: G --> A

Eretmobrycon_miraensis :

Ventral_extent_of_third_infraorbital (88):
(0)_reaching_horizontal_arm_of_preopercle -->
(1)_not_reaching_horizontal_arm_of_preopercle,_a
t_least_anteriorly

Char. 4096: G --> A
Char. 4177: C --> T
Char. 5010: G --> T

Eretmobycon_gonzalezi :

Char. 2602: C --> T
Char. 2683: T --> C
Char. 3612: A --> T
Char. 3634: C --> T
Char. 4003: C --> T
Char. 4090: A --> G
Char. 4219: C --> T
Char. 5432: T --> C
Char. 6043: A --> G
Char. 6343: G --> A

Bryconamericus_diaphanus :

Number_of_dentary_teeth_on_outer_row (198):

(1)_ten_or_more --> (0)_eight_or_fewer

Char. 6324: C --> A
Char. 6343: A --> G
Char. 6361: T --> A
Char. 6414: A --> G
Char. 6454: A --> G

Knodus_deuterodonoides :

Char. 1579: A --> G
Char. 1600: G --> A
Char. 1726: C --> T
Char. 1846: T --> C
Char. 1912: C --> T
Char. 1921: G --> A
Char. 1936: A --> G
Char. 1999: A --> G
Char. 2014: T --> C
Char. 2059: A --> G
Char. 2083: G --> A
Char. 3982: C --> T
Char. 4048: T --> A
Char. 4053: C --> T
Char. 4129: C --> T
Char. 4201: G --> A
Char. 4370: C --> A
Char. 4399: G --> A
Char. 5058: T --> C
Char. 5274: A --> T
Char. 5436: C --> T
Char. 5439: A --> T
Char. 5554: C --> T

Knodus_alpha :

Char. 1687: A --> G
Char. 1714: A --> G
Char. 1735: A --> G
Char. 1744: C --> T
Char. 1756: C --> T
Char. 1759: A --> G
Char. 1783: T --> C
Char. 1786: C --> T
Char. 1846: T --> C
Char. 1858: T --> C
Char. 1864: C --> T
Char. 1870: A --> G
Char. 1876: G --> A
Char. 1879: A --> G
Char. 1885: T --> C
Char. 1993: A --> G
Char. 2014: T --> C
Char. 2024: C --> T
Char. 2048: C --> T
Char. 2056: C --> T

Astyanax_orthodus :

Number_of_cusps_of_anterior_dentary_teeth

(201): (1)_five_or_more --> (0)_three_or_fewer

Humeral_spot (492): (0)_absent_or_vertically-
elongate --> (1)_horizontally-ovate

Char. 595: C --> T
Char. 616: A --> G
Char. 670: T --> C
Char. 718: A --> G
Char. 742: T --> C
Char. 796: A --> C
Char. 898: T --> A

Char. 1003: A --> T
Char. 1099: T --> C
Char. 1105: A --> T
Char. 1129: C --> T
Char. 1132: C --> T
Char. 1279: A --> G
Char. 1331: C --> T
Char. 1358: C --> T
Char. 1690: C --> T
Char. 1843: A --> G
Char. 2014: C --> T
Char. 2116: T --> C
Char. 6326: T --> C
Char. 6358: C --> T

Astyanax_nasutus :

Char. 583: C --> T
Char. 664: C --> T
Char. 674: C --> T
Char. 685: C --> T
Char. 739: T --> C
Char. 751: C --> T
Char. 778: C --> A
Char. 787: A --> T
Char. 850: C --> A
Char. 880: T --> C
Char. 1006: C --> T
Char. 1060: T --> C
Char. 1171: A --> T
Char. 1201: A --> G
Char. 1630: G --> A
Char. 1822: A --> G
Char. 1825: A --> G
Char. 1843: A --> G
Char. 1879: A --> G
Char. 1972: A --> G
Char. 2041: C --> T
Char. 2044: T --> C
Char. 2098: T --> A
Char. 2137: A --> G
Char. 2140: T --> C
Char. 2161: C --> T
Char. 6326: T --> C
Char. 6342: A --> G
Char. 6346: T --> C

Astyanax_nicaraguensis :

No autapomorphies

Acestrorhynchus_falcatus :

Char. 553: C --> T
Char. 557: T --> C
Char. 564: T --> C
Char. 586: T --> C
Char. 592: C --> T
Char. 613: T --> C
Char. 625: T --> C
Char. 632: A --> T
Char. 668: A --> G
Char. 688: A --> T
Char. 709: C --> T
Char. 717: A --> C
Char. 730: C --> T
Char. 755: G --> C
Char. 757: A --> T
Char. 778: C --> T
Char. 787: C --> T
Char. 833: C --> T
Char. 836: C --> T
Char. 846: T --> G
Char. 860: G --> A
Char. 864: T --> C
Char. 886: G --> C
Char. 901: C --> T
Char. 905: G --> C
Char. 911: C --> T
Char. 915: C --> G
Char. 916: A --> C
Char. 949: T --> C
Char. 958: A --> G
Char. 964: A --> C
Char. 968: G --> C
Char. 1003: A --> T
Char. 1019: C --> A
Char. 1021: A --> T
Char. 1027: A --> G

Char. 1045: C --> T
Char. 1063: C --> A
Char. 1065: A --> T
Char. 1094: T --> A
Char. 1100: G --> A
Char. 1105: C --> T
Char. 1114: A --> T
Char. 1123: T --> C
Char. 1126: C --> A
Char. 1135: C --> A
Char. 1136: C --> T
Char. 1138: A --> G
Char. 1144: C --> T
Char. 1153: C --> T
Char. 1156: T --> C
Char. 1157: A --> G
Char. 1162: C --> A
Char. 1183: C --> T
Char. 1184: C --> G
Char. 1185: C --> T
Char. 1186: A --> C
Char. 1207: C --> T
Char. 1219: C --> T
Char. 1222: C --> T
Char. 1228: T --> C
Char. 1234: A --> C
Char. 1237: C --> T
Char. 1240: C --> T
Char. 1261: C --> T
Char. 1273: A --> T
Char. 1315: C --> A
Char. 1321: A --> G
Char. 1331: C --> T
Char. 1333: A --> G
Char. 1363: T --> C
Char. 1370: C --> T
Char. 1391: C --> T
Char. 1408: A --> C
Char. 1414: A --> G
Char. 1417: A --> T
Char. 1432: T --> C
Char. 1453: C --> A
Char. 1454: G --> A
Char. 1457: C --> T
Char. 1462: C --> T
Char. 2284: A --> G
Char. 2314: A --> G
Char. 2441: T --> G
Char. 2593: G --> A
Char. 2719: A --> G
Char. 2806: C --> T
Char. 2821: G --> A
Char. 2872: C --> T
Char. 4767: C --> T
Char. 4806: C --> A
Char. 4807: G --> A
Char. 4809: C --> T
Char. 4836: G --> A
Char. 4875: C --> T
Char. 5016: G --> A
Char. 5133: G --> A
Char. 5151: C --> T
Char. 5157: C --> T
Char. 5301: T --> G
Char. 5343: A --> T
Char. 5344: T --> C
Char. 5358: T --> C
Char. 5361: T --> C
Char. 5382: T --> C
Char. 5475: A --> G
Char. 6209: C --> T
Char. 6227: C --> A
Char. 6229: G --> A
Char. 6247: C --> T
Char. 6255: A --> C
Char. 6308: G --> A
Char. 6315: A --> C
Char. 6325: C --> T
Char. 6327: A --> T
Char. 6363: A --> G
Char. 6368: C --> A
Char. 6415: A --> G
Char. 6496: A --> G

Char. 6507: C --> T
Char. 6513: C --> A
Char. 6516: G --> A
Char. 6541: T --> C
Char. 6573: T --> C
Char. 6589: G --> A

Alestes_baremoze :

Char. 1549: A --> G
Char. 1606: A --> G
Char. 1708: G --> A
Char. 1714: A --> G
Char. 1732: C --> T
Char. 1810: G --> C
Char. 1843: A --> T
Char. 1849: G --> T
Char. 2038: T --> C
Char. 2092: A --> G
Char. 2161: A --> G

Brachyalestes_bimaculatus :

Char. 542: G --> A
Char. 547: A --> G
Char. 553: C --> T
Char. 567: C --> T
Char. 569: A --> G
Char. 607: A --> G
Char. 622: T --> C
Char. 640: T --> C
Char. 673: T --> C
Char. 751: T --> C
Char. 754: A --> T
Char. 785: C --> T
Char. 790: C --> T
Char. 796: A --> G
Char. 814: C --> T
Char. 820: C --> T
Char. 832: T --> C
Char. 1021: A --> G
Char. 1066: C --> T
Char. 1078: A --> G
Char. 1120: A --> T
Char. 1186: C --> A
Char. 1198: C --> T
Char. 1201: A --> G
Char. 1243: T --> C
Char. 1279: C --> T
Char. 1285: T --> C
Char. 1336: C --> T
Char. 1354: A --> G
Char. 1355: C --> T
Char. 1366: A --> G
Char. 1402: T --> C
Char. 1441: A --> G
Char. 1453: C --> T
Char. 1456: C --> T
Char. 1466: A --> C
Char. 1467: T --> C
Char. 1474: C --> T
Char. 1486: C --> T
Char. 1493: G --> A
Char. 1504: C --> T
Char. 2266: C --> A
Char. 2443: A --> G

Brachyalestes_comptus :

Char. 535: T --> A
Char. 538: C --> T
Char. 559: A --> G
Char. 587: G --> A
Char. 601: A --> G
Char. 682: T --> C
Char. 694: A --> G
Char. 739: A --> T
Char. 778: C --> T
Char. 793: A --> G
Char. 796: A --> G
Char. 805: A --> T
Char. 814: C --> G
Char. 835: A --> G
Char. 862: T --> C
Char. 913: A --> T
Char. 952: A --> T
Char. 1024: C --> T
Char. 1078: A --> G
Char. 1105: C --> T

Char. 1114: A --> G
Char. 1186: C --> T
Char. 1192: T --> C
Char. 1207: C --> T
Char. 1213: A --> G
Char. 1250: C --> T
Char. 1295: C --> T
Char. 1307: C --> T
Char. 1348: C --> T
Char. 1358: C --> T
Char. 1372: A --> T
Char. 1414: A --> G
Char. 1435: T --> C
Char. 1486: C --> T
Char. 1504: C --> T
Char. 1540: G --> A
Char. 1570: T --> C
Char. 1600: T --> G
Char. 1612: C --> T
Char. 1645: A --> G
Char. 1648: T --> C
Char. 1771: T --> C
Char. 1798: A --> G
Char. 1810: A --> T
Char. 1846: C --> T
Char. 1888: T --> C
Char. 1906: A --> G
Char. 1939: T --> C
Char. 1954: T --> C
Char. 1957: T --> C
Char. 2023: C --> A
Char. 2056: C --> T
Char. 2092: G --> A
Char. 2119: T --> C
Char. 2122: T --> C
Char. 2134: A --> G

Brycinus_grandisquamis :

Char. 523: C --> T
Char. 673: C --> T
Char. 787: A --> G
Char. 796: A --> G
Char. 835: C --> G
Char. 859: A --> T
Char. 940: C --> T
Char. 1088: A --> G
Char. 1096: A --> G
Char. 1126: A --> G
Char. 1132: C --> T
Char. 1175: G --> A
Char. 1228: C --> T
Char. 1250: C --> T
Char. 1372: A --> G
Char. 1399: A --> G
Char. 1504: C --> T
Char. 1606: G --> T
Char. 1888: T --> A
Char. 1894: A --> G
Char. 1948: T --> C
Char. 1966: A --> G
Char. 2089: A --> G

Alestes_inferus :

Char. 538: C --> G
Char. 547: A --> G
Char. 586: A --> T
Char. 682: T --> C
Char. 796: A --> G
Char. 871: A --> G
Char. 883: A --> G
Char. 886: G --> A
Char. 898: A --> G
Char. 979: C --> T
Char. 1000: C --> G
Char. 1024: C --> T
Char. 1120: A --> G
Char. 1141: A --> G
Char. 1153: T --> C
Char. 1156: T --> C
Char. 1159: C --> T
Char. 1172: C --> T
Char. 1312: C --> T
Char. 1329: G --> C
Char. 1402: T --> C
Char. 1441: A --> C

Char. 1481: C --> T
Char. 1483: C --> G
Char. 1485: A --> G
Char. 1493: A --> G
Char. 1666: G --> A
Char. 1669: C --> T
Char. 1744: A --> C
Char. 1864: T --> C
Char. 1879: G --> A
Char. 2026: A --> G
Char. 2038: T --> C
Char. 2083: G --> A

Alestes_liebrechtsii :

Char. 619: A --> G
Char. 679: C --> T
Char. 706: C --> T
Char. 740: A --> G
Char. 802: A --> G
Char. 833: C --> T
Char. 860: G --> A
Char. 985: T --> C
Char. 1012: C --> T
Char. 1072: C --> T
Char. 1073: A --> G
Char. 1090: T --> C
Char. 1112: C --> T
Char. 1171: C --> T
Char. 1183: A --> G
Char. 1201: A --> G
Char. 1270: C --> T
Char. 1370: C --> T
Char. 1378: A --> C
Char. 1405: A --> G
Char. 1477: C --> T
Char. 1561: C --> T
Char. 1796: T --> C
Char. 1801: C --> T
Char. 1924: C --> T
Char. 1939: T --> A
Char. 1990: A --> G
Char. 2014: T --> C
Char. 2119: T --> C
Char. 2134: A --> G
Char. 2312: G --> C

Alestopetersius_bifasciatus :

Char. 589: C --> T
Char. 667: C --> T
Char. 793: A --> G
Char. 859: A --> G
Char. 961: C --> T
Char. 979: C --> T
Char. 1003: C --> T
Char. 1084: T --> C
Char. 1105: T --> A
Char. 1165: A --> T
Char. 1180: C --> T
Char. 1291: A --> T
Char. 1309: A --> G
Char. 1402: T --> C
Char. 1426: A --> G
Char. 1438: T --> C
Char. 1469: C --> T
Char. 1525: C --> T
Char. 1540: G --> A
Char. 1582: A --> G
Char. 1639: A --> G
Char. 1684: T --> C
Char. 1687: G --> A
Char. 1723: G --> A
Char. 1777: C --> T
Char. 1792: C --> T
Char. 1828: G --> A
Char. 1969: T --> C
Char. 2006: T --> C
Char. 2062: C --> T
Char. 2077: C --> T
Char. 2113: C --> T
Char. 2404: T --> C
Char. 2569: G --> A
Char. 2671: T --> A
Char. 2839: G --> C

Alestopetersius_caudalis :

Char. 625: C --> T

Char. 634: T --> C
Char. 688: A --> G
Char. 754: A --> G
Char. 811: A --> G
Char. 877: A --> G
Char. 1195: A --> G
Char. 1243: A --> G
Char. 1318: A --> G
Char. 1408: C --> T
Char. 1564: C --> A
Char. 1633: T --> C
Char. 1744: A --> C
Char. 1819: G --> A

Alestopetersius compressus :

Char. 526: A --> G
Char. 667: C --> T
Char. 712: C --> T
Char. 778: T --> C
Char. 787: A --> G
Char. 898: A --> G
Char. 1019: C --> T
Char. 1105: T --> C
Char. 1117: C --> A
Char. 1153: C --> T
Char. 1258: A --> G
Char. 1270: A --> G
Char. 1327: A --> G
Char. 1441: C --> T
Char. 1445: A --> G
Char. 1485: G --> A
Char. 1494: T --> C
Char. 1516: C --> T
Char. 1681: G --> A
Char. 2630: T --> A
Char. 2818: C --> A
Char. 2839: G --> C

Alestopetersius conspectus :

Char. 535: T --> A
Char. 568: A --> G
Char. 589: C --> T
Char. 607: A --> C
Char. 619: A --> G
Char. 631: T --> C
Char. 661: T --> C
Char. 682: T --> C
Char. 694: A --> T
Char. 739: T --> A
Char. 745: C --> T
Char. 766: T --> C
Char. 781: C --> T
Char. 787: A --> G
Char. 793: A --> G
Char. 796: A --> G
Char. 856: C --> T
Char. 864: C --> T
Char. 874: A --> G
Char. 895: T --> A
Char. 934: C --> T
Char. 953: A --> G
Char. 961: C --> T
Char. 1006: T --> C
Char. 1018: A --> C
Char. 1019: C --> T
Char. 1021: A --> G
Char. 1030: C --> T
Char. 1033: A --> C
Char. 1042: C --> T
Char. 1066: T --> C
Char. 1078: A --> G
Char. 1105: T --> C
Char. 1114: A --> G
Char. 1118: C --> T
Char. 1129: C --> T
Char. 1132: C --> T
Char. 1135: T --> C
Char. 1138: T --> C
Char. 1162: C --> A
Char. 1177: T --> C
Char. 1186: C --> T
Char. 1237: C --> T
Char. 1240: C --> T
Char. 1249: A --> G
Char. 1252: G --> A

Char. 1261: C --> A
Char. 1276: C --> T
Char. 1282: C --> T
Char. 1294: C --> A
Char. 1295: C --> T
Char. 1358: C --> A
Char. 1363: C --> T
Char. 1426: A --> T
Char. 1441: A --> G
Char. 1453: T --> C
Char. 1457: C --> T
Char. 1459: G --> A
Char. 1483: C --> T
Char. 1485: G --> A
Char. 1513: C --> T
Char. 1594: G --> A
Char. 1681: G --> A
Char. 1732: C --> T
Char. 1960: C --> G

Alestopetersius nigropterus :

Char. 559: T --> C
Char. 574: C --> T
Char. 673: C --> T
Char. 676: C --> T
Char. 697: C --> T
Char. 742: C --> T
Char. 752: C --> T
Char. 757: A --> G
Char. 784: A --> CT
Char. 790: C --> T
Char. 796: A --> T
Char. 808: C --> T
Char. 865: C --> T
Char. 866: C --> T
Char. 907: C --> T
Char. 934: C --> T
Char. 940: G --> C
Char. 985: C --> T
Char. 1012: C --> T
Char. 1013: A --> G
Char. 1030: C --> T
Char. 1048: C --> T
Char. 1084: T --> C
Char. 1102: C --> T
Char. 1108: C --> T
Char. 1114: A --> G
Char. 1123: T --> C
Char. 1135: T --> C
Char. 1171: C --> T
Char. 1177: T --> C
Char. 1186: C --> T
Char. 1192: T --> C
Char. 1237: C --> A
Char. 1243: A --> C
Char. 1273: T --> C
Char. 1295: C --> T
Char. 1306: C --> T
Char. 1309: A --> G
Char. 1339: C --> T
Char. 1411: A --> G
Char. 1426: A --> C
Char. 1432: T --> C
Char. 1471: A --> CT
Char. 1549: A --> T

Alestopetersius tumbensis :

Char. 625: C --> T
Char. 634: T --> C
Char. 688: A --> G
Char. 754: A --> G
Char. 811: A --> G
Char. 877: A --> G
Char. 1114: A --> G
Char. 1195: A --> G
Char. 1408: C --> T
Char. 1588: G --> A
Char. 1606: G --> T
Char. 1669: A --> G
Char. 1708: G --> A
Char. 1720: C --> T
Char. 1873: C --> T
Char. 2134: A --> T
Char. 2329: A --> C
Char. 2818: C --> A

Ammocryptocharax elegans :

No autapomorphies

Ammocryptocharax lateralis :

Char. 571: C --> T
Char. 649: C --> T
Char. 688: A --> T
Char. 697: C --> T
Char. 715: T --> C
Char. 736: AC --> G
Char. 748: C --> T
Char. 829: C --> T
Char. 832: C --> T
Char. 864: C --> T
Char. 871: A --> C
Char. 880: C --> T
Char. 913: A --> T
Char. 916: C --> T
Char. 922: C --> T
Char. 934: C --> T
Char. 949: T --> C
Char. 961: A --> G
Char. 964: C --> T
Char. 967: C --> A
Char. 1000: C --> A
Char. 1060: C --> T
Char. 1087: A --> G
Char. 1102: C --> T
Char. 1105: A --> G
Char. 1129: A --> T
Char. 1138: A --> T
Char. 1147: A --> C
Char. 1165: C --> T
Char. 1183: A --> G
Char. 1192: T --> C
Char. 1207: C --> T
Char. 1240: C --> T
Char. 1258: A --> G
Char. 1264: A --> G
Char. 1276: C --> T
Char. 1289: C --> T
Char. 1298: G --> A
Char. 1309: C --> T
Char. 1345: C --> T
Char. 1355: T --> C
Char. 1372: A --> C
Char. 1378: A --> C
Char. 1417: A --> G
Char. 1423: C --> T
Char. 1456: C --> T
Char. 1459: C --> T
Char. 1471: A --> C
Char. 1502: T --> C
Char. 3637: C --> T
Char. 3767: G --> A
Char. 3794: G --> C
Char. 3802: A --> T
Char. 4042: T --> C
Char. 4207: G --> T
Char. 4398: A --> T
Char. 4447: A --> G
Char. 4591: T --> A
Char. 4725: T --> C
Char. 4728: A --> G
Char. 4750: C --> T
Char. 4791: G --> T
Char. 4827: G --> A
Char. 4839: G --> A
Char. 4953: G --> A
Char. 4983: G --> A
Char. 5008: C --> T
Char. 5043: C --> A
Char. 5054: C --> T
Char. 5109: A --> G
Char. 5121: T --> G
Char. 5127: C --> T
Char. 5130: A --> G
Char. 5133: C --> A
Char. 5139: C --> T
Char. 5183: G --> A
Char. 5227: A --> G
Char. 5277: G --> A
Char. 5284: C --> A
Char. 5295: A --> T

Char. 5296: A --> G
Char. 5298: T --> G
Char. 5343: C --> T
Char. 5344: T --> C
Char. 5345: A --> G
Char. 5352: G --> A
Char. 5355: G --> A
Char. 5383: C --> A
Char. 5395: C --> G
Char. 5454: G --> A
Char. 5487: T --> C
Char. 5509: T --> A
Char. 5538: G --> A
Char. 5601: T --> A
Char. 5607: A --> G
Char. 5610: A --> G
Char. 5643: T --> C
Char. 5694: A --> G
Char. 5716: A --> G
Char. 5733: A --> G
Char. 6253: A --> T
Char. 6317: A --> G
Char. 6329: C --> T
Char. 6331: A --> T
Char. 6346: C --> G
Char. 6358: T --> C
Char. 6365: A --> T
Char. 6379: A --> T
Char. 6402: G --> A
Char. 6414: A --> T
Char. 6415: A --> C
Char. 6438: G --> A
Char. 6439: G --> T
Char. 6471: T --> C
Char. 6523: C --> T

Anodus_elongatus :

Char. 535: A --> C
Char. 607: A --> C
Char. 646: A --> T
Char. 679: C --> T
Char. 712: A --> T
Char. 745: A --> T
Char. 749: C --> T
Char. 751: A --> G
Char. 757: A --> T
Char. 775: A --> G
Char. 778: A --> C
Char. 787: C --> G
Char. 796: A --> C
Char. 841: C --> T
Char. 864: C --> T
Char. 895: C --> T
Char. 898: A --> T
Char. 913: A --> G
Char. 940: A --> C
Char. 941: C --> T
Char. 943: AT --> C
Char. 946: A --> G
Char. 971: C --> A
Char. 976: C --> T
Char. 1021: A --> C
Char. 1042: T --> C
Char. 1045: A --> G
Char. 1048: C --> T
Char. 1066: C --> T
Char. 1105: A --> G
Char. 1111: A --> T
Char. 1118: C --> T
Char. 1123: C --> T
Char. 1129: C --> G
Char. 1153: C --> T
Char. 1171: C --> G
Char. 1210: C --> T
Char. 1216: T --> C
Char. 1255: A --> C
Char. 1271: C --> T
Char. 1279: A --> T
Char. 1282: C --> T
Char. 1297: A --> T
Char. 1306: A --> G
Char. 1349: A --> T
Char. 1351: C --> T
Char. 1357: C --> T

Char. 1372: A --> T
Char. 1375: C --> A
Char. 1384: A --> T
Char. 1456: C --> T
Char. 1457: C --> T
Char. 1459: C --> A
Char. 1480: C --> T
Char. 1499: T --> C
Char. 1500: G --> A
Char. 1504: A --> C
Char. 1516: T --> C
Char. 1517: T --> C
Char. 1567: A --> C
Char. 1678: T --> C
Char. 1687: A --> G
Char. 1711: C --> A
Char. 1723: A --> G
Char. 1729: T --> G
Char. 1735: G --> A
Char. 1744: C --> A
Char. 1771: AG --> T
Char. 1828: C --> A
Char. 1843: C --> G
Char. 1892: C --> T
Char. 1918: A --> C
Char. 1921: G --> A
Char. 1924: C --> A
Char. 1951: T --> C
Char. 1960: C --> T
Char. 1996: T --> C
Char. 2011: T --> C
Char. 2014: G --> T
Char. 2035: T --> C
Char. 2063: C --> T
Char. 2107: C --> T
Char. 2110: A --> G
Char. 2410: G --> T
Char. 2479: C --> T
Char. 2575: C --> A
Char. 2763: A --> T
Char. 2788: T --> C
Char. 2800: A --> T
Char. 6253: A --> G
Char. 6286: A --> T

Anodus_orinocensis :

Char. 563: A --> G
Char. 646: A --> C
Char. 658: C --> T
Char. 730: C --> T
Char. 740: G --> A
Char. 781: C --> T
Char. 784: C --> T
Char. 814: G --> CT
Char. 863: A --> G
Char. 883: A --> G
Char. 916: C --> AG
Char. 971: C --> A
Char. 985: C --> T
Char. 1006: C --> T
Char. 1063: C --> A
Char. 1078: A --> G
Char. 1090: T --> AC
Char. 1129: C --> A
Char. 1165: C --> T
Char. 1192: C --> T
Char. 1279: A --> CT
Char. 1295: C --> T
Char. 1349: A --> T
Char. 1351: C --> A
Char. 1396: A --> T
Char. 1426: A --> C
Char. 1435: C --> T
Char. 1459: C --> AG
Char. 1478: G --> A
Char. 1499: T --> C
Char. 1500: G --> A
Char. 1504: A --> C
Char. 1708: T --> G
Char. 1714: A --> G
Char. 1723: A --> T
Char. 1771: A --> T
Char. 1786: C --> T
Char. 1789: T --> C

Char. 1792: T --> A
Char. 1795: C --> T
Char. 1810: A --> G
Char. 1828: C --> G
Char. 1840: T --> C
Char. 1852: T --> C
Char. 1879: T --> C
Char. 1894: A --> G
Char. 1900: T --> C
Char. 1915: T --> A
Char. 1918: A --> G
Char. 1927: AC --> T
Char. 1951: T --> C
Char. 2006: C --> T
Char. 2011: T --> C
Char. 2017: A --> G
Char. 2041: T --> C
Char. 2050: C --> T
Char. 2056: C --> T
Char. 2080: C --> T
Char. 2086: T --> C
Char. 2095: C --> T
Char. 2131: A --> G
Char. 2158: C --> T
Char. 4767: C --> G
Char. 4827: A --> C
Char. 4881: T --> A
Char. 4896: C --> T
Char. 4980: T --> A
Char. 5115: T --> C
Char. 5172: G --> A
Char. 5214: C --> T
Char. 5241: C --> T
Char. 5328: G --> A
Char. 5350: G --> A
Char. 5401: A --> G
Char. 5472: T --> A
Char. 5555: C --> T
Char. 5574: A --> G
Char. 5721: C --> G
Char. 6347: T --> A
Char. 6443: C --> T
Char. 6513: T --> C
Char. 6531: C --> T
Char. 6573: C --> T

Anostomus_anostomus :

Char. 529: A --> T
Char. 563: A --> G
Char. 604: T --> C
Char. 607: A --> C
Char. 613: C --> T
Char. 622: A --> T
Char. 680: A --> G
Char. 692: C --> T
Char. 700: T --> C
Char. 710: C --> T
Char. 730: C --> T
Char. 748: C --> G
Char. 772: C --> T
Char. 856: A --> G
Char. 886: C --> T
Char. 889: G --> A
Char. 901: C --> T
Char. 911: C --> T
Char. 928: C --> T
Char. 940: C --> T
Char. 941: C --> T
Char. 946: A --> T
Char. 955: CT --> A
Char. 1019: C --> A
Char. 1027: A --> G
Char. 1084: T --> C
Char. 1097: A --> T
Char. 1111: A --> C
Char. 1126: C --> T
Char. 1147: C --> A
Char. 1165: C --> T
Char. 1168: C --> T
Char. 1189: C --> T
Char. 1213: C --> T
Char. 1243: C --> T
Char. 1262: C --> T
Char. 1273: A --> T

Char. 1285: A --> T
Char. 1336: A --> G
Char. 1349: A --> G
Char. 1363: C --> T
Char. 1367: A --> G
Char. 1369: C --> T
Char. 1428: T --> A
Char. 1429: C --> T
Char. 1447: C --> T
Char. 1459: C --> A
Char. 1462: C --> T
Char. 1475: C --> T
Char. 1477: T --> A
Char. 1500: G --> T
Char. 1501: A --> G
Char. 6322: C --> AT
Char. 6328: A --> T
Char. 6344: A --> G
Char. 6361: G --> T
Char. 6363: A --> CT
Char. 6513: C --> T
Anostomus_ternetzi :
Char. 568: C --> T
Char. 592: C --> T
Char. 595: T --> C
Char. 601: C --> T
Char. 610: C --> T
Char. 712: A --> T
Char. 715: T --> C
Char. 742: T --> C
Char. 778: C --> T
Char. 844: C --> T
Char. 871: A --> G
Char. 949: C --> T
Char. 964: C --> A
Char. 1006: C --> T
Char. 1048: C --> T
Char. 1054: C --> T
Char. 1057: C --> T
Char. 1097: A --> C
Char. 1100: G --> A
Char. 1102: C --> T
Char. 1105: A --> CT
Char. 1129: C --> A
Char. 1132: C --> T
Char. 1136: C --> T
Char. 1141: T --> C
Char. 1276: C --> T
Char. 1360: A --> CT
Char. 1408: A --> GCT
Char. 1414: A --> C
Char. 1421: G --> CT
Char. 1432: T --> C
Char. 1468: A --> G
Char. 1478: G --> A
Char. 1489: C --> T
Char. 1525: T --> C
Char. 1528: T --> C
Char. 1564: T --> A
Char. 1576: T --> C
Char. 1600: C --> G
Char. 1601: C --> T
Char. 1621: T --> C
Char. 1627: T --> C
Char. 1648: C --> T
Char. 1678: T --> C
Char. 1687: G --> AT
Char. 1706: A --> G
Char. 1708: T --> A
Char. 1771: A --> G
Char. 1772: T --> C
Char. 1780: T --> C
Char. 1790: C --> T
Char. 1792: T --> A
Char. 1793: C --> T
Char. 1795: A --> G
Char. 1807: C --> T
Char. 1825: A --> T
Char. 1861: A --> T
Char. 1885: C --> T
Char. 1888: T --> A
Char. 1891: T --> C
Char. 1942: C --> T

Char. 1951: T --> C
Char. 1972: A --> G
Char. 1993: G --> A
Char. 1996: C --> T
Char. 2023: T --> A
Char. 2024: T --> C
Char. 2036: G --> A
Char. 2038: A --> T
Char. 2039: C --> T
Char. 2053: T --> C
Char. 2056: A --> G
Char. 2062: C --> A
Char. 2086: G --> A
Char. 2107: C --> T
Char. 2110: C --> T
Char. 2116: C --> T
Char. 2134: A --> G
Char. 2147: C --> T
Char. 2152: T --> C
Char. 2159: C --> T
Char. 2455: C --> T
Char. 2740: A --> G
Char. 2839: C --> T
Char. 3523: G --> A
Char. 3613: G --> T
Char. 3826: A --> G
Char. 3891: C --> G
Char. 3901: T --> C
Char. 3922: A --> G
Char. 4650: C --> A
Char. 4848: G --> C
Char. 4887: T --> C
Char. 5562: G --> A
Char. 6168: T --> C
Char. 6205: T --> C
Char. 6327: A --> C
Char. 6343: A --> G
Char. 6345: A --> G
Char. 6382: C --> T
Char. 6407: G --> A
Char. 6419: C --> T
Char. 6434: G --> A
Char. 6461: G --> A
Char. 6589: A --> G
Aphyocharacinae_sp. :
Char. 532: A --> G
Char. 550: C --> T
Char. 566: T --> A
Char. 567: C --> T
Char. 568: C --> T
Char. 583: C --> T
Char. 595: C --> T
Char. 607: A --> G
Char. 621: T --> C
Char. 631: T --> C
Char. 632: A --> C
Char. 634: A --> C
Char. 637: T --> C
Char. 658: C --> T
Char. 680: A --> G
Char. 691: C --> T
Char. 703: C --> A
Char. 706: C --> T
Char. 721: A --> G
Char. 757: A --> C
Char. 772: T --> C
Char. 790: C --> A
Char. 793: A --> G
Char. 808: C --> T
Char. 814: G --> C
Char. 832: C --> T
Char. 862: T --> C
Char. 886: G --> A
Char. 889: T --> A
Char. 905: G --> C
Char. 911: C --> T
Char. 946: A --> T
Char. 961: A --> C
Char. 967: C --> T
Char. 973: A --> T
Char. 1000: C --> G
Char. 1014: C --> T
Char. 1043: T --> C

Char. 1044: C --> A
Char. 1057: C --> T
Char. 1073: C --> T
Char. 1085: G --> T
Char. 1094: C --> A
Char. 1106: G --> C
Char. 1107: C --> T
Char. 1108: A --> C
Char. 1126: C --> T
Char. 1157: A --> T
Char. 1210: C --> T
Char. 1213: A --> G
Char. 1231: A --> G
Char. 1250: C --> T
Char. 1252: A --> G
Char. 1271: C --> T
Char. 1294: A --> G
Char. 1297: A --> C
Char. 1303: C --> G
Char. 1312: C --> T
Char. 1318: T --> A
Char. 1330: C --> T
Char. 1342: A --> C
Char. 1357: C --> T
Char. 1388: A --> G
Char. 1391: C --> T
Char. 1441: C --> A
Char. 1445: A --> G
Char. 1447: C --> A
Char. 1462: C --> T
Char. 1469: G --> A
Char. 1474: C --> T
Char. 1483: A --> C
Char. 1498: C --> A
Char. 1502: G --> A
Char. 1504: A --> T
Char. 2312: G --> C
Char. 2459: A --> G
Char. 2461: C --> A
Char. 2533: T --> C
Char. 2602: C --> A
Char. 2607: A --> G
Char. 2632: A --> T
Char. 2839: C --> T
Char. 2872: C --> T
Char. 3511: A --> G
Char. 3529: C --> A
Char. 3568: A --> C
Char. 3601: G --> A
Char. 3694: C --> T
Char. 3718: T --> C
Char. 3737: A --> C
Char. 3853: C --> T
Char. 3877: C --> T
Char. 3889: C --> T
Char. 3891: C --> G
Char. 3931: G --> A
Char. 4000: C --> G
Char. 4003: C --> T
Char. 4033: G --> T
Char. 4039: G --> A
Char. 4060: C --> A
Char. 4096: G --> A
Char. 4099: A --> C
Char. 4124: C --> A
Char. 4132: C --> T
Char. 4159: A --> T
Char. 4207: A --> C
Char. 4403: A --> C
Char. 4508: C --> T
Char. 4515: C --> T
Char. 4516: T --> A
Char. 4565: T --> A
Char. 4597: A --> G
Char. 4624: A --> G
Char. 4647: C --> G
Char. 4759: C --> A
Char. 4821: C --> T
Char. 4896: C --> A
Char. 4971: G --> C
Char. 5118: T --> C
Char. 5154: C --> T
Char. 5215: T --> A

Char. 5304: T --> C
Char. 5322: AC --> T
Char. 5343: G --> A
Char. 5359: G --> A
Char. 5372: G --> A
Char. 5376: G --> A
Char. 5409: G --> A
Char. 5458: G --> A
Char. 5577: G --> A
Char. 5598: A --> G
Char. 5661: C --> T
Char. 5682: C --> G
Char. 6276: T --> C
Char. 6361: T --> A
Char. 6381: A --> T
Char. 6413: C --> T
Char. 6434: G --> A
Char. 6446: A --> C
Char. 6450: A --> T
Char. 6452: A --> C
Char. 6510: C --> T

Aphyocharax alburnus :

Char. 535: A --> G
Char. 551: T --> A
Char. 556: C --> T
Char. 679: T --> C
Char. 775: A --> G
Char. 901: T --> C
Char. 988: T --> C
Char. 1006: C --> T
Char. 1132: C --> T
Char. 1168: C --> T
Char. 1432: T --> C
Char. 1454: G --> A
Char. 1456: T --> C
Char. 1478: G --> A
Char. 1498: C --> T
Char. 2182: T --> C
Char. 2794: G --> A
Char. 2899: G --> A
Char. 5185: G --> T

Aphyocharax pusillus :

Char. 533: T --> C
Char. 550: C --> T
Char. 577: T --> C
Char. 586: C --> A
Char. 592: C --> T
Char. 604: T --> C
Char. 670: C --> T
Char. 736: AT --> C
Char. 763: A --> G
Char. 865: A --> G
Char. 866: T --> C
Char. 904: T --> C
Char. 973: A --> T
Char. 994: A --> G
Char. 1024: C --> T
Char. 1118: T --> C
Char. 1144: C --> T
Char. 1150: A --> G
Char. 1243: CT --> A
Char. 1273: AT --> C
Char. 1283: C --> T
Char. 1300: A --> G
Char. 1307: C --> T
Char. 1309: T --> A
Char. 1330: C --> T
Char. 1396: T --> C
Char. 1423: C --> T
Char. 1438: T --> C
Char. 1447: C --> T
Char. 1471: C --> T
Char. 1483: A --> T
Char. 1490: C --> T
Char. 3544: C --> T
Char. 3955: A --> T
Char. 4697: A --> C
Char. 4699: A --> C
Char. 4700: C --> A
Char. 4848: G --> A
Char. 5133: G --> A
Char. 5334: G --> C
Char. 6183: A --> G

Char. 6254: T --> C
Char. 6324: A --> T
Char. 6343: C --> T

Aphyocharax rathbuni :

Char. 634: A --> G
Char. 649: A --> T
Char. 736: T --> C
Char. 754: A --> G
Char. 766: T --> C
Char. 787: C --> A
Char. 790: C --> T
Char. 850: A --> G
Char. 886: G --> C
Char. 913: A --> G
Char. 922: C --> T
Char. 934: C --> T
Char. 967: C --> T
Char. 988: T --> C
Char. 1006: C --> T
Char. 1009: C --> T
Char. 1012: A --> G
Char. 1019: T --> C
Char. 1030: C --> T
Char. 1051: C --> T
Char. 1088: A --> G
Char. 1090: T --> A
Char. 1102: C --> T
Char. 1117: C --> T
Char. 1159: C --> A
Char. 1171: C --> T
Char. 1177: C --> T
Char. 1211: C --> T
Char. 1222: T --> C
Char. 1255: C --> T
Char. 1273: T --> C
Char. 1283: C --> T
Char. 1295: C --> T
Char. 1309: T --> A
Char. 1321: A --> G
Char. 1342: A --> G
Char. 1369: T --> C
Char. 1408: C --> T
Char. 1411: A --> G
Char. 1420: A --> G
Char. 2593: C --> T
Char. 2686: G --> T
Char. 2830: T --> C
Char. 2842: A --> G
Char. 2878: T --> A
Char. 4504: G --> A
Char. 4746: C --> T
Char. 4806: C --> T
Char. 4871: C --> T
Char. 4872: T --> A
Char. 4935: G --> A
Char. 5193: T --> C
Char. 5268: T --> C
Char. 5373: T --> A
Char. 5391: A --> G
Char. 5421: C --> T
Char. 5516: A --> T
Char. 5574: A --> G
Char. 5605: C --> T
Char. 6211: A --> G
Char. 6306: A --> G
Char. 6343: C --> A
Char. 6361: C --> T

Argonectes robertsi :

Char. 532: A --> G
Char. 533: C --> T
Char. 544: T --> C
Char. 577: C --> T
Char. 583: A --> C
Char. 595: C --> T
Char. 598: C --> T
Char. 604: C --> T
Char. 619: A --> G
Char. 631: C --> T
Char. 634: G --> A
Char. 640: C --> T
Char. 658: C --> T
Char. 664: C --> T
Char. 670: T --> C

Char. 692: C --> T
Char. 733: T --> C
Char. 754: A --> C
Char. 838: C --> A
Char. 856: A --> T
Char. 986: C --> T
Char. 991: C --> T
Char. 997: A --> T
Char. 1012: C --> T
Char. 1019: C --> T
Char. 1031: G --> A
Char. 1043: T --> C
Char. 1063: C --> T
Char. 1072: C --> T
Char. 1078: A --> G
Char. 1088: G --> A
Char. 1091: C --> A
Char. 1097: A --> G
Char. 1106: A --> T
Char. 1108: A --> T
Char. 1124: G --> A
Char. 1147: C --> T
Char. 1162: C --> A
Char. 1186: C --> T
Char. 1285: T --> C
Char. 1288: A --> C
Char. 1295: C --> T
Char. 1300: C --> T
Char. 1312: C --> T
Char. 1330: C --> T
Char. 1334: A --> G
Char. 1360: A --> C
Char. 1387: A --> G
Char. 1391: C --> T
Char. 1408: A --> C
Char. 1411: A --> G
Char. 1426: A --> C
Char. 1429: C --> T
Char. 1435: C --> T
Char. 1447: C --> T
Char. 1453: C --> A
Char. 1469: C --> T
Char. 2226: G --> T
Char. 2241: G --> A
Char. 2461: C --> T
Char. 2491: T --> C
Char. 2515: T --> C
Char. 2521: T --> C
Char. 2671: C --> T
Char. 2749: T --> C
Char. 4795: T --> A
Char. 4893: C --> T
Char. 4962: A --> C
Char. 5115: T --> C
Char. 5121: C --> T
Char. 5202: C --> T
Char. 5466: C --> A
Char. 5467: G --> T
Char. 6182: G --> T
Char. 6207: C --> T
Char. 6245: G --> A
Char. 6254: C --> A
Char. 6475: T --> C
Char. 6522: T --> C

Arnoldichthys spilopterus :

Char. 2269: C --> T
Char. 2305: C --> A
Char. 2314: G --> A
Char. 2407: G --> A
Char. 2435: C --> T
Char. 2441: T --> G
Char. 2452: T --> C
Char. 2479: C --> T
Char. 2497: G --> A
Char. 2518: A --> G
Char. 2583: T --> C
Char. 2602: T --> A
Char. 2656: C --> T
Char. 2664: C --> T
Char. 2671: T --> A
Char. 2722: G --> A
Char. 2746: T --> C
Char. 2809: T --> C

Char. 2876: C --> A
Astyanax_jordani :
Char. 2236: C --> T
Char. 4966: A --> T
Char. 5197: C --> T
Astyanax_paranae :
Char. 1966: T --> C
Char. 2116: T --> C
Bathyaethiops_breuseghemi :
Char. 808: C --> T
Char. 1537: C --> T
Char. 1549: A --> C
Char. 1580: C --> T
Char. 1606: G --> T
Char. 1621: T --> C
Char. 1633: T --> C
Char. 1690: G --> T
Char. 1714: A --> T
Char. 1787: C --> T
Char. 1789: T --> A
Char. 1834: T --> C
Char. 1840: A --> G
Char. 1873: C --> T
Char. 1924: T --> C
Char. 1960: T --> A
Char. 1984: C --> T
Char. 2006: T --> C
Char. 2011: T --> C
Char. 2014: T --> A
Char. 2116: C --> T
Char. 2131: G --> A
Char. 2134: A --> C
Char. 2155: A --> G
Char. 2159: T --> C
Char. 2407: G --> A
Char. 2428: T --> C
Char. 2671: T --> C
Bathyaethiops_caudomaculatus :
Char. 679: C --> T
Char. 940: G --> A
Char. 1363: C --> T
Char. 2623: C --> T
Bathyaethiops_greeni :
Char. 628: A --> G
Char. 811: A --> G
Char. 973: T --> G
Char. 1099: T --> C
Char. 1454: AG --> C
Char. 1466: A --> G
Char. 1594: G --> C
Char. 1666: G --> A
Char. 1672: A --> G
Char. 1687: G --> A
Char. 1712: C --> T
Char. 1735: A --> G
Char. 1765: C --> T
Char. 1774: C --> T
Char. 1831: A --> G
Char. 1867: T --> C
Char. 1879: G --> C
Char. 1906: A --> G
Char. 1986: T --> C
Char. 1999: A --> G
Char. 2071: A --> G
Char. 2080: T --> C
Char. 2083: A --> G
Char. 2102: T --> C
Char. 2149: C --> A
Char. 2158: C --> T
Char. 2461: C --> T
Belonophago_hutsebouti :
Char. 2481: A --> G
Char. 2758: A --> C
Belonophago_tinanti :
Char. 2884: A --> G
Boulengerella_maculata :
Char. 586: A --> T
Char. 598: C --> T
Char. 697: C --> T
Char. 718: A --> G
Char. 748: C --> T
Char. 790: A --> GT
Char. 868: A --> G

Char. 886: A --> G
Char. 898: A --> C
Char. 956: G --> A
Char. 964: C --> T
Char. 1054: C --> T
Char. 1105: C --> T
Char. 1183: C --> T
Char. 1234: C --> T
Char. 1321: A --> G
Char. 1360: C --> T
Char. 1368: T --> C
Char. 1393: A --> C
Char. 1402: C --> T
Char. 1432: T --> C
Char. 1447: C --> T
Char. 1459: C --> T
Char. 1478: A --> G
Char. 1486: C --> T
Char. 2215: T --> A
Char. 2221: T --> A
Char. 2222: G --> T
Char. 2223: G --> C
Char. 2226: G --> C
Char. 2236: C --> T
Char. 2275: T --> A
Char. 2293: T --> C
Char. 2302: T --> C
Char. 2314: G --> A
Char. 2335: C --> T
Char. 2374: T --> C
Char. 2395: T --> C
Char. 2419: T --> C
Char. 2422: T --> A
Char. 2428: T --> C
Char. 2440: G --> A
Char. 2449: G --> A
Char. 2464: T --> C
Char. 2467: C --> T
Char. 2473: A --> C
Char. 2485: A --> C
Char. 2491: T --> A
Char. 2509: C --> T
Char. 2510: T --> C
Char. 2557: G --> A
Char. 2591: C --> T
Char. 2594: A --> T
Char. 2596: G --> A
Char. 2607: A --> G
Char. 2611: T --> C
Char. 2632: T --> C
Char. 2644: A --> G
Char. 2653: C --> G
Char. 2660: C --> T
Char. 2662: C --> G
Char. 2680: T --> C
Char. 2686: T --> G
Char. 2695: A --> G
Char. 2704: G --> A
Char. 2725: A --> T
Char. 2739: C --> G
Char. 2740: A --> C
Char. 2752: C --> T
Char. 2755: G --> A
Char. 2758: A --> T
Char. 2779: T --> C
Char. 2780: T --> A
Char. 2781: C --> G
Char. 2791: T --> C
Char. 2792: T --> C
Char. 2797: A --> G
Char. 2812: A --> G
Char. 2848: C --> T
Char. 2866: C --> A
Char. 6314: C --> T
Char. 6376: T --> C
Char. 6442: C --> T
Brachypetersius_altus :
Char. 616: C --> T
Char. 2134: A --> T
Brachypetersius_notospilus :
Char. 589: C --> G
Char. 607: A --> G
Char. 620: A --> G

Char. 664: C --> T
Char. 676: C --> T
Char. 682: T --> C
Char. 697: C --> T
Char. 740: A --> G
Char. 742: C --> A
Char. 752: C --> T
Char. 757: A --> T
Char. 784: C --> T
Char. 820: C --> A
Char. 829: C --> A
Char. 836: C --> T
Char. 838: C --> A
Char. 841: C --> T
Char. 847: C --> A
Char. 856: T --> C
Char. 861: A --> G
Char. 864: C --> A
Char. 871: A --> G
Char. 872: C --> G
Char. 883: A --> G
Char. 937: C --> T
Char. 940: G --> A
Char. 943: C --> T
Char. 953: A --> G
Char. 955: C --> T
Char. 970: C --> T
Char. 979: C --> A
Char. 985: C --> T
Char. 986: C --> T
Char. 991: C --> T
Char. 1009: C --> T
Char. 1021: A --> C
Char. 1033: A --> G
Char. 1048: C --> T
Char. 1105: A --> G
Char. 1110: C --> T
Char. 1126: A --> C
Char. 1135: T --> C
Char. 1138: C --> A
Char. 1168: C --> T
Char. 1172: C --> T
Char. 1177: T --> A
Char. 1192: T --> C
Char. 1204: A --> G
Char. 1207: C --> T
Char. 1250: C --> T
Char. 1262: C --> T
Char. 1267: A --> T
Char. 1268: C --> T
Char. 1273: T --> A
Char. 1291: A --> G
Char. 1300: C --> T
Char. 1315: C --> A
Char. 1333: C --> T
Char. 1351: C --> T
Char. 1384: T --> C
Char. 1387: T --> C
Char. 1390: C --> T
Char. 1408: C --> A
Char. 1429: C --> T
Char. 1433: A --> G
Char. 1441: C --> A
Char. 1447: C --> T
Char. 1450: C --> A
Char. 1485: A --> G
Char. 1494: T --> C
Char. 1498: C --> A
Char. 1555: C --> T
Char. 1556: C --> T
Char. 1558: A --> G
Char. 1621: T --> C
Char. 1636: A --> C
Char. 1684: T --> C
Char. 1696: G --> C
Char. 1708: G --> T
Char. 1729: C --> A
Char. 1771: T --> G
Char. 1783: C --> T
Char. 1796: T --> C
Char. 1819: A --> C
Char. 1828: A --> G
Char. 1858: C --> T

Char. 1859: G --> A
 Char. 1873: C --> T
 Char. 1891: C --> T
 Char. 1960: T --> C
 Char. 1966: T --> C
 Char. 1993: A --> G
 Char. 2017: A --> G
 Char. 2023: T --> C
 Char. 2048: C --> T
 Char. 2050: C --> A
 Char. 2056: C --> T
 Char. 2074: C --> A
 Char. 2087: C --> T
 Char. 2137: A --> G
 Char. 2223: G --> C
 Char. 2461: C --> T
 Char. 2533: T --> C
 Char. 2602: C --> T
Brachyalestes_affinis :
 Char. 556: C --> T
 Char. 631: T --> C
 Char. 715: C --> T
 Char. 718: A --> G
 Char. 740: A --> G
 Char. 787: A --> G
 Char. 6118: T --> G
 Char. 6307: T --> C
 Char. 6311: C --> T
 Char. 6441: C --> T
 Char. 6496: T --> C
 Char. 6643: C --> G
 Char. 6652: G --> C
Brycinus_imberi :
 Char. 5592: G --> A
 Char. 5716: A --> T
 Char. 6485: A --> T
Brachyalestes_kingsleyae :
 Char. 574: A --> C
 Char. 601: A --> G
 Char. 604: T --> C
 Char. 610: C --> T
 Char. 667: T --> C
 Char. 700: T --> C
 Char. 712: A --> C
 Char. 733: T --> C
 Char. 739: A --> C
 Char. 766: T --> A
 Char. 1909: T --> C
 Char. 2263: A --> G
 Char. 2815: A --> G
 Char. 4800: G --> A
 Char. 4814: G --> A
 Char. 4983: G --> A
 Char. 5043: C --> A
 Char. 5121: C --> G
 Char. 5151: C --> T
 Char. 5233: A --> G
 Char. 5325: A --> G
 Char. 6322: A --> C
 Char. 6328: A --> G
Brachyalestes_lateralis :
 Char. 577: C --> T
 Char. 697: C --> T
 Char. 703: C --> T
 Char. 742: C --> T
 Char. 748: C --> T
 Char. 757: A --> T
 Char. 775: A --> G
 Char. 802: A --> G
 Char. 820: C --> T
 Char. 833: C --> T
 Char. 940: C --> G
 Char. 967: C --> T
 Char. 1005: A --> G
 Char. 1084: C --> T
 Char. 1087: A --> G
 Char. 1156: T --> C
 Char. 1234: C --> T
 Char. 1264: A --> G
 Char. 1294: A --> G
 Char. 1298: G --> A
 Char. 1326: A --> G
 Char. 1327: A --> G
 Char. 1360: A --> C
 Char. 1363: C --> T
 Char. 1396: A --> G
 Char. 1453: C --> T
 Char. 1454: A --> G
 Char. 1480: C --> T
 Char. 1525: T --> C
 Char. 1528: T --> C
 Char. 1537: G --> A
 Char. 1546: C --> T
 Char. 1555: T --> C
 Char. 1579: A --> G
 Char. 1582: A --> G
 Char. 1594: A --> G
 Char. 1681: A --> G
 Char. 1684: T --> C
 Char. 1726: C --> T
 Char. 1774: C --> G
 Char. 1792: C --> T
 Char. 1819: G --> A
 Char. 1822: G --> A
 Char. 1831: A --> G
 Char. 1834: C --> T
 Char. 1849: C --> T
 Char. 2005: T --> C
 Char. 2038: C --> T
 Char. 2053: C --> G
 Char. 2158: C --> T
 Char. 2507: C --> T
 Char. 2668: T --> G
 Char. 2698: C --> T
 Char. 2735: G --> T
Brycinus_macrolepidotus :
 Char. 553: C --> T
 Char. 676: C --> T
 Char. 820: C --> T
 Char. 853: C --> T
 Char. 937: C --> T
 Char. 958: A --> GT
 Char. 976: C --> T
 Char. 1060: C --> T
 Char. 1141: A --> GT
 Char. 1246: C --> T
 Char. 1252: A --> GC
 Char. 1258: A --> G
 Char. 1297: A --> CT
 Char. 1330: A --> G
 Char. 1357: C --> A
 Char. 1555: C --> T
 Char. 1711: C --> AT
Brachyalestes_nurse :
 Char. 529: C --> T
 Char. 544: AT --> C
 Char. 586: A --> C
 Char. 604: T --> C
 Char. 610: C --> T
 Char. 619: A --> G
 Char. 664: C --> T
 Char. 685: C --> T
 Char. 688: A --> G
 Char. 697: C --> T
 Char. 733: T --> C
 Char. 751: T --> A
 Char. 805: A --> T
 Char. 820: C --> T
 Char. 862: T --> C
 Char. 880: T --> C
 Char. 898: T --> C
 Char. 955: C --> T
 Char. 971: C --> T
 Char. 980: C --> T
 Char. 1009: C --> T
 Char. 1012: C --> T
 Char. 1018: A --> G
 Char. 1019: C --> T
 Char. 1042: T --> C
 Char. 1069: A --> G
 Char. 1075: T --> G
 Char. 1103: C --> T
 Char. 1112: C --> T
 Char. 1120: A --> G
 Char. 1126: A --> C
 Char. 1159: C --> T
 Char. 1165: C --> A
 Char. 1171: C --> T
 Char. 1198: C --> T
 Char. 1231: C --> T
 Char. 1243: T --> C
 Char. 1255: A --> G
 Char. 1276: C --> T
 Char. 1282: T --> C
 Char. 1297: A --> C
 Char. 1306: C --> T
 Char. 1318: A --> G
 Char. 1355: C --> T
 Char. 1360: A --> G
 Char. 1363: C --> T
 Char. 1387: T --> C
 Char. 1466: A --> G
 Char. 1471: A --> G
 Char. 1477: T --> C
 Char. 1480: C --> T
 Char. 1481: C --> A
 Char. 1510: C --> T
 Char. 1558: AT --> G
 Char. 1582: A --> G
 Char. 1588: G --> A
 Char. 1663: T --> C
 Char. 1666: A --> G
 Char. 1768: A --> G
 Char. 1843: A --> T
 Char. 1849: C --> T
 Char. 1864: T --> C
 Char. 1888: T --> A
 Char. 1891: C --> T
 Char. 1894: A --> G
 Char. 1912: C --> T
 Char. 1936: T --> G
 Char. 1948: T --> C
 Char. 1978: C --> T
 Char. 1993: A --> G
 Char. 2029: T --> G
 Char. 2056: C --> A
 Char. 2062: C --> T
 Char. 2065: A --> G
 Char. 2125: T --> C
 Char. 2128: T --> A
 Char. 2131: A --> C
 Char. 2137: A --> G
 Char. 2155: A --> G
 Char. 2167: G --> A
 Char. 2275: A --> G
 Char. 2512: G --> A
 Char. 2842: A --> T
 Char. 4814: G --> A
 Char. 4827: G --> A
 Char. 4925: C --> G
 Char. 5035: G --> T
 Char. 5127: C --> T
 Char. 5413: A --> G
 Char. 5529: C --> T
 Char. 5605: C --> T
 Char. 5667: T --> C
 Char. 5679: C --> T
 Char. 5680: A --> G
 Char. 6210: T --> C
 Char. 6251: A --> G
 Char. 6253: A --> C
 Char. 6254: T --> C
 Char. 6298: A --> T
 Char. 6300: G --> C
 Char. 6325: C --> T
 Char. 6377: C --> T
Brachyalestes_opisthotaenia :
 Char. 523: C --> T
 Char. 526: A --> G
 Char. 535: T --> C
 Char. 561: A --> C
 Char. 625: T --> C
 Char. 676: C --> T
 Char. 739: A --> G
 Char. 742: C --> T
 Char. 745: T --> C
 Char. 775: A --> G
 Char. 787: A --> T
 Char. 856: T --> C

Char. 871: A --> G
Char. 898: T --> C
Char. 943: C --> T
Char. 982: T --> G
Char. 1006: C --> T
Char. 1009: C --> T
Char. 1042: T --> C
Char. 1107: C --> T
Char. 1117: C --> T
Char. 1135: T --> C
Char. 1246: C --> T
Char. 1249: A --> G
Char. 1264: A --> G
Char. 1270: C --> T
Char. 1348: C --> T
Char. 1351: C --> T
Char. 1405: C --> T
Char. 1408: C --> A
Char. 1480: C --> T
Char. 1489: C --> T

Brycinus_poptae :

Char. 529: C --> T
Char. 535: T --> C
Char. 586: T --> C
Char. 592: C --> T
Char. 646: A --> G
Char. 652: A --> T
Char. 658: C --> T
Char. 667: C --> T
Char. 712: C --> T
Char. 718: A --> G
Char. 733: T --> C
Char. 742: C --> T
Char. 751: T --> C
Char. 793: A --> G
Char. 826: T --> C
Char. 832: C --> T
Char. 841: C --> T
Char. 866: C --> T
Char. 868: A --> G
Char. 880: T --> C
Char. 922: C --> T
Char. 925: C --> T
Char. 943: C --> G
Char. 967: C --> T
Char. 985: C --> T
Char. 1031: G --> T
Char. 1075: T --> C
Char. 1081: C --> T
Char. 1098: T --> C
Char. 1100: G --> A
Char. 1103: C --> T
Char. 1106: A --> T
Char. 1112: C --> A
Char. 1117: C --> T
Char. 1195: A --> G
Char. 1216: T --> C
Char. 1264: A --> G
Char. 1295: C --> T
Char. 1300: C --> A
Char. 1309: A --> G
Char. 1312: C --> T
Char. 1339: C --> T
Char. 1357: C --> T
Char. 1396: A --> C
Char. 1405: A --> G
Char. 1426: A --> C
Char. 1429: C --> T
Char. 1432: T --> C
Char. 1444: A --> G
Char. 1445: A --> G
Char. 1446: T --> C
Char. 1453: C --> T
Char. 1455: T --> C
Char. 1462: C --> T
Char. 1469: C --> T
Char. 1477: T --> C
Char. 1486: C --> T
Char. 1489: C --> T
Char. 1516: C --> T
Char. 1552: T --> G
Char. 1594: A --> G
Char. 1651: A --> G

Char. 1678: T --> C
Char. 1684: T --> C
Char. 1699: C --> T
Char. 1720: T --> C
Char. 1729: C --> T
Char. 1753: T --> C
Char. 1756: C --> T
Char. 1762: C --> T
Char. 1771: T --> C
Char. 1777: C --> T
Char. 1798: A --> G
Char. 1804: C --> T
Char. 1811: G --> A
Char. 1840: T --> A
Char. 1843: T --> C
Char. 1846: C --> T
Char. 1888: T --> G
Char. 1930: C --> T
Char. 1945: T --> C
Char. 1954: T --> C
Char. 1969: C --> T
Char. 1984: C --> T
Char. 2005: T --> G
Char. 2026: A --> G
Char. 2042: C --> T
Char. 2056: C --> T
Char. 2074: C --> T
Char. 2077: T --> C
Char. 2092: A --> G
Char. 2107: C --> T
Char. 2122: C --> T
Char. 2131: A --> G
Char. 2146: T --> C
Char. 2155: A --> G
Char. 2443: A --> T
Char. 2539: T --> C
Char. 2620: G --> A
Char. 2664: C --> T
Char. 2683: T --> C

Bryconaeithiops_boulengeri :

Char. 538: C --> T
Char. 646: A --> G
Char. 673: C --> T
Char. 676: C --> T
Char. 727: A --> G
Char. 752: C --> T
Char. 784: C --> T
Char. 793: A --> G
Char. 802: A --> G
Char. 838: C --> T
Char. 883: A --> G
Char. 934: C --> T
Char. 937: C --> T
Char. 940: C --> A
Char. 1015: T --> C
Char. 1021: A --> G
Char. 1162: C --> T
Char. 1180: C --> T
Char. 1183: A --> C
Char. 1237: C --> T
Char. 1261: C --> G
Char. 1357: C --> T
Char. 1370: C --> T
Char. 1432: T --> C
Char. 1462: C --> T
Char. 1534: A --> G
Char. 1585: C --> T
Char. 1672: A --> G
Char. 1675: A --> C
Char. 1687: C --> A
Char. 1741: C --> T
Char. 1753: T --> C
Char. 1768: A --> G
Char. 1780: A --> G
Char. 1810: G --> A
Char. 1828: A --> G
Char. 1849: C --> A
Char. 1909: T --> C
Char. 1933: T --> C
Char. 1948: T --> C
Char. 1987: C --> T
Char. 2017: A --> G
Char. 2056: C --> T

Char. 2080: T --> C
Char. 2104: A --> G
Char. 2131: A --> T
Char. 2134: A --> G
Char. 2223: G --> C
Char. 2539: T --> C

Bryconaeithiops_microstoma :

Char. 1807: C --> T

Brycon_amazonicus :

Char. 547: A --> G
Char. 555: C --> A
Char. 557: C --> T
Char. 559: C --> A
Char. 561: A --> C
Char. 595: C --> AT
Char. 655: T --> C
Char. 691: C --> T
Char. 751: C --> A
Char. 757: A --> G
Char. 808: T --> C
Char. 823: A --> G
Char. 838: A --> G
Char. 895: C --> A
Char. 904: C --> T
Char. 934: C --> T
Char. 937: C --> T
Char. 943: A --> T
Char. 949: T --> C
Char. 973: A --> G
Char. 988: T --> C
Char. 1018: A --> G
Char. 1024: T --> C
Char. 1048: C --> T
Char. 1066: C --> T
Char. 1072: T --> C
Char. 1090: T --> C
Char. 1135: C --> T
Char. 1136: T --> C
Char. 1138: A --> G
Char. 1162: C --> A
Char. 1258: A --> G
Char. 1291: C --> A
Char. 1306: A --> G
Char. 1339: T --> C
Char. 1346: A --> C
Char. 1360: A --> G
Char. 1367: C --> G
Char. 1370: T --> C
Char. 1411: A --> G
Char. 1433: G --> A
Char. 1498: A --> G
Char. 2884: A --> G
Char. 5330: G --> A
Char. 6153: C --> T
Char. 6209: C --> T
Char. 6403: C --> T
Char. 6420: C --> T
Char. 6444: T --> C
Char. 6523: C --> T

Brycon_chagrensis :

Char. 532: A --> C
Char. 535: AC --> G
Char. 550: C --> T
Char. 628: A --> C
Char. 658: C --> T
Char. 668: C --> T
Char. 775: A --> G
Char. 817: C --> T
Char. 836: C --> T
Char. 874: A --> G
Char. 904: C --> T
Char. 911: C --> T
Char. 931: C --> T
Char. 943: A --> G
Char. 949: T --> C
Char. 976: C --> T
Char. 991: C --> T
Char. 1013: A --> G
Char. 1033: A --> C
Char. 1088: A --> G
Char. 1096: T --> C
Char. 1105: A --> C
Char. 1111: C --> T

Char. 1144: C --> T
Char. 1159: C --> A
Char. 1175: G --> C
Char. 1177: T --> C
Char. 1195: A --> G
Char. 1201: A --> G
Char. 1211: C --> T
Char. 1231: A --> G
Char. 1250: C --> T
Char. 1258: A --> G
Char. 1262: C --> T
Char. 1279: A --> C
Char. 1363: T --> C
Char. 1367: C --> T
Char. 1375: C --> T
Char. 1411: A --> G
Char. 1435: C --> T
Char. 1456: C --> T
Char. 1469: C --> T
Char. 1478: A --> G
Char. 1483: T --> A
Char. 1489: C --> G
Char. 1498: A --> G
Char. 2894: T --> C
Char. 2895: C --> G
Char. 3466: C --> T
Char. 3484: G --> A
Char. 3613: G --> A
Char. 3691: C --> T
Char. 3694: C --> T
Char. 3703: C --> T
Char. 3751: A --> T
Char. 3841: G --> A
Char. 4123: T --> A
Char. 4309: G --> C
Char. 4310: G --> A
Char. 4312: T --> G
Char. 4320: G --> T
Char. 4321: T --> C
Char. 4334: A --> T
Char. 4336: A --> T
Char. 4346: G --> A
Char. 4348: T --> C
Char. 4349: C --> A
Char. 4351: A --> C
Char. 4361: C --> A
Char. 4366: C --> T
Char. 4372: A --> G
Char. 4373: T --> G
Char. 4374: C --> T
Char. 4391: C --> T
Char. 4393: G --> T
Char. 4398: A --> C
Char. 4404: T --> A
Char. 4409: C --> G
Char. 4414: G --> C
Char. 4418: G --> T
Char. 4422: T --> C
Char. 4424: A --> T
Char. 4427: A --> C
Char. 4438: C --> A
Char. 4439: T --> A
Char. 4440: A --> C
Char. 4441: C --> A
Char. 4455: T --> C
Char. 4460: C --> A
Char. 4461: G --> A
Char. 4466: G --> A
Char. 4476: T --> C
Char. 4482: G --> C
Char. 4487: C --> A
Char. 4488: T --> C
Char. 4508: C --> T
Char. 4509: G --> T
Char. 4517: C --> A
Char. 4518: T --> C
Char. 4520: A --> T
Char. 4530: T --> C
Char. 4577: G --> A
Char. 4580: A --> G
Char. 4586: T --> A
Char. 4595: C --> T
Char. 4597: A --> T

Char. 4598: C --> T
Char. 4626: G --> T
Char. 4628: T --> A
Char. 4629: T --> G
Char. 4630: T --> A
Char. 4632: C --> G
Char. 4637: C --> T
Char. 4644: C --> G
Char. 4651: A --> G
Char. 4652: T --> A
Char. 4659: A --> C
Char. 4660: T --> A
Char. 4661: C --> A
Char. 4663: C --> G
Char. 4669: T --> G
Char. 4679: A --> C
Char. 4680: C --> A
Char. 4681: C --> G
Char. 4684: C --> T
Char. 4690: C --> T
Char. 4693: C --> G
Char. 4697: A --> T
Char. 4698: C --> T
Char. 4699: A --> C
Char. 4700: C --> A
Char. 4708: T --> C
Char. 4709: G --> A
Char. 4710: T --> A
Char. 4713: C --> A
Char. 6176: T --> C
Char. 6229: G --> A
Char. 6245: A --> G
Char. 6247: C --> T
Char. 6307: T --> G
Char. 6308: G --> T
Char. 6309: T --> A
Char. 6328: A --> G
Char. 6351: A --> G
Char. 6357: A --> G
Char. 6424: C --> T
Char. 6484: C --> T
Char. 6508: A --> G
Char. 6525: A --> G
Char. 6565: C --> T
Char. 6573: C --> AT
Brycon_ferox :
Char. 640: C --> T
Char. 1159: C --> T
Char. 1171: C --> T
Char. 1300: A --> G
Brycon_henni :
Char. 524: C --> T
Char. 544: C --> T
Char. 557: C --> T
Char. 586: A --> G
Char. 598: C --> T
Char. 613: T --> C
Char. 637: T --> C
Char. 676: C --> T
Char. 691: C --> T
Char. 717: T --> A
Char. 787: C --> T
Char. 845: G --> A
Char. 850: A --> G
Char. 856: A --> C
Char. 862: C --> T
Char. 871: A --> G
Char. 941: C --> T
Char. 982: C --> T
Char. 1027: A --> G
Char. 1028: G --> A
Char. 1045: C --> T
Char. 1057: C --> T
Char. 1111: C --> A
Char. 1114: A --> G
Char. 1158: C --> T
Char. 1174: A --> G
Char. 1183: A --> G
Char. 1184: A --> G
Char. 1185: C --> T
Char. 1210: C --> T
Char. 1243: A --> C
Char. 1246: C --> T

Char. 1252: A --> G
Char. 1270: A --> G
Char. 1285: T --> C
Char. 1307: C --> T
Char. 1327: A --> G
Char. 1333: C --> T
Char. 1358: C --> T
Char. 1360: A --> G
Char. 1384: A --> G
Char. 1495: C --> T
Char. 1502: T --> C
Char. 3479: G --> A
Char. 3792: C --> T
Char. 4078: C --> T
Char. 4084: A --> C
Char. 4228: G --> A
Char. 4447: A --> G
Char. 6202: C --> T
Brycon_hilarii :
Char. 661: C --> T
Char. 668: C --> T
Char. 670: A --> G
Char. 673: C --> T
Char. 727: A --> G
Char. 745: T --> C
Char. 838: A --> G
Char. 877: G --> A
Char. 895: C --> A
Char. 940: C --> T
Char. 941: C --> T
Char. 949: T --> C
Char. 952: A --> T
Char. 964: T --> C
Char. 982: C --> T
Char. 1072: T --> C
Char. 1118: T --> C
Char. 1192: T --> C
Char. 1198: A --> G
Char. 1249: A --> G
Char. 1264: A --> G
Char. 1282: C --> T
Char. 1294: G --> A
Char. 1295: C --> T
Char. 1318: C --> T
Char. 1339: T --> C
Char. 1357: C --> T
Char. 1367: C --> G
Char. 1372: A --> G
Char. 1387: A --> G
Char. 1468: A --> GC
Char. 1601: C --> T
Char. 1606: T --> C
Char. 1660: C --> T
Char. 1663: T --> C
Char. 1672: G --> A
Char. 1684: T --> C
Char. 1708: G --> A
Char. 1762: T --> C
Char. 1798: A --> G
Char. 1804: A --> G
Char. 1939: A --> G
Char. 1966: C --> T
Char. 2006: C --> T
Char. 2020: T --> A
Char. 2023: C --> T
Char. 2038: C --> T
Char. 2053: T --> C
Char. 2056: G --> A
Char. 2083: G --> A
Char. 2171: A --> C
Char. 2587: G --> A
Char. 2905: G --> A
Char. 4614: A --> T
Char. 4699: A --> CT
Char. 4773: T --> C
Char. 6153: C --> T
Char. 6254: T --> A
Char. 6295: A --> C
Char. 6298: C --> A
Char. 6319: C --> A
Char. 6322: T --> AC
Char. 6326: A --> T
Char. 6327: C --> A

Char. 6330: A --> T
Char. 6345: C --> A
Char. 6441: C --> T

Brycon_insignis :

Char. 557: C --> A
Char. 562: T --> A
Char. 592: C --> T
Char. 772: T --> C
Char. 799: G --> A
Char. 814: C --> T
Char. 856: A --> C
Char. 904: T --> C
Char. 1123: C --> T
Char. 1229: C --> T
Char. 1258: A --> G
Char. 1420: A --> G
Char. 2262: A --> C
Char. 2269: C --> G
Char. 2270: C --> G
Char. 2312: G --> A
Char. 2496: T --> C
Char. 2857: G --> T
Char. 3452: T --> G
Char. 4753: G --> A
Char. 4754: G --> A
Char. 4799: T --> A
Char. 4848: G --> T
Char. 4901: G --> T
Char. 4971: G --> A
Char. 5101: C --> T
Char. 5375: T --> G
Char. 5499: G --> A
Char. 5714: A --> T
Char. 6298: T --> C
Char. 6379: T --> C

Brycon_melanopterus :

Char. 559: C --> A
Char. 568: C --> T
Char. 580: A --> G
Char. 619: A --> G
Char. 622: T --> C
Char. 631: C --> T
Char. 661: C --> T
Char. 676: A --> G
Char. 692: C --> T
Char. 715: C --> T
Char. 736: A --> T
Char. 785: C --> T
Char. 796: A --> C
Char. 832: C --> T
Char. 850: C --> A
Char. 880: A --> G
Char. 925: T --> C
Char. 950: C --> T
Char. 967: T --> C
Char. 979: C --> T
Char. 997: A --> C
Char. 1013: A --> G
Char. 1048: C --> T
Char. 1060: T --> C
Char. 1110: C --> T
Char. 1112: C --> T
Char. 1117: C --> A
Char. 1157: A --> T
Char. 1162: C --> A
Char. 1192: T --> C
Char. 1219: C --> T
Char. 1249: A --> G
Char. 1327: A --> G
Char. 1345: T --> A
Char. 1346: A --> G
Char. 1387: A --> G
Char. 1393: A --> G
Char. 1411: A --> G
Char. 1414: T --> C
Char. 1447: C --> A
Char. 1456: C --> T
Char. 1474: C --> T
Char. 1477: C --> T
Char. 1490: C --> T
Char. 1498: A --> G
Char. 2190: A --> T
Char. 2315: A --> C

Char. 2482: T --> C
Char. 2485: A --> G
Char. 2758: T --> C
Char. 4878: G --> A
Char. 5361: T --> G
Char. 6153: T --> C
Char. 6210: A --> T
Char. 6306: C --> T
Char. 6325: T --> C
Char. 6326: A --> G
Char. 6368: C --> A
Char. 6410: A --> T
Char. 6441: C --> T
Char. 6444: C --> T
Char. 6524: A --> G

Brycon_moorei :

Char. 586: A --> G
Char. 667: C --> T
Char. 752: C --> T
Char. 775: A --> G
Char. 814: C --> T
Char. 826: T --> C
Char. 853: T --> C
Char. 931: C --> T
Char. 943: A --> G
Char. 982: C --> G
Char. 1009: C --> T
Char. 1015: C --> T
Char. 1019: C --> T
Char. 1075: C --> T
Char. 1087: A --> G
Char. 1129: A --> C
Char. 1147: A --> CT
Char. 1165: C --> T
Char. 1201: A --> G
Char. 1211: C --> T
Char. 1288: C --> T
Char. 1312: C --> T
Char. 1330: C --> T
Char. 1346: A --> C
Char. 1351: C --> T
Char. 1399: A --> G
Char. 1411: A --> G
Char. 1414: T --> C
Char. 1426: C --> A
Char. 1471: A --> G
Char. 1490: C --> T
Char. 2183: A --> T
Char. 2255: G --> A
Char. 2831: G --> A
Char. 2846: G --> A
Char. 2849: C --> A
Char. 2881: T --> G
Char. 5028: T --> A
Char. 5330: G --> A
Char. 5347: G --> A
Char. 5457: C --> T
Char. 6162: A --> G
Char. 6254: T --> C
Char. 6328: T --> C
Char. 6346: T --> C
Char. 6473: A --> G
Char. 6523: C --> T

Brycon_nattereri :

Char. 577: T --> C
Char. 616: A --> C
Char. 646: A --> G
Char. 674: C --> A
Char. 682: T --> A
Char. 745: T --> C
Char. 748: A --> G
Char. 752: C --> T
Char. 793: G --> A
Char. 817: C --> T
Char. 823: A --> G
Char. 826: T --> C
Char. 844: T --> C
Char. 847: T --> C
Char. 895: C --> T
Char. 916: C --> A
Char. 928: T --> C
Char. 952: A --> G
Char. 955: T --> C

Char. 976: C --> T
Char. 982: T --> C
Char. 988: C --> A
Char. 997: A --> G
Char. 1036: C --> T
Char. 1048: C --> T
Char. 1088: G --> A
Char. 1090: T --> G
Char. 1129: A --> G
Char. 1136: C --> T
Char. 1171: C --> T
Char. 1192: T --> C
Char. 1229: C --> T
Char. 1255: A --> G
Char. 1262: T --> C
Char. 1279: A --> G
Char. 1282: C --> T
Char. 1300: A --> G
Char. 1304: A --> C
Char. 1339: C --> T
Char. 1346: A --> G
Char. 1363: T --> C
Char. 1402: T --> GC
Char. 1420: A --> G
Char. 1517: C --> T
Char. 1594: G --> A
Char. 1666: A --> G
Char. 1681: A --> G
Char. 1684: T --> C
Char. 1687: A --> G
Char. 1738: C --> A
Char. 1771: T --> C
Char. 1825: A --> T
Char. 1837: A --> G
Char. 1864: T --> C
Char. 1906: A --> G
Char. 1930: A --> G
Char. 1975: A --> G
Char. 2014: C --> A
Char. 2041: A --> C
Char. 2080: C --> T
Char. 2083: G --> A
Char. 2095: T --> C
Char. 2128: A --> G
Char. 2313: T --> G
Char. 2362: C --> T
Char. 2881: T --> A
Char. 3535: T --> C
Char. 3718: C --> T
Char. 4153: C --> T
Char. 4180: C --> T
Char. 4262: T --> C
Char. 5499: G --> A
Char. 6298: T --> C
Char. 6378: C --> T

Brycon_opalinus :

Char. 559: C --> T
Char. 568: C --> T
Char. 622: T --> C
Char. 631: C --> T
Char. 694: AGT --> C
Char. 715: C --> T
Char. 733: T --> A
Char. 746: C --> T
Char. 760: A --> G
Char. 796: A --> C
Char. 814: C --> A
Char. 835: C --> A
Char. 854: G --> A
Char. 856: A --> C
Char. 871: AG --> T
Char. 873: G --> A
Char. 901: C --> T
Char. 950: C --> A
Char. 1003: C --> T
Char. 1009: C --> T
Char. 1015: C --> T
Char. 1045: C --> T
Char. 1057: C --> T
Char. 1081: A --> G
Char. 1090: T --> C
Char. 1099: C --> T
Char. 1102: A --> G

Char. 1129: A --> T
Char. 1141: C --> T
Char. 1177: T --> C
Char. 1201: A --> G
Char. 1210: C --> T
Char. 1234: A --> T
Char. 1270: A --> G
Char. 1288: C --> T
Char. 1321: A --> G
Char. 1333: C --> T
Char. 1369: A --> G
Char. 1373: G --> A
Char. 1423: C --> T
Char. 1462: T --> C
Char. 1474: C --> T
Char. 1480: C --> T
Char. 1481: C --> T
Char. 1490: C --> T
Char. 1513: CT --> A
Char. 1546: T --> C
Char. 1600: A --> C
Char. 1648: C --> T
Char. 1657: T --> C
Char. 1783: C --> A
Char. 1810: G --> A
Char. 1846: C --> T
Char. 1909: C --> G
Char. 1912: T --> C
Char. 1969: C --> T
Char. 2008: A --> G
Char. 2035: C --> A
Char. 2041: A --> T
Char. 2053: T --> C
Char. 2071: C --> T
Char. 2122: C --> T
Char. 2137: A --> G
Char. 2623: C --> T
Char. 3656: G --> A
Char. 3791: G --> A
Char. 4027: G --> T
Char. 4555: C --> T
Char. 6162: A --> G
Char. 6254: T --> A
Char. 6299: A --> G
Char. 6300: G --> A
Char. 6306: C --> T
Char. 6355: A --> G
Char. 6357: A --> G
Char. 6426: T --> A
Char. 6442: A --> C
Char. 6443: A --> T
Char. 6513: C --> T
Char. 6523: C --> T
Char. 6530: C --> T
Char. 6575: G --> A
Char. 6584: A --> G
Char. 6649: A --> G

Brycon_orthotaenia :
Char. 556: C --> A
Char. 557: C --> A
Char. 604: C --> T
Char. 748: T --> C
Char. 778: G --> T
Char. 799: A --> G
Char. 836: C --> T
Char. 1018: A --> G
Char. 1096: C --> T
Char. 1105: T --> A
Char. 1162: C --> A
Char. 1258: A --> G
Char. 1262: C --> T
Char. 1285: C --> T
Char. 1309: A --> G
Char. 1381: C --> T
Char. 1405: A --> G
Char. 1477: C --> T
Char. 1484: A --> T
Char. 1498: A --> G
Char. 1591: T --> C
Char. 1819: A --> G
Char. 1918: C --> T
Char. 1921: A --> G
Char. 2024: T --> C

Char. 2068: A --> G
Char. 2128: A --> G
Char. 2143: A --> G
Char. 2158: C --> T
Char. 2164: T --> C
Char. 2176: G --> A
Char. 2182: A --> T
Char. 2395: T --> C
Char. 2419: A --> C
Char. 2425: G --> T
Char. 2485: A --> C
Char. 2602: C --> A
Char. 2623: C --> T
Char. 2664: C --> T
Char. 2716: G --> A
Char. 2731: C --> T
Char. 2738: A --> T
Char. 2884: A --> G
Char. 3467: G --> T
Char. 3947: C --> T
Char. 4717: C --> A
Char. 4721: G --> A
Char. 4730: G --> C
Char. 4733: C --> A
Char. 4734: T --> A
Char. 4742: A --> G
Char. 4747: A --> G
Char. 4760: G --> A
Char. 4777: C --> A
Char. 4788: C --> T
Char. 4792: T --> A
Char. 4794: C --> G
Char. 4926: C --> T
Char. 5032: C --> T
Char. 5169: C --> T
Char. 5220: C --> T
Char. 5412: C --> T
Char. 6211: G --> A
Char. 6254: T --> C
Char. 6332: A --> G

Brycon_petrosus :
Char. 540: T --> G
Char. 562: C --> T
Char. 563: A --> G
Char. 616: A --> C
Char. 631: C --> T
Char. 697: C --> T
Char. 730: C --> T
Char. 733: T --> C
Char. 784: C --> A
Char. 790: T --> C
Char. 817: C --> T
Char. 844: T --> C
Char. 934: C --> T
Char. 976: C --> T
Char. 1006: C --> T
Char. 1014: C --> T
Char. 1048: C --> T
Char. 1072: C --> T
Char. 1156: C --> T
Char. 1159: C --> T
Char. 1175: G --> A
Char. 1204: A --> G
Char. 1207: C --> T
Char. 1255: G --> A
Char. 1294: A --> G
Char. 1312: C --> T
Char. 1363: T --> C
Char. 1367: C --> T
Char. 1426: C --> T
Char. 1437: T --> C
Char. 1441: C --> G
Char. 1446: T --> A
Char. 1447: C --> A
Char. 1450: C --> G
Char. 1456: C --> T
Char. 1467: C --> T
Char. 1476: T --> C
Char. 1490: C --> T
Char. 1506: A --> G
Char. 2738: A --> T
Char. 3703: C --> T
Char. 3841: G --> A

Char. 3845: C --> A
Char. 3880: G --> A
Char. 4186: T --> C
Char. 4459: C --> G
Char. 6168: T --> C
Char. 6181: G --> A
Char. 6257: A --> G
Char. 6310: G --> A
Char. 6413: C --> T
Char. 6433: C --> A
Char. 6439: C --> T
Char. 6443: A --> T
Char. 6445: C --> T
Char. 6446: C --> A
Char. 6461: G --> A
Char. 6493: T --> C

Caenotropus_labyrinthicus :
Char. 568: C --> T
Char. 826: C --> T
Char. 850: A --> C
Char. 955: T --> C
Char. 1111: C --> AT
Char. 1291: T --> AC
Char. 1300: C --> T
Char. 1483: T --> C
Char. 1492: A --> G
Char. 1516: T --> C
Char. 1558: C --> T
Char. 1693: T --> C
Char. 1765: C --> T
Char. 1828: A --> G
Char. 1834: C --> T
Char. 1864: T --> C
Char. 2005: C --> T
Char. 2023: T --> C
Char. 2044: T --> C
Char. 2054: C --> T
Char. 4468: C --> AT
Char. 6366: A --> T
Char. 6446: C --> T
Char. 6450: A --> CT

Caenotropus_maculosus :
Char. 545: A --> T
Char. 574: C --> A
Char. 598: C --> T
Char. 640: C --> T
Char. 653: T --> C
Char. 688: A --> G
Char. 706: C --> T
Char. 709: C --> T
Char. 721: A --> G
Char. 731: A --> G
Char. 740: G --> A
Char. 742: A --> T
Char. 743: C --> T
Char. 778: C --> T
Char. 814: G --> C
Char. 835: C --> A
Char. 836: C --> A
Char. 854: G --> A
Char. 855: T --> C
Char. 961: A --> CT
Char. 1021: A --> CT
Char. 1084: T --> C
Char. 1136: C --> T
Char. 1261: A --> C
Char. 1295: C --> T
Char. 1318: T --> C
Char. 1468: A --> CT
Char. 1495: A --> C
Char. 1549: T --> AG
Char. 1552: A --> G
Char. 1564: C --> T
Char. 1573: A --> G
Char. 1690: C --> T
Char. 1717: G --> A
Char. 1771: A --> CT
Char. 1792: C --> A
Char. 1819: A --> GT
Char. 1834: C --> G
Char. 1843: T --> C
Char. 1849: AC --> G
Char. 1873: C --> T

Char. 1924: T --> AC
Char. 2032: A --> G
Char. 2041: T --> C
Char. 2059: A --> C
Char. 2071: C --> T
Char. 2128: A --> G
Char. 2176: G --> A
Char. 2290: A --> G
Char. 2425: G --> CT
Char. 2500: G --> A
Char. 2635: A --> G
Char. 2848: C --> G
Char. 2872: C --> T
Char. 3646: T --> C
Char. 3700: G --> A
Char. 3751: G --> A
Char. 3982: T --> C
Char. 4042: T --> C
Char. 4201: T --> C
Char. 4339: C --> A
Char. 4666: T --> C
Char. 4672: C --> G
Char. 4678: T --> C
Char. 6119: T --> C
Char. 6162: A --> G
Char. 6206: T --> C
Char. 6208: T --> C
Char. 6324: C --> T
Char. 6331: A --> T
Char. 6344: A --> G
Char. 6381: A --> G
Char. 6446: C --> T
Char. 6449: T --> C
Char. 6450: A --> T
Char. 6507: C --> T
Char. 6516: G --> A
Char. 6566: C --> T

Caenotropus_mestomorgmatos :

Char. 592: C --> T
Char. 601: T --> AG
Char. 616: C --> T
Char. 625: C --> T
Char. 631: C --> T
Char. 637: T --> C
Char. 646: A --> G
Char. 667: C --> T
Char. 730: C --> T
Char. 745: A --> T
Char. 746: C --> T
Char. 811: A --> G
Char. 841: C --> A
Char. 850: A --> G
Char. 864: C --> A
Char. 865: C --> T
Char. 901: C --> T
Char. 916: A --> C
Char. 964: C --> T
Char. 1018: A --> G
Char. 1033: A --> G
Char. 1057: C --> T
Char. 1069: A --> G
Char. 1087: A --> G
Char. 1090: T --> C
Char. 1105: C --> T
Char. 1110: C --> T
Char. 1117: A --> G
Char. 1165: C --> T
Char. 1195: A --> G
Char. 1211: C --> T
Char. 1255: C --> T
Char. 1270: C --> T
Char. 1273: A --> G
Char. 1276: C --> T
Char. 1300: C --> A
Char. 1339: C --> T
Char. 1342: C --> T
Char. 1357: C --> T
Char. 1387: A --> G
Char. 1390: C --> T
Char. 1408: A --> T
Char. 1432: T --> C
Char. 1445: A --> G
Char. 1462: C --> T

Char. 1475: C --> T
Char. 1477: T --> A
Char. 1478: G --> A
Char. 1486: C --> T
Char. 1591: C --> G
Char. 1606: C --> T
Char. 1636: T --> C
Char. 1645: C --> A
Char. 1648: C --> T
Char. 1675: C --> T
Char. 1705: A --> G
Char. 1720: T --> C
Char. 1741: C --> T
Char. 1783: C --> A
Char. 1816: A --> G
Char. 1831: A --> G
Char. 1852: T --> C
Char. 1897: C --> T
Char. 1954: T --> C
Char. 2005: C --> A
Char. 2006: C --> T
Char. 2024: T --> C
Char. 2062: A --> G
Char. 2065: A --> G
Char. 2068: T --> C
Char. 2353: C --> T
Char. 2863: A --> G
Char. 3652: T --> A
Char. 3766: G --> A
Char. 3796: C --> A
Char. 3994: C --> T
Char. 4072: C --> T
Char. 4089: A --> C
Char. 4123: C --> A
Char. 4225: G --> A
Char. 4228: G --> A
Char. 4306: C --> T
Char. 4336: A --> G
Char. 4354: G --> A
Char. 4541: C --> A
Char. 4814: G --> A
Char. 5053: G --> T
Char. 5085: G --> A
Char. 5169: C --> T
Char. 5220: T --> C
Char. 5310: C --> T
Char. 5401: A --> T
Char. 5452: G --> C
Char. 5628: C --> T
Char. 5682: C --> G
Char. 6252: C --> T
Char. 6308: G --> A
Char. 6331: A --> C
Char. 6358: C --> T
Char. 6410: A --> T
Char. 6439: T --> C

Caenotropus_schizodon :

Char. 532: A --> G
Char. 550: C --> T
Char. 640: C --> T
Char. 655: C --> T
Char. 700: C --> T
Char. 787: C --> T
Char. 859: A --> C
Char. 886: G --> A
Char. 952: A --> G
Char. 970: C --> T
Char. 979: C --> T
Char. 988: A --> T
Char. 1009: C --> T
Char. 1054: C --> A
Char. 1138: A --> G
Char. 1144: C --> T
Char. 1147: T --> A
Char. 1159: C --> T
Char. 1171: C --> A
Char. 1172: C --> T
Char. 1180: A --> G
Char. 1183: C --> T
Char. 1204: A --> G
Char. 1207: C --> T
Char. 1210: C --> T
Char. 1225: C --> T

Char. 1297: A --> G
Char. 1318: T --> C
Char. 1330: A --> G
Char. 1393: A --> G
Char. 1468: A --> G
Char. 1474: T --> C
Char. 1489: A --> G
Char. 1601: C --> A
Char. 1648: C --> A
Char. 1738: A --> C
Char. 1744: C --> A
Char. 1772: C --> T
Char. 1780: C --> A
Char. 1801: C --> T
Char. 1858: C --> T
Char. 1892: C --> T
Char. 1903: T --> C
Char. 1945: T --> C
Char. 1948: T --> C
Char. 2041: T --> A
Char. 2053: T --> G
Char. 2080: T --> C
Char. 2137: A --> T
Char. 3652: T --> G
Char. 3889: T --> A
Char. 3916: G --> A
Char. 4435: G --> A
Char. 4474: G --> A
Char. 4480: G --> C
Char. 4708: C --> T
Char. 6319: A --> C
Char. 6327: C --> T
Char. 6367: A --> T
Char. 6368: C --> T
Char. 6381: A --> G
Char. 6510: C --> T
Carnegiella_marthae :
Char. 937: T --> C
Char. 1036: C --> T
Char. 1063: T --> A
Char. 1073: C --> A
Char. 1089: T --> C
Char. 1133: C --> T
Char. 1177: A --> C
Char. 1222: C --> T
Char. 1229: T --> C
Char. 1258: T --> C
Char. 1261: CT --> G
Char. 1270: A --> G
Char. 1282: T --> C
Char. 1303: T --> A
Char. 1370: T --> C
Char. 1372: A --> C
Char. 1408: A --> C
Char. 1417: A --> T
Char. 1457: C --> T
Char. 1498: A --> T
Char. 1502: C --> T
Char. 1504: A --> G
Char. 1509: A --> T
Char. 1510: C --> A
Char. 3865: C --> T
Char. 3961: G --> A
Char. 3990: G --> T
Char. 4147: G --> A
Char. 4291: G --> A
Char. 4363: A --> G
Char. 4426: G --> A
Char. 4471: G --> A
Char. 4558: G --> C
Char. 4637: C --> A
Char. 5526: C --> T
Char. 5529: C --> T
Char. 5540: G --> A
Char. 5586: C --> G
Char. 5599: G --> C
Char. 5706: C --> T
Char. 5742: C --> T
Char. 6326: T --> A
Char. 6333: A --> C
Char. 6359: A --> T
Char. 6381: CT --> A
Char. 6445: A --> C

Char. 6477: A --> G
Char. 6513: T --> C
Char. 6636: C --> T
Catoprion_mento :
Char. 6040: A --> G
Char. 6043: G --> A
Chalceus_epakros :
Char. 646: A --> C
Char. 826: T --> C
Char. 1517: C --> T
Char. 1645: A --> G
Char. 1657: T --> C
Char. 1720: T --> C
Char. 1744: C --> T
Char. 1787: C --> T
Char. 1810: G --> A
Char. 1891: C --> T
Char. 1897: C --> T
Char. 1915: T --> C
Char. 1921: G --> A
Char. 1954: T --> C
Char. 1969: C --> T
Char. 1987: C --> T
Char. 2017: A --> G
Char. 2027: A --> G
Char. 2029: T --> A
Char. 2038: C --> G
Char. 2039: C --> T
Char. 2041: T --> A
Char. 2053: C --> T
Char. 2054: C --> T
Char. 2065: A --> G
Char. 2077: T --> C
Char. 2128: A --> C
Char. 2152: C --> T
Char. 4679: A --> C
Char. 4709: G --> C
Char. 6157: A --> T
Chalceus_erythrurus :
Char. 524: C --> T
Char. 541: A --> G
Char. 562: C --> T
Char. 604: C --> T
Char. 607: A --> C
Char. 616: C --> G
Char. 622: T --> A
Char. 640: C --> T
Char. 676: C --> A
Char. 694: T --> A
Char. 697: C --> T
Char. 724: A --> G
Char. 733: T --> C
Char. 740: G --> A
Char. 787: A --> G
Char. 790: A --> C
Char. 854: G --> A
Char. 856: A --> G
Char. 859: A --> T
Char. 904: C --> T
Char. 910: C --> A
Char. 922: C --> T
Char. 931: C --> T
Char. 1013: G --> A
Char. 1045: A --> G
Char. 1060: C --> T
Char. 1075: T --> C
Char. 1078: A --> T
Char. 1081: A --> G
Char. 1096: A --> C
Char. 1099: A --> G
Char. 1112: C --> T
Char. 1118: C --> T
Char. 1126: C --> T
Char. 1177: T --> C
Char. 1183: C --> T
Char. 1189: C --> T
Char. 1210: C --> T
Char. 1211: C --> T
Char. 1228: C --> T
Char. 1229: C --> T
Char. 1261: C --> A
Char. 1262: C --> T
Char. 1276: C --> T

Char. 1298: G --> A
Char. 1315: C --> T
Char. 1321: A --> G
Char. 1326: A --> G
Char. 1339: C --> T
Char. 1348: C --> A
Char. 1357: C --> T
Char. 1368: C --> T
Char. 1391: C --> T
Char. 1429: C --> T
Char. 1450: C --> T
Char. 1475: C --> T
Char. 1481: C --> T
Char. 1486: C --> T
Char. 1492: A --> G
Char. 2366: A --> C
Char. 2584: T --> C
Char. 2761: C --> T
Char. 2824: A --> G
Char. 2848: C --> A
Char. 3508: A --> G
Char. 3733: A --> C
Char. 3767: G --> A
Char. 3796: C --> T
Char. 3826: A --> G
Char. 3921: G --> A
Char. 3967: T --> C
Char. 4036: G --> A
Char. 4057: C --> T
Char. 4222: A --> T
Char. 4252: G --> A
Char. 4318: T --> C
Char. 4375: A --> C
Char. 4376: G --> A
Char. 4420: G --> A
Char. 4543: C --> A
Char. 4555: T --> C
Char. 4588: C --> T
Char. 4802: G --> A
Char. 4876: G --> T
Char. 5256: T --> C
Char. 5304: T --> C
Char. 5391: A --> G
Char. 6207: T --> C
Char. 6230: C --> T
Char. 6253: A --> G
Char. 6344: A --> G
Char. 6346: C --> T
Char. 6365: A --> C
Char. 6432: A --> G
Char. 6485: A --> G
Char. 6506: G --> A
Characidium_alipioi :
Char. 523: C --> T
Char. 526: C --> T
Char. 539: T --> C
Char. 559: A --> G
Char. 571: C --> T
Char. 588: C --> T
Char. 610: C --> T
Char. 634: A --> G
Char. 664: C --> T
Char. 673: C --> T
Char. 715: T --> C
Char. 754: A --> G
Char. 778: C --> T
Char. 781: C --> T
Char. 785: T --> C
Char. 787: A --> G
Char. 793: A --> G
Char. 805: A --> T
Char. 817: C --> T
Char. 823: C --> T
Char. 859: A --> G
Char. 871: A --> G
Char. 877: A --> G
Char. 886: C --> T
Char. 901: T --> C
Char. 949: T --> C
Char. 967: C --> T
Char. 970: C --> T
Char. 982: A --> G
Char. 1019: T --> C

Char. 1057: C --> T
Char. 1060: C --> T
Char. 1102: C --> T
Char. 1111: T --> T
Char. 1120: A --> G
Char. 1136: C --> T
Char. 1141: A --> T
Char. 1156: T --> C
Char. 1189: C --> T
Char. 1195: A --> G
Char. 1207: C --> T
Char. 1219: C --> T
Char. 1270: C --> T
Char. 1295: C --> T
Char. 1303: C --> T
Char. 1357: T --> C
Char. 1367: A --> G
Char. 1375: T --> C
Char. 1390: C --> T
Char. 1411: A --> G
Char. 1477: T --> C
Char. 1483: A --> G
Char. 1486: C --> T
Char. 1495: A --> G
Char. 1531: C --> T
Char. 1534: A --> G
Char. 1798: A --> G
Char. 1834: A --> G
Char. 1906: T --> C
Char. 1972: A --> G
Characidium_fasciatum :
Char. 556: C --> A
Char. 646: G --> A
Char. 697: C --> T
Char. 742: C --> T
Char. 1117: C --> T
Char. 1144: C --> T
Char. 1249: A --> G
Char. 1444: A --> G
Char. 1474: C --> T
Characidium_gomesi :
Char. 559: A --> GT
Char. 580: C --> T
Char. 620: A --> G
Char. 676: C --> T
Char. 739: T --> C
Char. 742: C --> T
Char. 751: C --> T
Char. 934: C --> T
Char. 968: G --> A
Char. 969: C --> T
Char. 1132: C --> T
Char. 1180: A --> C
Char. 1237: T --> C
Char. 1246: C --> C
Char. 1258: A --> CT
Char. 1300: C --> T
Char. 1304: C --> T
Char. 1318: C --> T
Char. 1358: C --> T
Char. 1384: A --> T
Char. 1390: C --> T
Char. 1391: C --> T
Char. 1411: A --> G
Char. 1414: A --> T
Char. 1465: C --> T
Char. 1469: C --> T
Char. 1502: T --> C
Char. 1579: G --> A
Char. 1582: T --> A
Char. 1690: C --> T
Char. 1708: T --> C
Char. 1712: C --> T
Char. 1771: T --> C
Char. 1780: A --> T
Char. 1787: C --> T
Char. 1804: C --> T
Char. 1819: A --> G
Char. 1840: T --> C
Char. 1978: C --> T
Char. 2041: T --> A
Char. 2083: G --> A
Char. 2089: A --> G

Char. 2146: T --> C
Characidium_lanei :
Char. 631: C --> T
Char. 679: C --> T
Char. 692: T --> C
Char. 697: C --> T
Char. 733: T --> C
Char. 817: C --> T
Char. 955: C --> T
Char. 1030: T --> C
Char. 1054: A --> G
Char. 1120: A --> GC
Char. 1135: T --> C
Char. 1258: T --> AC
Char. 1276: C --> T
Char. 1279: C --> T
Char. 1315: A --> G
Char. 1345: C --> AG
Char. 1348: T --> C
Char. 1450: T --> C
Char. 1469: G --> T
Char. 1477: T --> C
Char. 1495: A --> G
Char. 1502: T --> A
Char. 1510: C --> T
Char. 1624: C --> T
Char. 1732: C --> T
Char. 1744: C --> T
Char. 1816: G --> A
Char. 1825: T --> C
Char. 1978: C --> T
Char. 2017: A --> G
Char. 2039: C --> T
Char. 2042: C --> T
Char. 2050: A --> G
Char. 2077: C --> T
Char. 2101: C --> T
Characidium_lauroi :
Char. 584: G --> A
Char. 697: C --> T
Char. 793: A --> G
Char. 823: C --> T
Char. 833: C --> T
Char. 1106: G --> A
Char. 1300: C --> T
Char. 1315: A --> G
Char. 1327: A --> G
Char. 1367: A --> G
Char. 1368: C --> T
Char. 1370: C --> T
Char. 1426: C --> T
Char. 1456: C --> T
Char. 1615: G --> A
Char. 2122: C --> T
Char. 2152: T --> C
Characidium_oiticicai :
Char. 533: C --> T
Char. 682: T --> C
Char. 685: T --> C
Char. 691: A --> G
Char. 710: C --> A
Char. 853: T --> C
Char. 866: T --> A
Char. 934: C --> T
Char. 1018: T --> C
Char. 1039: A --> G
Char. 1090: T --> C
Char. 1118: C --> T
Char. 1132: C --> T
Char. 1177: A --> G
Char. 1306: T --> C
Char. 1345: C --> T
Char. 1384: A --> G
Char. 1462: C --> T
Char. 1546: T --> C
Char. 1609: C --> T
Char. 1681: A --> G
Char. 1822: A --> G
Char. 1891: C --> T
Char. 1915: G --> A
Char. 2092: A --> G
Characidium_pterosictum :
Char. 697: C --> T

Char. 862: T --> C
Char. 1477: T --> C
Characidium_schubarti :
Char. 598: C --> T
Char. 637: C --> T
Char. 715: T --> C
Char. 724: T --> C
Char. 745: T --> G
Char. 775: G --> T
Char. 782: G --> A
Char. 832: C --> T
Char. 833: C --> T
Char. 865: C --> A
Char. 903: A --> G
Char. 934: C --> T
Char. 952: A --> T
Char. 968: A --> G
Char. 1000: C --> T
Char. 1009: C --> T
Char. 1081: C --> T
Char. 1106: G --> A
Char. 1114: C --> T
Char. 1201: A --> G
Char. 1213: G --> A
Char. 1270: C --> T
Char. 1295: C --> T
Char. 1298: G --> A
Char. 1312: C --> T
Char. 1373: G --> A
Char. 1387: A --> G
Char. 1429: C --> T
Char. 1445: A --> G
Char. 1462: C --> T
Char. 1612: T --> C
Char. 1699: C --> T
Char. 1762: C --> T
Char. 1777: A --> C
Char. 1796: T --> C
Char. 1840: C --> T
Char. 1849: A --> G
Char. 1921: G --> A
Char. 1924: T --> C
Char. 1948: C --> T
Char. 1957: C --> T
Char. 1960: C --> T
Char. 2006: T --> C
Characidium_serrano :
Char. 620: A --> G
Char. 643: C --> T
Char. 745: T --> C
Char. 769: C --> T
Char. 823: C --> T
Char. 833: C --> T
Char. 841: T --> C
Char. 955: C --> T
Char. 958: C --> T
Char. 1024: C --> T
Char. 1045: G --> A
Char. 1106: G --> A
Char. 1136: C --> T
Char. 1174: C --> T
Char. 1229: C --> T
Char. 1231: A --> G
Char. 1240: T --> C
Char. 1258: T --> A
Char. 1274: T --> C
Char. 1288: A --> T
Char. 1517: T --> C
Char. 1712: C --> T
Char. 1909: T --> C
Char. 2080: C --> T
Char. 2092: A --> G
Char. 2134: C --> T
Characidium_timbuense :
Char. 631: C --> T
Char. 691: A --> G
Char. 694: A --> G
Char. 706: A --> G
Char. 709: C --> T
Char. 733: T --> C
Char. 802: A --> G
Char. 838: T --> C
Char. 970: C --> T

Char. 1006: C --> T
Char. 1009: C --> T
Char. 1051: C --> T
Char. 1141: A --> G
Char. 1141: A --> G
Char. 1153: C --> T
Char. 1162: C --> T
Char. 1198: A --> G
Char. 1219: C --> T
Char. 1225: T --> C
Char. 1300: C --> T
Char. 1315: A --> G
Char. 1333: C --> T
Char. 1570: C --> T
Char. 1597: T --> C
Char. 1774: T --> C
Char. 1807: A --> C
Char. 1822: A --> G
Char. 1885: C --> T
Char. 1972: A --> G
Char. 2077: C --> T
Char. 2152: T --> C
Characidium_vidali :
Char. 586: T --> C
Char. 620: A --> G
Char. 883: A --> G
Char. 1141: A --> GC
Char. 1513: A --> G
Char. 1540: A --> T
Char. 1618: T --> C
Char. 1621: T --> C
Char. 1702: A --> G
Char. 1726: A --> T
Char. 1732: C --> T
Char. 1756: C --> T
Char. 1762: C --> T
Char. 1795: T --> C
Char. 1819: A --> G
Char. 1822: A --> G
Char. 1843: A --> G
Char. 1936: T --> C
Char. 1978: C --> T
Char. 2006: T --> C
Char. 2047: T --> G
Char. 2056: T --> C
Char. 2059: C --> A
Char. 2074: A --> G
Char. 2093: G --> T
Char. 6188: G --> A
Char. 6210: T --> C
Char. 6329: C --> T
Char. 6507: C --> T
Char. 6510: T --> C
Charax_tectifer :
Char. 640: C --> A
Char. 646: G --> A
Char. 670: T --> C
Char. 676: C --> T
Char. 685: C --> T
Char. 703: C --> T
Char. 743: C --> T
Char. 749: C --> T
Char. 763: A --> G
Char. 772: C --> T
Char. 808: C --> T
Char. 826: T --> C
Char. 860: G --> A
Char. 907: A --> T
Char. 910: C --> T
Char. 950: G --> A
Char. 953: G --> A
Char. 955: A --> T
Char. 970: C --> A
Char. 1000: C --> A
Char. 1012: T --> C
Char. 1013: G --> C
Char. 1018: G --> A
Char. 1019: C --> T
Char. 1048: C --> T
Char. 1063: C --> T
Char. 1111: C --> T
Char. 1117: C --> T
Char. 1133: C --> A
Char. 1192: T --> C

Char. 1219: C --> T
Char. 1225: C --> T
Char. 1229: C --> T
Char. 1250: C --> T
Char. 1271: C --> T
Char. 1295: C --> T
Char. 1315: A --> T
Char. 1318: T --> C
Char. 1331: C --> T
Char. 1348: C --> T
Char. 1351: C --> T
Char. 1360: A --> G
Char. 1372: A --> G
Char. 1390: C --> T
Char. 1466: G --> A
Char. 1467: C --> T
Char. 1471: C --> T
Char. 1474: C --> T
Char. 6361: A --> G
Char. 6415: A --> G
Char. 6523: C --> T
Cheirodon_ibicuhiensis :
Char. 631: C --> A
Char. 632: A --> G
Char. 633: T --> C
Char. 635: C --> T
Char. 652: A --> G
Char. 760: A --> G
Char. 859: A --> G
Char. 985: C --> T
Char. 1021: T --> C
Char. 1114: A --> G
Char. 1177: T --> C
Char. 1237: C --> T
Char. 1276: T --> C
Char. 1402: T --> C
Char. 1435: T --> C
Char. 1672: A --> G
Char. 1684: T --> C
Char. 1708: T --> C
Char. 1729: A --> G
Char. 1798: A --> G
Char. 1810: G --> A
Char. 1948: T --> C
Char. 1954: T --> C
Char. 1969: T --> C
Char. 1978: C --> T
Char. 2017: A --> G
Char. 2062: T --> C
Char. 2237: G --> A
Char. 2533: T --> C
Char. 2620: G --> T
Char. 2674: C --> T
Char. 2824: A --> G
Char. 3889: C --> T
Char. 4129: C --> T
Char. 4132: C --> T
Char. 4252: G --> A
Char. 5109: A --> C
Char. 6041: G --> A
Char. 6179: G --> T
Char. 6180: T --> G
Char. 6253: T --> C
Char. 6356: A --> C
Char. 6513: T --> A
Chilobrycon_deuterodon :
Char. 526: A --> T
Char. 539: C --> T
Char. 592: C --> T
Char. 604: C --> T
Char. 670: A --> G
Char. 717: T --> C
Char. 752: T --> C
Char. 826: T --> C
Char. 853: T --> C
Char. 856: A --> G
Char. 859: A --> G
Char. 883: A --> G
Char. 910: T --> C
Char. 991: C --> T
Char. 1015: C --> T
Char. 1054: C --> T
Char. 1066: C --> T

Char. 1069: A --> G
Char. 1088: A --> G
Char. 1089: C --> T
Char. 1090: C --> T
Char. 1096: T --> C
Char. 1144: C --> T
Char. 1177: T --> C
Char. 1189: C --> T
Char. 1291: C --> T
Char. 1295: C --> T
Char. 1348: C --> T
Char. 1354: A --> G
Char. 1390: T --> C
Char. 1420: A --> G
Char. 2197: G --> A
Char. 2200: C --> T
Char. 2206: A --> C
Char. 2395: T --> C
Char. 2611: C --> T
Char. 2894: T --> C
Char. 2895: C --> G
Char. 3456: G --> A
Char. 3559: G --> A
Char. 3761: G --> A
Char. 3787: A --> T
Char. 4135: T --> G
Char. 4157: A --> G
Char. 4321: T --> A
Char. 4396: G --> A
Char. 6317: A --> T
Char. 6322: C --> A
Char. 6364: C --> T
Char. 6381: A --> G
Char. 6475: T --> C
Chilodus_fritillus :
Char. 535: C --> A
Char. 865: C --> T
Char. 901: C --> T
Char. 997: A --> G
Char. 1051: C --> T
Char. 1123: C --> T
Char. 1129: C --> T
Char. 1225: C --> G
Char. 1237: T --> A
Char. 1435: C --> T
Char. 1441: C --> T
Char. 1483: T --> C
Char. 1502: C --> T
Char. 1564: C --> T
Char. 1714: A --> T
Char. 1816: A --> G
Char. 1828: A --> G
Char. 1831: C --> T
Char. 1849: C --> T
Char. 1978: C --> T
Char. 2086: T --> C
Char. 3880: G --> A
Char. 4372: A --> T
Char. 6377: C --> T
Chilodus_gracilis :
Char. 532: A --> G
Char. 550: C --> T
Char. 562: C --> T
Char. 577: C --> T
Char. 604: T --> C
Char. 634: A --> G
Char. 664: C --> T
Char. 667: C --> T
Char. 676: A --> G
Char. 685: C --> A
Char. 688: A --> G
Char. 694: A --> T
Char. 697: C --> T
Char. 709: C --> T
Char. 731: A --> G
Char. 739: A --> G
Char. 740: G --> T
Char. 766: C --> T
Char. 805: A --> G
Char. 814: G --> C
Char. 826: C --> T
Char. 866: C --> T
Char. 916: A --> C

Char. 964: C --> T
Char. 970: C --> A
Char. 1006: C --> T
Char. 1078: A --> C
Char. 1120: A --> C
Char. 1165: C --> T
Char. 1168: C --> T
Char. 1171: C --> T
Char. 1183: C --> T
Char. 1262: C --> T
Char. 1264: A --> G
Char. 1276: C --> T
Char. 1292: A --> G
Char. 1293: T --> C
Char. 1318: T --> C
Char. 1390: C --> T
Char. 1438: T --> C
Char. 1453: C --> T
Char. 1477: T --> C
Char. 1478: G --> A
Char. 1480: C --> T
Char. 1495: A --> G
Char. 1561: C --> T
Char. 1570: T --> C
Char. 1597: C --> T
Char. 1663: T --> C
Char. 1678: T --> C
Char. 1687: A --> G
Char. 1712: C --> T
Char. 1753: T --> C
Char. 1769: C --> T
Char. 1789: T --> A
Char. 1825: A --> G
Char. 1843: T --> C
Char. 1858: C --> T
Char. 1879: A --> G
Char. 1894: A --> G
Char. 1907: C --> T
Char. 1930: T --> C
Char. 1933: T --> C
Char. 1939: G --> A
Char. 1984: C --> T
Char. 1987: C --> T
Char. 2020: CT --> G
Char. 2023: T --> C
Char. 2128: A --> GT
Char. 2245: A --> G
Char. 2320: T --> C
Char. 2353: C --> T
Char. 2641: G --> A
Char. 3625: T --> C
Char. 4085: G --> T
Char. 4372: A --> G
Char. 4700: T --> C
Char. 4708: C --> T
Char. 6511: A --> T
Chilodus_punctatus :
No autapomorphies
Chilodus_zunevei :
Char. 858: G --> C
Char. 904: C --> T
Char. 1159: A --> G
Char. 1213: A --> T
Char. 1298: G --> A
Char. 1360: A --> T
Char. 1534: A --> G
Char. 1579: G --> A
Char. 1615: G --> A
Char. 1894: A --> G
Char. 2029: T --> C
Char. 2116: C --> T
Char. 2213: G --> T
Char. 2231: A --> G
Char. 2237: G --> A
Char. 2241: G --> T
Char. 2266: C --> T
Char. 2761: C --> A
Char. 2805: G --> T
Char. 2806: T --> G
Char. 2807: C --> T
Char. 2842: C --> A
Char. 2847: G --> A
Char. 2857: T --> G

Char. 2860: T --> G
 Char. 2861: C --> A
 Char. 2868: A --> T
 Char. 2870: T --> A
 Char. 2874: C --> G
 Char. 2875: A --> G
 Char. 4189: T --> C
 Citharinus_citharus :
 Char. 6254: T --> C
 Char. 6329: C --> T
 Char. 6361: A --> G
 Char. 6413: C --> T
 Citharinus_congicus :
 No autapomorphies
 Citharinus_gibbosus :
 No autapomorphies
 Colossoma_macropomum :
 Char. 550: C --> T
 Char. 592: C --> T
 Char. 595: C --> T
 Char. 634: G --> A
 Char. 640: C --> T
 Char. 673: C --> T
 Char. 694: A --> G
 Char. 715: T --> C
 Char. 733: T --> C
 Char. 751: A --> G
 Char. 814: A --> G
 Char. 844: A --> C
 Char. 976: C --> T
 Char. 982: A --> C
 Char. 1009: C --> T
 Char. 1045: A --> C
 Char. 1054: A --> T
 Char. 1066: C --> T
 Char. 1075: A --> G
 Char. 1081: C --> A
 Char. 1084: T --> C
 Char. 1096: T --> C
 Char. 1117: C --> T
 Char. 1147: C --> T
 Char. 1225: C --> A
 Char. 1249: A --> G
 Char. 1288: C --> T
 Char. 1304: C --> A
 Char. 1307: C --> T
 Char. 1312: C --> T
 Char. 1396: A --> G
 Char. 1432: T --> C
 Char. 1471: A --> G
 Char. 1504: A --> G
 Char. 3464: G --> A
 Char. 3562: A --> G
 Char. 3572: C --> G
 Char. 3607: A --> G
 Char. 3694: C --> T
 Char. 3774: C --> G
 Char. 3808: G --> A
 Char. 3859: C --> T
 Char. 3984: A --> T
 Char. 4150: C --> G
 Char. 4180: T --> C
 Char. 4363: A --> G
 Char. 4451: C --> T
 Char. 4701: T --> G
 Char. 4703: G --> C
 Char. 4836: A --> G
 Char. 4847: A --> T
 Char. 4866: G --> A
 Char. 4994: G --> C
 Char. 5067: A --> G
 Char. 5094: C --> T
 Char. 5211: G --> T
 Char. 5347: G --> A
 Char. 5350: G --> A
 Char. 5454: G --> A
 Char. 5508: T --> C
 Char. 5540: G --> A
 Char. 5674: G --> A
 Char. 5706: C --> T
 Creagrutus_paraguayensis :
 Char. 1606: T --> C
 Char. 1615: A --> G
 Char. 1687: A --> G
 Char. 1717: A --> G
 Char. 1771: C --> A
 Char. 1774: A --> G
 Char. 1813: T --> C
 Char. 1819: T --> C
 Char. 1828: A --> G
 Char. 1843: T --> C
 Char. 1849: A --> G
 Char. 1942: C --> T
 Char. 2005: T --> C
 Char. 2017: A --> G
 Char. 2041: T --> C
 Char. 2056: T --> C
 Crenuchus_spilurus :
 Char. 2293: T --> C
 Char. 2435: C --> T
 Char. 2602: T --> C
 Char. 2633: C --> G
 Char. 2902: T --> C
 Char. 3460: T --> A
 Char. 3467: G --> A
 Char. 3562: A --> T
 Char. 3596: A --> T
 Char. 3664: G --> A
 Char. 3721: T --> A
 Char. 3730: G --> A
 Char. 3844: C --> T
 Char. 3925: T --> C
 Char. 4096: T --> A
 Char. 4118: A --> G
 Char. 4141: C --> T
 Char. 4251: C --> T
 Char. 4300: G --> A
 Char. 4342: C --> T
 Char. 4426: G --> A
 Char. 4469: A --> G
 Char. 4525: G --> A
 Char. 4636: A --> T
 Char. 5001: G --> A
 Char. 5025: C --> T
 Char. 5055: G --> A
 Char. 5299: C --> T
 Char. 5313: G --> A
 Char. 5348: T --> C
 Char. 5412: C --> T
 Char. 5423: G --> A
 Char. 5500: G --> A
 Char. 5570: G --> T
 Char. 5628: C --> T
 Char. 5641: C --> G
 Char. 5643: T --> C
 Char. 6206: C --> T
 Char. 6210: T --> C
 Char. 6253: A --> T
 Char. 6258: C --> T
 Char. 6276: T --> A
 Char. 6301: C --> T
 Char. 6306: C --> AG
 Char. 6314: C --> T
 Char. 6344: A --> G
 Char. 6352: C --> T
 Char. 6356: A --> C
 Char. 6361: A --> T
 Char. 6374: G --> A
 Char. 6377: C --> T
 Char. 6389: G --> A
 Char. 6398: G --> A
 Char. 6401: C --> T
 Char. 6403: C --> T
 Char. 6421: C --> T
 Char. 6480: G --> A
 Char. 6482: A --> T
 Char. 6487: C --> AT
 Char. 6508: C --> T
 Ctenolucius_hujeta :
 Char. 526: C --> T
 Char. 533: C --> T
 Char. 556: C --> T
 Char. 565: C --> T
 Char. 604: C --> T
 Char. 610: C --> T
 Char. 613: C --> T
 Char. 616: A --> G
 Char. 628: A --> T
 Char. 637: C --> T
 Char. 643: C --> T
 Char. 668: A --> C
 Char. 673: C --> T
 Char. 674: C --> G
 Char. 675: T --> C
 Char. 682: T --> C
 Char. 694: A --> T
 Char. 751: C --> T
 Char. 763: A --> G
 Char. 823: C --> T
 Char. 836: C --> T
 Char. 838: CT --> A
 Char. 847: C --> A
 Char. 853: C --> T
 Char. 868: A --> C
 Char. 871: A --> T
 Char. 907: A --> T
 Char. 922: C --> T
 Char. 925: C --> T
 Char. 940: C --> T
 Char. 970: C --> A
 Char. 982: A --> T
 Char. 991: C --> T
 Char. 1015: A --> C
 Char. 1027: A --> C
 Char. 1045: A --> C
 Char. 1048: C --> T
 Char. 1057: C --> T
 Char. 1081: C --> T
 Char. 1097: T --> C
 Char. 1102: C --> T
 Char. 1108: A --> T
 Char. 1117: C --> A
 Char. 1120: A --> T
 Char. 1129: C --> G
 Char. 1132: C --> T
 Char. 1165: C --> T
 Char. 1172: C --> T
 Char. 1183: C --> A
 Char. 1207: C --> T
 Char. 1222: C --> T
 Char. 1237: A --> C
 Char. 1258: A --> T
 Char. 1261: C --> A
 Char. 1288: C --> T
 Char. 1297: C --> T
 Char. 1303: C --> T
 Char. 1306: AG --> C
 Char. 1333: A --> C
 Char. 1346: C --> T
 Char. 1348: A --> T
 Char. 1357: C --> T
 Char. 1363: T --> C
 Char. 1372: A --> T
 Char. 1373: G --> A
 Char. 1384: A --> C
 Char. 1390: C --> T
 Char. 1411: A --> G
 Char. 1445: A --> G
 Char. 1446: T --> C
 Char. 1447: C --> A
 Char. 1459: C --> A
 Char. 1462: C --> T
 Char. 1471: C --> T
 Char. 1478: A --> C
 Char. 1480: C --> A
 Char. 1499: C --> A
 Char. 2197: A --> T
 Char. 2203: T --> A
 Char. 2217: G --> C
 Char. 2329: GC --> A
 Char. 2362: T --> C
 Char. 2435: C --> T
 Char. 2518: A --> G
 Char. 2548: C --> T
 Char. 2566: T --> C
 Char. 2635: A --> G
 Char. 2650: A --> T
 Char. 2710: G --> A
 Char. 2765: C --> T

Char. 2785: A --> T
Char. 2788: T --> C
Char. 3706: A --> G
Char. 3712: A --> C
Char. 3742: C --> T
Char. 4201: G --> T
Char. 4487: C --> A
Char. 4490: G --> A
Char. 4501: G --> A
Char. 4543: C --> G
Char. 4555: A --> C
Char. 4593: A --> T
Char. 4867: G --> C
Char. 4887: T --> C
Char. 4911: C --> A
Char. 4968: T --> A
Char. 5013: C --> T
Char. 5076: A --> G
Char. 5094: C --> T
Char. 5113: G --> A
Char. 5121: C --> A
Char. 5172: G --> A
Char. 5220: T --> C
Char. 5242: C --> A
Char. 5267: C --> T
Char. 5283: T --> C
Char. 5352: C --> T
Char. 5355: G --> A
Char. 5371: C --> A
Char. 5403: C --> T
Char. 5405: G --> A
Char. 5457: T --> C
Char. 5482: G --> C
Char. 5540: G --> A
Char. 5604: A --> C
Char. 5670: A --> C
Char. 5796: G --> A
Char. 5807: A --> G
Char. 5864: T --> C
Char. 5865: T --> A
Char. 5868: T --> A
Char. 5903: T --> C
Char. 5906: A --> G
Char. 5911: C --> T
Char. 5930: G --> A
Char. 5940: C --> T
Char. 6020: A --> G
Char. 6025: C --> T
Char. 6042: T --> G
Char. 6049: G --> C
Char. 6071: A --> G
Char. 6074: C --> T
Char. 6084: A --> C
Char. 6210: T --> A
Char. 6252: A --> T
Char. 6301: C --> T
Char. 6309: T --> C
Char. 6310: G --> T
Char. 6311: T --> C
Char. 6316: A --> G
Char. 6326: T --> C
Char. 6347: T --> A
Char. 6356: A --> T
Char. 6358: C --> T
Char. 6359: A --> G
Char. 6374: G --> A
Char. 6381: A --> G
Char. 6426: T --> C
Char. 6458: A --> C
Char. 6563: C --> T
Char. 6575: A --> C
Char. 6588: G --> A
Curimata_cyprinoides :
Char. 1600: A --> GT
Char. 1828: C --> T
Char. 1831: T --> AC
Char. 1924: A --> G
Char. 2161: T --> C
Curimata_mivartii :
Char. 526: A --> C
Char. 533: C --> T
Char. 550: C --> T
Char. 553: C --> T

Char. 592: C --> T
Char. 601: T --> A
Char. 604: T --> C
Char. 610: C --> T
Char. 634: A --> T
Char. 655: C --> T
Char. 661: T --> C
Char. 664: C --> T
Char. 676: A --> G
Char. 697: C --> T
Char. 706: C --> A
Char. 724: A --> C
Char. 736: A --> G
Char. 751: A --> G
Char. 808: C --> T
Char. 829: A --> G
Char. 844: A --> C
Char. 850: A --> C
Char. 866: C --> T
Char. 871: A --> T
Char. 889: C --> T
Char. 895: C --> T
Char. 916: A --> C
Char. 919: A --> G
Char. 934: C --> T
Char. 941: C --> T
Char. 967: A --> G
Char. 979: C --> T
Char. 1048: C --> T
Char. 1060: C --> T
Char. 1063: C --> T
Char. 1078: A --> G
Char. 1120: A --> C
Char. 1136: C --> T
Char. 1144: C --> T
Char. 1145: G --> T
Char. 1177: T --> C
Char. 1180: A --> G
Char. 1204: A --> G
Char. 1207: C --> T
Char. 1210: C --> T
Char. 1252: A --> T
Char. 1255: C --> T
Char. 1261: A --> C
Char. 1267: C --> T
Char. 1270: C --> T
Char. 1285: A --> C
Char. 1288: C --> T
Char. 1291: A --> T
Char. 1306: A --> C
Char. 1315: C --> A
Char. 1357: C --> T
Char. 1358: C --> T
Char. 1360: A --> G
Char. 1367: A --> G
Char. 1375: T --> A
Char. 1423: C --> T
Char. 1426: A --> C
Char. 1428: T --> A
Char. 1453: C --> A
Char. 1454: G --> A
Char. 1468: A --> C
Char. 1471: A --> T
Char. 1489: A --> C
Curimatella_dorsalis :
Char. 538: T --> C
Char. 565: C --> T
Char. 577: C --> T
Char. 610: C --> T
Char. 613: C --> T
Char. 620: C --> T
Char. 634: A --> G
Char. 670: C --> T
Char. 679: C --> T
Char. 697: C --> T
Char. 730: C --> T
Char. 745: A --> T
Char. 772: C --> T
Char. 775: A --> G
Char. 802: A --> G
Char. 814: A --> G
Char. 826: C --> T
Char. 832: C --> T

Char. 850: A --> T
Char. 866: C --> T
Char. 892: C --> T
Char. 946: C --> T
Char. 951: C --> T
Char. 952: A --> T
Char. 961: A --> G
Char. 997: A --> C
Char. 1076: C --> T
Char. 1090: T --> C
Char. 1126: C --> T
Char. 1136: C --> T
Char. 1246: C --> T
Char. 1264: A --> G
Char. 1276: C --> T
Char. 1282: C --> T
Char. 1289: C --> T
Char. 1346: G --> C
Char. 1367: A --> G
Char. 1381: C --> T
Char. 1405: A --> G
Char. 1426: A --> C
Char. 1432: T --> C
Char. 1447: C --> T
Char. 1465: C --> T
Char. 1478: G --> A
Char. 1483: C --> A
Char. 1537: C --> T
Char. 1549: T --> C
Char. 1594: A --> G
Char. 1609: C --> T
Char. 1633: T --> C
Char. 1684: T --> C
Char. 1690: C --> T
Char. 1703: T --> C
Char. 1705: A --> G
Char. 1711: C --> T
Char. 1726: C --> T
Char. 1729: C --> T
Char. 1771: A --> T
Char. 1774: A --> G
Char. 1793: C --> T
Char. 1879: T --> A
Char. 1906: C --> T
Char. 1999: A --> G
Char. 2005: C --> T
Char. 2056: C --> T
Char. 2068: T --> A
Char. 2102: A --> C
Char. 2137: A --> G
Char. 5049: C --> T
Char. 5112: G --> T
Char. 5187: G --> A
Char. 5296: A --> G
Char. 5319: C --> T
Char. 5373: T --> C
Char. 5443: C --> T
Char. 5445: G --> A
Char. 5623: C --> T
Char. 6302: C --> T
Char. 6362: C --> T
Char. 6414: A --> G
Char. 6424: T --> C
Char. 6454: A --> G
Char. 6471: T --> G
Char. 6511: A --> G
Cynodon_gibbus :
Char. 664: C --> T
Char. 676: C --> A
Char. 679: C --> T
Char. 739: A --> T
Char. 742: C --> T
Char. 748: C --> T
Char. 766: C --> T
Char. 778: A --> C
Char. 835: C --> T
Char. 877: A --> G
Char. 910: C --> T
Char. 931: C --> T
Char. 941: C --> T
Char. 985: C --> T
Char. 1033: A --> C
Char. 1057: C --> T

Char. 1063: C --> G
Char. 1093: C --> A
Char. 1099: A --> T
Char. 1105: A --> C
Char. 1106: A --> T
Char. 1123: C --> T
Char. 1210: C --> T
Char. 1222: C --> T
Char. 1231: A --> C
Char. 1261: A --> T
Char. 1288: C --> G
Char. 1349: A --> G
Char. 1360: A --> G
Char. 1368: C --> T
Char. 1375: C --> T
Char. 1435: C --> T
Char. 1447: C --> T
Char. 1549: C --> T
Char. 1561: C --> T
Char. 1567: A --> G
Char. 1618: C --> T
Char. 1690: C --> T
Char. 1696: A --> C
Char. 1777: CT --> A
Char. 1834: T --> C
Char. 1849: T --> A
Char. 1960: C --> G
Char. 1978: C --> T
Char. 1990: A --> C
Char. 2008: A --> G
Char. 2017: A --> G
Char. 2023: A --> C
Char. 2062: C --> T
Char. 2122: C --> T
Char. 2134: A --> G
Char. 2137: A --> T
Char. 2140: C --> T
Char. 2146: T --> C
Char. 2227: C --> T
Char. 2296: C --> T
Char. 2380: G --> T
Char. 2401: A --> G
Char. 2428: C --> A
Char. 2452: C --> T
Char. 2498: C --> T
Char. 2584: T --> C
Char. 2782: T --> G
Char. 2792: C --> T
Char. 2803: C --> T
Char. 2854: T --> C
Char. 3613: G --> A
Char. 3766: G --> T
Char. 3943: C --> A
Char. 3979: C --> T
Char. 4088: G --> C
Char. 4118: A --> G
Char. 4210: C --> T
Char. 4243: C --> T
Char. 4328: T --> C
Char. 4378: C --> T
Char. 4489: G --> A
Char. 4514: G --> T
Char. 4650: C --> T
Char. 4741: T --> A
Char. 4848: G --> A
Char. 4917: G --> A
Char. 4998: G --> A
Char. 5052: A --> G
Char. 5103: G --> T
Char. 5337: G --> A
Char. 5466: T --> C
Char. 5559: C --> G
Char. 5574: A --> G
Char. 5756: AT --> G
Char. 5867: T --> C
Char. 5911: C --> T
Char. 5945: A --> G
Char. 6001: A --> G
Char. 6002: T --> A
Char. 6020: A --> G
Char. 6022: T --> A
Char. 6048: T --> C
Char. 6205: T --> C

Char. 6252: T --> C
Char. 6328: A --> T
Char. 6346: C --> T
Char. 6382: C --> A
Char. 6456: C --> T
Char. 6476: C --> A
Char. 6566: C --> T
Char. 6573: C --> T
Cyphocharax_festivus :
Char. 532: A --> G
Char. 535: A --> G
Char. 550: C --> T
Char. 553: C --> T
Char. 568: C --> T
Char. 580: C --> T
Char. 589: C --> T
Char. 661: T --> C
Char. 674: C --> T
Char. 706: C --> T
Char. 733: T --> C
Char. 823: C --> T
Char. 853: T --> C
Char. 871: A --> G
Char. 919: A --> G
Char. 922: C --> T
Char. 943: A --> G
Char. 964: C --> T
Char. 970: C --> T
Char. 982: C --> T
Char. 1015: T --> C
Char. 1024: C --> T
Char. 1030: C --> T
Char. 1048: C --> T
Char. 1078: A --> G
Char. 1081: C --> T
Char. 1102: C --> T
Char. 1111: C --> T
Char. 1132: C --> T
Char. 1141: A --> C
Char. 1201: A --> G
Char. 1207: C --> T
Char. 1216: T --> C
Char. 1255: C --> A
Char. 1270: C --> T
Char. 1271: C --> T
Char. 1285: A --> G
Char. 1303: C --> T
Char. 1348: A --> C
Char. 1366: A --> G
Char. 1391: C --> T
Char. 1414: T --> C
Char. 1445: A --> G
Char. 1453: C --> T
Char. 1469: C --> T
Char. 1486: C --> T
Char. 1534: A --> G
Char. 1612: T --> C
Char. 1657: C --> T
Char. 1681: G --> A
Char. 1696: A --> G
Char. 1702: A --> G
Char. 1706: A --> G
Char. 1708: T --> A
Char. 1720: T --> C
Char. 1768: A --> G
Char. 1789: T --> C
Char. 1813: T --> C
Char. 1825: A --> G
Char. 1828: A --> G
Char. 1837: A --> G
Char. 1843: A --> C
Char. 1852: T --> C
Char. 1867: A --> G
Char. 1882: C --> T
Char. 1891: T --> C
Char. 1954: T --> C
Char. 2014: G --> C
Char. 2017: A --> G
Char. 2038: A --> C
Char. 2077: T --> C
Char. 2092: A --> G
Char. 2095: C --> T
Char. 2116: C --> T

Char. 2125: T --> G
Char. 2134: A --> G
Char. 4723: G --> A
Char. 4740: T --> A
Char. 4749: T --> A
Char. 4791: C --> G
Char. 4953: T --> A
Char. 5055: T --> A
Char. 5121: C --> G
Char. 5151: C --> T
Char. 5280: T --> A
Char. 5283: T --> C
Char. 5307: C --> A
Char. 5343: C --> G
Char. 5505: C --> A
Char. 5509: T --> A
Char. 5516: A --> C
Char. 6252: C --> T
Char. 6345: A --> G
Char. 6433: T --> C
Char. 6456: C --> T
Char. 6508: C --> A
Cyphocharax_gilbert :
Char. 550: C --> T
Char. 592: C --> T
Char. 595: T --> C
Char. 634: A --> G
Char. 655: C --> T
Char. 661: T --> C
Char. 670: C --> T
Char. 674: C --> T
Char. 733: T --> C
Char. 739: A --> C
Char. 743: C --> T
Char. 746: C --> T
Char. 751: G --> T
Char. 784: C --> G
Char. 823: C --> A
Char. 958: A --> G
Char. 964: C --> T
Char. 988: A --> G
Char. 1054: C --> T
Char. 1081: C --> A
Char. 1106: A --> G
Char. 1111: C --> T
Char. 1114: A --> G
Char. 1132: C --> T
Char. 1136: C --> T
Char. 1144: C --> T
Char. 1174: C --> A
Char. 1183: A --> G
Char. 1234: A --> G
Char. 1243: A --> C
Char. 1246: C --> T
Char. 1258: A --> G
Char. 1261: A --> G
Char. 1273: A --> G
Char. 1276: C --> T
Char. 1294: A --> G
Char. 1315: C --> T
Char. 1326: A --> G
Char. 1357: C --> T
Char. 1367: A --> G
Char. 1375: T --> C
Char. 1387: A --> G
Char. 1391: C --> T
Char. 1408: A --> G
Char. 1414: T --> C
Char. 1441: C --> G
Char. 1443: A --> G
Char. 1447: C --> T
Char. 1453: C --> T
Char. 1723: G --> AC
Char. 1861: C --> T
Char. 2038: A --> GCT
Char. 2147: C --> T
Char. 2269: C --> T
Char. 2364: G --> C
Char. 2530: T --> C
Char. 2536: C --> T
Char. 2572: T --> C
Char. 2608: T --> C
Char. 2671: T --> C

Char. 2744: G --> T
Char. 6253: A --> T
Char. 6413: C --> T
Char. 6456: C --> T
Cyphocharax_magdalenae :
Char. 607: C --> T
Char. 620: T --> C
Char. 625: C --> T
Char. 652: C --> T
Char. 682: C --> T
Char. 685: T --> C
Char. 691: C --> T
Char. 692: C --> T
Char. 700: T --> C
Char. 706: C --> T
Char. 709: C --> T
Char. 712: C --> T
Char. 730: C --> T
Char. 760: A --> G
Char. 763: A --> G
Char. 766: C --> T
Char. 796: C --> T
Char. 814: A --> G
Char. 835: T --> C
Char. 838: C --> T
Char. 847: C --> T
Char. 856: A --> C
Char. 866: C --> T
Char. 913: A --> G
Char. 925: T --> C
Char. 938: C --> T
Char. 970: C --> T
Char. 973: C --> T
Char. 982: C --> A
Char. 985: C --> T
Char. 994: A --> G
Char. 1042: C --> T
Char. 1057: T --> C
Char. 1066: T --> C
Char. 1085: AC --> T
Char. 1093: A --> G
Char. 1123: C --> T
Char. 1138: A --> G
Char. 1159: T --> C
Char. 1210: C --> T
Char. 1211: C --> T
Char. 1219: C --> T
Char. 1229: C --> T
Char. 1250: C --> T
Char. 1261: A --> T
Char. 1262: T --> C
Char. 1285: A --> G
Char. 1288: C --> T
Char. 1300: C --> A
Char. 1306: A --> C
Char. 1309: T --> C
Char. 1336: AG --> C
Char. 1346: G --> C
Char. 1348: A --> C
Char. 1351: C --> T
Char. 1358: T --> C
Char. 1372: AC --> T
Char. 1396: A --> T
Char. 1402: C --> T
Char. 1408: A --> T
Char. 1414: T --> C
Char. 1423: C --> T
Char. 1429: C --> T
Char. 1432: C --> T
Char. 1456: C --> T
Char. 1478: G --> A
Char. 1480: C --> T
Char. 2278: T --> C
Char. 2305: C --> T
Char. 2368: G --> C
Char. 2404: T --> C
Char. 2527: C --> T
Char. 2607: G --> A
Char. 2713: T --> A
Char. 2854: C --> T
Char. 3493: C --> T
Char. 3535: T --> G
Char. 3544: C --> T

Char. 3595: C --> T
Char. 3730: G --> A
Char. 3770: C --> A
Char. 3982: T --> C
Char. 4012: G --> A
Char. 4150: G --> A
Char. 4201: G --> A
Char. 4252: G --> A
Char. 4348: T --> G
Char. 4349: C --> A
Char. 4504: G --> A
Char. 4572: G --> C
Char. 4573: C --> T
Char. 4636: A --> G
Char. 6245: G --> A
Char. 6299: A --> G
Char. 6319: A --> G
Char. 6323: T --> C
Char. 6439: A --> T
Char. 6562: C --> T
Char. 6563: C --> T
Distichodus_affinis :
Char. 547: A --> G
Char. 589: C --> T
Char. 604: T --> C
Char. 680: A --> G
Char. 700: C --> T
Char. 757: A --> G
Char. 778: A --> G
Char. 820: A --> C
Char. 838: T --> C
Char. 847: C --> T
Char. 850: C --> A
Char. 940: C --> A
Char. 946: C --> A
Char. 961: T --> C
Char. 967: A --> G
Char. 970: C --> T
Char. 982: A --> T
Char. 1000: A --> G
Char. 1006: C --> T
Char. 1126: A --> G
Char. 1168: C --> T
Char. 1186: A --> T
Char. 1219: C --> T
Char. 1240: T --> C
Char. 1250: C --> T
Char. 1261: A --> C
Char. 1276: C --> T
Char. 1285: C --> T
Char. 1295: C --> T
Char. 1390: C --> T
Char. 1408: C --> T
Char. 1411: C --> T
Char. 1423: T --> C
Char. 1426: C --> A
Char. 1438: T --> C
Char. 1601: T --> C
Char. 1714: A --> G
Char. 1789: C --> T
Char. 1810: G --> A
Char. 1903: C --> T
Char. 1906: C --> T
Char. 1934: T --> C
Char. 1969: T --> C
Char. 2053: C --> A
Char. 2107: C --> T
Char. 2152: T --> C
Distichodus_antonii :
Char. 574: C --> A
Char. 752: T --> C
Char. 784: T --> C
Char. 901: C --> T
Char. 976: C --> T
Char. 1003: T --> C
Char. 1036: C --> T
Char. 1094: C --> T
Char. 1135: A --> G
Char. 1168: C --> T
Char. 1324: A --> G
Char. 1363: T --> C
Char. 1459: T --> C
Char. 1477: C --> A

Char. 1489: A --> G
Char. 1609: C --> T
Char. 2041: T --> G
Distichodus_atroventralis :
Char. 799: A --> G
Char. 889: G --> A
Char. 950: G --> A
Char. 980: C --> T
Char. 1009: T --> C
Char. 1015: C --> T
Char. 1168: C --> T
Char. 1225: C --> T
Char. 1289: C --> T
Char. 1303: A --> G
Char. 1438: C --> T
Char. 1459: T --> C
Char. 1624: C --> T
Char. 1822: A --> G
Char. 1861: A --> G
Char. 1918: T --> C
Char. 1924: G --> T
Char. 2038: A --> G
Char. 2065: T --> C
Distichodus_decemmaculatus :
Char. 673: C --> T
Char. 679: C --> T
Char. 865: C --> T
Char. 1063: A --> G
Char. 1454: C --> A
Char. 1501: A --> G
Char. 2794: G --> A
Distichodus_engycephalus :
Char. 523: C --> T
Char. 538: T --> C
Char. 562: C --> T
Char. 574: C --> T
Char. 613: C --> T
Char. 622: T --> C
Char. 637: C --> T
Char. 685: C --> T
Char. 724: C --> T
Char. 745: C --> A
Char. 752: T --> C
Char. 787: C --> A
Char. 799: A --> G
Char. 940: C --> T
Char. 958: A --> G
Char. 961: T --> C
Char. 1003: T --> C
Char. 1006: C --> T
Char. 1048: C --> T
Char. 1075: A --> G
Char. 1081: C --> A
Char. 1091: C --> T
Char. 1117: C --> T
Char. 1136: C --> T
Char. 1201: A --> G
Char. 1210: C --> T
Char. 1271: C --> T
Char. 1306: C --> T
Char. 1336: C --> T
Char. 1396: A --> T
Char. 1420: A --> G
Char. 1456: C --> T
Char. 1486: C --> T
Char. 1510: C --> T
Char. 1618: T --> C
Char. 1672: A --> G
Char. 1892: C --> T
Char. 1912: T --> C
Char. 2313: C --> T
Distichodus_fasciolatus :
No autapomorphies
Distichodus_hypostomatus :
Char. 634: A --> G
Char. 667: A --> T
Char. 673: C --> T
Char. 685: C --> A
Char. 691: C --> A
Char. 784: C --> A
Char. 808: C --> T
Char. 814: T --> A
Char. 850: C --> T

Char. 854: C --> T
Char. 919: A --> G
Char. 952: C --> T
Char. 958: A --> G
Char. 1106: A --> G
Char. 1126: A --> G
Char. 1132: C --> T
Char. 1159: C --> T
Char. 1219: C --> T
Char. 1357: C --> A
Char. 1385: T --> C
Char. 1411: C --> T
Char. 1447: T --> C
Char. 1455: T --> C
Char. 1462: C --> T
Char. 1467: C --> T
Char. 1486: C --> T
Char. 1517: A --> C
Char. 1657: C --> T
Char. 1675: A --> G
Char. 1690: A --> G
Char. 1711: C --> T
Char. 1712: C --> T
Char. 1777: A --> G
Char. 1813: T --> C
Char. 1873: T --> C
Char. 1906: C --> T
Char. 1927: T --> C
Char. 1993: A --> G
Char. 2014: T --> G
Char. 2029: A --> T
Char. 2053: C --> T
Char. 2071: A --> G
Char. 2102: C --> T
Char. 2222: A --> T
Char. 2226: G --> C
Char. 2413: A --> G
Char. 2634: C --> T
Char. 2752: C --> T
Char. 4721: G --> T
Char. 4825: C --> A
Char. 5013: C --> T
Char. 5014: A --> G
Char. 5178: G --> A
Char. 5383: C --> T
Char. 5395: C --> G
Char. 5415: C --> T
Char. 5539: G --> A
Char. 6022: C --> T
Char. 6078: T --> C
Char. 6182: G --> A
Char. 6293: C --> A
Char. 6381: C --> A
Char. 6433: T --> C
Char. 6446: C --> T
Char. 6495: T --> C
Char. 6497: T --> C
Char. 6514: C --> T
Distichodus_kolleri :
Char. 607: A --> T
Char. 634: A --> G
Char. 640: T --> C
Char. 673: C --> T
Char. 674: C --> T
Char. 692: T --> C
Char. 714: A --> T
Char. 835: C --> T
Char. 985: C --> T
Char. 1040: A --> G
Char. 1072: C --> T
Char. 1094: C --> T
Char. 1177: T --> C
Char. 1211: C --> T
Char. 1229: C --> T
Char. 1237: A --> C
Char. 1279: C --> G
Char. 1312: C --> T
Char. 1333: C --> T
Char. 1336: C --> T
Char. 1454: G --> A
Char. 1456: C --> T
Char. 1497: G --> C
Char. 1525: C --> T

Char. 1540: A --> G
Char. 1582: T --> C
Char. 1585: C --> T
Char. 1630: T --> C
Char. 1642: C --> T
Char. 1703: C --> T
Char. 1706: G --> A
Char. 1712: C --> T
Char. 1726: C --> T
Char. 1741: C --> T
Char. 1771: T --> C
Char. 1801: C --> T
Char. 1834: C --> T
Char. 1843: T --> G
Char. 1981: C --> T
Char. 1990: T --> C
Char. 1999: A --> G
Char. 2029: A --> G
Char. 2035: C --> T
Char. 2038: A --> G
Char. 2077: T --> C
Char. 2149: C --> T
Char. 2159: C --> T
Char. 2257: G --> A
Char. 2581: T --> C
Distichodus_lusosso :
Char. 595: T --> C
Char. 670: T --> C
Char. 673: C --> T
Char. 817: A --> T
Char. 868: T --> C
Char. 913: C --> T
Char. 949: C --> T
Char. 955: T --> C
Char. 985: C --> T
Char. 1096: A --> G
Char. 1114: G --> A
Char. 1177: T --> C
Char. 1207: T --> C
Char. 1240: T --> C
Char. 1255: A --> G
Char. 1558: G --> A
Char. 1924: G --> A
Char. 1934: T --> C
Char. 2101: T --> C
Char. 5017: G --> A
Distichodus_mossambicus :
Char. 1576: G --> A
Char. 1684: C --> T
Char. 1774: A --> G
Char. 1816: G --> A
Char. 1819: G --> A
Char. 1879: T --> C
Distichodus_noboli :
Char. 589: C --> T
Char. 685: C --> T
Char. 700: C --> T
Char. 766: C --> T
Char. 850: C --> A
Char. 952: C --> T
Char. 991: C --> T
Char. 1066: C --> T
Char. 1135: A --> G
Char. 1303: A --> C
Char. 1336: C --> T
Char. 1369: T --> C
Char. 1405: A --> G
Char. 1408: C --> T
Char. 1444: A --> G
Char. 1478: C --> T
Char. 1556: T --> C
Char. 1573: A --> G
Char. 1723: T --> C
Char. 1756: T --> C
Char. 1759: A --> G
Char. 1849: C --> T
Char. 1861: A --> G
Char. 1903: C --> T
Char. 1939: T --> C
Char. 1945: T --> C
Char. 2014: T --> C
Char. 2041: T --> C
Char. 2048: C --> T

Char. 2113: A --> G
Char. 2313: C --> T
Char. 2607: A --> G
Char. 2656: C --> T
Distichodus_notospilus :
Char. 682: C --> T
Char. 692: T --> C
Char. 826: C --> T
Char. 832: C --> T
Char. 835: C --> T
Char. 1085: A --> C
Char. 1094: C --> T
Char. 1141: A --> T
Char. 1211: C --> T
Char. 1229: C --> T
Char. 1246: C --> T
Char. 1255: A --> C
Char. 1276: C --> T
Char. 1300: C --> T
Char. 1390: C --> T
Char. 1411: C --> T
Char. 1417: C --> T
Char. 2225: G --> T
Char. 2788: T --> C
Char. 5505: C --> A
Char. 5756: T --> A
Char. 5858: C --> T
Char. 5859: C --> T
Char. 5978: G --> A
Char. 6362: C --> T
Char. 6494: T --> A
Distichodus_petersii :
Char. 550: C --> T
Char. 571: C --> T
Char. 577: T --> C
Char. 613: C --> T
Char. 622: T --> C
Char. 637: C --> T
Char. 640: C --> T
Char. 679: C --> T
Char. 682: C --> T
Char. 703: C --> T
Char. 766: T --> C
Char. 772: C --> T
Char. 787: C --> T
Char. 823: A --> G
Char. 850: C --> A
Char. 886: A --> G
Char. 895: C --> A
Char. 980: C --> T
Char. 1051: C --> T
Char. 1066: C --> T
Char. 1106: A --> G
Char. 1111: C --> T
Char. 1117: C --> A
Char. 1136: C --> T
Char. 1144: C --> T
Char. 1159: C --> T
Char. 1165: C --> T
Char. 1229: C --> T
Char. 1288: C --> T
Char. 1289: C --> T
Char. 1300: C --> T
Char. 1307: C --> T
Char. 1346: A --> G
Char. 1347: T --> C
Char. 1387: C --> T
Char. 1411: C --> T
Char. 1429: T --> C
Char. 1477: A --> T
Char. 2441: A --> G
Char. 2461: C --> A
Char. 2632: A --> G
Char. 2812: A --> C
Char. 2815: G --> A
Char. 2878: T --> C
Distichodus_sexfasciatus :
Char. 532: A --> G
Char. 587: G --> A
Char. 610: C --> T
Char. 679: C --> T
Char. 739: A --> G
Char. 772: C --> T

Char. 871: C --> T
Char. 916: C --> T
Char. 943: T --> C
Char. 985: C --> T
Char. 1081: C --> T
Char. 1147: A --> G
Char. 1225: C --> T
Char. 1249: A --> G
Char. 1289: C --> T
Char. 1312: C --> T
Char. 1370: T --> C
Char. 1438: C --> T
Char. 1712: C --> T
Char. 1729: A --> G
Char. 1777: A --> G
Char. 1849: C --> T
Char. 1924: G --> A
Char. 2038: A --> G
Char. 2237: G --> A
Char. 2287: T --> G
Char. 2474: T --> C
Char. 2731: A --> C
Char. 2734: C --> T
Char. 2848: C --> T
Char. 2857: G --> A
Char. 5230: C --> T
Char. 5440: A --> G
Char. 5867: T --> C
Char. 6357: A --> G

Distichodus teugelsi :

Char. 553: C --> T
Char. 763: A --> G
Char. 781: C --> T
Char. 940: C --> T
Char. 1123: T --> C
Char. 1306: C --> T
Char. 1471: T --> C
Char. 2731: A --> C

Erythrinus erythrinus :

Char. 1517: C --> T
Char. 1558: T --> C
Char. 1570: C --> T
Char. 1582: A --> G
Char. 1636: T --> C
Char. 1675: A --> C
Char. 1717: G --> A
Char. 1726: A --> C
Char. 1732: C --> T
Char. 1747: A --> C
Char. 1750: A --> G
Char. 1774: T --> A
Char. 1793: C --> T
Char. 1795: C --> A
Char. 1810: G --> A
Char. 1846: C --> T
Char. 1858: C --> G
Char. 1879: A --> G
Char. 1915: T --> C
Char. 1930: A --> G
Char. 2006: C --> T
Char. 2038: C --> A
Char. 2039: C --> T
Char. 2059: C --> T
Char. 2065: T --> G
Char. 2134: A --> G
Char. 2137: A --> G
Char. 2140: C --> T
Char. 2155: A --> G
Char. 3529: C --> A
Char. 3628: C --> T
Char. 3673: T --> C
Char. 3694: C --> T
Char. 3754: G --> A
Char. 4051: C --> G
Char. 4087: C --> A
Char. 4196: C --> T
Char. 4231: G --> A
Char. 4339: C --> T
Char. 4366: C --> T
Char. 4393: G --> A
Char. 4403: A --> C
Char. 4490: G --> A
Char. 4546: G --> A

Char. 4564: C --> T
Char. 4642: G --> A
Char. 4663: G --> T
Char. 4699: A --> G
Char. 6161: G --> A
Char. 6182: G --> A
Char. 6183: A --> G
Char. 6254: C --> T
Char. 6300: A --> G
Char. 6309: T --> C
Char. 6335: A --> G
Char. 6357: A --> T
Char. 6361: G --> A
Char. 6379: A --> C
Char. 6415: A --> G
Char. 6440: A --> C
Char. 6445: A --> CT

Eugnathichthys macroterolepis :

Char. 1810: A --> G

Gasteropelecus maculatus :

Char. 523: T --> C
Char. 538: C --> T
Char. 566: T --> A
Char. 580: C --> T
Char. 586: C --> G
Char. 607: A --> T
Char. 637: T --> C
Char. 640: C --> T
Char. 658: C --> T
Char. 688: A --> G
Char. 691: C --> A
Char. 712: A --> T
Char. 718: A --> G
Char. 724: A --> C
Char. 733: T --> C
Char. 741: T --> C
Char. 745: T --> C
Char. 754: A --> G
Char. 772: T --> C
Char. 817: C --> A
Char. 820: A --> C
Char. 823: A --> C
Char. 871: AT --> G
Char. 913: A --> C
Char. 946: AC --> T
Char. 952: T --> C
Char. 969: T --> C
Char. 970: T --> A
Char. 986: C --> T
Char. 994: A --> G
Char. 997: A --> C
Char. 1013: A --> G
Char. 1027: A --> C
Char. 1036: C --> T
Char. 1054: A --> G
Char. 1088: A --> C
Char. 1096: CT --> A
Char. 1112: C --> T
Char. 1117: A --> T
Char. 1124: T --> G
Char. 1138: A --> G
Char. 1141: A --> C
Char. 1183: A --> C
Char. 1195: A --> G
Char. 1243: T --> C
Char. 1267: C --> A
Char. 1282: T --> C
Char. 1293: T --> C
Char. 1294: A --> T
Char. 1307: C --> T
Char. 1339: C --> T
Char. 1342: A --> C
Char. 1354: A --> G
Char. 1357: T --> C
Char. 1363: T --> C
Char. 1367: A --> G
Char. 1393: A --> C
Char. 1399: A --> G
Char. 1402: T --> C
Char. 1405: A --> G
Char. 1417: A --> C
Char. 1423: C --> T
Char. 1426: C --> G

Char. 1455: C --> G
Char. 1471: A --> C
Char. 1480: CT --> A
Char. 1483: T --> A
Char. 1504: A --> G
Char. 6255: A --> C
Char. 6276: T --> A
Char. 6344: A --> G
Char. 6368: C --> A
Char. 6379: AG --> C
Char. 6443: A --> T
Char. 6477: A --> G
Char. 6496: A --> C
Char. 6505: G --> A
Char. 6510: T --> C
Char. 6511: A --> T
Char. 6513: T --> A
Char. 6514: T --> C
Char. 6562: T --> C

Gasteropelecus sternicla :

Char. 539: T --> C
Char. 556: C --> T
Char. 577: T --> C
Char. 604: C --> T
Char. 649: C --> T
Char. 655: C --> T
Char. 685: C --> T
Char. 691: C --> T
Char. 749: C --> T
Char. 811: A --> G
Char. 836: T --> C
Char. 856: T --> C
Char. 866: T --> C
Char. 934: C --> T
Char. 943: T --> C
Char. 952: T --> A
Char. 970: T --> C
Char. 973: T --> A
Char. 985: T --> C
Char. 991: C --> T
Char. 1012: C --> T
Char. 1084: T --> C
Char. 1088: A --> T
Char. 1153: C --> T
Char. 1162: C --> T
Char. 1183: A --> T
Char. 1202: T --> G
Char. 1210: C --> T
Char. 1219: A --> C
Char. 1243: T --> A
Char. 1264: A --> T
Char. 1289: C --> T
Char. 1295: C --> T
Char. 1315: C --> A
Char. 1336: A --> C
Char. 1345: T --> C
Char. 1384: C --> A
Char. 1466: G --> A
Char. 1467: C --> T
Char. 1471: A --> T
Char. 1486: C --> T
Char. 1489: T --> A
Char. 1495: C --> A
Char. 1501: A --> G
Char. 2353: G --> C
Char. 2368: G --> A
Char. 2395: T --> C
Char. 2458: C --> T
Char. 2480: A --> T
Char. 2481: A --> G
Char. 2599: C --> A
Char. 2626: T --> C
Char. 2662: G --> A
Char. 2701: G --> A
Char. 2707: G --> A
Char. 2710: G --> A
Char. 2731: T --> C
Char. 2782: T --> A
Char. 2852: G --> A
Char. 3475: C --> T
Char. 3479: G --> A
Char. 3533: T --> G
Char. 3553: T --> C

Char. 3554: G --> A
Char. 3556: T --> C
Char. 3646: T --> G
Char. 3649: C --> T
Char. 3670: A --> T
Char. 3739: A --> G
Char. 3793: G --> A
Char. 3811: G --> A
Char. 3880: G --> A
Char. 3934: G --> A
Char. 3970: T --> C
Char. 3979: C --> A
Char. 4097: C --> G
Char. 4142: C --> T
Char. 4144: T --> A
Char. 4168: C --> A
Char. 4189: A --> G
Char. 4196: C --> T
Char. 4201: G --> A
Char. 4267: C --> T
Char. 4279: C --> T
Char. 4294: C --> T
Char. 4349: C --> A
Char. 4377: C --> T
Char. 4420: G --> A
Char. 4489: G --> A
Char. 4496: T --> A
Char. 4537: G --> A
Char. 4546: G --> A
Char. 4585: C --> T
Char. 4603: C --> T
Char. 5001: G --> A
Char. 6254: A --> T
Char. 6346: C --> A
Char. 6382: A --> T
Char. 6408: G --> A
Char. 6423: A --> G
Char. 6443: A --> C
Char. 6492: T --> C
Char. 6512: T --> A

Nannocharax_machadoi :

Char. 560: G --> A
Char. 563: A --> C
Char. 583: T --> C
Char. 682: C --> T
Char. 700: C --> T
Char. 760: A --> G
Char. 793: A --> G
Char. 832: C --> T
Char. 859: A --> C
Char. 871: C --> A
Char. 916: C --> T
Char. 922: C --> T
Char. 946: A --> C
Char. 952: C --> T
Char. 985: C --> T
Char. 1009: C --> T
Char. 1060: T --> C
Char. 1063: A --> G
Char. 1078: T --> A
Char. 1081: T --> G
Char. 1090: C --> T
Char. 1156: C --> T
Char. 1159: C --> T
Char. 1234: A --> T
Char. 1271: C --> T
Char. 1298: G --> A
Char. 1327: A --> G
Char. 1345: A --> G
Char. 1369: C --> A
Char. 1402: T --> C
Char. 1435: C --> T
Char. 1445: A --> G
Char. 1462: C --> T
Char. 1486: C --> T
Char. 6205: C --> T
Char. 6432: A --> G
Char. 6515: A --> G

Nannocharax_multifasciatus :

Char. 664: C --> T
Char. 709: C --> T
Char. 754: A --> G
Char. 775: A --> G

Char. 784: C --> A
Char. 802: A --> G
Char. 823: T --> G
Char. 853: C --> T
Char. 913: A --> G
Char. 979: C --> T
Char. 988: T --> G
Char. 1027: C --> T
Char. 1066: T --> C
Char. 1069: A --> G
Char. 1088: C --> A
Char. 1093: T --> C
Char. 1136: C --> T
Char. 1180: C --> T
Char. 1306: C --> T
Char. 1336: C --> T
Char. 1363: C --> T
Char. 1441: A --> G
Char. 1474: C --> T
Char. 6255: A --> T
Char. 6326: T --> C
Char. 6450: A --> T
Char. 6462: G --> A
Char. 6493: A --> T

Nannocharax_ocellicauda :

Char. 523: T --> C
Char. 538: C --> T
Char. 539: C --> T
Char. 565: T --> C
Char. 580: T --> C
Char. 589: C --> T
Char. 592: C --> T
Char. 643: C --> T
Char. 664: C --> T
Char. 697: C --> T
Char. 703: C --> T
Char. 706: A --> C
Char. 715: C --> T
Char. 724: C --> T
Char. 757: A --> G
Char. 808: C --> T
Char. 838: A --> T
Char. 841: A --> C
Char. 856: A --> T
Char. 865: C --> A
Char. 866: C --> T
Char. 895: C --> A
Char. 901: C --> T
Char. 928: C --> A
Char. 931: C --> T
Char. 934: C --> T
Char. 937: C --> T
Char. 941: C --> T
Char. 949: C --> T
Char. 964: A --> T
Char. 967: A --> T
Char. 979: C --> T
Char. 980: C --> T
Char. 985: C --> T
Char. 997: A --> T
Char. 1000: A --> T
Char. 1012: A --> C
Char. 1015: T --> A
Char. 1019: C --> T
Char. 1045: A --> C
Char. 1081: C --> T
Char. 1091: T --> C
Char. 1093: A --> T
Char. 1105: C --> A
Char. 1111: C --> T
Char. 1129: A --> T
Char. 1135: A --> C
Char. 1165: C --> T
Char. 1172: C --> T
Char. 1213: A --> C
Char. 1225: C --> T
Char. 1276: C --> T
Char. 1283: C --> T
Char. 1307: C --> T
Char. 1318: A --> C
Char. 1333: C --> A
Char. 1336: C --> T
Char. 1339: C --> T

Char. 1346: A --> C
Char. 1357: C --> T
Char. 1384: A --> C
Char. 1396: A --> T
Char. 1402: C --> T
Char. 1417: C --> T
Char. 1426: C --> T
Char. 1432: C --> T
Char. 1435: C --> T
Char. 1438: C --> T
Char. 1453: A --> C
Char. 1465: C --> T
Char. 1483: T --> A
Char. 1531: C --> T
Char. 1555: C --> T
Char. 1585: C --> A
Char. 1594: A --> G
Char. 1630: T --> A
Char. 1702: A --> G
Char. 1705: A --> T
Char. 1726: C --> T
Char. 1738: A --> C
Char. 1798: A --> G
Char. 1810: A --> T
Char. 1813: T --> C
Char. 1849: C --> A
Char. 1855: T --> C
Char. 1876: A --> G
Char. 1912: C --> T
Char. 1933: T --> C
Char. 1936: A --> G
Char. 1945: T --> C
Char. 1954: C --> T
Char. 1978: G --> C
Char. 1996: T --> C
Char. 1999: A --> G
Char. 2014: T --> A
Char. 2017: A --> G
Char. 2023: C --> A
Char. 2053: C --> T
Char. 2059: A --> C
Char. 2107: T --> C
Char. 2128: A --> T
Char. 2137: A --> C
Char. 2143: A --> G
Char. 2146: T --> C
Char. 2239: T --> A
Char. 2725: A --> C
Char. 2761: G --> A
Char. 5912: A --> T
Char. 5936: A --> G
Char. 6002: T --> C
Char. 6205: C --> T
Char. 6254: T --> A
Char. 6292: A --> G
Char. 6298: A --> G
Char. 6325: G --> T
Char. 6329: C --> T
Char. 6331: A --> T
Char. 6345: A --> T
Char. 6357: A --> G
Char. 6365: C --> A
Char. 6408: G --> A
Char. 6415: A --> C
Char. 6417: G --> A
Char. 6432: A --> G
Char. 6456: C --> T
Char. 6461: G --> A
Char. 6468: C --> T
Char. 6485: A --> T

Nannocharax_uniocellatus :

Char. 535: A --> T
Char. 556: A --> C
Char. 586: A --> T
Char. 588: C --> T
Char. 601: T --> G
Char. 604: C --> T
Char. 616: A --> G
Char. 655: C --> T
Char. 661: T --> C
Char. 667: A --> T
Char. 679: C --> T
Char. 703: C --> G

Char. 712: C --> T
Char. 740: A --> G
Char. 823: T --> G
Char. 871: C --> T
Char. 877: A --> G
Char. 880: C --> T
Char. 901: C --> T
Char. 907: C --> T
Char. 919: A --> G
Char. 967: A --> T
Char. 1000: G --> C
Char. 1006: T --> C
Char. 1015: T --> C
Char. 1036: C --> T
Char. 1118: T --> C
Char. 1135: A --> G
Char. 1141: A --> G
Char. 1172: C --> T
Char. 1228: C --> T
Char. 1234: A --> G
Char. 1252: A --> T
Char. 1261: A --> C
Char. 1276: C --> T
Char. 1318: A --> C
Char. 1320: T --> C
Char. 1324: A --> G
Char. 1339: C --> T
Char. 1345: A --> C
Char. 1346: A --> G
Char. 1347: T --> C
Char. 1387: C --> T
Char. 1408: A --> T
Char. 1426: C --> T
Char. 1441: A --> C
Char. 1450: A --> C
Char. 1454: G --> A
Char. 1485: A --> G
Char. 1490: C --> T
Char. 1496: A --> G
Char. 1497: G --> C
Char. 2185: C --> T
Char. 2313: C --> T
Char. 2510: C --> T
Char. 2629: C --> T
Char. 2878: T --> C
Char. 6168: T --> C
Char. 6207: C --> T
Char. 6245: G --> A
Char. 6292: A --> G
Char. 6294: T --> C
Char. 6299: G --> A
Char. 6300: A --> G
Char. 6357: A --> G
Char. 6361: G --> A
Char. 6376: T --> C
Char. 6377: C --> T
Char. 6403: C --> A
Char. 6444: T --> A
Char. 6496: A --> T
Char. 6512: C --> T
Hemigrammopetersius_barnardi :
Char. 524: C --> T
Char. 526: A --> G
Char. 589: T --> A
Char. 631: T --> C
Char. 655: C --> T
Char. 697: C --> T
Char. 772: C --> T
Char. 1519: T --> C
Char. 1537: C --> T
Char. 1540: A --> T
Char. 1543: A --> G
Char. 1555: C --> G
Char. 1576: C --> T
Char. 1597: T --> C
Char. 1609: C --> T
Char. 1648: C --> T
Char. 1660: T --> C
Char. 1681: A --> G
Char. 1684: T --> C
Char. 1693: T --> C
Char. 1732: C --> T
Char. 1735: A --> G

Char. 1771: T --> C
Char. 1772: C --> T
Char. 1793: T --> C
Char. 1795: A --> G
Char. 1804: C --> T
Char. 1819: A --> G
Char. 1825: C --> A
Char. 1864: T --> C
Char. 1885: T --> A
Char. 1930: C --> T
Char. 1966: T --> C
Char. 1972: A --> G
Char. 1975: A --> G
Char. 1984: T --> C
Char. 2005: T --> C
Char. 2014: T --> C
Char. 2024: C --> T
Char. 2062: C --> A
Char. 2071: A --> G
Char. 2074: C --> A
Char. 2080: T --> C
Char. 2086: T --> C
Char. 2128: T --> C
Char. 2134: A --> G
Char. 2146: C --> T
Char. 2152: C --> T
Char. 2159: T --> C
Char. 2203: T --> A
Char. 2284: A --> G
Char. 2312: T --> C
Char. 2314: G --> T
Char. 2329: G --> A
Char. 2461: C --> T
Char. 2662: G --> A
Char. 2857: G --> T
Char. 4717: C --> A
Char. 5133: T --> G
Char. 5238: T --> C
Char. 5406: T --> C
Char. 5460: A --> T
Char. 5607: A --> G
Char. 5664: C --> T
Char. 5716: A --> G
Char. 6254: T --> C
Char. 6347: A --> C
Char. 6426: T --> C
Char. 6444: C --> A
Char. 6467: T --> C
Char. 6575: A --> C
Hemiodus_gracilis :
Char. 1564: C --> T
Char. 1591: A --> G
Char. 1609: T --> C
Char. 1630: C --> T
Char. 1633: T --> C
Char. 1642: T --> C
Char. 1684: T --> C
Char. 1687: A --> G
Char. 1720: T --> C
Char. 1723: A --> G
Char. 1789: T --> G
Char. 1798: A --> G
Char. 1807: T --> C
Char. 1828: C --> T
Char. 1843: T --> C
Char. 1846: C --> T
Char. 1861: A --> G
Char. 1867: T --> A
Char. 1888: T --> C
Char. 1912: C --> T
Char. 1936: A --> T
Hemiodus_unimaculatus :
Char. 550: C --> T
Char. 553: C --> T
Char. 571: C --> T
Char. 586: A --> G
Char. 592: C --> T
Char. 688: A --> C
Char. 703: C --> A
Char. 712: A --> G
Char. 739: C --> T
Char. 746: C --> T
Char. 748: G --> A

Char. 751: A --> T
Char. 766: C --> T
Char. 811: A --> G
Char. 814: G --> A
Char. 853: T --> C
Char. 862: C --> T
Char. 863: A --> G
Char. 886: C --> T
Char. 911: C --> T
Char. 931: C --> T
Char. 952: A --> T
Char. 961: A --> C
Char. 985: C --> T
Char. 1003: A --> G
Char. 1015: T --> C
Char. 1024: G --> T
Char. 1030: C --> T
Char. 1054: C --> A
Char. 1084: T --> C
Char. 1090: T --> A
Char. 1138: A --> C
Char. 1165: C --> T
Char. 1189: C --> T
Char. 1192: C --> T
Char. 1201: A --> G
Char. 1211: C --> T
Char. 1234: A --> G
Char. 1243: C --> T
Char. 1252: A --> T
Char. 1255: A --> G
Char. 1258: C --> T
Char. 1318: T --> A
Char. 1333: C --> T
Char. 1339: C --> T
Char. 1345: A --> C
Char. 1348: C --> T
Char. 1363: C --> T
Char. 1370: C --> T
Char. 1375: C --> T
Char. 1381: C --> T
Char. 1430: A --> G
Char. 1432: T --> C
Char. 1455: T --> C
Char. 1459: C --> T
Char. 1462: C --> T
Char. 1483: C --> G
Char. 1498: C --> T
Char. 1513: C --> T
Char. 1525: T --> C
Char. 1600: C --> T
Char. 1684: C --> T
Char. 1729: T --> A
Char. 1741: C --> T
Char. 1750: A --> G
Char. 1753: T --> C
Char. 1756: C --> T
Char. 1774: C --> T
Char. 1777: C --> T
Char. 1816: A --> G
Char. 1840: T --> C
Char. 1846: C --> T
Char. 1852: C --> A
Char. 1876: A --> G
Char. 1903: C --> T
Char. 1906: C --> T
Char. 1924: C --> T
Char. 1934: C --> T
Char. 1939: G --> A
Char. 1972: G --> A
Char. 1981: C --> T
Char. 1987: C --> T
Char. 2014: G --> A
Char. 2020: C --> T
Char. 2023: A --> T
Char. 2059: C --> T
Char. 2062: T --> G
Char. 2068: T --> C
Char. 2071: C --> T
Char. 2080: C --> T
Char. 2128: A --> T
Char. 2209: T --> A
Char. 2230: G --> A
Char. 2287: C --> T

Char. 2347: T --> C
Char. 2518: A --> G
Char. 2758: A --> G
Char. 4878: G --> A
Char. 4881: T --> C
Char. 4884: G --> C
Char. 4905: A --> T
Char. 4944: C --> T
Char. 4980: T --> C
Char. 5100: A --> T
Char. 5145: C --> G
Char. 5214: C --> A
Char. 5350: G --> T
Char. 5372: G --> A
Char. 5402: G --> C
Char. 5538: A --> G
Char. 5554: G --> C
Char. 5595: T --> C
Char. 5616: A --> T
Char. 5634: A --> C
Char. 6168: T --> C
Char. 6205: T --> C
Char. 6210: C --> T
Char. 6294: C --> A

Monostichodus_lootensi :

Char. 532: A --> G
Char. 533: C --> T
Char. 538: T --> C
Char. 550: C --> T
Char. 553: C --> T
Char. 586: A --> T
Char. 588: C --> T
Char. 620: A --> G
Char. 631: C --> T
Char. 643: C --> T
Char. 661: T --> C
Char. 670: T --> C
Char. 673: C --> T
Char. 679: C --> T
Char. 700: C --> T
Char. 736: A --> C
Char. 739: A --> T
Char. 746: C --> T
Char. 751: A --> C
Char. 763: A --> G
Char. 784: C --> G
Char. 787: C --> G
Char. 802: A --> G
Char. 865: C --> A
Char. 868: A --> G
Char. 871: C --> A
Char. 886: A --> C
Char. 940: C --> T
Char. 943: CT --> A
Char. 950: G --> A
Char. 955: T --> C
Char. 1042: C --> T
Char. 1081: C --> G
Char. 1086: T --> C
Char. 1087: CT --> G
Char. 1102: C --> A
Char. 1135: A --> C
Char. 1141: A --> T
Char. 1171: A --> G
Char. 1186: A --> C
Char. 1192: T --> C
Char. 1195: A --> G
Char. 1213: A --> T
Char. 1243: A --> C
Char. 1250: C --> T
Char. 1262: C --> T
Char. 1288: C --> T
Char. 1297: A --> C
Char. 1306: C --> T
Char. 1314: C --> T
Char. 1324: A --> G
Char. 1333: C --> T
Char. 1339: C --> T
Char. 1345: A --> T
Char. 1346: A --> C
Char. 1351: C --> A
Char. 1360: A --> G
Char. 1381: C --> T

Char. 1384: A --> G
Char. 1411: C --> A
Char. 1417: C --> T
Char. 1429: T --> C
Char. 1438: C --> T
Char. 1444: A --> G
Char. 1445: A --> G
Char. 1455: T --> C
Char. 1478: C --> A
Char. 1483: C --> T
Char. 1493: G --> A
Char. 1495: A --> T
Char. 1496: G --> A
Char. 1498: C --> T
Char. 1507: A --> G
Char. 1510: C --> T
Char. 1546: T --> A
Char. 1555: T --> C
Char. 1585: C --> T
Char. 1597: C --> T
Char. 1624: T --> C
Char. 1627: A --> T
Char. 1639: A --> C
Char. 1663: T --> C
Char. 1669: A --> G
Char. 1672: A --> G
Char. 1678: T --> C
Char. 1681: G --> A
Char. 1696: A --> G
Char. 1732: C --> T
Char. 1738: A --> T
Char. 1741: C --> T
Char. 1753: T --> C
Char. 1756: C --> T
Char. 1759: A --> G
Char. 1765: C --> T
Char. 1771: T --> C
Char. 1777: A --> G
Char. 1793: C --> T
Char. 1825: A --> C
Char. 1831: A --> T
Char. 1840: T --> C
Char. 1865: C --> A
Char. 1873: T --> C
Char. 1876: A --> C
Char. 1885: C --> A
Char. 1942: A --> T
Char. 1951: T --> C
Char. 1972: A --> G
Char. 1993: A --> G
Char. 1996: T --> C
Char. 2014: T --> C
Char. 2038: A --> T
Char. 2080: A --> T
Char. 2110: C --> T
Char. 2137: A --> T
Char. 2149: C --> G
Char. 2159: T --> C
Char. 2425: G --> T
Char. 2507: C --> T
Char. 2602: T --> G
Char. 2737: C --> G
Char. 2765: C --> T
Char. 2878: T --> C

Monostichodus_mesmaekersi :

Char. 524: C --> T
Char. 529: A --> C
Char. 533: C --> T
Char. 538: T --> C
Char. 539: T --> C
Char. 553: C --> T
Char. 556: T --> A
Char. 565: T --> C
Char. 586: A --> T
Char. 588: C --> T
Char. 610: T --> C
Char. 628: A --> T
Char. 643: C --> T
Char. 670: T --> C
Char. 676: C --> AG
Char. 679: C --> T
Char. 736: A --> C
Char. 740: G --> A

Char. 745: C --> T
Char. 746: C --> T
Char. 751: T --> C
Char. 766: C --> T
Char. 772: T --> C
Char. 784: C --> AG
Char. 787: A --> G
Char. 826: T --> C
Char. 838: A --> T
Char. 865: C --> A
Char. 868: A --> G
Char. 895: T --> C
Char. 904: T --> C
Char. 911: T --> C
Char. 913: A --> C
Char. 919: C --> A
Char. 940: C --> T
Char. 950: G --> A
Char. 960: G --> C
Char. 971: T --> C
Char. 991: T --> C
Char. 1003: A --> C
Char. 1015: A --> C
Char. 1027: A --> T
Char. 1072: T --> C
Char. 1073: T --> C
Char. 1075: A --> T
Char. 1081: C --> G
Char. 1086: T --> C
Char. 1087: C --> AG
Char. 1106: G --> A
Char. 1114: T --> A
Char. 1135: G --> C
Char. 1136: C --> T
Char. 1165: C --> T
Char. 1180: A --> C
Char. 1183: C --> GT
Char. 1186: A --> C
Char. 1195: A --> G
Char. 1213: A --> T
Char. 1229: C --> T
Char. 1243: A --> C
Char. 1261: C --> A
Char. 1268: T --> C
Char. 1279: A --> CT
Char. 1283: T --> C
Char. 1303: A --> C
Char. 1309: C --> A
Char. 1314: C --> T
Char. 1318: C --> A
Char. 1324: A --> G
Char. 1345: A --> CT
Char. 1346: A --> C
Char. 1351: C --> A
Char. 1358: T --> A
Char. 1360: A --> G
Char. 1381: C --> T
Char. 1384: A --> G
Char. 1417: A --> GT
Char. 1429: T --> C
Char. 1438: C --> T
Char. 1441: C --> A
Char. 1444: A --> G
Char. 1445: A --> G
Char. 1453: C --> A
Char. 1455: T --> C
Char. 1462: C --> T
Char. 1471: T --> C
Char. 1478: C --> A
Char. 1480: A --> C
Char. 1493: G --> A
Char. 1495: G --> T
Char. 1498: C --> T
Char. 1507: A --> G

Henochilus_wheatlandii :

Char. 586: A --> T
Char. 625: T --> C
Char. 781: T --> C
Char. 883: A --> G
Char. 889: C --> T
Char. 969: C --> T
Char. 973: A --> G
Char. 1156: C --> T

Char. 1204: A --> G
Char. 1211: C --> T
Char. 1249: A --> G
Char. 1252: A --> G
Char. 1271: C --> T
Char. 1303: C --> T
Char. 1307: C --> T
Char. 1372: A --> G
Char. 1378: A --> G
Char. 1384: C --> T
Char. 2226: G --> C
Char. 2329: G --> A
Char. 3478: C --> T
Char. 3490: T --> C
Char. 3595: C --> G
Char. 3596: A --> G
Char. 3982: C --> T
Char. 4276: T --> G
Char. 4277: G --> A
Char. 4294: C --> G
Char. 4320: G --> A
Char. 4321: T --> A
Char. 4365: G --> A
Char. 4367: T --> G
Char. 4372: T --> G
Char. 4397: A --> C
Char. 4408: G --> C
Char. 4442: G --> C
Char. 4509: G --> C
Char. 4525: G --> A
Char. 4536: T --> C
Char. 4545: A --> G
Char. 4553: C --> G
Char. 4573: C --> T
Char. 4601: T --> C
Char. 4602: G --> A
Char. 4611: G --> A
Char. 4612: C --> T
Char. 4617: A --> G
Char. 4647: C --> A
Char. 4649: A --> C
Char. 4668: A --> G
Char. 4682: A --> C
Char. 4683: A --> T
Char. 4709: G --> C
Char. 4715: A --> G
Char. 4723: G --> A
Char. 4747: A --> G
Char. 4748: T --> G
Char. 4749: T --> A
Char. 4750: C --> A
Char. 4752: T --> G
Char. 4788: C --> T
Char. 4792: T --> A
Char. 4794: C --> G
Char. 4796: T --> A
Char. 5298: C --> T
Char. 6118: C --> T
Char. 6254: T --> C
Char. 6441: C --> T
Char. 6519: C --> G
Char. 6520: G --> A
Char. 6521: A --> T
Char. 6522: T --> C
Char. 6523: C --> G
Hepsetus_odoe :
Char. 526: A --> T
Char. 532: A --> C
Char. 544: A --> T
Char. 571: C --> T
Char. 580: C --> A
Char. 613: T --> C
Char. 632: A --> C
Char. 646: A --> C
Char. 703: C --> GT
Char. 769: A --> CT
Char. 787: A --> C
Char. 796: A --> C
Char. 836: C --> T
Char. 838: C --> AG
Char. 841: C --> A
Char. 844: A --> T
Char. 871: A --> C

Char. 950: G --> A
Char. 955: C --> T
Char. 968: G --> C
Char. 969: C --> T
Char. 1019: C --> A
Char. 1021: A --> CT
Char. 1078: A --> CT
Char. 1088: A --> C
Char. 1105: A --> CT
Char. 1109: T --> G
Char. 1124: T --> G
Char. 1174: A --> CT
Char. 1255: A --> C
Char. 1286: G --> A
Char. 1297: A --> C
Char. 1298: G --> CT
Char. 1299: T --> C
Char. 1309: A --> CT
Char. 1315: C --> A
Char. 1326: A --> G
Char. 1329: G --> C
Char. 1330: A --> C
Char. 1357: C --> A
Char. 1360: A --> CT
Char. 1369: C --> A
Char. 1385: G --> CT
Char. 1426: A --> C
Char. 1441: C --> AG
Char. 1445: A --> G
Char. 1447: C --> A
Char. 1469: C --> AG
Char. 1474: C --> T
Char. 1481: C --> T
Char. 1502: T --> C
Char. 1504: A --> G
Char. 1525: T --> C
Char. 1531: C --> A
Char. 1570: T --> C
Char. 1579: G --> A
Char. 1591: C --> A
Char. 1606: C --> A
Char. 1621: T --> C
Char. 1633: T --> C
Char. 1642: T --> C
Char. 1648: C --> T
Char. 1663: T --> C
Char. 1666: A --> G
Char. 1669: A --> C
Char. 1705: T --> A
Char. 1712: C --> T
Char. 1796: C --> T
Char. 1810: G --> C
Char. 1811: G --> A
Char. 1828: A --> G
Char. 1834: T --> C
Char. 1840: T --> C
Char. 1849: C --> G
Char. 1855: T --> G
Char. 1858: C --> G
Char. 1861: A --> CT
Char. 1867: T --> A
Char. 1876: A --> T
Char. 1891: C --> T
Char. 1906: C --> G
Char. 1912: C --> T
Char. 1921: G --> T
Char. 1933: T --> C
Char. 1939: G --> T
Char. 1948: T --> C
Char. 1951: T --> C
Char. 1960: T --> C
Char. 1966: T --> C
Char. 1988: T --> A
Char. 1993: A --> G
Char. 2008: A --> T
Char. 2074: C --> T
Char. 2110: C --> T
Char. 2113: C --> T
Char. 2119: T --> C
Char. 2128: A --> C
Char. 2239: A --> C
Char. 2287: T --> A
Char. 2293: C --> A

Char. 2332: T --> C
Char. 2344: G --> A
Char. 2368: A --> G
Char. 2371: T --> C
Char. 2380: T --> G
Char. 2407: G --> C
Char. 2437: A --> G
Char. 2441: T --> A
Char. 2458: C --> T
Char. 2476: A --> G
Char. 2500: G --> C
Char. 2503: T --> C
Char. 2509: G --> T
Char. 2591: C --> T
Char. 2631: C --> A
Char. 2698: C --> T
Char. 2725: A --> G
Char. 2776: G --> A
Char. 2779: C --> T
Char. 2818: C --> T
Char. 2842: A --> G
Char. 2881: T --> G
Char. 2885: C --> T
Char. 4723: G --> A
Char. 4737: G --> A
Char. 4749: T --> C
Char. 4761: A --> C
Char. 4767: C --> T
Char. 4785: T --> C
Char. 4791: C --> G
Char. 4802: G --> A
Char. 4821: C --> T
Char. 4836: A --> G
Char. 4840: A --> C
Char. 4851: G --> A
Char. 4857: G --> T
Char. 4858: C --> T
Char. 4860: G --> A
Char. 4920: G --> A
Char. 4926: C --> T
Char. 4938: T --> A
Char. 4944: T --> C
Char. 4971: G --> A
Char. 4983: G --> A
Char. 4994: G --> C
Char. 5019: G --> T
Char. 5031: C --> T
Char. 5049: C --> T
Char. 5050: T --> A
Char. 5062: C --> A
Char. 5097: A --> T
Char. 5100: A --> C
Char. 5115: C --> T
Char. 5127: C --> T
Char. 5151: C --> T
Char. 5160: A --> T
Char. 5178: G --> A
Char. 5194: C --> T
Char. 5202: C --> T
Char. 5208: A --> G
Char. 5210: T --> C
Char. 5212: C --> A
Char. 5227: G --> T
Char. 5247: C --> T
Char. 5250: C --> T
Char. 5268: T --> G
Char. 5278: T --> C
Char. 5299: C --> T
Char. 5313: G --> A
Char. 5343: C --> A
Char. 5346: C --> T
Char. 5353: C --> A
Char. 5362: G --> A
Char. 5389: C --> G
Char. 5394: A --> G
Char. 5401: A --> G
Char. 5442: C --> T
Char. 5454: G --> A
Char. 5461: C --> T
Char. 5466: T --> G
Char. 5470: A --> G
Char. 5478: A --> T
Char. 5481: G --> A

Char. 5496: T --> A
Char. 5502: T --> A
Char. 5517: C --> T
Char. 5550: A --> C
Char. 5551: G --> A
Char. 5555: C --> A
Char. 5604: T --> C
Char. 5634: G --> A
Char. 5664: C --> T
Char. 5670: C --> T
Char. 5688: C --> T
Char. 6209: C --> T
Char. 6299: A --> G
Char. 6309: T --> C
Char. 6314: C --> A
Char. 6316: A --> CT
Char. 6317: A --> T
Char. 6336: T --> C
Char. 6346: C --> A
Char. 6357: A --> G
Char. 6362: C --> A
Char. 6363: A --> C
Char. 6379: A --> C
Char. 6434: G --> A
Char. 6446: C --> A
Char. 6447: C --> T
Char. 6449: T --> C
Char. 6450: A --> T
Char. 6454: A --> G
Char. 6461: G --> A
Char. 6467: T --> C
Char. 6468: C --> T
Char. 6475: T --> C
Char. 6508: C --> A
Char. 6514: A --> C
Char. 6515: A --> C

Hoplias_aimara :

Char. 532: C --> T
Char. 533: C --> T
Char. 562: C --> T
Char. 586: A --> G
Char. 613: C --> T
Char. 616: A --> G
Char. 676: C --> T
Char. 691: C --> T
Char. 706: C --> T
Char. 814: T --> C
Char. 820: C --> T
Char. 913: A --> G
Char. 925: C --> T
Char. 928: C --> T
Char. 949: T --> C
Char. 956: A --> G
Char. 1000: A --> G
Char. 1033: A --> C
Char. 1057: C --> T
Char. 1096: A --> G
Char. 1112: C --> T
Char. 1138: A --> G
Char. 1147: A --> G
Char. 1158: C --> T
Char. 1161: C --> T
Char. 1168: C --> T
Char. 2214: G --> C
Char. 2229: A --> G
Char. 2252: C --> T
Char. 2425: G --> A
Char. 2563: G --> A
Char. 2847: G --> C
Char. 2849: C --> A
Char. 2851: A --> G
Char. 6317: A --> G
Char. 6346: T --> C
Char. 6347: T --> C
Char. 6374: A --> G
Char. 6439: A --> C
Char. 6457: T --> C
Char. 6589: T --> C

Hoplias_microlepis :

Char. 535: A --> G
Char. 541: A --> G
Char. 556: C --> T
Char. 565: C --> T

Char. 634: T --> C
Char. 661: C --> T
Char. 673: C --> T
Char. 697: C --> T
Char. 721: A --> G
Char. 733: T --> A
Char. 742: C --> T
Char. 778: C --> T
Char. 784: C --> T
Char. 847: C --> T
Char. 880: C --> T
Char. 895: C --> T
Char. 943: C --> T
Char. 950: G --> A
Char. 973: C --> T
Char. 976: C --> T
Char. 982: A --> T
Char. 1003: C --> T
Char. 1018: C --> A
Char. 1021: A --> T
Char. 1030: C --> T
Char. 1060: C --> T
Char. 1063: C --> T
Char. 1100: G --> A
Char. 1114: A --> G
Char. 1139: G --> A
Char. 6161: G --> A
Char. 6295: T --> C
Char. 6314: T --> C
Char. 6348: A --> G
Char. 6357: A --> G
Char. 6417: G --> A
Char. 6425: G --> A
Char. 6444: T --> C
Char. 6502: T --> C

Hydrocynus_brevis :

Char. 1519: T --> C
Char. 1579: G --> A
Char. 1582: A --> G
Char. 1588: G --> A
Char. 1663: C --> T
Char. 1669: T --> C
Char. 1696: G --> A
Char. 1732: C --> T
Char. 1777: A --> G
Char. 1795: C --> T
Char. 1804: C --> T
Char. 1825: C --> A
Char. 1861: A --> G
Char. 1864: T --> C
Char. 1879: C --> G

Hydrocynus_forskahlii :

Char. 532: A --> G
Char. 553: C --> T
Char. 562: C --> T
Char. 1042: T --> C
Char. 1429: C --> T
Char. 1441: A --> G
Char. 1490: C --> T
Char. 1513: C --> A
Char. 1519: T --> G
Char. 1520: G --> C
Char. 1522: A --> T
Char. 1537: C --> T
Char. 1546: G --> A
Char. 1582: A --> T
Char. 1585: C --> T
Char. 1603: G --> C
Char. 1633: T --> C
Char. 1669: T --> G
Char. 1702: A --> G
Char. 1720: T --> C
Char. 1729: C --> T
Char. 1768: A --> G
Char. 1798: A --> G
Char. 1828: A --> G
Char. 1858: T --> C
Char. 1888: T --> C
Char. 1894: A --> G
Char. 1972: A --> G
Char. 1975: A --> G
Char. 2017: A --> G
Char. 2047: G --> T

Char. 2062: C --> G
Char. 2068: T --> C
Char. 2074: C --> A
Char. 2125: T --> C
Char. 2134: A --> G
Char. 5364: C --> T
Char. 6244: A --> G
Char. 6254: C --> A
Char. 6292: A --> G
Char. 6317: A --> G
Char. 6322: A --> G
Char. 6328: A --> G
Char. 6344: A --> T
Char. 6450: A --> G
Char. 6498: A --> G
Char. 6516: G --> A

Hydrocynus_goliath :

Char. 529: C --> A
Char. 547: A --> G
Char. 587: G --> A
Char. 628: C --> A
Char. 634: T --> C
Char. 646: A --> G
Char. 655: C --> T
Char. 743: C --> T
Char. 763: A --> G
Char. 772: C --> T
Char. 775: G --> A
Char. 814: C --> T
Char. 826: T --> C
Char. 829: C --> A
Char. 835: A --> G
Char. 854: A --> G
Char. 889: C --> A
Char. 904: C --> T
Char. 922: C --> T
Char. 938: C --> T
Char. 961: C --> A
Char. 964: C --> T
Char. 970: C --> T
Char. 988: C --> A
Char. 1085: C --> T
Char. 1096: T --> A
Char. 1101: G --> C
Char. 1108: A --> G
Char. 1129: C --> A
Char. 1132: C --> T
Char. 1135: T --> C
Char. 1147: A --> G
Char. 1153: T --> C
Char. 1156: T --> C
Char. 1165: C --> T
Char. 1171: C --> T
Char. 1183: A --> T
Char. 1204: A --> G
Char. 1210: C --> T
Char. 1211: C --> T
Char. 1267: C --> A
Char. 1270: C --> A
Char. 1307: C --> T
Char. 1312: C --> T
Char. 1346: C --> T
Char. 1363: C --> T
Char. 1402: T --> C
Char. 1405: A --> G
Char. 1426: A --> C
Char. 1462: C --> T
Char. 1480: C --> G
Char. 1495: T --> C
Char. 2788: T --> C
Char. 4749: T --> C
Char. 4950: G --> A
Char. 5466: T --> A
Char. 5637: T --> C
Char. 6194: A --> G
Char. 6308: G --> A
Char. 6374: A --> G
Char. 6413: C --> A
Char. 6433: T --> C
Char. 6436: G --> A
Char. 6440: C --> T
Char. 6441: C --> T
Char. 6496: T --> A

Char. 6497: T --> C
Char. 6509: A --> T

Hydrocynus_tanzaniae :

Char. 595: C --> T
Char. 604: T --> C
Char. 619: A --> G
Char. 622: A --> G
Char. 676: C --> T
Char. 697: C --> T
Char. 751: T --> C
Char. 787: G --> C
Char. 853: T --> C
Char. 988: C --> G
Char. 1033: A --> G
Char. 1087: A --> G
Char. 1099: T --> C
Char. 1108: A --> T
Char. 1177: T --> C
Char. 1183: A --> C
Char. 1240: C --> T
Char. 1255: C --> T
Char. 1258: A --> G
Char. 1264: A --> G
Char. 1288: C --> T
Char. 1291: T --> G
Char. 1315: C --> AG
Char. 1339: C --> T
Char. 1348: A --> G
Char. 1369: A --> G
Char. 1396: C --> T

Hydrolycus_scomberoides :

Char. 1519: A --> G
Char. 1546: T --> C
Char. 1585: T --> C
Char. 1588: A --> G
Char. 1598: C --> T
Char. 1621: C --> T
Char. 1642: C --> T
Char. 1703: C --> T
Char. 1705: A --> G
Char. 1712: C --> T
Char. 1723: T --> G
Char. 1735: G --> A
Char. 1759: A --> G
Char. 1765: C --> T
Char. 1792: C --> G
Char. 1819: A --> T
Char. 1828: A --> G
Char. 1831: A --> T
Char. 1849: T --> G
Char. 1861: A --> G
Char. 1892: C --> T
Char. 1933: T --> C
Char. 1951: T --> C
Char. 1954: T --> C
Char. 1960: C --> T
Char. 1972: G --> A
Char. 1999: A --> G
Char. 2005: C --> A
Char. 2032: A --> T
Char. 2044: A --> G
Char. 2047: A --> C
Char. 2068: T --> C
Char. 2074: G --> T
Char. 2083: G --> A
Char. 2086: C --> G
Char. 2092: A --> C
Char. 2104: A --> G
Char. 2113: A --> T
Char. 2147: C --> T
Char. 2149: T --> A
Char. 5797: T --> C
Char. 5869: T --> C
Char. 5901: T --> C
Char. 5906: A --> G
Char. 5909: A --> C
Char. 5929: G --> A

Hypomasticus_megalepis :

Char. 529: A --> C
Char. 535: A --> G
Char. 544: T --> C
Char. 547: A --> G
Char. 562: C --> T

Char. 571: C --> T
Char. 643: C --> T
Char. 668: A --> C
Char. 763: A --> G
Char. 772: C --> T
Char. 799: A --> G
Char. 808: C --> T
Char. 835: C --> A
Char. 850: A --> C
Char. 853: T --> C
Char. 864: C --> T
Char. 913: A --> G
Char. 937: C --> T
Char. 956: G --> A
Char. 991: C --> T
Char. 1018: A --> C
Char. 1054: A --> T
Char. 1081: A --> G
Char. 1096: A --> G
Char. 1099: A --> G
Char. 1103: C --> T
Char. 1120: A --> G
Char. 1123: C --> T
Char. 1129: C --> A
Char. 1135: C --> T
Char. 1153: C --> T
Char. 1225: C --> T
Char. 1237: A --> C
Char. 1255: A --> G
Char. 1294: A --> G
Char. 1306: A --> C
Char. 1349: A --> T
Char. 1355: T --> G
Char. 1356: T --> C
Char. 1370: C --> T
Char. 1385: A --> G
Char. 1386: T --> C
Char. 1429: C --> T
Char. 1471: C --> A
Char. 1481: C --> T
Char. 1489: C --> T
Char. 1496: G --> A
Char. 1549: T --> A
Char. 1565: C --> T
Char. 1591: C --> T
Char. 1603: A --> G
Char. 1624: T --> C
Char. 1633: T --> C
Char. 1636: C --> T
Char. 1681: A --> G
Char. 1703: T --> C
Char. 1738: A --> G
Char. 1756: C --> T
Char. 1765: C --> T
Char. 1777: C --> T
Char. 1801: C --> T
Char. 1849: A --> G
Char. 1865: T --> C
Char. 1879: T --> C
Char. 1888: T --> A
Char. 1892: C --> T
Char. 1924: T --> C
Char. 1942: T --> A
Char. 1987: C --> T
Char. 1990: A --> C
Char. 2008: A --> G
Char. 2065: A --> G
Char. 2074: A --> G
Char. 2077: T --> C
Char. 2087: C --> T
Char. 2110: T --> A
Char. 2143: A --> T
Char. 2147: C --> T
Char. 2214: G --> C
Char. 2257: G --> A
Char. 2284: A --> G
Char. 2287: C --> G
Char. 2341: A --> G
Char. 2644: A --> G
Char. 3607: A --> G
Char. 3679: C --> G
Char. 3754: G --> C
Char. 3781: T --> C

Char. 3853: G --> C
Char. 3882: T --> C
Char. 3946: C --> T
Char. 4303: A --> T
Char. 4321: C --> T
Char. 4332: T --> A
Char. 4347: A --> G
Char. 4384: T --> C
Char. 4510: C --> T
Char. 4737: G --> A
Char. 4773: T --> C
Char. 4788: C --> T
Char. 4854: A --> G
Char. 4980: A --> G
Char. 4995: T --> C
Char. 5346: C --> T
Char. 5370: A --> CT
Char. 5545: G --> A
Char. 5712: T --> C

Hypomasticus_mormyrops :

Char. 631: C --> T
Char. 691: C --> T
Char. 730: C --> T
Char. 778: C --> T
Char. 835: C --> T
Char. 950: G --> A
Char. 952: A --> G
Char. 1138: A --> G
Char. 1279: C --> T
Char. 1335: C --> T
Char. 1349: A --> G
Char. 1445: A --> G
Char. 1483: T --> C
Char. 1490: C --> T
Char. 1496: G --> A
Char. 2312: C --> G
Char. 4009: G --> A
Char. 4072: C --> T
Char. 4140: A --> C
Char. 4737: G --> A
Char. 4773: T --> C
Char. 4788: C --> T
Char. 4854: A --> G
Char. 4980: A --> G
Char. 4995: T --> C
Char. 5346: C --> T
Char. 5370: A --> CT
Char. 5545: G --> A
Char. 5712: T --> C

Hypomasticus_pachycheilus :

Char. 538: C --> T
Char. 544: T --> C
Char. 547: A --> G
Char. 550: C --> T
Char. 565: C --> A
Char. 577: C --> T
Char. 583: C --> T
Char. 604: T --> C
Char. 616: C --> T
Char. 640: C --> T
Char. 667: C --> T
Char. 673: C --> T
Char. 685: C --> T
Char. 709: C --> T
Char. 712: C --> T
Char. 742: T --> C
Char. 748: C --> T
Char. 757: T --> C
Char. 781: T --> C
Char. 845: G --> A
Char. 862: C --> T
Char. 863: A --> G
Char. 871: A --> T
Char. 874: A --> G
Char. 880: T --> C
Char. 886: C --> T
Char. 940: C --> T
Char. 964: C --> T
Char. 982: C --> T
Char. 988: T --> A
Char. 1003: C --> T
Char. 1019: C --> T
Char. 1075: T --> C

Char. 1123: C --> T
 Char. 1132: C --> T
 Char. 1136: C --> T
 Char. 1162: A --> G
 Char. 1201: A --> G
 Char. 1258: C --> T
 Char. 1285: A --> T
 Char. 1289: T --> C
 Char. 1300: C --> T
 Char. 1330: A --> G
 Char. 1342: C --> T
 Char. 1351: C --> A
 Char. 1366: A --> G
 Char. 1375: C --> T
 Char. 1385: C --> T
 Char. 1390: T --> C
 Char. 1393: A --> T
 Char. 1411: A --> G
 Char. 1459: C --> T
 Char. 1468: A --> G
 Char. 1501: A --> G
 Char. 2443: A --> G
 Char. 2749: T --> A
 Char. 3466: T --> C
 Char. 3514: T --> C
 Char. 3607: A --> C
 Char. 3718: C --> T
 Char. 3732: C --> T
 Char. 3808: G --> A
 Char. 3937: T --> C
 Char. 4132: T --> C
 Char. 4345: A --> G
 Char. 4375: A --> G
 Char. 4399: G --> A
 Char. 4470: T --> C
 Char. 4528: C --> T
 Char. 4614: T --> A
 Char. 4657: A --> G
 Char. 4755: G --> A
 Char. 4789: C --> T
 Char. 4992: T --> C
 Char. 5085: G --> A
 Char. 5136: C --> G
 Char. 5202: C --> T
 Char. 5211: G --> C
 Char. 5235: T --> C
 Char. 5349: C --> T
 Char. 5688: C --> T
 Ichthyoborus_besse :
 Char. 844: C --> T
 Char. 1183: T --> C
 Char. 1286: G --> A
 Char. 1294: A --> G
 Char. 2887: G --> A
 Char. 6254: A --> G
 Char. 6347: T --> C
 Char. 6415: A --> T
 Char. 6444: T --> C
 Char. 6497: T --> C
 Char. 6575: C --> A
 Ichthyoborus_ornatus :
 Char. 841: A --> G
 Char. 1246: C --> T
 Char. 6122: G --> A
 Char. 6168: T --> C
 Char. 6182: G --> A
 Char. 6229: A --> G
 Char. 6245: G --> A
 Char. 6247: T --> C
 Char. 6294: T --> C
 Char. 6346: T --> C
 Char. 6361: G --> A
 Char. 6381: C --> T
 Char. 6528: G --> A
 Char. 6541: T --> C
 Ichthyoelephas_longirostris :
 Char. 5095: C --> A
 Char. 5113: G --> A
 Char. 5169: C --> T
 Char. 5409: G --> C
 Char. 5525: G --> A
 Char. 5538: G --> A
 Char. 5542: G --> A
 Char. 5688: C --> T
 Ladigesia_roloffi :
 Char. 539: C --> T
 Char. 553: C --> T
 Char. 556: A --> T
 Char. 565: T --> C
 Char. 607: A --> T
 Char. 637: T --> C
 Char. 646: A --> G
 Char. 658: C --> T
 Char. 661: C --> T
 Char. 703: C --> T
 Char. 730: C --> T
 Char. 808: C --> T
 Char. 814: C --> T
 Char. 838: A --> G
 Char. 844: A --> T
 Char. 853: T --> C
 Char. 859: A --> G
 Char. 862: T --> C
 Char. 868: A --> C
 Char. 871: T --> C
 Char. 943: T --> C
 Char. 949: C --> T
 Char. 985: T --> C
 Char. 1003: C --> T
 Char. 1012: C --> T
 Char. 1033: A --> G
 Char. 1045: A --> T
 Char. 1075: T --> C
 Char. 1078: A --> G
 Char. 1081: T --> C
 Char. 1099: C --> A
 Char. 1108: A --> G
 Char. 1126: A --> C
 Char. 1135: T --> C
 Char. 1159: C --> A
 Char. 1165: C --> T
 Char. 1177: T --> A
 Char. 1268: C --> T
 Char. 1279: AC --> G
 Char. 1289: C --> T
 Char. 1306: A --> T
 Char. 1339: C --> T
 Char. 1355: C --> T
 Char. 1358: C --> T
 Char. 1369: C --> A
 Char. 1378: A --> C
 Char. 1381: C --> T
 Char. 1387: C --> T
 Char. 1432: T --> C
 Char. 1450: C --> T
 Char. 1474: C --> T
 Char. 1477: C --> T
 Char. 1490: C --> G
 Char. 1494: T --> C
 Char. 1519: T --> C
 Char. 1522: A --> G
 Char. 1585: C --> T
 Char. 1594: A --> G
 Char. 1603: G --> A
 Char. 1609: C --> T
 Char. 1618: T --> C
 Char. 1633: T --> G
 Char. 1648: C --> T
 Char. 1672: A --> G
 Char. 1675: A --> G
 Char. 1690: C --> G
 Char. 1771: T --> C
 Char. 1780: A --> C
 Char. 1828: A --> G
 Char. 1861: A --> G
 Char. 1870: C --> T
 Char. 1897: T --> C
 Char. 1909: T --> C
 Char. 1918: A --> T
 Char. 1930: C --> A
 Char. 1954: T --> C
 Char. 1978: C --> T
 Char. 1981: T --> C
 Char. 1993: A --> G
 Char. 2020: T --> A
 Char. 2038: CT --> A
 Char. 2050: C --> T
 Char. 2063: C --> T
 Char. 2074: C --> G
 Char. 2125: A --> C
 Char. 2149: CT --> G
 Char. 2152: C --> T
 Char. 2222: G --> A
 Char. 2225: G --> A
 Char. 2245: G --> A
 Char. 2299: C --> T
 Char. 2785: A --> T
 Char. 2812: A --> C
 Char. 4764: A --> T
 Char. 4803: T --> A
 Char. 4878: G --> A
 Char. 4905: A --> T
 Char. 4944: T --> A
 Char. 5060: C --> T
 Char. 5064: C --> T
 Char. 5152: G --> A
 Char. 5205: C --> G
 Char. 5214: C --> T
 Char. 5226: T --> A
 Char. 5313: A --> G
 Char. 5346: C --> T
 Char. 5401: A --> G
 Char. 5423: G --> A
 Char. 5564: C --> A
 Char. 5681: C --> A
 Char. 6254: T --> A
 Char. 6255: A --> C
 Char. 6353: T --> C
 Char. 6441: C --> T
 Char. 6477: A --> G
 Laemolyta_fernandezii :
 Char. 631: T --> C
 Char. 961: A --> G
 Char. 1222: T --> C
 Char. 1876: A --> G
 Laemolyta_garmani :
 Char. 1601: C --> T
 Char. 1771: C --> T
 Char. 1903: C --> T
 Char. 1975: A --> G
 Char. 2047: T --> A
 Char. 2080: C --> T
 Char. 2140: C --> T
 Laemolyta_proxima :
 Char. 880: T --> C
 Char. 1000: A --> G
 Char. 1129: C --> T
 Char. 1132: C --> T
 Char. 1201: A --> G
 Char. 1231: A --> T
 Char. 1369: C --> T
 Char. 1391: C --> T
 Char. 1423: C --> T
 Char. 1483: A --> T
 Char. 1852: A --> G
 Char. 2595: T --> A
 Char. 2854: C --> T
 Char. 3838: C --> T
 Lebiasina_astrigata :
 Char. 1555: C --> T
 Char. 1565: C --> T
 Char. 1570: C --> T
 Char. 1582: T --> G
 Char. 1630: T --> C
 Char. 1681: A --> G
 Char. 1711: C --> A
 Char. 1738: T --> C
 Char. 1744: CT --> G
 Char. 1759: A --> G
 Char. 1780: A --> T
 Char. 1798: G --> C
 Char. 1810: G --> A
 Char. 1822: G --> A
 Char. 1828: AC --> T
 Char. 1831: A --> G
 Char. 1852: A --> G
 Char. 1853: C --> T
 Char. 1858: T --> C
 Char. 1888: T --> A

Char. 1897: A --> T
Char. 1903: T --> C
Char. 1909: T --> A
Char. 1913: C --> T
Char. 1921: T --> A
Char. 1927: C --> T
Char. 1930: A --> C
Char. 1936: A --> T
Char. 1969: C --> T
Char. 1972: A --> G
Char. 1990: T --> C
Char. 1993: A --> G
Char. 2005: C --> T
Char. 2006: C --> T
Char. 2017: G --> A
Char. 2024: C --> T
Char. 2035: AT --> C
Char. 2044: T --> C
Char. 2045: C --> T
Char. 2053: A --> T
Char. 2054: C --> T
Char. 2063: C --> T
Char. 2086: A --> C
Char. 2089: AG --> C
Char. 2095: C --> T
Char. 2101: C --> T
Char. 2143: A --> T
Char. 6229: G --> C
Char. 6292: A --> T
Char. 6309: T --> C
Char. 6310: G --> A
Char. 6321: A --> C
Char. 6326: T --> C
Char. 6329: T --> C
Char. 6353: A --> T
Char. 6357: A --> G
Char. 6362: T --> A
Char. 6363: A --> C
Char. 6368: C --> A
Char. 6413: C --> T
Char. 6415: A --> T
Char. 6430: A --> T
Char. 6433: T --> C
Char. 6562: C --> T
Char. 6563: C --> T
Char. 6588: G --> A
Char. 6589: G --> A
Leporellus_vittatus :
Char. 533: C --> T
Char. 544: T --> A
Char. 559: A --> G
Char. 568: C --> A
Char. 574: C --> T
Char. 619: A --> G
Char. 632: A --> T
Char. 640: C --> T
Char. 655: C --> T
Char. 667: C --> T
Char. 676: C --> T
Char. 685: C --> T
Char. 691: C --> A
Char. 692: C --> T
Char. 700: T --> C
Char. 712: A --> T
Char. 739: A --> T
Char. 749: C --> T
Char. 752: C --> T
Char. 763: A --> G
Char. 778: C --> T
Char. 796: A --> C
Char. 808: C --> T
Char. 814: G --> C
Char. 838: C --> T
Char. 856: A --> G
Char. 860: G --> A
Char. 862: C --> T
Char. 863: A --> G
Char. 880: C --> T
Char. 904: C --> T
Char. 910: C --> T
Char. 911: C --> T
Char. 925: C --> T
Char. 928: C --> T

Char. 949: C --> T
Char. 950: G --> A
Char. 951: C --> T
Char. 952: A --> T
Char. 976: C --> T
Char. 979: C --> T
Char. 982: C --> T
Char. 997: A --> G
Char. 1015: T --> G
Char. 1018: A --> C
Char. 1019: C --> T
Char. 1030: C --> T
Char. 1036: C --> T
Char. 1069: A --> G
Char. 1078: A --> T
Char. 1081: A --> G
Char. 1084: T --> C
Char. 1085: A --> G
Char. 1086: T --> C
Char. 1087: T --> C
Char. 1091: C --> T
Char. 1097: A --> G
Char. 1105: A --> C
Char. 1111: A --> T
Char. 1114: A --> G
Char. 1118: C --> T
Char. 1123: C --> T
Char. 1126: C --> T
Char. 1138: A --> G
Char. 1147: C --> A
Char. 1150: A --> T
Char. 1165: C --> T
Char. 1172: C --> T
Char. 1204: A --> G
Char. 1285: A --> G
Char. 1324: A --> G
Char. 1346: A --> C
Char. 1348: C --> A
Char. 1351: C --> T
Char. 1358: C --> T
Char. 1381: C --> T
Char. 1421: G --> A
Char. 1432: T --> C
Char. 1456: C --> T
Char. 1459: C --> T
Char. 1466: G --> A
Char. 1474: C --> T
Char. 1490: C --> A
Char. 1491: T --> C
Char. 1501: A --> G
Char. 1504: A --> G
Char. 1531: C --> T
Char. 1540: A --> CT
Char. 1544: G --> A
Char. 1552: A --> G
Char. 1555: C --> T
Char. 1558: C --> T
Char. 1666: A --> G
Char. 1693: C --> T
Char. 1705: A --> G
Char. 1711: C --> A
Char. 1777: C --> AG
Char. 1789: T --> A
Char. 1796: C --> T
Char. 1810: A --> G
Char. 1837: A --> G
Char. 1849: A --> G
Char. 1858: C --> T
Char. 1909: C --> AG
Char. 1963: T --> C
Char. 1966: T --> C
Char. 1981: A --> G
Char. 2005: C --> T
Char. 2006: C --> T
Char. 2011: T --> C
Char. 2014: G --> C
Char. 2023: T --> AC
Char. 2038: A --> T
Char. 2050: C --> AG
Char. 2056: A --> T
Char. 2059: A --> T
Char. 2068: T --> C
Char. 2080: C --> T

Char. 2098: A --> CT
Char. 2110: C --> G
Char. 2140: C --> T
Char. 2159: C --> T
Char. 2203: T --> C
Char. 2236: C --> T
Char. 2275: C --> T
Char. 2482: C --> T
Char. 2602: C --> G
Char. 2633: C --> T
Char. 2674: C --> T
Char. 2764: C --> T
Char. 2863: A --> G
Char. 2866: G --> T
Char. 2893: G --> A
Char. 3469: A --> T
Char. 3475: C --> T
Char. 3524: G --> A
Char. 3532: G --> A
Char. 3533: G --> A
Char. 3607: A --> T
Char. 3649: C --> T
Char. 3691: G --> A
Char. 3694: C --> T
Char. 3727: G --> A
Char. 3773: G --> A
Char. 3774: C --> G
Char. 3787: A --> T
Char. 3845: C --> A
Char. 3970: T --> G
Char. 4021: A --> G
Char. 4216: G --> T
Char. 4306: C --> T
Char. 4420: G --> C
Char. 4516: C --> T
Char. 4546: G --> A
Char. 4615: C --> T
Char. 4711: G --> A
Char. 4764: A --> G
Char. 4776: G --> A
Char. 4779: G --> C
Char. 4806: C --> T
Char. 4925: C --> T
Char. 4941: C --> T
Char. 5031: C --> T
Char. 5046: C --> T
Char. 5061: C --> T
Char. 5076: G --> A
Char. 5247: T --> C
Char. 5310: C --> T
Char. 5330: G --> A
Char. 5414: G --> T
Char. 5470: A --> G
Char. 5601: C --> T
Char. 5607: C --> T
Char. 5619: A --> G
Char. 5634: G --> C
Char. 5670: A --> G
Char. 5677: G --> C
Char. 5700: G --> A
Leporinus_affinis :
Char. 565: A --> T
Char. 574: C --> T
Char. 586: C --> T
Char. 649: C --> T
Char. 694: A --> G
Char. 700: T --> C
Char. 784: AT --> C
Char. 796: A --> G
Char. 814: G --> A
Char. 845: A --> G
Char. 868: A --> G
Char. 964: C --> T
Char. 1108: A --> C
Char. 1112: C --> T
Char. 1147: C --> T
Char. 1171: C --> G
Char. 1172: C --> T
Char. 1177: A --> G
Char. 1192: T --> C
Char. 1237: A --> G
Char. 1262: C --> T
Char. 1360: A --> G

Char. 1372: A --> G
 Char. 1445: G --> A
 Char. 1684: T --> C
 Char. 1741: C --> T
 Char. 1807: C --> T
 Char. 1819: C --> T
 Char. 1843: T --> A
 Char. 1934: C --> T
 Char. 1939: G --> A
 Char. 1954: T --> C
 Char. 2062: C --> T
 Char. 2080: T --> C
 Char. 2131: A --> G
 Char. 3649: C --> T
 Leporinus_amblyrhynchus :
 Char. 553: C --> T
 Char. 559: A --> C
 Char. 571: C --> T
 Char. 637: T --> C
 Char. 679: C --> T
 Char. 814: G --> A
 Char. 838: C --> T
 Char. 886: C --> T
 Char. 949: C --> T
 Char. 985: C --> T
 Char. 1003: C --> T
 Char. 1006: C --> T
 Char. 1009: C --> T
 Char. 1019: C --> T
 Char. 1057: C --> T
 Char. 1060: C --> T
 Char. 1076: C --> T
 Char. 1112: C --> T
 Char. 1114: A --> G
 Char. 1129: C --> A
 Char. 1172: C --> T
 Char. 1174: A --> G
 Char. 1177: A --> T
 Char. 1189: T --> C
 Char. 1211: C --> T
 Char. 1213: A --> G
 Char. 1261: A --> T
 Char. 1267: C --> GT
 Char. 1288: A --> G
 Char. 1309: C --> T
 Char. 1315: C --> T
 Char. 1326: A --> G
 Char. 1342: C --> T
 Char. 1384: A --> T
 Char. 1441: C --> T
 Char. 1462: C --> T
 Char. 1463: T --> AG
 Char. 1549: T --> C
 Char. 1648: C --> T
 Char. 1699: C --> T
 Char. 1738: A --> C
 Char. 1786: T --> C
 Char. 1795: A --> G
 Char. 1867: A --> G
 Char. 1939: G --> A
 Char. 1960: T --> A
 Char. 1978: C --> T
 Char. 1990: A --> G
 Char. 2005: C --> T
 Char. 2014: C --> T
 Char. 2050: C --> T
 Char. 2053: A --> T
 Char. 2056: A --> G
 Char. 2077: T --> C
 Char. 2104: T --> A
 Char. 2137: A --> GT
 Char. 2158: C --> T
 Char. 6308: G --> A
 Char. 6326: T --> C
 Char. 6358: C --> T
 Char. 6413: C --> T
 Char. 6445: T --> A
 Char. 6484: C --> T
 Char. 6589: A --> G
 Leporinus_bleheri :
 Char. 550: C --> T
 Char. 685: C --> T
 Char. 715: T --> C
 Char. 778: C --> T
 Char. 781: T --> C
 Char. 883: A --> G
 Char. 910: C --> T
 Char. 946: A --> C
 Char. 956: G --> A
 Char. 970: C --> T
 Char. 994: A --> G
 Char. 1048: C --> T
 Char. 1063: A --> T
 Char. 1066: C --> T
 Char. 1072: C --> T
 Char. 1075: T --> C
 Char. 1078: A --> G
 Char. 1102: C --> T
 Char. 1165: C --> T
 Char. 1168: C --> T
 Char. 1258: T --> C
 Char. 1264: A --> G
 Char. 1330: A --> G
 Char. 1369: C --> T
 Char. 1375: C --> T
 Char. 1399: A --> G
 Char. 1414: A --> T
 Char. 1456: C --> A
 Char. 1465: T --> C
 Char. 1486: T --> C
 Char. 1546: T --> C
 Char. 1570: T --> C
 Char. 1774: A --> G
 Char. 1777: C --> T
 Char. 1825: T --> C
 Char. 1834: C --> T
 Char. 1879: G --> A
 Char. 1909: C --> T
 Char. 1960: G --> C
 Char. 1969: T --> C
 Char. 2035: T --> C
 Char. 2063: C --> T
 Char. 2335: C --> A
 Char. 2484: C --> A
 Char. 2614: C --> T
 Char. 2662: G --> C
 Char. 2674: C --> A
 Char. 2854: C --> T
 Char. 3736: G --> A
 Char. 3751: G --> A
 Char. 4147: G --> C
 Char. 4606: T --> C
 Char. 4643: T --> G
 Char. 4761: G --> A
 Char. 4836: A --> G
 Char. 4917: G --> A
 Char. 5058: C --> T
 Char. 5183: G --> A
 Char. 5208: A --> T
 Char. 5460: G --> A
 Char. 5718: G --> A
 Leporinus_copelandii :
 Char. 601: T --> C
 Char. 625: C --> T
 Char. 748: T --> C
 Char. 757: T --> C
 Char. 826: T --> C
 Char. 943: A --> T
 Char. 1075: T --> C
 Char. 1100: G --> A
 Char. 1129: C --> T
 Char. 1172: C --> T
 Char. 1288: A --> C
 Char. 1298: G --> A
 Char. 1336: A --> G
 Char. 1346: A --> G
 Char. 1399: A --> G
 Char. 2449: G --> A
 Char. 2482: C --> T
 Char. 3500: G --> A
 Char. 5362: G --> A
 Char. 5463: G --> T
 Char. 5706: C --> T
 Leporinus_desmotes :
 Char. 886: C --> T
 Leporinus_fasciatus :
 Char. 631: C --> T
 Char. 982: C --> AT
 Char. 1156: C --> T
 Char. 1222: C --> T
 Char. 1367: A --> G
 Char. 1669: A --> G
 Char. 1849: C --> T
 Char. 2020: C --> T
 Char. 2059: C --> T
 Char. 2065: A --> G
 Char. 2104: T --> C
 Char. 2143: A --> G
 Char. 3724: G --> AT
 Leporinus_friderici :
 Char. 2767: A --> G
 Leporinus_geminis :
 Char. 553: C --> T
 Char. 562: C --> T
 Char. 592: C --> T
 Char. 601: T --> C
 Char. 620: T --> C
 Char. 649: C --> T
 Char. 658: T --> C
 Char. 661: T --> C
 Char. 679: C --> T
 Char. 694: A --> G
 Char. 745: C --> T
 Char. 766: C --> T
 Char. 808: C --> T
 Char. 817: A --> T
 Char. 856: A --> G
 Char. 913: A --> G
 Char. 925: T --> C
 Char. 931: C --> T
 Char. 956: G --> A
 Char. 969: C --> T
 Char. 985: C --> T
 Char. 1012: C --> A
 Char. 1015: T --> A
 Char. 1018: A --> C
 Char. 1036: C --> T
 Char. 1042: C --> T
 Char. 1043: T --> C
 Char. 1081: A --> G
 Char. 1096: T --> C
 Char. 1105: A --> T
 Char. 1108: A --> T
 Char. 1112: C --> T
 Char. 1126: C --> T
 Char. 1135: C --> T
 Char. 1159: C --> T
 Char. 1168: C --> T
 Char. 1174: A --> G
 Char. 1216: T --> C
 Char. 1237: A --> T
 Char. 1312: C --> T
 Char. 1346: A --> C
 Char. 1360: A --> T
 Char. 1367: A --> G
 Char. 1370: C --> T
 Char. 1471: C --> T
 Char. 1495: A --> C
 Char. 1502: C --> T
 Char. 2252: C --> T
 Char. 2284: A --> G
 Char. 2539: T --> G
 Char. 2602: C --> T
 Char. 2755: A --> G
 Char. 3469: A --> T
 Char. 3652: G --> T
 Char. 3659: G --> A
 Char. 3766: G --> T
 Char. 4045: A --> G
 Char. 4338: C --> A
 Char. 4339: C --> A
 Char. 4645: T --> C
 Char. 4806: C --> G
 Char. 4837: C --> T
 Char. 5163: A --> G
 Char. 5364: A --> G
 Char. 5421: C --> T
 Char. 5522: T --> C
 Char. 5556: A --> G

Char. 5613: C --> T
Leporinus_jatuncochi :
Char. 964: C --> T
Char. 1012: C --> T
Char. 1100: G --> A
Char. 1465: T --> C
Char. 1504: A --> G
Char. 1717: G --> A
Char. 1799: G --> A
Char. 2134: A --> G
Char. 3508: A --> T
Leporinus_lacustris :
Char. 1213: A --> G
Char. 2608: T --> C
Char. 3500: G --> A
Char. 4192: C --> T
Char. 4345: A --> T
Char. 4612: C --> T
Char. 5004: C --> T
Leporinus_microphthalmus :
Char. 544: T --> C
Char. 604: T --> C
Char. 616: C --> T
Char. 628: T --> C
Char. 631: T --> C
Char. 634: A --> C
Char. 661: T --> C
Char. 664: C --> T
Char. 667: C --> T
Char. 712: C --> T
Char. 740: G --> A
Char. 748: C --> T
Char. 751: A --> C
Char. 763: A --> G
Char. 766: C --> T
Char. 784: A --> T
Char. 808: C --> T
Char. 841: C --> T
Char. 850: A --> C
Char. 856: A --> G
Char. 862: C --> T
Char. 865: A --> G
Char. 878: A --> G
Char. 931: C --> T
Char. 943: C --> T
Char. 946: A --> G
Char. 951: C --> T
Char. 968: G --> C
Char. 969: C --> T
Char. 1013: A --> C
Char. 1054: A --> C
Char. 1081: A --> G
Char. 1111: A --> C
Char. 1147: C --> A
Char. 1216: T --> C
Char. 1255: A --> G
Char. 1271: C --> T
Char. 1276: C --> T
Char. 1283: C --> T
Char. 1285: A --> G
Char. 1351: C --> T
Char. 1373: G --> A
Char. 1414: A --> C
Char. 1432: T --> C
Char. 1466: G --> A
Char. 1474: C --> T
Char. 1481: C --> T
Char. 1490: C --> A
Char. 1540: A --> T
Char. 1609: T --> C
Char. 1708: A --> G
Char. 1804: T --> C
Char. 1909: C --> T
Char. 1993: A --> G
Char. 2008: A --> G
Char. 2065: A --> G
Char. 2149: C --> A
Char. 6229: A --> G
Char. 6230: C --> T
Char. 6245: G --> A
Char. 6301: C --> T
Char. 6323: C --> T
Char. 6374: G --> A

Char. 6446: T --> C
Char. 6463: T --> C
Char. 6522: T --> C
Leporinus_octofasciatus :
Char. 685: C --> T
Char. 1057: C --> T
Char. 1129: C --> AT
Char. 1393: T --> C
Char. 1492: G --> A
Char. 1594: G --> A
Char. 1681: A --> G
Char. 1703: C --> T
Char. 1708: C --> A
Char. 1888: T --> C
Char. 6181: G --> A
Char. 6324: C --> T
Char. 6353: A --> G
Char. 6408: G --> A
Leporinus_paranensis :
Char. 547: A --> G
Char. 610: T --> C
Char. 622: A --> G
Char. 712: C --> A
Char. 745: C --> A
Char. 752: C --> T
Char. 814: G --> A
Char. 823: A --> G
Char. 865: G --> A
Char. 943: C --> T
Char. 973: A --> T
Char. 1012: C --> A
Char. 1147: C --> A
Char. 1261: A --> T
Char. 1304: C --> T
Char. 1326: A --> G
Char. 1369: C --> T
Char. 1378: A --> G
Char. 1426: C --> A
Char. 1453: C --> T
Char. 6359: A --> G
Leporinus_piau :
Char. 583: C --> AG
Char. 745: C --> T
Char. 886: C --> GT
Char. 1306: A --> G
Char. 1333: C --> AT
Char. 1369: C --> T
Char. 4216: G --> A
Char. 5598: G --> T
Leporinus_reticulatus :
Char. 538: C --> T
Char. 550: C --> T
Char. 577: C --> T
Char. 620: T --> C
Char. 661: C --> T
Char. 733: T --> C
Char. 766: C --> T
Char. 769: A --> G
Char. 811: A --> G
Char. 841: C --> T
Char. 850: A --> T
Char. 911: C --> T
Char. 1000: A --> G
Char. 1006: C --> T
Char. 1024: C --> T
Char. 1031: G --> A
Char. 1051: C --> T
Char. 1054: A --> G
Char. 1066: C --> T
Char. 1111: A --> C
Char. 1162: C --> T
Char. 1204: A --> G
Char. 1282: T --> C
Char. 1309: C --> T
Char. 1312: C --> T
Char. 1336: A --> G
Char. 1357: C --> A
Char. 1381: C --> T
Char. 1390: T --> C
Char. 1447: C --> T
Char. 1453: C --> T
Char. 1486: C --> T
Char. 1502: C --> T

Char. 1744: A --> G
Char. 1747: A --> G
Char. 1750: A --> G
Char. 1769: C --> T
Char. 1774: A --> G
Char. 1795: A --> G
Char. 1879: T --> G
Char. 1900: T --> C
Char. 1903: C --> T
Char. 1909: C --> T
Char. 1951: C --> T
Char. 1960: T --> A
Char. 1969: C --> T
Char. 2014: G --> A
Char. 2089: A --> G
Char. 2131: A --> G
Char. 2140: C --> T
Char. 2566: T --> C
Char. 2602: C --> T
Char. 2686: C --> A
Char. 3718: C --> T
Char. 4066: G --> C
Char. 4118: A --> G
Char. 4216: G --> T
Char. 4342: T --> C
Char. 4408: G --> A
Char. 4627: C --> T
Char. 4666: T --> C
Char. 4672: C --> T
Char. 4824: T --> C
Char. 4902: T --> C
Char. 4941: C --> T
Char. 5106: T --> C
Char. 5112: G --> A
Char. 5170: C --> A
Char. 5172: G --> A
Char. 5433: T --> C
Char. 5655: G --> C
Leporinus_steindachneri :
Char. 547: A --> GT
Char. 679: C --> T
Char. 733: T --> C
Char. 784: C --> T
Char. 976: C --> T
Char. 1003: T --> AC
Char. 1118: T --> AC
Char. 1141: A --> GC
Char. 1192: T --> C
Char. 1216: C --> T
Char. 1261: C --> G
Char. 1306: A --> G
Char. 1504: A --> G
Char. 1517: T --> C
Char. 2774: C --> T
Char. 5110: G --> C
Char. 5232: T --> C
Leporinus_taeiniatus :
Char. 667: C --> GT
Char. 952: A --> G
Char. 1018: A --> G
Char. 1216: T --> C
Char. 1237: A --> G
Char. 1243: C --> A
Char. 1318: A --> T
Char. 1351: C --> T
Char. 1370: T --> C
Char. 1489: C --> T
Char. 1633: T --> C
Char. 1636: C --> T
Char. 1651: A --> T
Char. 1714: A --> T
Char. 1717: G --> A
Char. 1720: T --> C
Char. 1849: G --> A
Char. 1873: C --> T
Char. 1921: T --> A
Char. 1930: C --> A
Char. 1933: T --> C
Char. 2014: C --> T
Char. 2041: C --> T
Char. 2110: C --> T
Char. 6210: T --> C
Char. 6412: A --> G

Char. 6456: C --> T
Leporinus_tigrinus :
Char. 553: C --> T
Char. 565: A --> G
Char. 577: C --> T
Char. 613: T --> C
Char. 628: T --> C
Char. 691: C --> A
Char. 700: T --> C
Char. 826: T --> C
Char. 832: C --> T
Char. 838: C --> A
Char. 859: A --> G
Char. 862: C --> T
Char. 886: C --> T
Char. 895: A --> G
Char. 913: A --> G
Char. 938: C --> T
Char. 943: C --> T
Char. 953: A --> G
Char. 973: A --> G
Char. 982: C --> T
Char. 1009: C --> T
Char. 1012: C --> T
Char. 1024: C --> T
Char. 1030: C --> T
Char. 1084: T --> C
Char. 1135: C --> A
Char. 1147: C --> A
Char. 1225: C --> T
Char. 1237: A --> T
Char. 1240: T --> C
Char. 1243: T --> C
Char. 1288: C --> A
Char. 1291: C --> T
Char. 1297: A --> G
Char. 1300: C --> T
Char. 1321: A --> G
Char. 1342: C --> T
Char. 1354: A --> G
Char. 1367: A --> G
Char. 1405: A --> G
Char. 1408: C --> T
Char. 1483: A --> T
Char. 1489: C --> T
Char. 1510: T --> C
Char. 1609: T --> C
Char. 1648: C --> T
Char. 1708: T --> C
Char. 1735: G --> A
Char. 1807: C --> A
Char. 1813: A --> C
Char. 1852: A --> G
Char. 1855: T --> C
Char. 1960: G --> A
Char. 2011: T --> C
Char. 2062: C --> T
Char. 2086: T --> C
Char. 2131: A --> G
Char. 2842: C --> T
Char. 3598: A --> T
Char. 3739: G --> A
Char. 3745: T --> G
Char. 3751: G --> C
Char. 3763: C --> T
Char. 4135: G --> A
Char. 4573: C --> T
Char. 4866: G --> A
Char. 5097: G --> C
Char. 5361: T --> C
Char. 5362: A --> T
Char. 5466: C --> T
Megaleporinus_trifasciatus :
Char. 847: T --> C
Char. 1201: A --> G
Char. 1588: A --> G
Char. 1702: G --> A
Char. 1822: A --> G
Char. 2053: C --> A
Char. 2143: A --> G
Char. 2716: G --> A
Leporinus_unitaeniatus :
Char. 1561: C --> T

Char. 1594: G --> A
Char. 1648: C --> T
Char. 1660: C --> T
Char. 1747: A --> T
Char. 1756: C --> T
Char. 1769: C --> T
Char. 1772: C --> T
Char. 1795: A --> T
Char. 1819: C --> G
Char. 1834: C --> A
Char. 1855: T --> C
Char. 1876: A --> G
Char. 1909: C --> T
Char. 1921: T --> C
Char. 1924: C --> T
Char. 1963: T --> C
Char. 2014: C --> T
Char. 2047: C --> T
Char. 2053: A --> T
Char. 2059: C --> A
Char. 2134: A --> G
Char. 2245: G --> A
Char. 3560: C --> T
Char. 3627: A --> C
Char. 3745: T --> G
Char. 3775: T --> C
Char. 3814: A --> G
Char. 3893: A --> G
Char. 3911: G --> A
Char. 4082: A --> C
Char. 4363: A --> G
Char. 4576: A --> T
Char. 4582: A --> G
Char. 4971: G --> A
Char. 5258: C --> T
Char. 5313: G --> A
Char. 5364: A --> G
Char. 5404: A --> G
Char. 5459: C --> T
Char. 5565: A --> T
Leporinus_venerei :
Char. 1822: A --> G
Char. 1996: T --> C
Char. 2884: A --> G
Char. 3724: G --> A
Char. 3826: A --> G
Char. 4362: G --> A
Char. 4441: C --> T
Char. 4508: C --> T
Char. 5136: C --> T
Char. 5151: C --> G
Char. 5583: A --> C
Char. 5686: A --> C
Megaleporinus_brinco :
Char. 587: G --> A
Char. 631: T --> C
Char. 661: T --> C
Char. 706: T --> C
Char. 760: A --> G
Char. 772: C --> T
Char. 805: A --> G
Char. 820: C --> T
Char. 844: T --> C
Char. 859: C --> T
Char. 860: G --> A
Char. 862: C --> T
Char. 886: G --> A
Char. 949: T --> C
Char. 976: T --> C
Char. 1012: C --> A
Char. 1024: C --> T
Char. 1036: T --> C
Char. 1063: A --> G
Char. 1103: C --> T
Char. 1138: A --> G
Char. 1141: C --> T
Char. 1153: C --> T
Char. 1159: C --> T
Char. 1175: G --> A
Char. 1192: T --> C
Char. 1195: A --> G
Char. 1240: T --> C
Char. 1243: T --> C

Char. 1286: G --> A
Char. 1346: A --> C
Char. 1387: A --> T
Char. 1411: A --> G
Char. 1483: T --> A
Char. 1501: G --> A
Char. 1543: A --> G
Char. 1564: T --> C
Char. 1567: A --> G
Char. 1570: T --> C
Char. 1684: T --> C
Char. 1732: C --> T
Char. 1750: A --> G
Char. 1792: C --> T
Char. 1816: A --> G
Char. 1870: G --> A
Char. 1873: C --> T
Char. 1907: C --> T
Char. 1909: C --> A
Char. 2014: C --> A
Char. 2035: C --> T
Char. 2054: C --> T
Char. 2080: T --> C
Char. 2086: C --> T
Char. 2134: A --> G
Char. 2149: A --> T
Char. 2236: C --> T
Char. 2252: C --> T
Char. 2763: A --> T
Char. 3889: C --> T
Char. 4228: G --> A
Char. 4363: G --> A
Char. 4384: T --> C
Char. 4520: A --> G
Char. 5715: G --> A
Char. 5718: G --> A
Megaleporinus_conirostris :
Char. 553: C --> T
Char. 612: A --> T
Char. 616: C --> T
Char. 712: C --> T
Char. 715: T --> C
Char. 751: A --> G
Char. 752: C --> T
Char. 775: A --> G
Char. 784: A --> G
Char. 871: A --> G
Char. 956: G --> A
Char. 973: AT --> G
Char. 1019: C --> T
Char. 1081: A --> G
Char. 1090: T --> A
Char. 1114: A --> G
Char. 1123: C --> T
Char. 1222: C --> T
Char. 1252: A --> CT
Char. 1264: A --> G
Char. 1282: C --> T
Char. 1289: T --> C
Char. 1291: T --> C
Char. 1298: G --> A
Char. 1329: G --> C
Char. 1391: C --> T
Char. 1455: T --> C
Char. 1513: T --> C
Char. 1517: T --> C
Char. 1531: A --> C
Char. 1822: A --> G
Char. 1969: T --> C
Char. 1978: G --> C
Char. 2056: A --> G
Char. 2107: C --> T
Char. 2161: A --> G
Char. 2890: T --> A
Char. 3880: G --> A
Char. 3925: C --> A
Char. 4063: C --> T
Char. 4461: G --> A
Char. 4637: C --> G
Megaleporinus_elongatus :
Char. 594: T --> C
Char. 613: T --> C
Char. 670: T --> C

Char. 763: A --> G
Char. 805: A --> G
Char. 814: G --> A
Char. 886: G --> A
Char. 931: C --> T
Char. 1048: C --> T
Char. 1101: C --> T
Char. 1129: C --> A
Char. 1252: A --> G
Char. 1309: C --> A
Char. 1312: C --> T
Char. 1346: A --> G
Char. 1366: A --> G
Char. 1433: A --> G
Char. 1483: T --> C
Char. 2530: C --> T
Char. 2659: A --> G
Char. 3844: C --> T

Megaleporinus_garmani :

Char. 525: T --> C
Char. 571: C --> T
Char. 622: A --> G
Char. 646: C --> T
Char. 652: C --> T
Char. 679: C --> T
Char. 685: A --> C
Char. 727: A --> G
Char. 796: A --> G
Char. 814: G --> A
Char. 859: C --> G
Char. 874: A --> G
Char. 988: C --> A
Char. 1177: C --> T
Char. 1213: A --> G
Char. 1252: A --> G
Char. 1282: C --> T
Char. 1288: C --> A
Char. 1289: T --> C
Char. 1315: C --> T
Char. 1351: C --> A
Char. 1363: C --> T
Char. 1373: G --> A
Char. 1417: A --> T
Char. 1438: T --> C
Char. 1441: C --> T
Char. 1454: G --> A
Char. 1549: T --> C
Char. 1556: C --> T
Char. 1576: A --> G
Char. 1603: A --> G
Char. 1609: T --> C
Char. 1699: C --> T
Char. 1702: G --> A
Char. 1753: T --> C
Char. 1804: T --> A
Char. 1843: T --> C
Char. 1879: C --> T
Char. 1972: A --> G
Char. 1975: A --> G
Char. 1978: G --> A
Char. 1985: A --> G
Char. 2024: C --> T
Char. 2050: C --> G
Char. 2053: C --> T
Char. 2089: A --> G
Char. 2119: T --> C
Char. 2128: A --> G
Char. 4180: C --> T
Char. 4469: G --> A
Char. 4806: C --> T

Megaleporinus_macrocephalus :

Char. 583: C --> G
Char. 586: C --> G
Char. 592: T --> C
Char. 646: C --> T
Char. 790: A --> G
Char. 811: A --> G
Char. 886: G --> A
Char. 946: A --> G
Char. 964: C --> T
Char. 1085: A --> T
Char. 1093: C --> GT
Char. 1147: C --> T

Char. 1346: A --> G
Char. 1684: T --> C
Char. 1703: T --> C
Char. 1873: C --> T
Char. 1876: A --> G
Char. 1930: A --> G
Char. 1939: G --> A
Char. 1969: T --> C
Char. 2086: C --> T
Char. 3565: G --> A
Char. 4111: G --> A
Char. 4435: G --> T
Char. 4887: C --> T
Char. 5463: G --> A

Megaleporinus_muyscorum :

Char. 523: C --> T
Char. 524: T --> C
Char. 539: C --> T
Char. 547: A --> G
Char. 550: C --> T
Char. 553: C --> T
Char. 565: C --> T
Char. 568: C --> T
Char. 604: T --> C
Char. 610: C --> T
Char. 694: A --> G
Char. 700: T --> C
Char. 706: T --> A
Char. 709: C --> T
Char. 739: C --> T
Char. 746: C --> T
Char. 751: A --> G
Char. 760: A --> G
Char. 766: C --> T
Char. 796: A --> G
Char. 805: A --> C
Char. 859: A --> T
Char. 862: C --> T
Char. 866: C --> T
Char. 901: C --> T
Char. 937: C --> T
Char. 940: C --> A
Char. 961: A --> G
Char. 970: C --> T
Char. 971: C --> A
Char. 1018: A --> C
Char. 1024: C --> T
Char. 1090: T --> C
Char. 1110: C --> T
Char. 1112: C --> T
Char. 1118: C --> T
Char. 1165: C --> T
Char. 1240: T --> C
Char. 1271: C --> T
Char. 1282: C --> T
Char. 1285: A --> C
Char. 1300: C --> G
Char. 1333: C --> T
Char. 1336: C --> T
Char. 1346: A --> C
Char. 1370: C --> T
Char. 1375: C --> G
Char. 1384: A --> C
Char. 1387: A --> G
Char. 1423: C --> T
Char. 1426: C --> A
Char. 1435: T --> C
Char. 1489: C --> A
Char. 1501: A --> T
Char. 1510: C --> T
Char. 1561: C --> T
Char. 1576: A --> G
Char. 1600: T --> C
Char. 1628: A --> G
Char. 1693: C --> T
Char. 1720: T --> C
Char. 1816: A --> G
Char. 1831: A --> G
Char. 1879: C --> A
Char. 1882: C --> T
Char. 1897: T --> C
Char. 1906: C --> G
Char. 1912: C --> T

Char. 2017: A --> G
Char. 2035: C --> G
Char. 2041: C --> T
Char. 2050: C --> T
Char. 2074: A --> G
Char. 2080: T --> A
Char. 2107: C --> T
Char. 2134: A --> G
Char. 2143: A --> T
Char. 2147: C --> T
Char. 2152: C --> T
Char. 2494: G --> A
Char. 2719: A --> G
Char. 2731: C --> T
Char. 3632: A --> G
Char. 3985: C --> T
Char. 4006: T --> C
Char. 4066: G --> A
Char. 4332: T --> A
Char. 4460: C --> A
Char. 4788: C --> T
Char. 4875: A --> G
Char. 4896: C --> T
Char. 4897: G --> A
Char. 5028: C --> T
Char. 5079: C --> T
Char. 5118: C --> T
Char. 5130: G --> A
Char. 5286: C --> T
Char. 5460: G --> C
Char. 5475: G --> T
Char. 5481: G --> A
Char. 5493: C --> C
Char. 5556: A --> G
Char. 5688: C --> T
Char. 6311: T --> C
Char. 6321: A --> G
Char. 6324: T --> C
Char. 6344: A --> G
Char. 6449: T --> C

Megaleporinus_obtusidens :

Char. 3607: A --> G
Char. 5454: G --> C

Megaleporinus_pivassu :

Char. 3560: C --> T
Char. 3904: C --> T
Char. 4522: A --> T
Char. 4645: T --> A
Char. 5475: G --> A

Megaleporinus_reinhardtii :

Char. 524: T --> C
Char. 529: G --> A
Char. 562: C --> T
Char. 583: A --> GC
Char. 625: T --> C
Char. 640: C --> T
Char. 692: T --> C
Char. 739: C --> T
Char. 982: A --> C
Char. 994: A --> G
Char. 1096: T --> C
Char. 1135: A --> GT
Char. 1162: C --> A
Char. 1216: C --> T
Char. 1333: C --> T
Char. 1385: C --> T
Char. 1478: G --> A
Char. 1552: A --> G
Char. 1654: G --> A
Char. 1669: A --> T
Char. 1678: T --> C
Char. 1681: G --> A
Char. 1703: C --> T
Char. 1706: A --> G
Char. 1711: C --> AT
Char. 1726: A --> G
Char. 1756: C --> T
Char. 1780: A --> C
Char. 1783: T --> C
Char. 1795: A --> T
Char. 1891: C --> T
Char. 1909: C --> T
Char. 1945: C --> T

Char. 1969: T --> C
Char. 2006: T --> C
Char. 2056: A --> G
Char. 2074: A --> G
Char. 2101: T --> C
Char. 2149: A --> G
Char. 2159: T --> C
Char. 3487: G --> C
Char. 3813: A --> C
Char. 4332: T --> A
Char. 4338: C --> A
Char. 5170: C --> G

Mesoborus_crocodilus :

Char. 580: T --> C
Char. 588: C --> T
Char. 613: T --> C
Char. 661: T --> C
Char. 676: G --> A
Char. 700: C --> T
Char. 739: A --> G
Char. 763: A --> G
Char. 766: T --> C
Char. 853: C --> T
Char. 854: C --> T
Char. 862: G --> A
Char. 919: A --> T
Char. 1000: A --> G
Char. 1102: C --> A
Char. 1118: T --> C
Char. 1153: C --> T
Char. 1159: C --> A
Char. 1162: C --> T
Char. 1189: C --> T
Char. 1198: A --> G
Char. 1207: C --> T
Char. 1229: T --> C
Char. 1234: A --> G
Char. 1264: A --> G
Char. 1271: T --> C
Char. 1306: C --> A
Char. 1385: T --> C
Char. 1465: C --> T
Char. 1471: T --> C
Char. 1519: T --> C
Char. 1555: T --> C
Char. 1630: T --> C
Char. 1639: A --> G
Char. 1771: C --> A
Char. 1813: T --> C
Char. 1840: T --> C
Char. 1852: C --> T
Char. 1861: C --> A
Char. 1900: C --> T
Char. 1913: C --> T
Char. 1972: A --> G
Char. 1978: G --> A
Char. 1993: A --> G
Char. 2029: G --> A
Char. 2086: T --> C
Char. 2125: T --> C
Char. 2305: C --> A
Char. 2591: T --> C
Char. 6331: A --> G
Char. 6410: A --> G
Char. 6452: A --> G
Char. 6471: T --> C
Char. 6494: C --> T
Char. 6508: T --> C

Metynnis_lippincottianus :

Char. 535: C --> T
Char. 556: C --> T
Char. 598: C --> T
Char. 625: C --> T
Char. 640: C --> T
Char. 643: C --> T
Char. 646: A --> G
Char. 661: C --> T
Char. 709: C --> T
Char. 724: A --> C
Char. 802: A --> G
Char. 808: C --> T
Char. 811: A --> G
Char. 898: A --> G

Char. 901: C --> T
Char. 1084: T --> C
Char. 1085: G --> A
Char. 1111: A --> C
Char. 1141: A --> C
Char. 1162: C --> A
Char. 1211: C --> T
Char. 1228: C --> T
Char. 1243: C --> T
Char. 1261: C --> T
Char. 1264: C --> T
Char. 1271: C --> T
Char. 1276: C --> T
Char. 1282: C --> T
Char. 1306: C --> T
Char. 1346: A --> G
Char. 1367: A --> G
Char. 1375: C --> T
Char. 1455: T --> C
Char. 1498: A --> G
Char. 4111: G --> A
Char. 4132: T --> C
Char. 4375: A --> C
Char. 4396: G --> A
Char. 4441: C --> T
Char. 4451: C --> G
Char. 4994: G --> C
Char. 5025: C --> G
Char. 5268: T --> A
Char. 5330: G --> A
Char. 5649: G --> A
Char. 6245: G --> A
Char. 6298: A --> G
Char. 6496: A --> G
Char. 6508: C --> T
Char. 6562: C --> T
Char. 6563: C --> T

Micralestes_acutidens :

Char. 2902: C --> T

Micralestes_humilis :

Char. 553: C --> T
Char. 628: T --> A
Char. 640: T --> C
Char. 709: C --> T
Char. 763: A --> G
Char. 778: T --> A
Char. 796: A --> G
Char. 838: A --> G
Char. 868: A --> G
Char. 898: T --> C
Char. 928: C --> T
Char. 937: C --> T
Char. 943: T --> C
Char. 997: A --> G
Char. 1019: T --> C
Char. 1048: C --> T
Char. 1066: T --> C
Char. 1072: T --> C
Char. 1075: T --> C
Char. 1076: T --> C
Char. 1103: C --> T
Char. 1228: C --> T
Char. 1267: C --> G
Char. 1282: T --> C
Char. 1289: C --> T
Char. 1303: T --> C
Char. 1306: A --> G
Char. 1327: A --> G
Char. 1357: T --> C
Char. 1393: T --> A
Char. 1435: T --> C
Char. 1468: C --> T
Char. 1477: C --> T
Char. 1594: A --> G
Char. 1603: G --> A
Char. 1744: A --> C
Char. 1780: A --> T
Char. 1786: T --> C
Char. 1798: A --> G
Char. 1858: T --> C
Char. 1897: T --> G
Char. 1966: T --> C
Char. 2002: C --> T

Char. 2023: T --> C
Char. 2035: CT --> G
Char. 2092: A --> C
Char. 2122: C --> T
Char. 2134: A --> G
Char. 2671: T --> A
Char. 2704: G --> A

Micralestes_lualabae :

Char. 1579: A --> G
Char. 1591: C --> T
Char. 1706: G --> A
Char. 1741: C --> T
Char. 1804: C --> A
Char. 1816: A --> G
Char. 1822: G --> A
Char. 1867: T --> C
Char. 1897: T --> A
Char. 1906: A --> T
Char. 1909: T --> C
Char. 1936: T --> AG
Char. 1945: C --> T
Char. 1963: T --> C
Char. 2008: A --> G
Char. 2011: T --> C
Char. 2041: T --> C
Char. 2045: C --> T
Char. 2053: T --> G
Char. 2059: C --> T
Char. 2092: A --> T
Char. 2119: T --> C
Char. 2225: G --> A
Char. 2368: G --> A

Micralestes_occidentalis :

Char. 649: A --> G
Char. 1027: C --> T
Char. 1489: T --> C
Char. 1513: T --> C
Char. 1519: T --> C
Char. 1558: C --> T
Char. 1570: C --> T
Char. 1598: C --> T
Char. 1600: T --> G
Char. 1606: A --> G
Char. 1612: T --> C
Char. 1615: A --> G
Char. 1651: A --> G
Char. 1654: A --> G
Char. 1657: T --> C
Char. 1660: C --> T
Char. 1669: T --> C
Char. 1678: T --> C
Char. 1681: G --> A
Char. 1687: G --> A
Char. 1690: C --> A
Char. 1696: A --> G
Char. 1708: C --> T
Char. 1714: T --> G
Char. 1723: C --> T
Char. 1735: A --> G
Char. 1738: A --> G
Char. 1753: T --> C
Char. 1756: T --> C
Char. 1759: G --> A
Char. 1762: T --> C
Char. 1765: C --> T
Char. 1771: T --> C
Char. 1774: C --> G
Char. 1789: T --> G
Char. 1813: A --> T
Char. 1825: C --> A
Char. 1828: A --> G
Char. 1843: A --> G
Char. 1846: C --> T
Char. 1861: A --> G
Char. 1876: A --> C
Char. 1879: A --> C
Char. 1891: T --> C
Char. 1892: T --> C
Char. 1912: T --> C
Char. 1927: C --> T
Char. 1939: T --> C
Char. 1960: T --> C
Char. 1981: T --> C

Char. 1996: T --> C
Char. 2006: C --> T
Char. 2014: C --> T
Char. 2017: A --> G
Char. 2044: T --> A
Char. 2047: A --> G
Char. 2050: C --> T
Char. 2056: C --> T
Char. 2063: C --> T
Char. 2080: T --> C
Char. 2101: T --> C
Char. 2107: T --> C
Char. 2110: T --> C
Char. 2113: T --> C
Char. 2125: A --> C
Char. 2137: A --> G
Char. 2149: T --> G
Char. 2312: C --> G
Char. 2326: C --> T
Char. 2425: G --> C
Char. 2484: C --> T
Char. 2752: C --> T
Char. 2788: T --> C
Char. 2875: C --> T
Char. 2902: C --> T

Microstomatichthyoborus_bashfor :

Char. 532: A --> GC
Char. 556: A --> G
Char. 676: G --> C
Char. 682: C --> T
Char. 781: C --> T
Char. 826: T --> C
Char. 836: C --> T
Char. 838: CT --> A
Char. 889: G --> A
Char. 901: C --> T
Char. 1012: A --> C
Char. 1117: C --> T
Char. 1124: G --> A
Char. 1180: C --> T
Char. 1186: A --> GT
Char. 1267: A --> GC
Char. 1279: C --> AT
Char. 1309: A --> G
Char. 1339: C --> T
Char. 1381: C --> T
Char. 1414: A --> C
Char. 1444: A --> G
Char. 2467: C --> T
Char. 5767: C --> T
Char. 6002: T --> C
Char. 6012: T --> C
Char. 6015: T --> C
Char. 6078: T --> C
Char. 6207: C --> T
Char. 6216: G --> A
Char. 6253: A --> G
Char. 6254: A --> C
Char. 6317: A --> T
Char. 6327: T --> C
Char. 6328: A --> G
Char. 6362: C --> T
Char. 6435: G --> A
Char. 6439: A --> T
Char. 6448: C --> T
Char. 6493: A --> G
Char. 6495: T --> A
Char. 6502: T --> C
Char. 6514: C --> T
Char. 6528: G --> A

Myloplus_schomburgkii :

Char. 1519: A --> G
Char. 1564: C --> T
Char. 1588: G --> A
Char. 1591: C --> T
Char. 1684: T --> C
Char. 1699: T --> C
Char. 1726: A --> G
Char. 1753: T --> C
Char. 1786: C --> T
Char. 1792: C --> T
Char. 1796: C --> T
Char. 1822: G --> A

Char. 1873: C --> T
Char. 1936: A --> G
Char. 1939: G --> A
Char. 1951: T --> C
Char. 1966: C --> T
Char. 1969: C --> T
Char. 1972: G --> A
Char. 1984: C --> T
Char. 1999: G --> A
Char. 2005: A --> T
Char. 2020: C --> T
Char. 2026: A --> G
Char. 2035: C --> T
Char. 2038: T --> C
Char. 2044: C --> T
Char. 2053: C --> A
Char. 2059: C --> T
Char. 2080: C --> T
Char. 5076: G --> A
Char. 5307: C --> T
Char. 5330: G --> A
Char. 5577: G --> A
Char. 6207: T --> C
Char. 6254: T --> C
Char. 6300: G --> A
Char. 6414: A --> G
Char. 6423: G --> A

Myloplus_rubripinnis :

Char. 703: C --> T
Char. 1111: A --> C
Char. 1270: C --> A
Char. 2481: A --> G

Mylossoma_duriventris :

Char. 1585: C --> T
Char. 1711: C --> T
Char. 1819: C --> T
Char. 1879: C --> T
Char. 2005: C --> T
Char. 6344: G --> A

Nannaethiops_bleheri :

Char. 620: G --> A
Char. 727: A --> G
Char. 739: A --> G
Char. 850: T --> C
Char. 1000: A --> C
Char. 1006: C --> T
Char. 1042: C --> T
Char. 1100: G --> A
Char. 1120: A --> G
Char. 1141: T --> C
Char. 1159: C --> T
Char. 1201: G --> A
Char. 1228: C --> T
Char. 1231: A --> G
Char. 1324: A --> G
Char. 1342: C --> T
Char. 1346: A --> G
Char. 1351: C --> A
Char. 1390: C --> T
Char. 1408: C --> A
Char. 1430: A --> G
Char. 1433: A --> G
Char. 1447: T --> C
Char. 2269: C --> T
Char. 2629: C --> T
Char. 2725: A --> C
Char. 5924: C --> T
Char. 6002: T --> C
Char. 6022: C --> A
Char. 6099: C --> T
Char. 6362: C --> G
Char. 6433: T --> C
Char. 6457: T --> C
Char. 6484: C --> T

Nannaethiops_gracilis :

Char. 616: A --> T
Char. 682: C --> T
Char. 685: C --> T
Char. 706: C --> T
Char. 752: C --> T
Char. 785: C --> T
Char. 835: T --> C
Char. 836: C --> T

Char. 844: C --> T
Char. 847: C --> G
Char. 856: A --> G
Char. 859: A --> G
Char. 866: C --> T
Char. 910: C --> T
Char. 934: C --> T
Char. 937: C --> T
Char. 958: A --> G
Char. 964: A --> C
Char. 970: C --> T
Char. 980: C --> T
Char. 1006: C --> T
Char. 1024: C --> T
Char. 1033: A --> G
Char. 1066: C --> T
Char. 1076: T --> C
Char. 1138: A --> T
Char. 1153: C --> T
Char. 1207: C --> T
Char. 1258: A --> G
Char. 1271: C --> T
Char. 1370: C --> T
Char. 1375: A --> G
Char. 1433: A --> G
Char. 1447: T --> C
Char. 1474: C --> T

Nannaethiops_unitaeniatus :

Char. 592: C --> T
Char. 679: C --> T
Char. 685: C --> T
Char. 688: A --> G
Char. 746: C --> T
Char. 754: A --> G
Char. 785: C --> T
Char. 836: C --> T
Char. 838: A --> G
Char. 856: A --> G
Char. 862: A --> G
Char. 916: C --> T
Char. 919: C --> T
Char. 946: A --> T
Char. 958: A --> G
Char. 1069: A --> G
Char. 1129: C --> T
Char. 1165: C --> T
Char. 1261: C --> T
Char. 1262: T --> C
Char. 1297: C --> T
Char. 1309: C --> T
Char. 1312: C --> T
Char. 1318: C --> T
Char. 1384: A --> G
Char. 1480: A --> C
Char. 2344: G --> A
Char. 2602: T --> G
Char. 2830: T --> C
Char. 5909: T --> C
Char. 5929: A --> G
Char. 6245: A --> G
Char. 6327: T --> G
Char. 6345: A --> G
Char. 6361: G --> A
Char. 6445: C --> A

Nannocharax_ansorgii :

Char. 524: C --> T
Char. 533: C --> T
Char. 544: C --> T
Char. 565: T --> C
Char. 583: T --> C
Char. 587: G --> A
Char. 628: A --> T
Char. 634: A --> G
Char. 664: C --> T
Char. 674: C --> T
Char. 676: C --> A
Char. 700: C --> T
Char. 712: C --> A
Char. 760: A --> G
Char. 775: A --> G
Char. 781: C --> T
Char. 784: C --> T
Char. 859: A --> T

Char. 862: A --> G
Char. 928: A --> T
Char. 946: A --> C
Char. 969: C --> G
Char. 970: C --> T
Char. 971: C --> A
Char. 1003: C --> T
Char. 1012: A --> T
Char. 1013: A --> G
Char. 1024: C --> T
Char. 1033: A --> T
Char. 1042: C --> T
Char. 1063: A --> T
Char. 1075: A --> T
Char. 1096: A --> T
Char. 1111: C --> T
Char. 1126: A --> C
Char. 1132: C --> T
Char. 1141: A --> T
Char. 1147: A --> C
Char. 1159: C --> G
Char. 1162: C --> A
Char. 1237: A --> G
Char. 1261: A --> T
Char. 1262: C --> T
Char. 1271: C --> T
Char. 1306: C --> T
Char. 1307: C --> A
Char. 1312: C --> T
Char. 1321: A --> T
Char. 1333: C --> T
Char. 1370: C --> T
Char. 1438: C --> T
Char. 1462: C --> T
Char. 1477: A --> T
Char. 1483: C --> T
Char. 2248: C --> T
Char. 2791: T --> G
Char. 2884: A --> G
Nannocharax_brevis :
Char. 532: A --> G
Char. 550: C --> T
Char. 583: T --> A
Char. 598: C --> T
Char. 604: C --> T
Char. 607: C --> A
Char. 625: C --> T
Char. 652: A --> C
Char. 667: A --> C
Char. 673: C --> T
Char. 674: C --> T
Char. 694: T --> C
Char. 700: C --> T
Char. 733: C --> T
Char. 746: C --> T
Char. 751: A --> T
Char. 754: A --> T
Char. 772: C --> T
Char. 775: A --> G
Char. 784: C --> A
Char. 880: C --> T
Char. 886: A --> T
Char. 925: T --> C
Char. 943: T --> G
Char. 955: T --> C
Char. 988: C --> T
Char. 991: C --> T
Char. 1003: C --> T
Char. 1066: C --> T
Char. 1087: C --> T
Char. 1100: G --> A
Char. 1101: C --> T
Char. 1114: A --> G
Char. 1118: T --> C
Char. 1123: C --> T
Char. 1132: C --> T
Char. 1210: C --> T
Char. 1211: C --> T
Char. 1240: C --> T
Char. 1286: G --> A
Char. 1298: G --> A
Char. 1306: A --> T
Char. 1324: A --> G

Char. 1355: C --> A
Char. 1358: C --> T
Char. 1385: T --> C
Char. 1433: A --> G
Char. 1459: T --> C
Char. 1462: C --> T
Char. 1468: A --> G
Char. 2240: A --> C
Char. 2335: T --> G
Char. 2389: C --> T
Char. 2461: C --> A
Char. 2632: A --> G
Char. 2773: A --> C
Char. 2848: C --> T

Nannocharax_elongatus :

Char. 523: T --> C
Char. 544: C --> A
Char. 568: A --> G
Char. 571: C --> T
Char. 595: T --> C
Char. 604: C --> T
Char. 613: C --> T
Char. 643: C --> T
Char. 685: C --> T
Char. 709: C --> T
Char. 712: C --> T
Char. 766: T --> C
Char. 832: C --> T
Char. 863: T --> A
Char. 961: T --> C
Char. 973: A --> T
Char. 1028: G --> A
Char. 1048: C --> T
Char. 1088: C --> A
Char. 1090: A --> T
Char. 1114: A --> G
Char. 1118: T --> C
Char. 1120: A --> T
Char. 1153: C --> T
Char. 1228: C --> T
Char. 1285: A --> G
Char. 1295: C --> T
Char. 1303: AC --> T
Char. 1345: A --> C
Char. 1358: C --> T
Char. 1369: C --> A
Char. 1390: C --> T
Char. 1438: C --> T
Char. 1471: T --> C
Char. 1483: T --> C
Char. 1498: T --> C
Char. 1618: T --> C
Char. 1621: T --> C
Char. 1687: A --> G
Char. 1708: T --> C
Char. 1828: A --> G
Char. 1840: T --> C
Char. 1858: A --> C
Char. 1927: C --> A
Char. 1960: A --> G
Char. 1972: A --> G
Char. 1984: A --> G
Char. 2024: T --> C
Char. 2044: A --> T
Char. 2053: C --> T
Char. 2119: T --> C
Char. 2128: A --> C
Char. 2131: A --> T
Char. 2143: A --> C
Char. 2335: T --> C
Char. 2479: C --> T
Char. 2488: G --> A
Char. 2827: C --> A

Nannocharax_fasciatus :

Char. 524: C --> T
Char. 562: C --> T
Char. 616: A --> G
Char. 622: T --> C
Char. 634: A --> G
Char. 673: C --> T
Char. 706: A --> C
Char. 715: C --> T
Char. 721: A --> G

Char. 784: C --> T
Char. 805: T --> C
Char. 901: C --> T
Char. 904: C --> T
Char. 964: A --> T
Char. 1000: A --> G
Char. 1088: C --> G
Char. 1126: A --> C
Char. 1231: A --> G
Char. 1234: A --> G
Char. 1258: A --> G
Char. 1276: C --> T
Char. 1291: A --> G
Char. 1363: C --> T
Char. 1378: A --> T
Char. 1468: A --> G
Char. 2646: T --> C

Nannocharax_occidentalis :

Char. 802: A --> G
Char. 814: T --> C
Char. 826: T --> C
Char. 835: T --> C
Char. 862: A --> G
Char. 886: C --> T
Char. 907: C --> T
Char. 925: T --> C
Char. 970: C --> T
Char. 1012: A --> T
Char. 1060: T --> C
Char. 1123: C --> T
Char. 1183: T --> G
Char. 1210: C --> T
Char. 1216: C --> T
Char. 1240: C --> T
Char. 1273: A --> G
Char. 1288: C --> T
Char. 1358: C --> T
Char. 1408: C --> T
Char. 1481: C --> A

Nannocharax_parvus :

Char. 2389: C --> T
Char. 2785: T --> C

Nannocharax_procatopus :

Char. 2251: C --> T
Char. 2488: G --> A
Char. 2881: A --> G

Nannocharax_rubrolabiatus :

Char. 613: C --> T
Char. 616: A --> C
Char. 652: A --> C
Char. 658: C --> T
Char. 691: C --> A
Char. 739: A --> G
Char. 748: C --> T
Char. 787: G --> A
Char. 850: C --> A
Char. 856: A --> G
Char. 889: A --> G
Char. 971: C --> T
Char. 1112: C --> T
Char. 1135: A --> G
Char. 1177: C --> T
Char. 1228: C --> T
Char. 1237: A --> T
Char. 1370: C --> T
Char. 1405: A --> G
Char. 1426: A --> A
Char. 1504: T --> C

Nannocharax_schoutedeni :

Char. 524: C --> A
Char. 526: A --> T
Char. 535: C --> T
Char. 538: C --> T
Char. 568: A --> C
Char. 580: T --> C
Char. 592: C --> T
Char. 619: A --> G
Char. 634: A --> T
Char. 640: C --> T
Char. 670: T --> C
Char. 715: C --> T
Char. 742: T --> C
Char. 781: C --> T

Char. 787: T --> C
Char. 796: A --> C
Char. 805: T --> C
Char. 808: C --> T
Char. 826: T --> C
Char. 844: C --> A
Char. 850: C --> G
Char. 859: A --> G
Char. 871: T --> A
Char. 895: C --> T
Char. 898: C --> A
Char. 904: C --> T
Char. 943: C --> A
Char. 952: C --> T
Char. 955: T --> C
Char. 956: G --> A
Char. 963: C --> T
Char. 1019: C --> T
Char. 1036: C --> T
Char. 1063: A --> G
Char. 1072: C --> T
Char. 1078: C --> T
Char. 1087: C --> T
Char. 1088: C --> T
Char. 1091: T --> C
Char. 1124: T --> A
Char. 1129: A --> C
Char. 1141: A --> G
Char. 1175: G --> A
Char. 1177: A --> T
Char. 1180: C --> A
Char. 1192: C --> T
Char. 1211: C --> T
Char. 1216: C --> T
Char. 1222: C --> T
Char. 1234: A --> G
Char. 1237: A --> C
Char. 1267: A --> C
Char. 1275: T --> C
Char. 1288: C --> A
Char. 1293: T --> C
Char. 1306: A --> C
Char. 1309: A --> T
Char. 1329: G --> C
Char. 1339: C --> T
Char. 1342: A --> T
Char. 1345: A --> G
Char. 1369: C --> T
Char. 1378: A --> C
Char. 1385: T --> C
Char. 1387: T --> C
Char. 1391: C --> T
Char. 1402: C --> T
Char. 1459: T --> C
Char. 1468: A --> T
Char. 1474: C --> T
Char. 1481: C --> T
Char. 1525: T --> C
Char. 1597: T --> AC
Char. 1600: A --> GT
Char. 1669: A --> GC
Char. 1705: A --> CT
Char. 1729: A --> CT
Char. 1774: A --> CT
Char. 1780: C --> T
Char. 1804: C --> T
Char. 1810: A --> GC
Char. 1843: A --> G
Char. 1855: T --> C
Char. 1879: T --> A
Char. 1969: C --> T
Char. 2038: T --> A
Char. 2071: A --> CT
Char. 6130: A --> G
Char. 6152: C --> T
Char. 6153: T --> C
Char. 6155: T --> C
Char. 6161: G --> A
Char. 6163: A --> G
Char. 6168: T --> C
Char. 6294: T --> C
Char. 6310: G --> T
Char. 6314: C --> A

Char. 6322: C --> A
Char. 6323: C --> T
Char. 6325: G --> T
Char. 6326: T --> A
Char. 6342: A --> T
Char. 6348: A --> G
Char. 6356: A --> T
Char. 6406: G --> A
Char. 6407: G --> A
Char. 6408: G --> T
Char. 6417: G --> A
Char. 6420: C --> T
Char. 6423: A --> G
Char. 6426: T --> C
Char. 6434: G --> A
Char. 6445: A --> T
Char. 6447: C --> A
Char. 6449: T --> C
Char. 6450: A --> T
Char. 6458: A --> C
Char. 6493: A --> T
Char. 6497: T --> C
Char. 6502: T --> C
Char. 6513: A --> G
Char. 6567: C --> A
Char. 6573: C --> T
Nannopetersius_ansorgii :
Char. 664: C --> T
Char. 676: C --> T
Char. 808: C --> T
Char. 961: C --> T
Char. 1012: C --> T
Char. 1019: C --> GT
Char. 1030: C --> T
Char. 1090: T --> AC
Char. 1097: A --> G
Char. 1129: C --> T
Char. 1135: T --> C
Char. 1252: G --> A
Char. 1459: G --> A
Char. 1582: A --> G
Char. 1588: G --> A
Char. 1666: G --> A
Char. 1708: G --> A
Char. 1777: C --> T
Char. 1780: A --> C
Char. 1846: T --> C
Char. 1849: C --> T
Char. 1859: G --> A
Char. 1885: T --> C
Char. 1912: C --> T
Char. 1993: A --> G
Char. 2002: C --> T
Char. 2023: T --> C
Char. 2095: C --> T
Char. 2131: G --> A
Char. 2134: A --> G
Char. 2484: C --> T
Char. 2664: C --> T
Char. 2788: T --> C
Char. 4845: C --> T
Char. 5187: G --> T
Char. 5536: G --> C
Char. 5564: C --> T
Char. 6221: A --> C
Char. 6254: C --> T
Char. 6290: C --> T
Char. 6295: A --> C
Char. 6333: A --> T
Char. 6383: G --> A
Char. 6461: G --> A
Char. 6510: A --> T
Char. 6511: T --> A
Char. 6575: AT --> C
Nannopetersius_mutambuei :
Char. 1534: G --> A
Char. 1579: A --> G
Char. 1588: G --> A
Char. 1612: C --> T
Char. 1676: A --> G
Char. 1678: C --> A
Char. 1753: T --> C
Char. 1777: C --> T

Char. 1990: A --> G
Char. 2032: A --> G
Char. 2065: A --> G
Char. 2155: A --> G
Char. 2237: A --> G
Char. 2260: C --> T
Char. 2623: C --> T
Neolebias_ansorgii :
Char. 553: C --> T
Char. 563: A --> G
Char. 586: A --> CT
Char. 604: C --> T
Char. 658: C --> T
Char. 661: T --> C
Char. 667: A --> T
Char. 694: T --> GC
Char. 745: C --> A
Char. 766: T --> C
Char. 817: A --> C
Char. 836: C --> T
Char. 847: C --> A
Char. 856: A --> T
Char. 859: A --> GC
Char. 886: A --> C
Char. 982: A --> G
Char. 988: A --> CT
Char. 991: T --> C
Char. 1000: A --> C
Char. 1018: C --> GT
Char. 1019: C --> T
Char. 1036: C --> T
Char. 1054: C --> A
Char. 1109: T --> G
Char. 1112: C --> T
Char. 1118: T --> C
Char. 1216: C --> T
Char. 1300: C --> T
Char. 1333: C --> T
Char. 1351: C --> A
Char. 1390: C --> T
Char. 1402: C --> T
Char. 1408: C --> A
Char. 1438: C --> T
Char. 1484: A --> G
Char. 1494: T --> C
Char. 4777: C --> T
Char. 4803: T --> C
Char. 4804: G --> A
Char. 4848: G --> A
Char. 4869: G --> A
Char. 4920: G --> A
Char. 4926: A --> T
Char. 5034: G --> T
Char. 5259: C --> G
Char. 5316: A --> T
Char. 5525: G --> A
Char. 5559: C --> A
Char. 5688: T --> C
Char. 5691: G --> A
Char. 6299: G --> A
Char. 6306: C --> T
Char. 6314: C --> A
Char. 6331: A --> C
Char. 6355: T --> C
Char. 6361: G --> A
Char. 6433: T --> C
Char. 6440: A --> G
Neolebias_powellii :
Char. 535: A --> G
Char. 538: T --> C
Char. 566: T --> A
Char. 574: C --> T
Char. 595: C --> T
Char. 616: A --> C
Char. 634: G --> C
Char. 643: C --> T
Char. 646: A --> C
Char. 649: C --> T
Char. 691: C --> A
Char. 724: C --> T
Char. 739: A --> C
Char. 740: G --> A
Char. 749: C --> T

Char. 808: C --> T
Char. 823: A --> T
Char. 832: C --> T
Char. 833: C --> T
Char. 845: G --> A
Char. 871: C --> T
Char. 895: C --> A
Char. 901: C --> T
Char. 919: A --> T
Char. 938: C --> T
Char. 940: C --> A
Char. 950: G --> A
Char. 961: A --> G
Char. 964: A --> C
Char. 973: A --> T
Char. 979: C --> T
Char. 980: C --> T
Char. 986: C --> T
Char. 994: A --> G
Char. 1021: A --> T
Char. 1033: A --> C
Char. 1066: C --> T
Char. 1081: C --> G
Char. 1084: T --> C
Char. 1091: C --> T
Char. 1098: C --> T
Char. 1099: A --> T
Char. 1102: C --> T
Char. 1107: C --> T
Char. 1117: C --> T
Char. 1126: A --> C
Char. 1132: C --> T
Char. 1207: C --> T
Char. 1237: A --> T
Char. 1250: C --> T
Char. 1258: A --> C
Char. 1267: A --> C
Char. 1270: A --> C
Char. 1309: A --> C
Char. 1330: C --> T
Char. 1345: A --> T
Char. 1357: C --> T
Char. 1358: C --> T
Char. 1370: C --> T
Char. 1387: T --> G
Char. 1411: T --> A
Char. 1426: C --> A
Char. 1430: A --> G
Char. 1432: C --> T
Char. 1433: A --> C
Char. 1477: A --> C
Char. 1478: C --> T
Char. 1480: A --> T
Char. 1481: C --> A
Char. 1483: C --> T
Char. 1489: A --> T
Char. 1495: A --> T
Char. 1498: C --> T
Char. 1501: A --> G
Char. 4723: G --> A
Char. 4815: T --> C
Char. 4867: G --> A
Char. 4914: C --> T
Char. 4931: G --> A
Char. 4976: C --> A
Char. 5052: A --> C
Char. 5127: C --> T
Char. 5128: C --> G
Char. 5168: G --> A
Char. 5184: G --> T
Char. 5202: C --> T
Char. 5205: C --> T
Char. 5209: G --> A
Char. 5335: C --> A
Char. 5372: G --> A
Char. 5394: A --> G
Char. 5409: G --> A
Char. 5445: G --> A
Char. 5484: A --> T
Char. 5509: T --> G
Char. 5546: G --> A
Char. 5564: C --> T
Char. 5568: C --> T

Char. 5583: A --> T
Char. 5679: C --> T
Char. 5703: G --> A
Char. 6290: C --> T
Char. 6329: C --> T
Char. 6345: A --> T
Char. 6368: C --> T
Char. 6374: G --> A
Char. 6379: T --> C
Char. 6383: G --> A
Char. 6424: T --> C
Char. 6432: A --> G
Char. 6438: G --> A
Char. 6443: A --> T
Char. 6446: C --> T
Char. 6480: G --> A
Char. 6487: C --> T
Char. 6507: C --> T
Char. 6515: A --> C
Char. 6516: G --> A
Char. 6528: G --> A
Neolebias_trewavasae :
Char. 533: C --> T
Char. 643: C --> T
Char. 655: C --> T
Char. 664: C --> T
Char. 670: T --> C
Char. 715: T --> C
Char. 739: A --> C
Char. 745: C --> T
Char. 790: A --> C
Char. 808: C --> T
Char. 866: C --> T
Char. 871: C --> A
Char. 904: T --> C
Char. 910: C --> T
Char. 937: C --> T
Char. 940: C --> T
Char. 953: A --> G
Char. 980: C --> T
Char. 986: C --> T
Char. 1000: A --> G
Char. 1054: C --> T
Char. 1088: C --> T
Char. 1091: C --> T
Char. 1109: T --> C
Char. 1110: C --> T
Char. 1111: C --> A
Char. 1129: C --> A
Char. 1159: C --> A
Char. 1162: A --> T
Char. 1216: C --> T
Char. 1219: C --> T
Char. 1229: C --> T
Char. 1237: A --> C
Char. 1258: A --> C
Char. 1294: A --> G
Char. 1300: C --> A
Char. 1348: C --> T
Char. 1357: C --> T
Char. 1369: C --> T
Char. 1372: A --> T
Char. 1390: C --> T
Char. 1393: A --> G
Char. 1402: C --> T
Char. 1417: A --> C
Char. 1429: T --> C
Char. 1459: T --> C
Char. 1475: C --> T
Char. 2188: G --> A
Char. 2241: A --> G
Char. 2254: G --> A
Char. 2269: C --> A
Char. 2344: G --> A
Char. 2374: C --> T
Char. 2389: C --> T
Char. 2591: T --> C
Char. 2707: G --> A
Char. 2716: A --> G
Char. 2752: C --> T
Char. 2782: C --> T
Char. 2830: T --> C
Char. 2869: T --> C

Char. 5927: T --> C
Char. 6038: T --> A
Char. 6077: A --> G
Char. 6085: G --> A
Char. 6099: C --> T
Char. 6251: A --> G
Char. 6254: A --> C
Char. 6294: T --> C
Char. 6306: C --> T
Char. 6309: T --> C
Char. 6317: A --> G
Char. 6328: A --> G
Char. 6329: C --> T
Char. 6357: A --> G
Char. 6361: G --> A
Char. 6365: A --> G
Char. 6381: C --> T
Char. 6452: A --> G
Char. 6508: T --> C
Char. 6512: C --> T
Char. 6515: A --> G
Neolebias_trilineatus :
Char. 685: C --> AG
Char. 691: C --> A
Char. 808: C --> T
Char. 928: C --> T
Char. 982: A --> G
Char. 1091: C --> T
Char. 1096: A --> T
Char. 1156: C --> T
Char. 1216: C --> T
Char. 1276: C --> T
Char. 1342: C --> T
Char. 1485: A --> G
Char. 2507: T --> A
Char. 2665: T --> A
Char. 2749: T --> C
Char. 2773: A --> T
Oligosarcus_argenteus :
Char. 580: T --> C
Char. 634: A --> G
Char. 673: C --> T
Char. 706: C --> GT
Oligosarcus_solitarius :
Char. 580: T --> C
Char. 634: A --> G
Char. 673: C --> T
Char. 706: C --> T
Paradistichodus_dimidiatus :
Char. 539: C --> T
Char. 547: A --> G
Char. 571: C --> T
Char. 586: A --> G
Char. 616: A --> G
Char. 620: A --> C
Char. 622: T --> G
Char. 625: C --> T
Char. 634: A --> G
Char. 655: C --> T
Char. 661: T --> C
Char. 670: T --> C
Char. 745: C --> G
Char. 757: A --> G
Char. 766: T --> C
Char. 778: C --> G
Char. 862: A --> G
Char. 880: C --> T
Char. 901: C --> T
Char. 910: C --> A
Char. 934: C --> T
Char. 937: C --> T
Char. 946: A --> T
Char. 951: C --> T
Char. 955: T --> C
Char. 970: C --> T
Char. 971: C --> T
Char. 1021: A --> G
Char. 1027: T --> C
Char. 1030: C --> T
Char. 1054: A --> G
Char. 1085: A --> G
Char. 1129: A --> C
Char. 1135: A --> T

Char. 1195: A --> G
Char. 1228: C --> T
Char. 1270: A --> T
Char. 1271: C --> T
Char. 1279: CT --> G
Char. 1306: C --> T
Char. 1309: A --> C
Char. 1324: A --> G
Char. 1327: A --> G
Char. 1346: A --> G
Char. 1347: T --> C
Char. 1358: C --> T
Char. 1375: A --> G
Char. 1390: C --> T
Char. 1405: A --> G
Char. 1456: C --> T
Char. 2179: G --> A
Char. 2185: C --> T
Char. 2188: G --> A
Char. 2237: G --> A
Char. 2239: T --> C
Char. 2248: C --> T
Char. 2313: C --> T
Char. 2405: C --> T
Char. 2583: G --> A
Char. 2665: T --> A
Char. 2668: T --> A
Char. 2792: C --> T
Char. 2881: A --> C
Char. 2899: G --> C
Phago_boulengeri :
Char. 538: T --> C
Char. 541: A --> G
Char. 592: T --> C
Char. 607: T --> A
Char. 643: C --> T
Char. 670: T --> C
Char. 709: C --> T
Char. 913: C --> T
Char. 941: C --> T
Char. 985: C --> T
Char. 994: A --> G
Char. 1003: C --> T
Char. 1006: C --> T
Char. 1078: A --> G
Char. 1102: C --> A
Char. 1111: C --> T
Char. 1133: C --> T
Char. 1153: C --> T
Char. 1172: C --> T
Char. 1174: A --> G
Char. 1177: C --> T
Char. 1219: C --> T
Char. 1222: C --> T
Char. 1283: C --> T
Char. 1285: A --> G
Char. 1294: G --> A
Char. 1306: C --> T
Char. 1318: A --> T
Char. 1333: C --> T
Char. 1346: A --> G
Char. 1384: A --> G
Char. 1405: A --> G
Char. 1450: A --> G
Char. 1454: C --> G
Char. 1480: C --> T
Char. 1501: A --> G
Phago_intermedius :
Char. 523: C --> T
Char. 529: C --> T
Char. 533: C --> T
Char. 539: C --> T
Char. 571: C --> T
Char. 574: C --> T
Char. 586: A --> G
Char. 598: T --> C
Char. 646: A --> G
Char. 655: C --> T
Char. 661: T --> C
Char. 676: G --> T
Char. 712: C --> T
Char. 749: C --> T
Char. 751: G --> A

Char. 752: C --> T
Char. 787: C --> T
Char. 808: C --> T
Char. 823: A --> G
Char. 835: C --> T
Char. 847: C --> T
Char. 850: C --> T
Char. 853: C --> T
Char. 854: C --> T
Char. 865: C --> G
Char. 874: A --> G
Char. 892: C --> T
Char. 922: C --> T
Char. 940: C --> T
Char. 967: A --> C
Char. 979: C --> T
Char. 988: T --> C
Char. 1015: C --> T
Char. 1045: C --> T
Char. 1048: C --> T
Char. 1057: C --> T
Char. 1081: C --> T
Char. 1094: C --> T
Char. 1105: C --> T
Char. 1124: G --> T
Char. 1125: C --> T
Char. 1135: A --> C
Char. 1204: A --> G
Char. 1207: C --> T
Char. 1228: C --> T
Char. 1229: T --> C
Char. 1282: C --> T
Char. 1295: C --> T
Char. 1300: C --> G
Char. 1336: C --> T
Char. 1342: C --> T
Char. 1369: C --> T
Char. 1375: A --> G
Char. 1399: A --> G
Char. 1408: C --> A
Char. 1414: A --> T
Char. 1423: C --> T
Char. 1426: C --> T
Char. 1477: C --> T
Char. 1489: A --> T
Char. 1490: C --> T
Char. 2206: A --> G
Char. 2529: A --> T
Phenacogrammus_aurantiacus :
Char. 1513: C --> T
Char. 1528: T --> C
Char. 1531: T --> C
Char. 1555: C --> T
Char. 1556: C --> T
Char. 1564: C --> T
Char. 1570: T --> C
Char. 1594: G --> A
Char. 1597: C --> T
Char. 1690: GC --> T
Char. 1714: A --> T
Char. 1735: A --> G
Char. 1774: G --> A
Char. 1804: C --> T
Char. 1825: CT --> G
Char. 1870: C --> T
Char. 1897: T --> C
Char. 1912: C --> T
Char. 1948: C --> T
Char. 1954: C --> T
Char. 1972: A --> G
Char. 2026: A --> G
Char. 2074: C --> T
Char. 2083: A --> G
Char. 2086: T --> C
Char. 2125: T --> C
Char. 2128: C --> A
Char. 2159: T --> C
Char. 2173: C --> T
Char. 2485: A --> C
Char. 2518: C --> A
Char. 2647: G --> A
Char. 2744: G --> T
Piabina_anhemi :

Char. 628: A --> G
Char. 772: T --> C
Char. 1252: A --> G
Char. 1459: T --> G
Char. 1520: G --> C
Char. 1525: C --> T
Char. 1606: T --> C
Char. 1708: T --> C
Char. 1732: C --> T
Char. 1772: T --> C
Char. 1846: T --> C
Char. 1909: T --> C
Char. 1999: A --> G
Char. 2044: T --> C
Piaractus_brachypomus :
Char. 1498: C --> T
Char. 4878: G --> A
Potamorhina_altamazonica :
Char. 523: C --> T
Char. 571: C --> T
Char. 607: A --> T
Char. 622: A --> T
Char. 640: C --> T
Char. 646: C --> T
Char. 670: C --> T
Char. 674: C --> T
Char. 685: C --> A
Char. 712: C --> T
Char. 727: A --> G
Char. 730: C --> T
Char. 742: A --> T
Char. 745: A --> C
Char. 766: C --> T
Char. 772: C --> T
Char. 781: C --> T
Char. 784: C --> A
Char. 787: T --> A
Char. 814: A --> T
Char. 832: C --> T
Char. 838: C --> A
Char. 847: C --> A
Char. 853: T --> C
Char. 854: G --> A
Char. 892: C --> T
Char. 904: C --> T
Char. 956: G --> A
Char. 958: A --> T
Char. 973: A --> T
Char. 982: T --> G
Char. 988: A --> T
Char. 1006: C --> T
Char. 1019: C --> T
Char. 1027: A --> G
Char. 1072: C --> T
Char. 1076: C --> T
Char. 1096: A --> T
Char. 1118: C --> T
Char. 1123: C --> T
Char. 1138: A --> G
Char. 1141: A --> T
Char. 1159: C --> T
Char. 1162: C --> G
Char. 1186: A --> T
Char. 1198: A --> T
Char. 1243: A --> C
Char. 1246: C --> T
Char. 1271: C --> T
Char. 1304: C --> T
Char. 1339: C --> T
Char. 1369: C --> A
Char. 1408: A --> T
Char. 1438: T --> C
Char. 1445: A --> G
Char. 1477: T --> C
Char. 1481: C --> T
Char. 1498: A --> G
Char. 6413: C --> T
Char. 6456: C --> T
Char. 6510: T --> C
Char. 6573: T --> C
Prochilodus_argenteus :
Char. 691: C --> A
Char. 757: T --> C

Char. 785: C --> T
 Char. 868: A --> G
 Char. 886: T --> C
 Char. 1126: C --> T
 Char. 1339: C --> T
 Char. 1438: C --> T
 Char. 1468: G --> A
 Char. 1756: C --> T
 Char. 1966: T --> C
 Char. 2006: T --> C
Prochilodus brevis :
 Char. 1255: C --> T
 Char. 2740: C --> T
 Char. 4615: T --> C
 Char. 5197: C --> T
Prochilodus costatus :
 Char. 553: T --> C
 Char. 1435: T --> C
 Char. 2006: T --> C
Prochilodus harttii :
 Char. 745: A --> G
 Char. 823: A --> G
 Char. 860: G --> A
 Char. 1069: A --> G
 Char. 1192: T --> C
 Char. 1312: C --> T
 Char. 1921: G --> A
 Char. 1969: C --> T
 Char. 2131: A --> G
 Char. 2422: T --> G
 Char. 6484: T --> C
Prochilodus lacustris :
 Char. 2284: A --> C
 Char. 2287: C --> T
 Char. 2578: T --> C
 Char. 3475: C --> T
 Char. 3712: A --> G
 Char. 4417: A --> G
 Char. 4489: T --> G
 Char. 5244: G --> A
Prochilodus magdalenae :
 Char. 1414: A --> G
 Char. 1443: A --> G
 Char. 5730: C --> A
Prochilodus mariae :
 Char. 5158: C --> A
 Char. 5331: G --> A
 Char. 5481: G --> A
 Char. 6413: T --> C
Prochilodus nigricans :
 No autapomorphies
Prochilodus reticulatus :
 Char. 544: A --> C
 Char. 1483: T --> A
 Char. 5409: G --> A
 Char. 5517: C --> T
 Char. 5571: C --> T
Prochilodus rubrotaeniatus :
 No autapomorphies
Prochilodus vimboides :
 Char. 562: C --> T
 Char. 568: C --> T
 Char. 577: C --> T
 Char. 616: C --> T
 Char. 620: C --> T
 Char. 749: C --> T
 Char. 757: T --> C
 Char. 808: C --> T
 Char. 817: T --> C
 Char. 823: A --> G
 Char. 826: T --> C
 Char. 847: A --> C
 Char. 910: C --> T
 Char. 955: C --> T
 Char. 956: G --> A
 Char. 986: C --> T
 Char. 1015: C --> T
 Char. 1024: C --> T
 Char. 1039: A --> G
 Char. 1057: C --> T
 Char. 1066: C --> T
 Char. 1141: A --> G
 Char. 1153: C --> T
 Char. 1222: C --> T
 Char. 1262: C --> T
 Char. 1283: C --> T
 Char. 1300: C --> T
 Char. 1342: C --> T
 Char. 1351: C --> T
 Char. 1360: A --> G
 Char. 1393: A --> G
 Char. 1570: T --> C
 Char. 1648: C --> T
 Char. 1681: G --> A
 Char. 1774: A --> G
 Char. 1780: A --> G
 Char. 1876: A --> G
 Char. 1906: A --> G
 Char. 1954: T --> C
 Char. 2074: A --> G
 Char. 2077: T --> C
 Char. 2083: G --> A
 Char. 2134: A --> G
 Char. 2848: C --> T
 Char. 3622: G --> A
 Char. 4099: G --> A
 Char. 4225: G --> A
 Char. 4438: C --> T
 Char. 5256: T --> C
 Char. 5393: C --> T
Psectrogaster amazonica :
 Char. 1621: T --> C
 Char. 1703: T --> C
 Char. 1720: T --> C
 Char. 1873: T --> C
 Char. 1892: C --> T
Pseudanos trimaculatus :
 Char. 544: T --> C
 Char. 556: C --> A
 Char. 557: T --> G
 Char. 577: T --> C
 Char. 640: C --> T
 Char. 674: C --> A
 Char. 676: C --> A
 Char. 793: A --> G
 Char. 796: A --> G
 Char. 805: A --> C
 Char. 808: C --> T
 Char. 814: G --> A
 Char. 838: C --> T
 Char. 847: C --> T
 Char. 853: T --> C
 Char. 859: A --> G
 Char. 866: C --> T
 Char. 913: A --> C
 Char. 943: A --> G
 Char. 950: G --> C
 Char. 951: C --> T
 Char. 964: C --> T
 Char. 976: C --> T
 Char. 991: T --> C
 Char. 1012: C --> T
 Char. 1023: A --> T
 Char. 1042: T --> C
 Char. 1066: C --> T
 Char. 1075: C --> T
 Char. 1076: C --> T
 Char. 1078: A --> G
 Char. 1086: T --> C
 Char. 1087: T --> A
 Char. 1098: T --> C
 Char. 1103: C --> T
 Char. 1109: T --> G
 Char. 1112: C --> T
 Char. 1138: A --> G
 Char. 1150: A --> C
 Char. 1171: C --> G
 Char. 1177: T --> A
 Char. 1192: T --> C
 Char. 1228: C --> T
 Char. 1237: A --> C
 Char. 1243: C --> A
 Char. 1252: A --> T
 Char. 1267: C --> T
 Char. 1288: AT --> G
 Char. 1289: C --> T
 Char. 1303: C --> T
 Char. 1309: C --> T
 Char. 1342: C --> T
 Char. 1345: C --> T
 Char. 1354: A --> G
 Char. 1375: C --> T
 Char. 1387: T --> C
 Char. 1430: A --> G
 Char. 1435: T --> C
 Char. 1438: T --> C
 Char. 1456: C --> T
 Char. 1474: C --> T
 Char. 1481: T --> C
 Char. 1497: G --> C
 Char. 1498: G --> C
 Char. 1540: A --> C
 Char. 1570: T --> C
 Char. 1588: G --> A
 Char. 1597: C --> T
 Char. 1639: A --> T
 Char. 1663: T --> C
 Char. 1684: T --> C
 Char. 1687: G --> A
 Char. 1705: A --> G
 Char. 1706: A --> G
 Char. 1708: T --> C
 Char. 1796: C --> T
 Char. 1801: C --> T
 Char. 1822: A --> G
 Char. 1828: A --> G
 Char. 1849: A --> G
 Char. 1852: C --> T
 Char. 1858: C --> T
 Char. 1882: T --> C
 Char. 1888: T --> C
 Char. 1909: C --> A
 Char. 1921: T --> G
 Char. 1975: A --> G
 Char. 1990: A --> T
 Char. 2005: C --> A
 Char. 2008: A --> G
 Char. 2038: A --> C
 Char. 2047: T --> C
 Char. 2050: C --> T
 Char. 2054: T --> C
 Char. 2056: A --> C
 Char. 2059: A --> G
 Char. 2080: C --> A
 Char. 2089: A --> G
 Char. 2128: A --> G
 Char. 2143: A --> C
 Char. 2329: G --> A
 Char. 2401: A --> G
 Char. 2584: C --> T
 Char. 2591: T --> C
 Char. 2602: C --> A
 Char. 3889: T --> C
 Char. 3976: T --> C
 Char. 4003: C --> T
 Char. 4018: G --> A
 Char. 4168: C --> A
 Char. 4199: C --> A
 Char. 4210: C --> T
 Char. 4332: T --> A
 Char. 4338: C --> A
 Char. 4390: G --> A
 Char. 4408: G --> A
 Char. 4573: C --> T
 Char. 5064: C --> T
 Char. 5151: C --> T
 Char. 5319: C --> T
 Char. 5358: T --> C
 Char. 5458: G --> T
 Char. 5466: C --> G
 Char. 5490: T --> A
 Char. 5552: A --> G
 Char. 5558: C --> G
 Char. 5676: A --> C
 Char. 5688: C --> T
Pygocentrus cariba :
 Char. 565: C --> T
 Char. 580: C --> T
 Char. 646: G --> A

Char. 655: C --> T
Char. 673: C --> T
Char. 736: A --> G
Char. 743: C --> T
Char. 754: C --> T
Char. 775: A --> G
Char. 787: T --> C
Char. 820: T --> C
Char. 841: T --> C
Char. 847: C --> T
Char. 853: T --> C
Char. 883: A --> G
Char. 982: C --> T
Char. 1063: A --> G
Char. 1114: A --> G
Char. 1129: C --> T
Char. 1156: C --> T
Char. 1165: C --> T
Char. 1171: C --> T
Char. 1177: C --> T
Char. 1180: A --> G
Char. 1219: T --> C
Char. 1234: A --> G
Char. 1279: A --> T
Char. 1309: A --> C
Char. 1363: C --> T
Char. 1367: A --> G
Char. 1369: C --> A
Char. 1375: T --> C
Char. 1384: A --> G
Char. 1405: A --> G
Char. 1411: G --> A
Char. 1429: T --> C
Char. 1483: C --> T
Char. 1486: C --> T
Char. 1489: C --> T
Char. 2287: C --> T
Char. 2581: C --> T
Char. 3694: C --> T
Char. 3774: C --> T
Char. 3832: C --> G
Char. 3920: A --> G
Char. 4637: C --> A
Char. 5019: G --> T
Char. 5172: G --> T
Char. 5259: C --> T
Char. 6098: T --> C
Pygocentrus_nattereri :
Char. 586: A --> G
Char. 592: C --> T
Char. 622: A --> T
Char. 634: A --> C
Char. 691: C --> T
Char. 733: T --> C
Char. 745: A --> T
Char. 748: C --> T
Char. 781: C --> T
Char. 826: T --> C
Char. 832: C --> T
Char. 892: T --> C
Char. 1030: C --> T
Char. 1102: C --> T
Char. 1105: T --> C
Char. 1111: T --> C
Char. 1177: C --> A
Char. 1195: A --> G
Char. 1279: A --> C
Char. 1285: C --> A
Char. 1306: C --> T
Char. 1312: C --> T
Char. 1432: C --> T
Char. 1714: G --> A
Char. 1750: A --> G
Char. 1822: G --> A
Char. 1915: T --> C
Char. 2047: T --> C
Char. 2050: G --> T
Char. 2062: T --> C
Char. 2065: A --> G
Char. 2074: A --> G
Char. 2095: C --> T
Char. 2128: A --> G
Char. 2594: T --> C

Char. 3544: C --> T
Char. 3676: C --> T
Char. 3760: C --> A
Char. 3845: C --> A
Char. 4624: A --> G
Char. 4749: T --> C
Char. 5238: T --> C
Char. 5466: T --> A
Char. 5718: C --> T
Char. 5910: C --> T
Char. 6004: A --> T
Char. 6098: T --> C
Rhabdalestes_maunensis :
Char. 556: A --> G
Char. 574: C --> T
Char. 595: C --> T
Char. 649: A --> C
Char. 658: C --> T
Char. 661: C --> T
Char. 691: C --> T
Char. 694: A --> T
Char. 721: A --> G
Char. 748: C --> A
Char. 751: T --> A
Char. 763: A --> G
Char. 790: C --> T
Char. 1558: C --> T
Char. 1564: A --> G
Char. 1603: G --> A
Char. 1672: A --> G
Char. 1675: A --> T
Char. 1678: T --> C
Char. 1726: C --> T
Char. 1792: T --> C
Char. 1867: T --> A
Char. 1876: A --> G
Char. 1888: T --> A
Char. 1900: T --> C
Char. 1906: A --> T
Char. 1909: T --> A
Char. 1939: T --> G
Char. 1951: T --> C
Char. 1954: T --> C
Char. 1963: C --> T
Char. 1978: C --> T
Char. 1999: A --> G
Char. 2020: T --> G
Char. 2026: A --> G
Char. 2029: T --> C
Char. 2047: A --> T
Char. 2087: T --> C
Char. 2101: C --> T
Char. 2125: A --> G
Char. 2131: A --> G
Char. 5136: C --> T
Char. 5289: G --> A
Char. 5549: A --> G
Char. 5577: G --> A
Char. 6315: C --> T
Rhytiodus_argenteofuscus :
Char. 1174: A --> G
Char. 1216: C --> T
Char. 1276: C --> T
Char. 1744: A --> G
Char. 1852: A --> T
Char. 2008: A --> G
Char. 2149: A --> G
Char. 3565: G --> A
Char. 4862: T --> A
Char. 5576: A --> G
Rhytiodus_microlepis :
Char. 613: T --> C
Char. 616: C --> T
Char. 991: C --> T
Char. 1189: C --> T
Char. 1411: A --> G
Char. 2014: C --> T
Char. 4827: A --> T
Char. 5554: C --> T
Salminus_franciscanus :
Char. 547: A --> G
Char. 566: T --> C
Char. 646: A --> G

Char. 775: A --> G
Char. 853: T --> C
Char. 866: T --> C
Char. 868: A --> G
Char. 1012: A --> C
Char. 1018: A --> G
Char. 1030: C --> T
Char. 1085: C --> T
Char. 1123: T --> C
Char. 1129: A --> G
Char. 1177: T --> C
Char. 1189: C --> T
Char. 1219: C --> T
Char. 1279: A --> G
Char. 1304: C --> G
Char. 1351: C --> T
Char. 1357: C --> T
Char. 1360: A --> G
Char. 1367: C --> T
Char. 1396: A --> G
Char. 1420: A --> G
Char. 1492: A --> G
Char. 1565: C --> T
Char. 1633: T --> C
Char. 1714: A --> G
Char. 1741: T --> C
Char. 1774: A --> G
Char. 1828: A --> G
Char. 1858: A --> G
Char. 1954: T --> C
Char. 1963: T --> C
Char. 2008: A --> G
Char. 2026: A --> G
Char. 2032: A --> G
Char. 2217: G --> T
Char. 2263: A --> T
Char. 2264: A --> T
Char. 4066: C --> T
Char. 4555: C --> T
Char. 4804: G --> A
Schizodon_borellii :
Char. 527: A --> C
Char. 1114: A --> G
Char. 4468: A --> C
Schizodon_fasciatus :
No autapomorphies
Schizodon_intermedius :
Char. 1201: G --> A
Char. 2125: T --> AG
Schizodon_knerii :
Char. 1865: T --> C
Char. 2020: C --> T
Char. 2054: T --> C
Char. 2152: C --> T
Schizodon_scororhabdotus :
Char. 580: T --> C
Char. 586: T --> C
Char. 622: A --> G
Char. 631: T --> C
Char. 643: C --> T
Char. 661: T --> C
Char. 691: C --> T
Char. 745: T --> C
Char. 775: A --> G
Char. 778: G --> A
Char. 955: T --> C
Char. 961: A --> G
Char. 969: C --> T
Char. 991: C --> T
Char. 1048: T --> C
Char. 1114: A --> G
Char. 1165: T --> C
Char. 1222: T --> C
Char. 1225: T --> C
Char. 1234: A --> G
Char. 1237: T --> C
Char. 1240: T --> C
Char. 1270: A --> G
Char. 1312: C --> T
Char. 1483: A --> G
Char. 1687: G --> A
Char. 1852: A --> C
Char. 1885: C --> T

Char. 1930: C --> T
Char. 2020: C --> A
Char. 2050: C --> T
Char. 2062: C --> T
Char. 2131: A --> C
Char. 3464: G --> A
Char. 4529: A --> G
Char. 4752: T --> C
Char. 5179: C --> T
Char. 5292: T --> C
Char. 5328: G --> A
Char. 5343: C --> T
Char. 5735: G --> T
Schizodon_vittatus :
Char. 1735: G --> A
Char. 1774: G --> A
Char. 5706: C --> T
Semaprochilodus_brama :
Char. 580: C --> A
Char. 622: A --> T
Char. 740: G --> A
Char. 784: A --> G
Char. 898: A --> G
Char. 925: C --> T
Char. 1231: A --> G
Char. 1363: T --> C
Char. 1378: A --> G
Char. 1465: C --> T
Char. 1819: C --> A
Char. 1924: A --> G
Char. 2792: C --> G
Char. 2801: C --> G
Char. 2810: C --> A
Char. 4147: G --> T
Char. 4195: A --> G
Char. 4207: G --> T
Char. 4325: A --> G
Char. 4360: C --> G
Char. 4466: G --> T
Char. 4478: G --> T
Char. 4489: G --> T
Char. 4602: G --> T
Char. 4603: C --> A
Char. 4678: T --> C
Char. 4708: C --> G
Semaprochilodus_insignis :
Char. 613: C --> T
Char. 688: A --> G
Char. 745: A --> G
Char. 1018: A --> G
Char. 1021: A --> G
Char. 1411: A --> G
Semaprochilodus_kneri :
Char. 865: C --> T
Char. 1066: C --> T
Char. 1933: T --> C
Char. 5361: C --> T
Semaprochilodus_laticeps :
Char. 562: C --> T
Char. 637: T --> C
Char. 712: C --> A
Char. 814: A --> G
Char. 956: G --> A
Char. 982: C --> A
Char. 1090: T --> C
Char. 1222: C --> T
Char. 1870: C --> T
Char. 1921: G --> A
Char. 1960: C --> T
Char. 2022: C --> T
Char. 2113: A --> G
Char. 2134: A --> G
Char. 5181: G --> T
Char. 6252: T --> C
Semaprochilodus_taeuius :
Char. 562: C --> T
Char. 587: G --> A
Char. 670: T --> C
Char. 706: C --> A
Char. 730: C --> T
Char. 736: C --> A
Char. 817: T --> C
Char. 863: G --> A

Char. 886: C --> T
Char. 895: C --> T
Char. 1009: C --> T
Char. 1036: C --> T
Char. 1069: A --> G
Char. 1091: C --> T
Char. 1132: C --> T
Char. 1144: C --> T
Char. 1159: C --> T
Char. 1189: C --> T
Char. 1195: A --> G
Char. 1207: C --> T
Char. 1210: C --> T
Char. 1237: C --> T
Char. 1271: C --> T
Char. 1292: C --> A
Char. 1294: A --> G
Char. 1346: A --> G
Char. 1420: A --> G
Char. 1445: A --> G
Char. 1450: C --> T
Char. 1462: C --> T
Char. 1466: G --> A
Char. 1469: C --> T
Char. 1475: C --> T
Char. 1483: T --> C
Char. 1490: C --> T
Char. 1492: A --> G
Char. 1510: C --> T
Char. 2296: C --> T
Char. 2362: C --> T
Char. 2524: T --> C
Char. 2665: T --> A
Char. 5394: G --> T
Char. 5721: C --> T
Char. 6119: T --> C
Char. 6154: T --> C
Char. 6162: A --> G
Char. 6163: A --> G
Char. 6245: G --> A
Char. 6286: T --> C
Char. 6299: G --> A
Char. 6425: G --> A
Char. 6484: C --> T
Char. 6541: T --> A
Char. 6645: A --> T
Semaprochilodus_varii :
Char. 544: C --> T
Char. 692: C --> T
Char. 847: A --> G
Char. 880: C --> T
Char. 1006: C --> T
Char. 1012: C --> A
Char. 1057: C --> T
Char. 1177: T --> C
Char. 1307: C --> T
Char. 1565: T --> C
Char. 1690: A --> G
Char. 1741: T --> C
Char. 1939: G --> A
Char. 1969: T --> C
Char. 2056: A --> G
Char. 2086: C --> A
Char. 2137: A --> G
Char. 3676: C --> T
Char. 4998: G --> A
Char. 5346: C --> T
Char. 5563: A --> G
Char. 6286: T --> C
Char. 6454: A --> G
Serrapinnus_kriegi :
Char. 580: T --> C
Char. 583: C --> G
Char. 595: C --> G
Char. 607: A --> T
Char. 649: C --> T
Char. 664: T --> C
Char. 736: C --> T
Char. 772: C --> T
Char. 778: C --> A
Char. 799: A --> G
Char. 817: T --> C
Char. 838: C --> T

Char. 874: A --> G
Char. 922: C --> T
Char. 928: C --> T
Char. 940: A --> G
Char. 958: A --> G
Char. 988: A --> T
Char. 1042: T --> C
Char. 1048: C --> T
Char. 1051: C --> T
Char. 1075: T --> C
Char. 1087: A --> G
Char. 1090: A --> G
Char. 1094: C --> T
Char. 1096: T --> A
Char. 1135: C --> T
Char. 1201: A --> G
Char. 1219: C --> T
Char. 1225: C --> T
Char. 1237: T --> C
Char. 1240: T --> C
Char. 1264: A --> G
Char. 1324: A --> G
Char. 1384: A --> G
Char. 1414: C --> A
Char. 1420: A --> G
Char. 1459: T --> C
Char. 1481: T --> A
Char. 1483: A --> T
Char. 1486: C --> T
Char. 6245: A --> G
Char. 6299: A --> G
Char. 6385: C --> T
Char. 6413: C --> A
Char. 6512: T --> C
Serrapinnus_piaba :
Char. 631: C --> T
Char. 649: C --> T
Char. 694: C --> T
Char. 743: C --> T
Char. 778: C --> A
Char. 796: A --> G
Char. 799: A --> G
Char. 802: A --> G
Char. 817: T --> C
Char. 895: T --> C
Char. 916: C --> T
Char. 940: A --> G
Char. 997: T --> A
Char. 1018: G --> A
Char. 1024: C --> T
Char. 1030: C --> T
Char. 1072: C --> T
Char. 1075: T --> C
Char. 1078: T --> C
Char. 1125: C --> T
Char. 1189: C --> T
Char. 1210: C --> T
Char. 1231: A --> G
Char. 1261: A --> T
Char. 1267: A --> G
Char. 1285: A --> G
Char. 1300: C --> T
Char. 1309: T --> C
Char. 1315: A --> G
Char. 1326: A --> G
Char. 1330: C --> T
Char. 1345: C --> T
Char. 1348: C --> T
Char. 1384: A --> T
Char. 1390: C --> T
Char. 1426: T --> A
Char. 1432: T --> C
Char. 1490: T --> C
Char. 1915: A --> G
Char. 2095: T --> C
Char. 2147: T --> C
Char. 2311: G --> A
Char. 2566: T --> A
Char. 2782: T --> C
Char. 3457: C --> T
Char. 3814: A --> G
Char. 3971: T --> G
Char. 4033: G --> A

Char. 4045: A --> G
Char. 4147: G --> A
Char. 4150: G --> A
Char. 4375: G --> A
Char. 4432: C --> T
Char. 4480: G --> A
Char. 4716: A --> G
Char. 4734: T --> C
Char. 4929: C --> A
Char. 4968: T --> A
Char. 5076: A --> T
Char. 5100: G --> T
Char. 5115: C --> A
Char. 5235: C --> T
Char. 5478: A --> T
Char. 5688: C --> T
Char. 6345: A --> G

Serrasalmus_spilopleura :

Char. 2854: C --> T
Char. 2894: G --> T
Char. 4541: C --> A

Spintherobolus_broccae :

Char. 523: T --> C
Char. 550: C --> T
Char. 565: C --> T
Char. 588: T --> A
Char. 596: T --> A
Char. 613: C --> T
Char. 670: T --> C
Char. 691: G --> A
Char. 703: C --> T
Char. 742: T --> C
Char. 784: G --> A
Char. 790: A --> C
Char. 850: C --> A
Char. 862: C --> T
Char. 1006: T --> C
Char. 1009: C --> T
Char. 1033: C --> T
Char. 1042: C --> T
Char. 1054: C --> T
Char. 1075: C --> G
Char. 1088: A --> G
Char. 1117: C --> T
Char. 1135: A --> G
Char. 1264: G --> A
Char. 1288: C --> A
Char. 1291: C --> T
Char. 1300: C --> T
Char. 1433: A --> G
Char. 1450: C --> T
Char. 1466: A --> G
Char. 1475: C --> G
Char. 1501: T --> C
Char. 2252: C --> T
Char. 2269: C --> T
Char. 2371: T --> C
Char. 2476: A --> G
Char. 2527: C --> T
Char. 2683: T --> C
Char. 2758: C --> A
Char. 3452: G --> T
Char. 3508: A --> G
Char. 3608: C --> A
Char. 3640: A --> C
Char. 3730: A --> G
Char. 3754: G --> A
Char. 3805: T --> C
Char. 3886: G --> C
Char. 4066: C --> A
Char. 4216: G --> A
Char. 4243: T --> C
Char. 4363: G --> A
Char. 4438: T --> C
Char. 4651: G --> C
Char. 6205: T --> C
Char. 6206: T --> C
Char. 6374: A --> T
Char. 6413: AC --> T

Spintherobolus_leptoura :

Char. 556: G --> A
Char. 620: A --> G
Char. 877: A --> G

Char. 1263: T --> G
Char. 1276: C --> T
Char. 1485: C --> T
Char. 3475: C --> T
Char. 3490: T --> G
Char. 3526: C --> G
Char. 3555: T --> C
Char. 3559: G --> T
Char. 3652: T --> C
Char. 3673: T --> C
Char. 3796: C --> G
Char. 3799: A --> G
Char. 3802: C --> A
Char. 3907: A --> T
Char. 3910: G --> T
Char. 3916: G --> A
Char. 3958: T --> C
Char. 3964: C --> G
Char. 4067: T --> A
Char. 4288: A --> G
Char. 4336: A --> G
Char. 4390: G --> A
Char. 4408: G --> A
Char. 4414: G --> A
Char. 4418: G --> A
Char. 4450: G --> C
Char. 4568: A --> T
Char. 4612: C --> T
Char. 4645: C --> T
Char. 4646: A --> G
Char. 4647: C --> G
Char. 4650: C --> A
Char. 4686: A --> T
Char. 4764: T --> G
Char. 5026: A --> G
Char. 5260: A --> G
Char. 5543: A --> T
Char. 5616: A --> C
Char. 6414: A --> C
Char. 6512: A --> G

Steindachnerina_insculpta :

Char. 559: A --> C
Char. 589: C --> T
Char. 604: T --> C
Char. 616: A --> C
Char. 634: A --> G
Char. 640: C --> T
Char. 643: C --> T
Char. 646: C --> T
Char. 649: C --> T
Char. 664: T --> C
Char. 685: T --> A
Char. 697: T --> C
Char. 715: T --> C
Char. 739: A --> T
Char. 749: C --> T
Char. 752: T --> C
Char. 772: T --> C
Char. 778: T --> C
Char. 781: C --> T
Char. 784: C --> T
Char. 802: G --> A
Char. 808: C --> T
Char. 814: A --> G
Char. 820: C --> T
Char. 847: C --> A
Char. 880: T --> C
Char. 886: G --> A
Char. 904: T --> C
Char. 925: T --> C
Char. 961: A --> C
Char. 967: T --> C
Char. 976: T --> C
Char. 982: C --> T
Char. 988: A --> C
Char. 991: T --> C
Char. 1072: C --> T
Char. 1102: C --> T
Char. 1112: T --> C
Char. 1126: C --> T
Char. 1171: C --> A
Char. 1192: C --> T
Char. 1195: A --> G

Char. 1219: C --> T
Char. 1246: C --> T
Char. 1270: C --> T
Char. 1276: C --> T
Char. 1291: A --> T
Char. 1297: A --> G
Char. 1303: A --> C
Char. 1304: C --> T
Char. 1318: T --> C
Char. 1330: A --> C
Char. 1342: C --> A
Char. 1348: A --> G
Char. 1366: A --> G
Char. 1369: C --> A
Char. 1375: T --> C
Char. 1386: T --> C
Char. 1390: T --> C
Char. 1391: C --> T
Char. 1402: C --> T
Char. 1426: A --> G
Char. 1445: G --> A
Char. 1450: C --> A
Char. 1456: C --> T
Char. 1462: C --> T
Char. 1477: CT --> A
Char. 1483: C --> T
Char. 1497: G --> C
Char. 1501: A --> G
Char. 1552: C --> G
Char. 1561: T --> C
Char. 1573: A --> G
Char. 1603: T --> G
Char. 1618: T --> C
Char. 1642: C --> T
Char. 1651: A --> T
Char. 1657: C --> T
Char. 1672: G --> A
Char. 1678: T --> C
Char. 1703: T --> C
Char. 1732: T --> C
Char. 1747: A --> G
Char. 1756: C --> T
Char. 1792: T --> C
Char. 1796: T --> C
Char. 1810: T --> G
Char. 1819: C --> A
Char. 1828: AT --> C
Char. 1834: C --> T
Char. 1837: A --> G
Char. 1840: T --> C
Char. 1846: T --> C
Char. 1864: T --> C
Char. 1873: T --> C
Char. 1888: T --> C
Char. 1906: C --> T
Char. 1918: C --> T
Char. 1924: T --> C
Char. 1927: C --> A
Char. 1984: A --> T
Char. 1990: A --> T
Char. 2002: A --> C
Char. 2006: C --> T
Char. 2014: A --> G
Char. 2026: A --> T
Char. 2032: A --> G
Char. 2038: A --> C
Char. 2044: T --> C
Char. 2050: C --> T
Char. 2071: T --> A
Char. 2074: A --> G
Char. 2077: T --> C
Char. 2089: AC --> G
Char. 2107: T --> C
Char. 2119: T --> C
Char. 2125: T --> C
Char. 2147: C --> T
Char. 2152: C --> T
Char. 2158: C --> T
Char. 2159: C --> T
Char. 2197: A --> G
Char. 2266: C --> T
Char. 2272: G --> A
Char. 2296: T --> C

Char. 2312: G --> T
Char. 2350: C --> T
Char. 2367: C --> T
Char. 2383: T --> C
Char. 2509: T --> G
Char. 2686: C --> A
Char. 2716: G --> A
Char. 2759: G --> T
Char. 2797: A --> G
Char. 2806: T --> C
Char. 2869: C --> T
Char. 2881: T --> A
Char. 2905: G --> A
Char. 3451: G --> A
Char. 3456: C --> G
Char. 3457: C --> A
Char. 3464: G --> A
Char. 3478: C --> T
Char. 3500: G --> A
Char. 3515: G --> A
Char. 3532: C --> T
Char. 3620: T --> C
Char. 3633: C --> A
Char. 3637: C --> T
Char. 3751: G --> T
Char. 3850: T --> C
Char. 3922: A --> G
Char. 3934: G --> A
Char. 4067: C --> T
Char. 4084: A --> T
Char. 4247: C --> A
Char. 4325: A --> T
Char. 4363: A --> G
Char. 4411: G --> A
Char. 4450: C --> A
Char. 4600: C --> G
Char. 4618: C --> T
Char. 4627: C --> T
Char. 4666: C --> T
Char. 6344: A --> G
Char. 6433: T --> C
Char. 6528: A --> G
Tometes_trilobatus :
Char. 583: C --> T
Char. 680: A --> G
Char. 1078: A --> G
Char. 1100: G --> A
Char. 1234: A --> G
Char. 2890: A --> T
Char. 2894: G --> T
Triportheus_albus :
Char. 580: C --> T
Char. 595: T --> C
Char. 598: C --> T
Char. 634: A --> G
Char. 697: C --> T
Char. 709: C --> T
Char. 715: T --> C
Char. 772: C --> T
Char. 787: C --> G
Char. 793: A --> G
Char. 835: C --> T
Char. 886: G --> A
Char. 943: A --> G
Char. 949: C --> T
Char. 1081: A --> G
Char. 1094: C --> A
Char. 1129: C --> T
Char. 1144: C --> T
Char. 1150: A --> G
Char. 1183: A --> G
Char. 1195: A --> G
Char. 1201: A --> G
Char. 1207: C --> T
Char. 1267: C --> T
Char. 1270: A --> G
Char. 1346: A --> G
Char. 1372: A --> G
Char. 1486: T --> C
Char. 1504: A --> G
Triportheus_auritus :
Char. 628: A --> G
Char. 664: C --> T

Char. 685: C --> T
Char. 703: C --> T
Char. 733: T --> C
Char. 745: T --> C
Char. 754: A --> C
Char. 793: A --> G
Char. 814: CT --> G
Char. 826: T --> C
Char. 853: T --> C
Char. 862: C --> T
Char. 925: T --> C
Char. 971: C --> A
Char. 976: C --> T
Char. 982: C --> A
Char. 1018: A --> G
Char. 1021: A --> C
Char. 1076: C --> T
Char. 1087: A --> C
Char. 1089: T --> C
Char. 1094: C --> A
Char. 1097: A --> G
Char. 1100: A --> C
Char. 1136: T --> C
Char. 1138: A --> G
Char. 1177: T --> C
Char. 1183: A --> G
Char. 1192: T --> C
Char. 1255: A --> G
Char. 1285: T --> C
Char. 1303: C --> A
Char. 1306: A --> G
Char. 1326: G --> A
Char. 1366: A --> G
Char. 1385: A --> C
Char. 1387: A --> T
Char. 1408: A --> T
Char. 1414: A --> T
Char. 1456: C --> T
Char. 3572: C --> A
Char. 3652: T --> A
Char. 3667: G --> A
Char. 3895: C --> G
Char. 3940: C --> G
Char. 4213: A --> C
Char. 4454: A --> C
Char. 4540: C --> T
Char. 4646: A --> T
Char. 4694: A --> T
Char. 4696: G --> C
Char. 4711: G --> C
Char. 4803: T --> C
Char. 4967: C --> G
Char. 4971: G --> A
Char. 5088: A --> G
Char. 5491: G --> A
Char. 5586: C --> G
Char. 5697: T --> C
Char. 5743: A --> T
Char. 5745: C --> A
Char. 5858: C --> T
Char. 5895: T --> C
Char. 5909: C --> G
Char. 5927: T --> C
Char. 5933: T --> C
Char. 6002: T --> C
Char. 6012: T --> C
Char. 6029: A --> G
Char. 6207: C --> T
Char. 6310: G --> A
Char. 6334: A --> G
Char. 6346: C --> T
Char. 6446: T --> A
Char. 6485: A --> C
Char. 6508: A --> G
Char. 6526: C --> T
Triportheus_brachipomus :
Char. 625: C --> T
Char. 700: T --> C
Char. 703: C --> A
Char. 712: G --> A
Char. 865: G --> A
Char. 877: A --> G
Char. 880: T --> C

Char. 889: A --> G
Char. 1014: T --> C
Char. 1018: A --> G
Char. 1045: A --> G
Char. 1075: C --> T
Char. 1096: T --> C
Char. 1112: C --> T
Char. 1135: T --> C
Char. 1136: T --> C
Char. 1141: A --> G
Char. 1309: A --> G
Char. 1408: A --> G
Char. 1435: C --> T
Char. 1438: C --> T
Char. 1462: C --> T
Char. 1492: A --> G
Char. 1495: A --> G
Char. 4692: A --> C
Triportheus_guentheri :
Char. 607: A --> G
Char. 670: C --> T
Char. 673: C --> T
Char. 706: C --> A
Char. 742: C --> A
Char. 748: C --> T
Char. 763: A --> G
Char. 787: C --> T
Char. 835: C --> G
Char. 868: A --> G
Char. 892: C --> T
Char. 895: C --> A
Char. 937: C --> T
Char. 964: A --> G
Char. 982: C --> T
Char. 1027: A --> G
Char. 1048: C --> T
Char. 1129: C --> A
Char. 1141: A --> T
Char. 1156: C --> T
Char. 1204: A --> G
Char. 1222: C --> T
Char. 1243: A --> T
Char. 1249: A --> G
Char. 1255: A --> G
Char. 1300: T --> A
Char. 1312: C --> T
Char. 1330: C --> T
Char. 1390: T --> C
Char. 1399: A --> G
Char. 1417: A --> T
Char. 1432: T --> C
Char. 1444: A --> G
Char. 2863: A --> G
Char. 4944: T --> A
Char. 4950: G --> A
Char. 4977: C --> A
Char. 5001: G --> A
Char. 5055: A --> G
Char. 5577: G --> A
Char. 5607: A --> G
Char. 6286: A --> T
Char. 6328: A --> T
Char. 6329: T --> C
Char. 6443: A --> G
Char. 6450: C --> T
Char. 6526: C --> T
Triportheus_magdalenae :
Char. 568: T --> C
Char. 589: A --> G
Char. 607: A --> G
Char. 622: T --> C
Char. 625: C --> T
Char. 631: T --> C
Char. 634: A --> G
Char. 670: C --> T
Char. 694: C --> T
Char. 700: T --> C
Char. 706: C --> T
Char. 727: A --> G
Char. 748: C --> G
Char. 752: C --> T
Char. 784: C --> A
Char. 787: C --> A

Char. 832: C --> T
Char. 835: C --> T
Char. 886: G --> A
Char. 913: A --> C
Char. 937: C --> T
Char. 958: G --> A
Char. 967: A --> G
Char. 970: A --> G
Char. 1006: C --> T
Char. 1027: A --> G
Char. 1048: C --> T
Char. 1112: C --> T
Char. 1123: T --> C
Char. 1156: C --> T
Char. 1189: C --> T
Char. 1207: C --> T
Char. 1211: C --> T
Char. 1225: C --> T
Char. 1234: A --> G
Char. 1246: C --> T
Char. 1250: C --> T
Char. 1276: C --> T
Char. 1285: T --> A
Char. 1298: G --> A
Char. 1307: C --> T
Char. 1351: C --> T
Char. 1435: C --> T
Char. 1438: C --> T
Char. 1466: G --> A
Char. 1468: A --> G
Char. 1498: C --> A
Char. 2176: G --> A
Char. 2311: A --> G
Char. 2459: A --> G
Char. 2527: C --> T
Char. 3472: C --> T
Char. 3478: C --> T
Char. 3487: C --> T
Char. 3559: G --> A
Char. 3715: A --> C
Char. 3719: G --> C
Char. 3952: C --> G
Char. 4543: C --> T
Char. 6208: T --> C
Char. 6257: A --> G
Char. 6322: A --> G
Char. 6329: T --> C
Char. 6330: A --> G
Char. 6413: A --> G
Char. 6475: T --> C
Char. 6565: C --> T
Triportheus_orinocensis :
Char. 524: A --> G
Char. 526: A --> C
Char. 535: T --> C
Char. 547: A --> G
Char. 556: C --> T
Char. 634: A --> G
Char. 658: T --> C
Char. 673: C --> T
Char. 721: A --> G
Char. 772: C --> T
Char. 775: A --> G
Char. 814: T --> C
Char. 838: T --> C
Char. 850: A --> C
Char. 916: A --> G
Char. 940: C --> A
Char. 958: G --> A
Char. 979: C --> T
Char. 1042: T --> C
Char. 1075: C --> T
Char. 1081: A --> G
Char. 1091: T --> C
Char. 1096: T --> C
Char. 1105: A --> G
Char. 1129: C --> T
Char. 1183: A --> G
Char. 1267: C --> T
Char. 1273: A --> T
Char. 1355: C --> T
Char. 1489: A --> G
Char. 1492: A --> G

Char. 2171: A --> C
Char. 2315: C --> A
Char. 3559: G --> C
Char. 4551: A --> G
Char. 4830: G --> A
Char. 5127: C --> T
Char. 5367: C --> AG
Char. 6636: T --> C
Triportheus_rotundatus :
Char. 580: C --> T
Char. 634: A --> G
Char. 697: C --> T
Char. 703: C --> A
Char. 772: C --> T
Char. 784: C --> A
Char. 790: A --> G
Char. 802: A --> G
Char. 865: G --> A
Char. 928: C --> T
Char. 1039: A --> G
Char. 1075: C --> G
Char. 1183: A --> G
Char. 1309: A --> G
Char. 1318: A --> C
Char. 1343: C --> A
Char. 1358: C --> T
Char. 1359: T --> C
Char. 1360: A --> T
Char. 1362: T --> G
Char. 1365: G --> T
Char. 1375: T --> C
Char. 1393: T --> A
Char. 1394: A --> C
Char. 1395: C --> A
Char. 1396: A --> T
Char. 1420: A --> C
Char. 1441: C --> T
Char. 1446: C --> G
Char. 1447: A --> C
Char. 1470: T --> A
Char. 1472: T --> C
Char. 1711: T --> C
Char. 1960: T --> C
Char. 3454: C --> T
Char. 3558: C --> T
Char. 3584: G --> T
Char. 3586: G --> C
Char. 3593: A --> G
Char. 3623: G --> T
Char. 3640: A --> C
Char. 3753: T --> G
Char. 3771: A --> T
Char. 3779: G --> T
Char. 3911: G --> T
Char. 3960: G --> A
Char. 3993: G --> A
Char. 4286: A --> C
Char. 4333: A --> G
Char. 4338: A --> T
Char. 6255: A --> G
Char. 6294: T --> C
Char. 6331: A --> G
Char. 6334: A --> G
Char. 6344: C --> G
Triportheus_signatus :
Char. 553: C --> T
Char. 718: A --> G
Char. 874: A --> G
Char. 961: A --> G
Char. 970: G --> A
Char. 1099: A --> G
Char. 1102: A --> G
Char. 1162: T --> C
Char. 1168: T --> C
Char. 1210: C --> T
Char. 1213: A --> G
Char. 1270: A --> G
Char. 1333: C --> T
Char. 1456: C --> T
Char. 3535: T --> G
Char. 4126: A --> T
Char. 4869: G --> A
Char. 4935: C --> T

Char. 4936: C --> A
Char. 6229: G --> A
Char. 6484: T --> C
Triportheus_trifurcatus :
Char. 556: C --> T
Char. 634: A --> G
Char. 661: C --> T
Char. 740: A --> G
Char. 802: A --> G
Char. 883: A --> G
Char. 946: A --> G
Char. 955: T --> C
Char. 1018: A --> G
Char. 1195: A --> G
Char. 1234: A --> G
Char. 3895: C --> G
Char. 4051: C --> T
Char. 6307: T --> C
Char. 6358: C --> T
Triportheus_venezuelensis :
Char. 592: C --> T
Char. 727: A --> G
Char. 823: T --> C
Char. 826: T --> C
Char. 943: A --> G
Char. 949: C --> T
Char. 964: A --> G
Char. 1177: T --> C
Char. 1286: A --> G
Char. 1298: G --> A
Char. 1370: C --> T
Char. 1435: C --> T
Char. 1468: C --> G
Char. 2351: C --> A
Char. 3556: C --> T
Char. 3620: T --> C
Char. 5010: G --> A
Char. 5136: C --> G
Char. 5491: G --> A
Char. 6329: T --> C
Char. 6344: C --> T
Char. 6415: G --> A
Char. 6446: T --> C
Tyttocharax_madeira :
Char. 622: T --> C
Char. 625: C --> T
Char. 634: A --> G
Char. 646: A --> C
Char. 658: C --> T
Char. 673: C --> T
Char. 709: C --> T
Char. 710: C --> T
Char. 712: C --> A
Char. 742: C --> A
Char. 760: A --> G
Char. 766: C --> T
Char. 778: C --> A
Char. 781: C --> T
Char. 796: A --> T
Char. 805: C --> T
Char. 823: A --> T
Char. 835: C --> T
Char. 865: A --> G
Char. 866: C --> T
Char. 895: T --> C
Char. 898: A --> T
Char. 901: C --> T
Char. 907: A --> T
Char. 910: A --> T
Char. 913: A --> T
Char. 925: T --> C
Char. 940: C --> T
Char. 1015: C --> G
Char. 1024: C --> T
Char. 1030: C --> T
Char. 1045: C --> G
Char. 1048: C --> T
Char. 1063: C --> T
Char. 1066: C --> T
Char. 1088: G --> T
Char. 1102: A --> C
Char. 1105: C --> G
Char. 1111: C --> T

Char. 1117: C --> T
 Char. 1138: A --> C
 Char. 1147: A --> T
 Char. 1168: C --> T
 Char. 1189: T --> C
 Char. 1211: C --> T
 Char. 1237: T --> A
 Char. 1250: C --> T
 Char. 1262: C --> T
 Char. 1271: C --> T
 Char. 1300: C --> A
 Char. 1312: C --> T
 Char. 1315: A --> T
 Char. 1345: C --> G
 Char. 1348: C --> T
 Char. 1351: C --> T
 Char. 1372: A --> C
 Char. 1381: C --> T
 Char. 1387: A --> T
 Char. 1393: A --> T
 Char. 1396: A --> G
 Char. 1408: A --> T
 Char. 1436: A --> C
 Xenocharax_crassus :
 No autapomorphies
 Xenocharax_spilurus :
 Char. 1498: C --> A
 Char. 1499: T --> C
 Char. 1500: G --> T
 Char. 1501: A --> G
 Acestrorhynchus_microlepis :
 Char. 6229: G --> A
 Char. 6245: A --> G
 Char. 6286: T --> C
 Char. 6299: A --> G
 Char. 6304: A --> G
 Char. 6313: T --> A
 Char. 6314: T --> A
 Char. 6316: T --> A
 Char. 6321: A --> G
 Char. 6327: A --> G
 Char. 6333: A --> T
 Char. 6362: C --> T
 Char. 6366: C --> T
 Char. 6371: T --> A
 Char. 6412: A --> G
 Char. 6413: C --> T
 Char. 6426: C --> A
 Char. 6492: C --> T
 Acnodon_oligacanthus :
 Char. 5747: C --> T
 Char. 5762: A --> G
 Char. 5845: A --> C
 Char. 5945: G --> A
 Char. 6014: T --> C
 Char. 6016: C --> A
 Char. 6026: A --> G
 Char. 6037: T --> C
 Char. 6040: A --> G
 Char. 6042: T --> C
 Char. 6049: G --> A
 Char. 6072: A --> G
 Char. 6168: T --> C
 Char. 6182: G --> A
 Char. 6254: T --> C
 Char. 6290: T --> C
 Char. 6314: C --> T
 Char. 6316: A --> T
 Char. 6325: C --> T
 Char. 6331: A --> T
 Char. 6345: A --> C
 Char. 6357: A --> G
 Char. 6413: C --> T
 Char. 6427: A --> G
 Char. 6433: T --> A
 Char. 6439: G --> A
 Char. 6450: A --> T
 Char. 6452: A --> G
 Char. 6456: C --> T
 Char. 6493: A --> T
 Char. 6510: A --> G
 Char. 6515: A --> G
 Alestes_dentex :
 Char. 1546: T --> C
 Char. 1789: T --> C
 Char. 1825: C --> A
 Char. 2050: A --> G
 Char. 2113: C --> T
 Alestopetersius_hilgendorfi :
 Char. 1630: T --> C
 Char. 1687: G --> A
 Char. 1798: A --> G
 Char. 1963: T --> C
 Char. 2134: A --> G
 Char. 2146: C --> T
 Apareiodon_ibitiensis :
 Char. 1615: G --> A
 Char. 1633: T --> C
 Char. 1684: T --> C
 Char. 1712: C --> T
 Char. 1777: A --> G
 Char. 1792: C --> T
 Char. 1804: C --> T
 Char. 1846: C --> T
 Char. 1892: T --> C
 Char. 1897: C --> T
 Char. 1927: C --> T
 Char. 1960: T --> C
 Char. 2014: G --> A
 Char. 2023: C --> T
 Char. 2029: C --> T
 Char. 2053: C --> T
 Char. 2059: T --> C
 Char. 2104: T --> C
 Apareiodon_orinocoensis :
 Char. 1517: T --> C
 Char. 1558: CT --> A
 Char. 1654: A --> G
 Char. 1681: G --> A
 Char. 1703: C --> T
 Char. 1765: C --> T
 Char. 1768: A --> G
 Char. 1771: A --> G
 Char. 1846: C --> T
 Char. 1870: C --> A
 Char. 1879: T --> A
 Char. 1894: A --> G
 Char. 1909: C --> T
 Char. 1918: C --> T
 Char. 1927: C --> T
 Char. 1972: G --> A
 Char. 2029: C --> T
 Char. 2063: C --> T
 Char. 2074: A --> C
 Char. 2089: A --> T
 Char. 2125: CT --> G
 Char. 2134: A --> G
 Apareiodon_piracicabae :
 Char. 1645: C --> T
 Char. 1651: A --> G
 Char. 1714: A --> G
 Char. 1807: T --> C
 Char. 1822: G --> A
 Char. 1837: A --> G
 Char. 1843: T --> A
 Char. 1849: C --> T
 Char. 1867: A --> G
 Char. 1873: T --> C
 Char. 1909: C --> T
 Char. 1939: T --> C
 Char. 1990: A --> G
 Char. 2017: A --> G
 Char. 2020: G --> C
 Char. 2032: A --> G
 Char. 2035: T --> C
 Char. 2071: G --> A
 Char. 2119: T --> C
 Char. 2125: C --> G
 Char. 2134: A --> G
 Char. 2140: C --> T
 Astyanax_anterior :
 Char. 1580: C --> T
 Char. 1675: T --> C
 Char. 1723: T --> C
 Char. 1735: G --> A
 Char. 1741: C --> T
 Char. 1780: A --> G
 Char. 1813: A --> T
 Char. 1816: A --> G
 Char. 1825: A --> C
 Char. 1828: G --> A
 Char. 1834: T --> G
 Char. 1861: G --> T
 Char. 1870: A --> C
 Char. 1882: C --> T
 Char. 1894: C --> A
 Char. 1900: C --> T
 Char. 1906: A --> G
 Char. 1918: T --> C
 Char. 1936: A --> T
 Char. 1939: A --> T
 Char. 1948: T --> C
 Char. 1957: A --> C
 Char. 1986: T --> C
 Char. 1987: C --> T
 Char. 1990: A --> G
 Char. 1993: A --> G
 Char. 2005: T --> A
 Char. 2020: C --> T
 Char. 2024: C --> T
 Char. 2027: A --> G
 Char. 2029: T --> A
 Char. 2032: A --> G
 Char. 2035: T --> A
 Char. 2048: C --> T
 Char. 2053: A --> C
 Char. 2056: C --> A
 Char. 2059: T --> A
 Char. 2074: C --> G
 Char. 2080: T --> C
 Char. 2083: A --> G
 Char. 2086: T --> A
 Char. 2089: T --> G
 Char. 2092: A --> T
 Char. 2095: C --> T
 Char. 2098: T --> A
 Char. 2101: C --> T
 Char. 2110: T --> C
 Char. 2128: A --> G
 Char. 2134: T --> A
 Char. 2140: C --> T
 Char. 2146: T --> C
 Char. 2149: T --> C
 Char. 2152: T --> C
 Char. 2159: C --> T
 Astyanax_argyrimarginatus :
 Char. 1517: C --> T
 Char. 1525: T --> C
 Char. 1594: A --> G
 Char. 1633: A --> G
 Char. 1639: A --> T
 Char. 1684: T --> C
 Char. 1708: C --> T
 Char. 1738: C --> T
 Char. 1747: A --> G
 Char. 1762: T --> C
 Char. 1816: A --> G
 Char. 1888: A --> G
 Char. 1915: A --> T
 Char. 1930: A --> T
 Char. 1934: T --> C
 Char. 1936: A --> G
 Char. 1939: G --> A
 Char. 1972: A --> G
 Char. 1984: T --> C
 Char. 2002: A --> C
 Char. 2005: T --> C
 Char. 2047: T --> C
 Char. 2140: T --> C
 Astyanax_bifasciatus :
 Char. 1810: G --> AC
 Astyanax_biotae :
 Char. 2131: G --> A
 Astyanax_bockmanni :
 No autapomorphies
 Astyanax_burgerai :
 Char. 1630: A --> G
 Char. 1678: A --> CT
 Char. 1708: C --> T

Char. 1795: T --> C
Char. 1816: G --> A
Char. 1927: T --> C
Char. 2014: T --> C
Char. 2068: A --> G
Char. 2113: A --> G
Char. 2131: A --> T
Astyanax_dissimilis :
Char. 1810: G --> A
Char. 2026: G --> A
Char. 2116: T --> C
Astyanax_elachylepis :
Char. 1513: T --> C
Char. 1540: G --> A
Char. 1549: A --> C
Char. 1556: T --> C
Char. 1570: T --> C
Char. 1616: G --> A
Char. 1627: T --> C
Char. 1666: A --> G
Char. 1678: A --> T
Char. 1687: A --> T
Char. 1705: T --> A
Char. 1706: A --> G
Char. 1717: G --> A
Char. 1765: C --> T
Char. 1873: T --> C
Char. 1879: A --> G
Char. 1882: C --> T
Char. 1885: T --> C
Char. 1913: C --> T
Char. 1933: C --> T
Char. 1939: G --> A
Char. 1942: A --> T
Char. 1945: T --> C
Char. 1969: T --> C
Char. 1978: C --> T
Char. 1990: A --> G
Char. 1993: A --> G
Char. 1999: A --> G
Char. 2017: A --> G
Char. 2047: T --> C
Char. 2059: T --> C
Char. 2095: T --> C
Char. 2107: T --> C
Char. 2158: T --> C
Astyanax_erythropterus :
Char. 1777: C --> T
Char. 1858: T --> C
Char. 1885: C --> T
Char. 2098: T --> C
Astyanax_fasciatus :
Char. 6331: T --> C
Char. 6347: A --> G
Char. 6456: C --> T
Char. 6573: C --> T
Astyanax_festae :
No autapomorphies
Astyanax_giton :
Char. 1678: A --> G
Char. 1684: T --> C
Char. 1756: T --> C
Char. 1786: T --> C
Char. 1810: A --> G
Char. 1822: A --> G
Char. 1858: T --> C
Char. 1939: G --> A
Char. 1972: A --> G
Char. 1975: A --> G
Char. 2041: T --> C
Char. 2044: T --> C
Char. 2054: T --> C
Char. 2059: A --> C
Char. 2074: A --> G
Char. 2128: G --> A
Char. 4736: A --> C
Char. 4737: G --> T
Char. 4738: T --> A
Char. 4739: G --> T
Char. 4740: T --> G
Char. 4744: C --> A
Char. 5148: C --> T
Char. 5216: C --> T
Char. 5217: C --> G
Char. 5298: C --> T
Char. 5457: C --> T
Char. 5505: G --> T
Char. 5534: A --> C
Char. 5538: G --> A
Char. 5573: A --> C
Char. 5700: G --> A
Char. 5706: C --> T
Astyanax_goyacensis :
No autapomorphies
Astyanax_goyanensis :
Char. 1735: G --> A
Char. 1792: C --> T
Char. 1825: A --> G
Char. 1903: C --> T
Char. 1915: A --> G
Char. 1924: C --> T
Char. 1972: G --> A
Char. 1999: A --> G
Char. 2041: C --> T
Char. 2044: C --> T
Char. 2053: A --> C
Char. 2071: T --> C
Char. 2089: T --> C
Char. 2128: A --> G
Char. 2159: C --> T
Astyanax_gymnodontus :
Char. 1756: C --> T
Char. 1933: C --> T
Char. 2116: T --> C
Astyanax_gymnogenys :
Char. 1684: T --> C
Char. 1735: G --> A
Char. 1756: C --> T
Char. 1780: A --> G
Char. 1849: C --> T
Char. 1888: G --> A
Char. 1933: C --> T
Char. 1984: C --> T
Char. 1987: C --> T
Char. 2006: C --> T
Char. 2116: T --> C
Astyanax_hamatilis :
Char. 1565: T --> C
Char. 1714: A --> G
Char. 1732: C --> T
Char. 1787: T --> C
Char. 1789: A --> T
Char. 1810: A --> G
Char. 1915: A --> G
Char. 1924: T --> C
Char. 1960: T --> A
Char. 1963: T --> C
Char. 1966: T --> C
Char. 1975: A --> G
Char. 1987: T --> C
Char. 2059: A --> T
Char. 2062: T --> C
Char. 2086: T --> C
Char. 2140: T --> C
Astyanax_hastatus :
Char. 1582: T --> A
Char. 1651: T --> C
Char. 1687: A --> G
Char. 1690: A --> G
Char. 1696: A --> T
Char. 1720: T --> C
Char. 1732: C --> T
Char. 1795: T --> C
Char. 1816: A --> G
Char. 1822: A --> G
Char. 1843: T --> C
Char. 1966: T --> C
Char. 2023: A --> G
Char. 2080: T --> C
Char. 2083: A --> G
Char. 2119: C --> T
Char. 2152: T --> C
Astyanax_henseli :
No autapomorphies
Astyanax_janeiroensis :
Char. 1579: A --> G
Char. 1696: A --> T
Char. 2023: A --> G
Char. 2146: T --> C
Astyanax_laticeps :
Char. 1780: A --> GC
Astyanax_magdalenae :
Char. 1589: C --> G
Char. 1591: C --> T
Char. 1594: A --> G
Char. 1595: T --> C
Char. 1606: C --> T
Char. 1663: T --> C
Char. 1693: T --> C
Char. 1717: A --> G
Char. 1723: T --> C
Char. 1729: A --> T
Char. 1732: C --> T
Char. 1741: C --> T
Char. 1777: C --> T
Char. 1780: A --> C
Char. 1784: T --> C
Char. 1789: T --> C
Char. 1825: A --> G
Char. 1828: A --> T
Char. 1852: T --> A
Char. 1882: T --> C
Char. 1892: C --> T
Char. 1972: A --> G
Char. 1975: A --> G
Char. 1978: C --> T
Char. 1993: A --> G
Char. 2005: T --> C
Char. 2011: T --> C
Char. 2014: T --> A
Char. 2029: T --> A
Char. 2038: T --> C
Char. 2059: A --> G
Char. 2086: T --> C
Char. 2161: A --> G
Char. 6206: T --> C
Char. 6332: A --> T
Char. 6345: A --> G
Char. 6347: A --> T
Char. 6368: C --> T
Char. 6424: C --> T
Char. 6438: A --> G
Char. 6441: T --> A
Char. 6446: T --> C
Char. 6514: T --> C
Astyanax_marionae :
Char. 1966: T --> C
Char. 2002: A --> G
Char. 2116: T --> C
Astyanax_metae :
Char. 1558: A --> G
Char. 1582: T --> C
Char. 1591: A --> G
Char. 1597: C --> T
Char. 1601: C --> T
Char. 1621: T --> C
Char. 1702: A --> G
Char. 1712: C --> T
Char. 1876: A --> G
Char. 1897: A --> T
Char. 1906: A --> T
Char. 1978: C --> T
Char. 2050: T --> A
Char. 2065: A --> G
Char. 2083: A --> G
Char. 2089: T --> C
Char. 2092: A --> T
Char. 2104: T --> C
Char. 2152: T --> C
Char. 2161: A --> G
Astyanax_minor :
Char. 1576: A --> G
Char. 1783: T --> C
Char. 1810: G --> A
Char. 1942: A --> G
Char. 2026: G --> A
Char. 2116: T --> C
Astyanax_mutator :
Char. 1513: T --> C

Char. 1525: T --> C
 Char. 1537: C --> T
 Char. 1564: T --> C
 Char. 1579: A --> G
 Char. 1594: A --> GC
 Char. 1651: T --> C
 Char. 1660: T --> C
 Char. 1714: A --> T
 Char. 1726: C --> T
 Char. 1792: T --> C
 Char. 1858: T --> C
 Char. 1879: A --> G
 Char. 1924: T --> C
 Char. 1954: T --> C
 Char. 1966: T --> C
 Char. 2002: A --> G
 Char. 2008: A --> G
 Char. 2011: T --> C
 Char. 2059: A --> C
 Char. 2074: A --> CT
 Char. 2077: T --> C
 Char. 2092: A --> CT
 Astyanax_obscurus :
 Char. 1633: A --> T
 Char. 1684: T --> C
 Char. 1780: A --> G
 Char. 1843: T --> C
 Char. 1873: C --> T
 Char. 1912: C --> T
 Char. 1930: A --> G
 Char. 1966: T --> C
 Char. 1996: C --> T
 Char. 2113: A --> G
 Char. 2122: C --> T
 Char. 2159: C --> T
 Astyanax_pampa :
 Char. 1669: C --> T
 Char. 1744: T --> A
 Char. 1771: C --> G
 Char. 1810: G --> C
 Char. 1825: A --> G
 Char. 1894: C --> T
 Char. 1948: T --> C
 Char. 2026: G --> C
 Char. 2050: C --> A
 Char. 2053: A --> C
 Char. 2071: T --> C
 Char. 2131: G --> A
 Char. 2143: C --> T
 Astyanax_parahybae :
 Char. 1684: T --> C
 Char. 1714: T --> C
 Char. 1744: T --> A
 Char. 1771: C --> G
 Char. 1804: A --> G
 Char. 1810: G --> C
 Char. 1861: G --> A
 Char. 1894: C --> T
 Char. 1948: T --> C
 Char. 1972: G --> A
 Char. 2005: T --> C
 Char. 2050: C --> A
 Char. 2053: A --> C
 Char. 2071: T --> C
 Astyanax_peleucus :
 Char. 1573: G --> A
 Char. 1579: A --> G
 Char. 1621: C --> T
 Char. 1627: T --> C
 Char. 1633: G --> A
 Char. 1672: G --> A
 Char. 1678: A --> T
 Char. 1703: C --> T
 Char. 1723: C --> G
 Char. 1729: T --> C
 Char. 1846: C --> T
 Char. 1861: A --> T
 Char. 1993: A --> G
 Char. 2014: T --> C
 Char. 2023: A --> C
 Char. 2035: T --> C
 Char. 2116: C --> T
 Char. 2125: C --> A
 Char. 2134: A --> G
 Char. 2159: C --> T
 Astyanax_pirapuan :
 Char. 1540: A --> C
 Char. 1546: T --> C
 Char. 1648: T --> C
 Char. 1744: C --> A
 Char. 1810: G --> A
 Char. 1846: C --> T
 Char. 1892: C --> T
 Char. 1906: A --> C
 Char. 1909: T --> C
 Char. 1912: C --> T
 Char. 1915: A --> G
 Char. 1930: A --> T
 Char. 1981: A --> G
 Char. 1990: A --> C
 Char. 2011: T --> C
 Char. 2053: A --> T
 Char. 2086: T --> C
 Char. 2087: C --> T
 Char. 2089: T --> A
 Char. 2101: C --> T
 Char. 2107: C --> T
 Char. 2140: C --> T
 Char. 2155: A --> G
 Char. 2158: C --> T
 Astyanax_ribeirae :
 No autapomorphies
 Astyanax_rivularis :
 No autapomorphies
 Astyanax_saguazu :
 Char. 1543: G --> A
 Char. 1648: T --> C
 Char. 1663: T --> C
 Char. 1720: T --> C
 Char. 1735: G --> A
 Char. 1738: C --> T
 Char. 1759: A --> G
 Char. 1783: T --> C
 Char. 1792: C --> T
 Char. 1816: A --> G
 Char. 1819: T --> C
 Char. 1828: G --> A
 Char. 1858: T --> C
 Char. 1892: C --> T
 Char. 1948: T --> C
 Char. 2017: G --> A
 Char. 2029: T --> C
 Char. 2032: A --> G
 Char. 2050: T --> C
 Char. 2056: C --> T
 Char. 2074: C --> T
 Char. 2092: A --> G
 Char. 2098: T --> C
 Char. 2152: T --> C
 Char. 2161: A --> G
 Astyanax_scabripinnis :
 No autapomorphies
 Astyanax_schubarti :
 No autapomorphies
 Astyanax_serratus :
 Char. 1588: A --> G
 Char. 1687: G --> A
 Char. 1780: A --> G
 Char. 1819: T --> C
 Char. 1843: A --> T
 Char. 1885: T --> C
 Char. 1894: A --> C
 Char. 1897: A --> T
 Char. 1927: C --> T
 Char. 1951: C --> T
 Char. 2014: C --> A
 Char. 2050: T --> C
 Char. 2077: T --> C
 Char. 2116: T --> C
 Astyanax_taeiniatus :
 No autapomorphies
 Astyanax_trierythropterus :
 No autapomorphies
 Astyanax_varzeae :
 No autapomorphies
 Astyanax_venezuelae :
 Char. 1565: C --> T
 Char. 1675: C --> T
 Char. 1684: T --> C
 Char. 1690: C --> A
 Char. 1771: C --> T
 Char. 1804: A --> G
 Char. 1909: T --> A
 Char. 1969: T --> C
 Char. 1972: A --> G
 Char. 1993: A --> G
 Char. 2023: T --> C
 Char. 2080: T --> A
 Char. 2119: T --> C
 Char. 2125: T --> C
 Astyanax_vermilion :
 Char. 1585: C --> T
 Char. 1588: A --> G
 Char. 1708: T --> C
 Char. 1819: T --> C
 Char. 1843: T --> C
 Char. 1957: A --> T
 Char. 1966: T --> C
 Char. 2014: T --> C
 Char. 2020: T --> C
 Char. 2050: A --> G
 Char. 2053: A --> T
 Char. 2065: A --> T
 Astyanax_xavante :
 Char. 1642: T --> C
 Char. 1684: T --> C
 Char. 1687: G --> A
 Char. 1756: C --> T
 Char. 1762: T --> C
 Char. 1780: A --> G
 Char. 1888: G --> A
 Char. 1906: A --> G
 Char. 1966: T --> C
 Char. 2027: A --> G
 Char. 2116: T --> C
 Bivibranchia_fowleri :
 Char. 1513: C --> T
 Char. 1540: A --> G
 Char. 1555: C --> G
 Char. 1570: T --> C
 Char. 1576: A --> G
 Char. 1600: C --> T
 Char. 1621: T --> C
 Char. 1645: C --> T
 Char. 1651: A --> G
 Char. 1666: A --> G
 Char. 1672: G --> A
 Char. 1690: C --> G
 Char. 1693: C --> T
 Char. 1705: A --> T
 Char. 1714: A --> C
 Char. 1732: C --> T
 Char. 1768: A --> G
 Char. 1780: A --> C
 Char. 1783: C --> T
 Char. 1801: C --> T
 Char. 1819: T --> C
 Char. 1831: T --> C
 Char. 1834: C --> T
 Char. 1840: T --> A
 Char. 1864: C --> T
 Char. 1873: C --> T
 Char. 1882: T --> C
 Char. 1891: C --> T
 Char. 1906: C --> T
 Char. 1909: C --> T
 Char. 1942: A --> C
 Char. 1960: C --> T
 Char. 1966: T --> C
 Brachypetersius_huloti :
 Char. 2365: A --> G
 Brachyalestes_fwansensis :
 Char. 1531: C --> T
 Char. 1708: C --> T
 Char. 1711: T --> C
 Char. 1717: A --> G
 Char. 1852: C --> T
 Char. 1861: A --> T
 Char. 1879: G --> A

Char. 1984: C --> T
Char. 2029: T --> C
Char. 2035: T --> C
Char. 2071: A --> G
Char. 2074: A --> T
Char. 2131: A --> G
Char. 2293: C --> T
Char. 2713: C --> T
Bryconalestes_longipinnis :
Char. 1633: T --> AC
Char. 1684: T --> C
Char. 1729: C --> T
Char. 1771: T --> GC
Char. 1774: C --> GT
Char. 1810: G --> C
Char. 1816: A --> G
Char. 1892: C --> T
Char. 1897: T --> C
Char. 1984: C --> T
Char. 2029: T --> AC
Char. 2086: T --> C
Char. 2095: C --> T
Char. 2125: T --> AC
Char. 2299: C --> T
Char. 2374: T --> C
Char. 2431: T --> C
Char. 2722: G --> A
Char. 2894: G --> T
Char. 3451: G --> A
Char. 3487: C --> T
Char. 3529: T --> A
Char. 3533: G --> T
Char. 3730: G --> A
Char. 3845: C --> A
Char. 4102: C --> T
Char. 4189: A --> T
Char. 4195: G --> A
Char. 4367: T --> C
Char. 4402: G --> A
Char. 4403: T --> G
Char. 4404: T --> A
Char. 4408: G --> A
Char. 4420: G --> A
Char. 4421: A --> T
Char. 4426: G --> A
Char. 4428: T --> C
Char. 4432: T --> C
Char. 4445: C --> G
Char. 4447: G --> A
Char. 4448: C --> G
Char. 4455: T --> A
Char. 4456: G --> A
Char. 4462: T --> A
Char. 4464: A --> G
Char. 4480: A --> T
Char. 4482: G --> T
Char. 4487: C --> A
Char. 4494: C --> G
Char. 4499: G --> T
Char. 4500: A --> C
Char. 4517: C --> G
Char. 4518: T --> A
Char. 4522: A --> G
Char. 4527: T --> A
Char. 4530: T --> C
Char. 4536: T --> C
Char. 4537: C --> A
Char. 4540: C --> T
Char. 4548: T --> A
Char. 4549: G --> T
Char. 4550: A --> C
Char. 4552: G --> C
Char. 4555: A --> C
Char. 4556: G --> A
Char. 4566: C --> G
Char. 4571: T --> A
Char. 4572: G --> C
Char. 4573: C --> A
Char. 4583: G --> A
Char. 4600: C --> T
Char. 4601: T --> C
Char. 4606: T --> A
Char. 4608: A --> T

Char. 4610: A --> C
Char. 4611: G --> A
Char. 4612: C --> T
Char. 4615: C --> T
Char. 4620: C --> T
Char. 4626: G --> A
Char. 4627: C --> A
Char. 4633: C --> A
Char. 4637: C --> A
Char. 4641: T --> G
Char. 4661: C --> G
Char. 4677: T --> A
Char. 4678: T --> A
Char. 4680: C --> G
Char. 4681: C --> T
Char. 4690: C --> G
Char. 4704: C --> G
Char. 4812: T --> C
Char. 4837: C --> A
Char. 4871: C --> G
Char. 4958: G --> T
Char. 5095: C --> T
Char. 5350: G --> A
Char. 5394: A --> G
Char. 5421: C --> T
Char. 5441: G --> A
Char. 5549: A --> T
Char. 5664: C --> T
Char. 5670: C --> T
Char. 5676: T --> C
Char. 5688: C --> T
Char. 5700: G --> A
Char. 5807: A --> G
Char. 5863: C --> T
Char. 5864: T --> C
Char. 5866: C --> T
Char. 5890: C --> A
Char. 5933: C --> T
Char. 5938: G --> A
Char. 5970: C --> T
Char. 6001: A --> G
Char. 6012: T --> C
Char. 6024: A --> T
Char. 6025: C --> T
Char. 6043: G --> A
Char. 6072: A --> C
Char. 6253: A --> T
Char. 6307: T --> C
Char. 6308: G --> A
Char. 6327: A --> C
Char. 6352: C --> A
Char. 6353: A --> C
Char. 6402: A --> C
Char. 6440: C --> T
Char. 6441: C --> AT
Char. 6444: T --> A
Char. 6471: T --> C
Char. 6484: C --> T
Char. 6493: A --> T
Char. 6496: T --> C
Char. 6523: C --> T
Bryconamericus_ecaï :
Char. 1560: G --> C
Char. 1720: T --> C
Char. 1777: A --> G
Char. 1924: A --> G
Char. 1939: G --> A
Char. 2119: C --> T
Bryconamericus_microcephalus :
Char. 1564: C --> T
Char. 1573: A --> G
Char. 1598: C --> T
Char. 1681: A --> G
Char. 1726: C --> A
Char. 1792: C --> T
Char. 1807: T --> C
Char. 1876: G --> A
Char. 1879: A --> G
Char. 1903: C --> T
Char. 1921: G --> A
Char. 1939: G --> A
Char. 1963: T --> C
Char. 2014: T --> C

Char. 2062: A --> T
Char. 3479: G --> A
Char. 3835: C --> T
Char. 4003: C --> T
Char. 4006: C --> T
Char. 4132: C --> T
Char. 4147: G --> C
Char. 4492: T --> C
Char. 4521: G --> C
Char. 4615: C --> T
Char. 5827: G --> A
Char. 6099: C --> T
Char. 6300: G --> C
Char. 6326: T --> C
Char. 6389: G --> A
Char. 6441: T --> C
Char. 6454: A --> G
Char. 6458: C --> A
Char. 6513: T --> C
Bryconamericus_turiuba :
Char. 1513: T --> C
Char. 1573: A --> G
Char. 1597: C --> T
Char. 1598: C --> T
Char. 1657: T --> C
Char. 1690: C --> T
Char. 1750: A --> G
Char. 1774: A --> T
Char. 1846: T --> C
Char. 1879: A --> G
Char. 1882: T --> C
Char. 1891: C --> T
Char. 1993: A --> G
Char. 2005: T --> C
Char. 2063: C --> T
Char. 2122: C --> T
Bryconops_caudomaculatus :
Char. 1591: C --> T
Char. 1597: T --> G
Char. 1603: A --> T
Char. 1729: C --> T
Char. 1741: T --> C
Char. 1822: G --> A
Char. 1828: A --> G
Char. 1852: T --> A
Char. 1861: A --> G
Char. 1867: T --> C
Char. 1892: C --> T
Char. 1912: C --> T
Char. 1945: T --> C
Char. 1972: A --> G
Char. 1984: C --> T
Char. 1987: C --> T
Char. 1999: A --> G
Char. 2014: G --> A
Char. 2020: C --> T
Char. 2026: A --> T
Char. 2041: T --> A
Char. 2482: T --> C
Char. 2541: A --> T
Char. 2626: T --> A
Char. 2635: A --> C
Char. 2660: T --> C
Char. 2797: G --> A
Char. 2809: T --> C
Char. 2830: T --> C
Char. 3550: T --> C
Char. 3586: G --> A
Char. 3718: T --> C
Char. 3733: T --> C
Char. 3748: T --> C
Char. 3800: A --> G
Char. 3970: T --> C
Char. 4111: G --> A
Char. 4177: C --> T
Char. 4186: T --> C
Char. 4231: T --> C
Char. 4252: G --> A
Char. 4258: T --> C
Char. 4453: G --> C
Char. 4627: C --> T
Char. 4980: A --> GC
Char. 5211: C --> T

Char. 5292: T --> C
 Char. 5299: C --> G
 Char. 5361: T --> C
 Char. 5379: A --> G
 Char. 5613: T --> C
 Char. 5670: A --> G
 Char. 5697: T --> C
 Char. 5721: T --> C
 Char. 6168: T --> C
 Char. 6245: A --> G
 Char. 6254: A --> T
 Char. 6292: A --> T
 Char. 6326: A --> T
 Char. 6345: A --> G
 Char. 6508: A --> G
 Char. 6513: C --> T
 Char. 6523: C --> T
 Characidium_lagosantense :
 Char. 1555: C --> G
 Char. 1627: A --> C
 Char. 1735: A --> G
 Char. 1798: A --> G
 Char. 1855: C --> G
 Char. 1969: T --> C
 Char. 2050: A --> G
 Char. 2074: T --> C
 Char. 2125: A --> G
 Char. 2161: A --> G
 Characidium_purpuratum :
 Char. 1534: A --> G
 Char. 1561: T --> C
 Char. 1562: C --> T
 Char. 1564: T --> A
 Char. 1621: T --> C
 Char. 1624: C --> T
 Char. 1663: T --> C
 Char. 1669: A --> G
 Char. 1712: C --> T
 Char. 1744: C --> T
 Char. 1747: A --> G
 Char. 1756: C --> T
 Char. 1771: T --> C
 Char. 1787: C --> T
 Char. 1801: C --> A
 Char. 1810: G --> A
 Char. 1813: T --> C
 Char. 1828: A --> C
 Char. 1831: A --> G
 Char. 1840: T --> C
 Char. 1849: A --> G
 Char. 1873: C --> T
 Char. 1906: T --> A
 Char. 1951: T --> C
 Char. 1966: T --> C
 Char. 1993: A --> G
 Char. 2017: A --> G
 Char. 2026: A --> G
 Char. 2035: T --> C
 Char. 2038: C --> T
 Char. 2039: C --> T
 Char. 2041: T --> A
 Char. 5712: T --> A
 Characidium_xanthopterum :
 No autapomorphies
 Clupeocharax_schoutedeni :
 Char. 1513: C --> A
 Char. 1531: T --> A
 Char. 1552: T --> G
 Char. 1573: G --> A
 Char. 1576: A --> T
 Char. 1579: A --> G
 Char. 1585: T --> C
 Char. 1588: G --> A
 Char. 1595: T --> G
 Char. 1606: G --> C
 Char. 1615: G --> A
 Char. 1627: T --> C
 Char. 1630: T --> C
 Char. 1639: A --> C
 Char. 1645: A --> G
 Char. 1651: A --> T
 Char. 1660: T --> C
 Char. 1678: C --> T
 Char. 1681: A --> G
 Char. 1702: A --> G
 Char. 1705: C --> T
 Char. 1711: T --> C
 Char. 1753: T --> C
 Char. 1771: T --> C
 Char. 1772: C --> T
 Char. 1780: A --> C
 Char. 1783: T --> C
 Char. 1786: C --> T
 Char. 1789: C --> T
 Char. 1798: A --> G
 Char. 1810: G --> T
 Char. 1822: G --> A
 Char. 1846: T --> C
 Char. 1861: C --> G
 Char. 1864: T --> C
 Char. 1906: A --> C
 Char. 1922: G --> A
 Char. 1930: C --> T
 Char. 1936: T --> C
 Char. 1945: T --> C
 Char. 1963: T --> C
 Char. 1969: T --> C
 Char. 2014: T --> C
 Char. 2020: T --> C
 Char. 2023: T --> C
 Char. 2032: A --> G
 Char. 2063: T --> C
 Char. 2065: A --> C
 Char. 2092: A --> T
 Char. 2098: A --> G
 Char. 2102: T --> C
 Char. 2122: C --> T
 Char. 2126: G --> T
 Char. 2128: C --> G
 Char. 2137: A --> G
 Char. 2143: A --> T
 Char. 2146: C --> T
 Char. 2149: T --> C
 Char. 2155: A --> G
 Char. 2461: C --> A
 Char. 2482: C --> T
 Char. 2539: T --> G
 Char. 2736: G --> C
 Curimata_roseni :
 Char. 1603: A --> G
 Char. 1849: AC --> G
 Char. 1867: A --> G
 Char. 1948: T --> C
 Char. 2038: A --> G
 Char. 2068: T --> C
 Char. 2119: T --> C
 Char. 2122: C --> T
 Char. 2137: A --> G
 Char. 2143: A --> G
 Char. 2147: C --> T
 Curimatella_lepidura :
 Char. 1561: C --> T
 Char. 1645: C --> T
 Char. 1762: C --> T
 Char. 1769: C --> T
 Char. 1793: C --> T
 Char. 1864: C --> T
 Char. 1867: A --> T
 Char. 1892: C --> T
 Char. 1924: T --> C
 Char. 2017: A --> G
 Char. 2023: T --> C
 Char. 2024: C --> T
 Char. 2032: A --> G
 Char. 2038: A --> C
 Char. 2050: C --> T
 Char. 2053: A --> T
 Char. 2065: A --> G
 Char. 2116: C --> T
 Char. 2119: T --> C
 Char. 2161: A --> G
 Diapoma_alegretense :
 Char. 1520: G --> A
 Char. 1633: A --> G
 Char. 1726: C --> T
 Char. 1795: A --> G
 Char. 1852: A --> G
 Char. 1918: T --> C
 Char. 2065: G --> A
 Char. 2113: T --> G
 Char. 2125: G --> A
 Char. 2134: G --> A
 Char. 5460: C --> G
 Char. 6004: C --> T
 Char. 6209: C --> T
 Char. 6253: A --> G
 Char. 6294: C --> A
 Char. 6342: G --> A
 Char. 6347: A --> G
 Char. 6424: T --> C
 Char. 6440: A --> G
 Char. 6515: A --> G
 Char. 6516: G --> A
 Diapoma_itaimbe :
 Char. 1726: C --> T
 Char. 1804: A --> G
 Char. 1903: C --> T
 Char. 1984: C --> T
 Char. 2038: C --> T
 Char. 6362: T --> C
 Char. 6452: A --> G
 Char. 6511: C --> T
 Cyphocharax_gouldingi :
 Char. 1517: T --> C
 Char. 1552: C --> A
 Char. 1603: T --> G
 Char. 1703: T --> C
 Char. 1744: T --> C
 Char. 1765: T --> C
 Char. 1768: A --> G
 Char. 1772: C --> T
 Char. 1786: C --> T
 Char. 1793: C --> T
 Char. 1810: T --> A
 Char. 1822: G --> A
 Char. 1825: A --> G
 Char. 1834: C --> T
 Char. 1879: C --> T
 Char. 1900: T --> C
 Char. 1906: C --> T
 Char. 1912: T --> C
 Char. 1918: C --> T
 Char. 1960: C --> T
 Char. 1972: G --> A
 Char. 1993: A --> G
 Char. 1996: C --> T
 Char. 1999: A --> G
 Char. 2002: A --> T
 Char. 2008: A --> C
 Char. 2011: T --> C
 Char. 2014: A --> C
 Char. 2020: T --> C
 Char. 2038: A --> T
 Char. 2050: C --> T
 Char. 2053: C --> T
 Char. 2062: C --> T
 Char. 2068: T --> C
 Char. 2071: T --> C
 Char. 2080: T --> A
 Char. 2087: C --> T
 Char. 2092: A --> G
 Char. 2095: C --> T
 Char. 2101: T --> C
 Char. 2107: T --> C
 Char. 2140: C --> T
 Cyphocharax_modestus :
 Char. 1703: T --> C
 Char. 1825: A --> G
 Char. 2014: A --> CT
 Char. 2050: C --> AT
 Char. 2092: A --> GC
 Char. 2095: C --> T
 Char. 2149: A --> CT
 Char. 2161: A --> G
 Cyphocharax_naegeli :
 No autapomorphies
 Cyphocharax_platanus :
 No autapomorphies
 Cyphocharax_vanderi :

Char. 1552: C --> A
 Char. 1561: T --> C
 Char. 1603: T --> A
 Char. 1681: G --> A
 Char. 1690: T --> C
 Char. 1712: C --> T
 Char. 1744: T --> C
 Char. 1750: A --> G
 Char. 1793: C --> T
 Char. 1807: T --> C
 Char. 1810: T --> G
 Char. 1819: C --> T
 Char. 1834: C --> T
 Char. 1840: T --> G
 Char. 1846: T --> C
 Char. 1867: C --> T
 Char. 1873: T --> C
 Char. 1894: A --> G
 Char. 1900: T --> C
 Char. 1903: C --> T
 Char. 1906: C --> T
 Char. 1912: T --> C
 Char. 1924: T --> C
 Char. 1939: G --> A
 Char. 1960: C --> T
 Char. 1987: T --> C
 Char. 1996: C --> T
 Char. 1999: A --> G
 Char. 2002: A --> T
 Char. 2008: A --> G
 Char. 2014: A --> C
 Char. 2017: A --> G
 Char. 2020: T --> C
 Char. 2038: A --> C
 Char. 2044: T --> C
 Char. 2071: T --> C
 Char. 2080: T --> A
 Char. 2086: A --> C
 Char. 2101: T --> C
 Char. 2107: T --> C
 Char. 2110: C --> T
 Char. 2113: A --> G
 Char. 2131: C --> T
 Char. 2147: C --> T
 Char. 2152: C --> T
 Char. 2158: C --> T
 Char. 2159: C --> T
 Cyphocharax_voga :
 Char. 1558: C --> A
 Char. 1645: C --> T
 Char. 1720: T --> C
 Char. 1723: G --> C
 Char. 1741: T --> C
 Char. 1759: G --> A
 Char. 1762: T --> C
 Char. 1783: A --> T
 Char. 1798: A --> G
 Char. 1804: T --> C
 Char. 1822: G --> A
 Char. 1867: C --> T
 Char. 1892: C --> T
 Char. 1933: T --> C
 Char. 2084: C --> T
 Char. 2086: A --> G
 Char. 2161: A --> G
 Deuterodon_parahybae :
 Char. 1717: A --> G
 Char. 1810: A --> T
 Char. 1918: C --> T
 Char. 2023: A --> G
 Char. 2119: C --> T
 Char. 2152: T --> C
 Diapoma_pyrrhopteryx :
 Char. 1606: T --> C
 Char. 1636: T --> C
 Char. 1894: A --> G
 Char. 1972: G --> A
 Char. 2401: C --> A
 Char. 4048: T --> A
 Char. 6254: A --> G
 Distichodus_rostratus :
 Char. 1639: A --> T
 Char. 1681: G --> A
 Char. 1705: A --> G
 Char. 1720: T --> C
 Char. 1732: C --> T
 Char. 1768: A --> G
 Char. 1807: A --> G
 Char. 1843: A --> G
 Char. 1921: G --> A
 Char. 1939: T --> C
 Char. 1954: C --> T
 Char. 1978: G --> A
 Char. 1999: A --> G
 Char. 2014: T --> A
 Char. 2047: C --> T
 Char. 2054: C --> T
 Char. 2056: A --> G
 Char. 2083: A --> G
 Char. 2110: C --> T
 Distichodus_schenga :
 No autapomorphies
 Eugnathichthys_eetveldii :
 Char. 1624: T --> C
 Char. 1636: C --> T
 Char. 1669: A --> G
 Char. 1723: CT --> G
 Char. 1729: AC --> T
 Char. 1759: A --> G
 Char. 1774: C --> T
 Char. 1777: A --> C
 Char. 1786: T --> C
 Char. 1795: A --> G
 Char. 1831: A --> G
 Char. 1843: AG --> C
 Char. 1858: A --> G
 Char. 1888: A --> G
 Char. 1921: T --> C
 Char. 1936: G --> A
 Char. 2017: A --> G
 Char. 2041: T --> C
 Char. 2050: A --> T
 Char. 2068: T --> A
 Char. 2077: T --> C
 Char. 2113: A --> G
 Char. 2128: C --> G
 Char. 2146: T --> C
 Char. 2149: C --> G
 Char. 2159: T --> C
 Eugnathichthys_virgatus :
 Char. 1540: A --> G
 Char. 1615: A --> G
 Hasemania_kalunga :
 Char. 1690: C --> T
 Char. 1744: T --> C
 Char. 1819: T --> C
 Char. 1822: G --> A
 Char. 1825: A --> G
 Char. 1846: C --> T
 Char. 1849: C --> T
 Char. 1861: G --> A
 Char. 1915: A --> T
 Char. 1960: C --> T
 Char. 1975: A --> G
 Hemibrycon_virolinica :
 Char. 1573: A --> G
 Hemigrammus_ocellifer :
 Char. 1513: T --> G
 Char. 1531: C --> A
 Char. 1552: A --> T
 Char. 1556: T --> C
 Char. 1564: T --> A
 Char. 1588: A --> G
 Char. 1594: A --> G
 Char. 1597: T --> A
 Char. 1603: A --> T
 Char. 1612: C --> T
 Char. 1621: T --> C
 Char. 1624: T --> C
 Char. 1633: G --> A
 Char. 1639: A --> C
 Char. 1642: T --> C
 Char. 1645: C --> T
 Char. 1648: C --> T
 Char. 1651: T --> G
 Char. 1666: A --> G
 Char. 1696: A --> T
 Char. 1703: C --> T
 Char. 1732: T --> C
 Char. 1771: T --> C
 Char. 1783: T --> C
 Char. 1807: T --> A
 Char. 1822: G --> C
 Char. 1825: A --> T
 Char. 1831: A --> T
 Char. 1834: A --> C
 Char. 1849: C --> G
 Char. 1852: T --> A
 Char. 1855: T --> A
 Char. 1858: T --> G
 Char. 1882: T --> C
 Char. 1907: C --> T
 Char. 1909: T --> A
 Char. 1918: C --> A
 Char. 1922: G --> A
 Char. 1924: T --> C
 Char. 1942: A --> T
 Char. 2005: T --> G
 Char. 2014: T --> C
 Char. 2020: T --> G
 Char. 2032: A --> C
 Char. 2035: T --> C
 Char. 2048: C --> T
 Char. 2059: A --> C
 Char. 2065: A --> T
 Char. 2089: A --> T
 Char. 2095: C --> T
 Char. 2110: C --> A
 Char. 2113: A --> C
 Char. 2137: T --> G
 Char. 2143: C --> A
 Hemiodus_argenteus :
 Char. 1579: G --> A
 Char. 1594: A --> G
 Char. 1601: C --> T
 Char. 1615: G --> A
 Char. 1627: T --> C
 Char. 1633: T --> C
 Char. 1669: A --> T
 Char. 1675: A --> G
 Char. 1696: A --> G
 Char. 1717: G --> A
 Char. 1750: A --> G
 Char. 1795: C --> A
 Char. 1798: A --> G
 Char. 1819: T --> G
 Char. 1840: T --> A
 Char. 1846: C --> T
 Char. 1855: T --> C
 Char. 1915: T --> C
 Char. 1933: T --> C
 Char. 1936: A --> G
 Char. 1987: C --> T
 Char. 2014: G --> C
 Char. 2020: C --> T
 Char. 2026: A --> T
 Char. 2035: T --> A
 Char. 2050: C --> T
 Char. 2053: A --> T
 Char. 2065: A --> G
 Char. 2068: T --> C
 Char. 2071: C --> T
 Char. 2086: T --> C
 Char. 2092: A --> G
 Char. 2098: A --> G
 Char. 2159: C --> T
 Hoplerythrinus_unitaeniatus :
 Char. 1642: T --> C
 Char. 1708: T --> C
 Char. 1711: C --> T
 Char. 1714: A --> T
 Char. 1735: A --> G
 Char. 1753: T --> C
 Char. 1756: C --> T
 Char. 1759: A --> G
 Char. 1765: C --> T
 Char. 1777: C --> A
 Char. 1780: C --> T
 Char. 1801: C --> T

Char. 1840: T --> C
 Char. 1849: C --> T
 Char. 1852: T --> C
 Char. 1855: C --> T
 Char. 1891: C --> T
 Char. 1892: C --> T
 Char. 1903: T --> C
 Char. 1978: C --> A
 Char. 1981: T --> C
 Char. 1993: A --> G
 Char. 1999: A --> G
 Char. 2002: C --> T
 Char. 2005: C --> T
 Char. 2011: T --> C
 Char. 2014: T --> G
 Char. 2029: T --> C
 Char. 2077: T --> C
 Char. 2086: T --> C
 Char. 2101: C --> T
 Char. 2110: C --> A
 Char. 2119: T --> C
 Char. 2122: C --> T
 Char. 2125: C --> G
 Char. 2146: T --> C
 Char. 3478: C --> A
 Char. 3499: A --> C
 Char. 3589: G --> A
 Char. 3592: C --> T
 Char. 3609: G --> A
 Char. 3703: T --> C
 Char. 3796: C --> T
 Char. 3814: A --> G
 Char. 3862: G --> A
 Char. 3934: G --> A
 Char. 3973: C --> T
 Char. 4033: G --> C
 Char. 4054: T --> A
 Char. 4066: C --> A
 Char. 4117: C --> G
 Char. 4129: C --> T
 Char. 4135: G --> T
 Char. 4192: T --> C
 Char. 4210: C --> G
 Char. 4216: G --> T
 Char. 4294: C --> T
 Char. 4297: C --> T
 Char. 4306: C --> T
 Char. 4378: C --> G
 Char. 4417: G --> C
 Char. 4432: T --> C
 Char. 4447: G --> A
 Char. 4451: C --> T
 Char. 4474: G --> T
 Char. 4537: G --> A
 Char. 6255: A --> C
 Char. 6294: T --> C
 Char. 6327: A --> G
 Char. 6329: T --> C
 Char. 6331: A --> T
 Char. 6347: T --> A
 Char. 6381: A --> G
 Char. 6413: C --> T
 Char. 6438: A --> G
 Hoplias_intermedius :
 No autapomorphies
 Hydrocynus_vittatus :
 Char. 1513: C --> G
 Char. 1555: T --> G
 Char. 1580: C --> T
 Char. 1594: A --> G
 Char. 1606: A --> G
 Char. 1609: C --> T
 Char. 1636: A --> G
 Char. 1687: C --> T
 Char. 1705: G --> C
 Char. 1712: C --> T
 Char. 1741: C --> T
 Char. 1759: A --> G
 Char. 1816: A --> G
 Char. 1843: G --> C
 Char. 1846: C --> T
 Char. 1885: C --> A
 Hydrolycus_armatus :
 Char. 1522: A --> G
 Char. 1531: C --> A
 Char. 1565: C --> T
 Char. 1591: C --> T
 Char. 1594: A --> G
 Char. 1627: T --> C
 Char. 1657: T --> C
 Char. 1675: A --> G
 Char. 1681: G --> A
 Char. 1732: C --> T
 Char. 1762: C --> T
 Char. 1783: C --> T
 Char. 1807: C --> T
 Char. 1810: A --> G
 Char. 1816: A --> G
 Char. 1834: T --> A
 Char. 1852: C --> T
 Char. 1864: C --> T
 Char. 1879: A --> T
 Char. 1882: C --> A
 Char. 1891: C --> T
 Char. 1897: T --> A
 Char. 1921: A --> T
 Char. 1924: G --> T
 Char. 1948: C --> T
 Char. 1975: A --> G
 Char. 1984: C --> T
 Char. 2006: T --> C
 Char. 2110: C --> T
 Char. 2119: C --> T
 Char. 2128: A --> C
 Char. 2137: A --> C
 Char. 2152: C --> T
 Char. 2158: C --> T
 Char. 5796: G --> A
 Char. 5867: T --> A
 Char. 5910: C --> T
 Char. 5936: A --> G
 Char. 5978: A --> C
 Char. 6001: A --> C
 Hyphessobrycon_balbus :
 Char. 1657: C --> T
 Char. 1711: A --> G
 Char. 1726: C --> T
 Char. 1756: C --> T
 Char. 1786: C --> T
 Char. 1912: C --> T
 Char. 2029: T --> C
 Hyphessobrycon_columbianus :
 Char. 1528: T --> C
 Char. 1543: A --> G
 Char. 1558: A --> G
 Char. 1564: T --> C
 Char. 1570: T --> C
 Char. 1573: A --> G
 Char. 1582: T --> C
 Char. 1588: A --> G
 Char. 1600: A --> T
 Char. 1609: T --> C
 Char. 1621: T --> C
 Char. 1663: T --> C
 Char. 1669: A --> G
 Char. 1681: A --> G
 Char. 1693: T --> C
 Char. 1706: G --> A
 Char. 1732: T --> C
 Char. 1768: A --> G
 Char. 1777: C --> T
 Char. 1789: T --> A
 Char. 1792: T --> C
 Char. 1819: T --> G
 Char. 1825: A --> G
 Char. 1834: A --> G
 Char. 1837: A --> G
 Char. 1843: T --> A
 Char. 1855: T --> C
 Char. 1909: T --> C
 Char. 1912: C --> T
 Char. 1924: T --> C
 Char. 1986: T --> C
 Char. 2053: A --> G
 Char. 2062: A --> T
 Char. 2063: C --> T
 Char. 2071: T --> A
 Char. 2083: A --> G
 Char. 2087: C --> T
 Char. 2095: C --> T
 Char. 2140: C --> T
 Char. 2143: C --> T
 Hyphessobrycon_flammeus :
 Char. 1669: C --> T
 Char. 1744: T --> AG
 Char. 1894: C --> AT
 Char. 2026: G --> AC
 Char. 2050: C --> A
 Char. 2131: G --> A
 Hyphessobrycon_itaparicensis :
 Char. 1714: A --> T
 Char. 1738: C --> A
 Char. 1765: C --> T
 Char. 1777: C --> A
 Char. 1807: T --> C
 Char. 1828: G --> T
 Char. 1852: T --> C
 Char. 1885: T --> C
 Char. 1912: C --> T
 Char. 2048: C --> T
 Char. 2086: T --> C
 Char. 2092: A --> G
 Char. 2119: T --> C
 Char. 2146: T --> C
 Hyphessobrycon_luetkenii :
 Char. 1606: T --> C
 Char. 1651: C --> T
 Char. 1666: G --> A
 Char. 1735: G --> A
 Char. 1741: C --> T
 Char. 1792: T --> C
 Char. 1888: A --> G
 Char. 1912: T --> C
 Char. 2014: T --> C
 Char. 2023: A --> G
 Char. 2029: A --> T
 Char. 2050: A --> G
 Hyphessobrycon_parvellus :
 Char. 1555: C --> T
 Char. 1573: G --> A
 Char. 1601: C --> T
 Char. 1681: A --> G
 Char. 1684: T --> C
 Char. 1726: C --> T
 Char. 1732: C --> T
 Char. 1882: C --> T
 Char. 1900: T --> C
 Char. 1909: T --> G
 Char. 1936: A --> G
 Char. 1945: T --> C
 Char. 2038: T --> A
 Char. 2041: T --> C
 Char. 2053: A --> G
 Char. 2063: C --> T
 Hyphessobrycon_rosaceus :
 Char. 1549: A --> T
 Char. 1720: T --> C
 Char. 1786: T --> C
 Char. 2029: A --> C
 Char. 2068: A --> G
 Ichthyborus_monodi :
 Char. 1534: A --> G
 Char. 1549: A --> C
 Char. 1573: A --> C
 Char. 1598: T --> C
 Char. 1633: C --> A
 Char. 1663: T --> C
 Char. 1666: A --> G
 Char. 1672: A --> G
 Char. 1675: A --> T
 Char. 1708: T --> C
 Char. 1723: G --> T
 Char. 1735: A --> G
 Char. 1756: C --> T
 Char. 1765: C --> T
 Char. 1774: T --> C
 Char. 1777: A --> G
 Char. 1783: T --> A
 Char. 1786: C --> T

Char. 1789: C --> T
 Char. 1801: C --> T
 Char. 1822: A --> G
 Char. 1846: C --> T
 Char. 1849: C --> G
 Char. 1894: G --> C
 Char. 1903: C --> T
 Char. 1921: G --> A
 Char. 1936: A --> G
 Char. 1945: T --> C
 Char. 1954: C --> T
 Char. 1981: C --> T
 Char. 2006: T --> C
 Char. 2017: A --> G
 Char. 2024: T --> C
 Char. 2032: A --> C
 Char. 2042: C --> T
 Char. 2047: C --> T
 Char. 2074: A --> G
 Char. 2083: A --> G
 Char. 2128: A --> C
 Char. 2137: A --> G
 Char. 2140: C --> T
 Char. 2161: A --> G
Ichthyoborus_quadriineatus :
 Char. 1531: C --> T
 Char. 1537: C --> T
 Char. 1567: A --> G
 Char. 1705: A --> C
 Char. 1807: A --> G
 Char. 1876: A --> T
 Char. 1972: A --> G
 Char. 1987: T --> C
 Char. 2029: A --> G
 Char. 2053: C --> T
 Char. 2092: A --> T
 Char. 2125: T --> C
Knodus_borki :
 Char. 1565: C --> T
 Char. 1738: C --> T
 Char. 1750: A --> G
 Char. 1774: A --> C
 Char. 1777: C --> A
 Char. 1789: T --> A
Knodus_tiquiensis :
 Char. 1567: T --> C
 Char. 1570: C --> T
 Char. 1612: T --> C
 Char. 1693: C --> T
 Char. 1702: A --> G
 Char. 1705: T --> C
 Char. 1735: A --> G
 Char. 1744: C --> T
 Char. 1768: A --> G
 Char. 1789: T --> A
 Char. 1849: C --> A
 Char. 1879: A --> C
 Char. 1888: A --> T
 Char. 1891: C --> T
 Char. 1894: A --> T
 Char. 1900: T --> C
 Char. 1921: G --> A
 Char. 1939: G --> A
 Char. 1993: A --> G
 Char. 2017: A --> G
 Char. 2035: T --> C
 Char. 2050: A --> C
 Char. 2063: C --> T
Knodus_victoriae :
 Char. 1588: A --> G
 Char. 1591: T --> C
 Char. 1639: A --> C
 Char. 1651: G --> A
 Char. 1672: A --> G
 Char. 1678: A --> G
 Char. 1723: T --> C
 Char. 1738: C --> A
 Char. 1750: A --> G
 Char. 1792: C --> T
 Char. 1793: C --> T
 Char. 1828: A --> G
 Char. 1843: C --> T
 Char. 1939: G --> A
 Char. 1990: A --> G
 Char. 2020: T --> C
 Char. 2044: T --> C
 Char. 2047: T --> C
 Char. 2077: T --> C
Laemolyta_taeiniata :
 Char. 1549: T --> C
 Char. 1804: T --> C
 Char. 2134: A --> G
Lebiasina_aureoguttata :
 Char. 1537: C --> T
 Char. 1546: T --> C
 Char. 1549: A --> G
 Char. 1555: C --> T
 Char. 1565: C --> T
 Char. 1570: C --> T
 Char. 1576: A --> T
 Char. 1579: G --> A
 Char. 1580: C --> T
 Char. 1582: T --> A
 Char. 1585: C --> T
 Char. 1597: C --> T
 Char. 1606: T --> A
 Char. 1639: C --> A
 Char. 1672: G --> A
 Char. 1681: A --> G
 Char. 1687: A --> C
 Char. 1696: A --> G
 Char. 1705: GT --> A
 Char. 1720: T --> C
 Char. 1723: A --> G
 Char. 1729: T --> A
 Char. 1744: CT --> A
 Char. 1796: C --> T
 Char. 1807: C --> T
 Char. 1843: T --> C
 Char. 1855: AC --> G
 Char. 1892: T --> C
 Char. 1906: C --> A
 Char. 1912: T --> C
 Char. 1918: C --> T
Lebiasina_provenzanoi :
 Char. 1516: T --> C
 Char. 1519: A --> T
 Char. 1546: T --> C
 Char. 1576: A --> T
 Char. 1580: C --> T
 Char. 1582: T --> A
 Char. 1606: T --> C
 Char. 1639: C --> A
 Char. 1678: T --> C
 Char. 1684: T --> C
 Char. 1687: A --> T
 Char. 1693: T --> C
 Char. 1699: T --> C
 Char. 1729: T --> A
 Char. 1738: T --> C
 Char. 1777: C --> T
 Char. 1780: A --> C
 Char. 1786: T --> C
 Char. 1789: T --> C
 Char. 1796: C --> T
 Char. 1804: C --> T
 Char. 1807: C --> T
 Char. 1813: A --> G
 Char. 1843: T --> C
 Char. 1853: C --> T
 Char. 1858: T --> A
 Char. 1879: A --> G
 Char. 1888: T --> A
 Char. 1897: A --> T
 Char. 1900: T --> C
 Char. 1903: T --> C
 Char. 1921: T --> G
 Char. 1927: C --> T
 Char. 1930: A --> T
 Char. 1934: C --> T
 Char. 1954: T --> C
 Char. 1960: A --> G
 Char. 1972: A --> G
 Char. 1984: C --> T
 Char. 1999: A --> G
 Char. 2005: C --> T
 Char. 2006: C --> T
 Char. 2014: T --> G
 Char. 2026: A --> G
 Char. 2027: A --> G
 Char. 2038: C --> T
 Char. 2042: C --> T
 Char. 2044: T --> A
 Char. 2048: T --> C
 Char. 2053: A --> C
 Char. 2056: A --> G
 Char. 2062: T --> C
 Char. 2077: T --> C
 Char. 2102: T --> C
 Char. 2113: T --> C
 Char. 2119: T --> C
Leporinus_agassizii :
 Char. 1753: T --> C
 Char. 1780: A --> G
 Char. 1849: G --> A
 Char. 2014: C --> T
 Char. 2054: C --> T
 Char. 2068: T --> C
 Char. 2074: A --> G
 Char. 2080: T --> C
 Char. 2152: C --> T
 Char. 2155: A --> G
 Char. 2161: A --> G
Leporinus_brunneus :
 Char. 1528: T --> C
 Char. 1552: A --> T
 Char. 1627: T --> C
 Char. 1636: C --> A
 Char. 1666: A --> G
 Char. 1693: C --> T
 Char. 1711: C --> G
 Char. 1762: C --> T
 Char. 1771: A --> T
 Char. 1774: A --> T
 Char. 1795: A --> G
 Char. 1810: A --> T
 Char. 1819: C --> T
 Char. 1825: A --> T
 Char. 1831: A --> C
 Char. 1849: A --> C
 Char. 1909: C --> A
 Char. 1915: T --> C
 Char. 1927: C --> T
 Char. 1981: A --> G
 Char. 2014: G --> T
 Char. 2023: T --> C
 Char. 2029: T --> C
 Char. 2032: A --> G
 Char. 2059: A --> T
 Char. 2080: C --> G
 Char. 2089: A --> G
 Char. 2104: T --> G
 Char. 2134: A --> G
Leporinus_octomaculatus :
 Char. 1534: A --> G
 Char. 1564: C --> T
 Char. 1630: C --> T
 Char. 1708: T --> C
 Char. 1849: C --> T
 Char. 1852: A --> C
 Char. 1999: A --> G
 Char. 2038: A --> G
 Char. 2062: C --> T
 Char. 2063: C --> T
 Char. 2116: C --> T
 Char. 2152: C --> T
 Char. 2614: C --> T
 Char. 2815: G --> A
 Char. 3844: C --> T
 Char. 3984: A --> T
 Char. 4081: A --> T
 Char. 4124: C --> A
 Char. 5421: C --> T
 Char. 5712: A --> T
 Char. 5718: G --> A
Leporinus_ortomaculatus :
 Char. 1549: T --> C
 Char. 1555: C --> T
 Char. 1588: A --> G

Char. 1633: T --> C
 Char. 1642: T --> C
 Char. 1717: G --> A
 Char. 1723: C --> A
 Char. 1771: A --> G
 Char. 1786: T --> C
 Char. 1798: A --> T
 Char. 1807: C --> T
 Char. 1810: A --> G
 Char. 1831: A --> G
 Char. 1888: T --> C
 Char. 1918: C --> A
 Char. 1984: C --> A
 Char. 1990: A --> G
 Char. 1999: A --> G
 Char. 2006: C --> T
 Char. 2008: A --> G
 Char. 2087: C --> T
 Char. 2104: T --> C
 Char. 2107: T --> C
 Char. 2119: T --> C
 Char. 2161: A --> G
 Leporinus_trimaculatus :
 Char. 1549: T --> C
 Char. 1744: A --> G
 Char. 1828: A --> G
 Char. 1849: G --> C
 Char. 1960: A --> G
 Char. 2143: A --> G
 Char. 2481: A --> G
 Char. 3533: G --> T
 Char. 3607: A --> C
 Char. 3913: A --> T
 Char. 4564: C --> G
 Char. 4654: C --> G
 Char. 4767: C --> T
 Char. 4777: C --> T
 Char. 4896: C --> G
 Char. 5388: G --> A
 Mimagoniates_lateralis :
 Char. 1565: C --> T
 Char. 1603: A --> G
 Char. 1606: C --> T
 Char. 1630: C --> T
 Char. 1681: A --> G
 Char. 1684: T --> C
 Char. 1729: T --> C
 Char. 1744: C --> A
 Char. 1828: T --> A
 Char. 1957: T --> C
 Char. 1963: T --> C
 Char. 4737: G --> A
 Char. 4789: C --> T
 Char. 4841: G --> A
 Char. 4878: G --> A
 Char. 4998: G --> T
 Char. 5112: G --> A
 Char. 5682: C --> T
 Char. 5837: T --> C
 Char. 6210: A --> T
 Char. 6515: A --> G
 Tetragonopterus_georgiae :
 Char. 1525: T --> C
 Char. 1540: A --> C
 Char. 1669: A --> G
 Char. 1675: C --> T
 Char. 1702: A --> G
 Char. 1705: T --> G
 Char. 1729: A --> C
 Char. 1738: A --> C
 Char. 1747: A --> T
 Char. 1786: C --> T
 Char. 1792: T --> A
 Char. 1810: C --> T
 Char. 1828: A --> G
 Char. 1831: A --> C
 Char. 1834: C --> T
 Char. 1837: A --> G
 Char. 1840: T --> C
 Char. 1849: A --> G
 Char. 1879: A --> G
 Char. 1897: A --> T
 Char. 1945: T --> C
 Char. 1972: A --> G
 Char. 1975: A --> G
 Char. 1981: T --> A
 Char. 1984: C --> A
 Char. 2029: T --> C
 Char. 2032: A --> T
 Char. 2041: T --> C
 Char. 2044: T --> C
 Char. 2053: AT --> G
 Char. 2065: A --> T
 Char. 2074: A --> G
 Char. 2077: T --> C
 Char. 2080: A --> T
 Char. 2102: C --> T
 Char. 2110: C --> T
 Char. 2137: A --> G
 Char. 2149: T --> A
 Char. 2159: T --> C
 Myleus_micans :
 Char. 1552: C --> T
 Char. 1612: T --> C
 Char. 1663: T --> C
 Char. 1720: C --> T
 Char. 1735: A --> G
 Char. 1744: G --> C
 Char. 1765: C --> T
 Char. 1780: A --> G
 Char. 1789: T --> C
 Char. 1849: C --> T
 Char. 1861: C --> T
 Char. 1876: C --> T
 Char. 1930: C --> T
 Char. 1978: C --> T
 Char. 1990: A --> T
 Char. 2032: T --> C
 Char. 2089: G --> T
 Char. 2098: A --> G
 Char. 2107: C --> T
 Char. 2110: C --> T
 Char. 2140: C --> T
 Myleus_pacu :
 Char. 1519: A --> G
 Char. 1712: C --> T
 Char. 1892: C --> T
 Char. 1969: C --> T
 Char. 2017: A --> C
 Char. 2026: A --> GC
 Char. 2027: A --> CT
 Char. 2035: C --> T
 Char. 2062: C --> T
 Mylossoma_aureum :
 Char. 1615: G --> A
 Char. 1693: C --> T
 Char. 1798: A --> G
 Char. 1816: A --> G
 Char. 1849: C --> T
 Char. 2017: A --> G
 Char. 2026: A --> G
 Char. 2071: CT --> A
 Char. 6347: C --> T
 Nannocharax_taenia :
 Char. 1513: T --> C
 Char. 1534: A --> G
 Char. 1546: T --> C
 Char. 1570: C --> T
 Char. 1600: A --> C
 Char. 1639: A --> T
 Char. 1642: C --> T
 Char. 1657: C --> T
 Char. 1678: T --> C
 Char. 1681: G --> A
 Char. 1693: T --> C
 Char. 1708: T --> C
 Char. 1717: A --> G
 Char. 1741: C --> T
 Char. 1771: T --> C
 Char. 1780: C --> G
 Char. 1787: C --> T
 Char. 1792: T --> C
 Char. 1795: A --> G
 Char. 1801: C --> T
 Char. 1840: T --> C
 Char. 1843: A --> C
 Char. 1873: T --> C
 Char. 1879: T --> C
 Char. 1888: A --> T
 Char. 1891: C --> T
 Char. 1900: T --> C
 Char. 1909: T --> A
 Char. 1915: A --> T
 Char. 1921: A --> T
 Char. 2006: T --> C
 Char. 2024: T --> C
 Char. 2035: C --> T
 Char. 2047: C --> T
 Char. 2050: A --> G
 Char. 2065: T --> C
 Char. 2068: T --> C
 Char. 2074: A --> C
 Char. 2102: C --> T
 Char. 2125: T --> C
 Char. 6005: T --> A
 Char. 6029: C --> A
 Char. 6077: A --> G
 Char. 6087: C --> T
 Char. 6099: T --> C
 Char. 6162: A --> G
 Char. 6230: C --> T
 Char. 6253: C --> GT
 Char. 6306: C --> T
 Char. 6322: C --> T
 Char. 6342: A --> CT
 Char. 6351: A --> G
 Char. 6361: G --> A
 Char. 6362: C --> T
 Char. 6401: C --> A
 Char. 6413: C --> T
 Char. 6424: T --> C
 Char. 6440: A --> T
 Char. 6447: C --> A
 Char. 6449: T --> C
 Char. 6450: A --> T
 Char. 6507: C --> T
 Char. 6516: G --> A
 Char. 6523: C --> T
 Char. 6575: C --> A
 Nannopetersius_lamberti :
 Char. 2167: G --> T
 Parodon_guyanensis :
 Char. 1531: C --> T
 Char. 1585: C --> T
 Char. 1594: A --> T
 Char. 1597: C --> A
 Char. 1615: G --> A
 Char. 1648: C --> T
 Char. 1651: A --> T
 Char. 1690: C --> T
 Char. 1729: C --> A
 Char. 1765: C --> T
 Char. 1771: A --> C
 Char. 1787: C --> T
 Char. 1789: T --> A
 Char. 1801: C --> A
 Char. 1810: A --> G
 Char. 1813: T --> C
 Char. 1846: C --> T
 Char. 1849: C --> T
 Char. 1852: T --> C
 Char. 1906: C --> T
 Char. 1907: C --> T
 Char. 1909: C --> A
 Char. 1987: C --> T
 Char. 1990: A --> G
 Char. 1993: A --> G
 Char. 2005: C --> G
 Char. 2024: C --> T
 Char. 2035: T --> A
 Char. 2047: T --> C
 Char. 2063: C --> T
 Char. 2083: G --> A
 Char. 2095: C --> T
 Char. 2137: A --> G
 Parodon_hilarii :
 Char. 1525: T --> C
 Char. 1552: A --> G
 Char. 1558: C --> T

Char. 1564: C --> T
 Char. 1567: A --> G
 Char. 1573: A --> G
 Char. 1594: G --> A
 Char. 1600: G --> A
 Char. 1609: T --> C
 Char. 1618: T --> C
 Char. 1639: A --> G
 Char. 1648: T --> C
 Char. 1657: T --> C
 Char. 1672: A --> G
 Char. 1681: G --> A
 Char. 1687: A --> G
 Char. 1696: A --> G
 Char. 1699: T --> C
 Char. 1703: C --> T
 Char. 1708: T --> C
 Char. 1738: A --> C
 Char. 1741: C --> T
 Char. 1744: T --> C
 Char. 1759: G --> A
 Char. 1777: A --> C
 Char. 1783: A --> C
 Char. 1792: C --> T
 Char. 1816: A --> G
 Char. 1831: G --> A
 Char. 1858: C --> G
 Char. 1876: A --> G
 Char. 1879: T --> C
 Char. 1882: C --> T
 Char. 1888: A --> G
 Char. 1892: T --> C
 Char. 1900: C --> T
 Char. 1912: T --> C
 Char. 1930: C --> T
 Char. 1942: T --> C
 Char. 1948: T --> C
 Char. 1951: T --> C
 Char. 1972: G --> A
 Char. 1993: A --> G
 Char. 2011: T --> C
 Char. 2038: C --> T
 Char. 2047: C --> T
 Char. 2050: C --> G
 Char. 2077: T --> C
 Char. 2080: C --> T
 Char. 2087: C --> T
 Char. 2128: A --> G
 Char. 2152: C --> T
 Petulanos_spiloclistron :
 Char. 1519: A --> C
 Char. 1531: C --> A
 Char. 1624: T --> C
 Char. 1636: C --> T
 Char. 1720: T --> C
 Char. 1738: A --> C
 Char. 1750: A --> G
 Char. 1759: A --> G
 Char. 1771: A --> G
 Char. 1876: A --> G
 Char. 1921: T --> A
 Char. 1954: T --> C
 Char. 2017: A --> G
 Char. 2032: A --> G
 Char. 2050: C --> T
 Char. 2062: C --> T
 Char. 2113: A --> T
 Char. 2158: C --> T
 Phenacogrammus_interruptus :
 Char. 1564: C --> T
 Char. 1588: G --> A
 Phenacogrammus_taeiniatus :
 No autapomorphies
 Planaltina_myersi :
 No autapomorphies
 Pristobrycon_striolatus :
 Char. 1573: A --> G
 Char. 1576: A --> G
 Char. 1588: A --> G
 Char. 1600: A --> C
 Char. 1606: C --> T
 Char. 1690: C --> G
 Char. 1702: A --> G
 Char. 1708: C --> G
 Char. 1717: G --> A
 Char. 1723: C --> A
 Char. 1729: C --> T
 Char. 1732: C --> T
 Char. 1735: A --> G
 Char. 1750: A --> G
 Char. 1771: T --> C
 Char. 1798: A --> C
 Char. 1819: T --> G
 Char. 1828: G --> A
 Char. 1861: A --> T
 Char. 1864: C --> T
 Char. 1892: C --> T
 Char. 1900: T --> C
 Char. 1906: C --> T
 Char. 1939: G --> T
 Char. 1948: C --> T
 Char. 1981: A --> G
 Char. 1996: T --> C
 Char. 2032: T --> C
 Char. 2038: T --> C
 Char. 2059: A --> C
 Char. 5763: A --> G
 Char. 5866: T --> C
 Char. 5935: A --> C
 Char. 5972: A --> G
 Char. 6024: G --> A
 Char. 6040: A --> G
 Char. 6334: A --> C
 Char. 6342: T --> A
 Char. 6378: A --> C
 Char. 6515: A --> G
 Char. 6573: T --> C
 Psectrogaster_ciliata :
 Char. 1774: A --> G
 Char. 1853: C --> T
 Char. 1933: T --> C
 Char. 2054: C --> T
 Pseudanos_winterbottomi :
 Char. 1519: A --> G
 Char. 1531: C --> T
 Char. 1630: T --> C
 Char. 1657: T --> C
 Char. 1663: T --> C
 Char. 1669: T --> C
 Char. 1690: C --> T
 Char. 1705: A --> G
 Char. 1729: C --> T
 Char. 1769: C --> T
 Char. 1843: T --> C
 Char. 1921: T --> G
 Char. 1983: C --> T
 Char. 2005: C --> T
 Char. 2011: T --> C
 Char. 2047: T --> C
 Char. 2146: C --> T
 Pygocentrus_piraya :
 Char. 1732: C --> T
 Char. 1822: G --> A
 Char. 1867: T --> C
 Char. 1870: A --> G
 Char. 1936: T --> C
 Char. 2047: T --> C
 Char. 2050: G --> C
 Char. 2074: A --> G
 Char. 2080: A --> G
 Char. 2095: C --> T
 Char. 2098: G --> A
 Char. 6515: A --> G
 Pyrrhulina_filamentosa :
 Char. 1525: C --> T
 Char. 1531: C --> T
 Char. 1537: C --> T
 Char. 1540: AG --> T
 Char. 1552: C --> T
 Char. 1561: C --> T
 Char. 1564: G --> A
 Char. 1567: A --> C
 Char. 1579: G --> A
 Char. 1588: A --> G
 Char. 1591: C --> A
 Char. 1598: C --> T
 Char. 1603: A --> G
 Char. 1609: T --> C
 Char. 1627: T --> A
 Char. 1630: T --> C
 Char. 1636: T --> C
 Char. 1651: T --> G
 Char. 1675: A --> T
 Char. 1676: A --> G
 Char. 1678: T --> A
 Char. 1690: C --> A
 Char. 1708: T --> A
 Char. 1711: C --> T
 Char. 1723: A --> T
 Char. 1732: C --> T
 Char. 1735: A --> G
 Char. 1756: C --> T
 Char. 1765: T --> C
 Char. 1810: G --> T
 Char. 1831: A --> C
 Char. 1846: C --> T
 Char. 1849: C --> A
 Char. 1852: A --> C
 Char. 1855: AC --> T
 Char. 1870: C --> A
 Char. 1873: T --> C
 Char. 1876: C --> T
 Char. 1915: A --> G
 Char. 1918: C --> G
 Char. 2008: A --> T
 Char. 2014: T --> C
 Char. 2050: GC --> A
 Char. 2065: A --> T
 Char. 2068: CT --> G
 Char. 2074: A --> T
 Char. 2086: A --> G
 Char. 2087: C --> T
 Char. 2125: C --> T
 Rachoviscus_graciliceps :
 Char. 1556: T --> C
 Char. 1601: T --> C
 Char. 1621: T --> C
 Char. 1681: A --> G
 Char. 1732: T --> C
 Char. 1774: C --> T
 Char. 1780: A --> C
 Char. 1825: A --> G
 Char. 1879: T --> A
 Char. 1933: T --> C
 Char. 1981: A --> G
 Char. 1987: T --> C
 Char. 2032: G --> A
 Char. 2050: A --> G
 Char. 2062: C --> T
 Char. 2134: A --> G
 Char. 2140: C --> T
 Char. 2146: T --> C
 Char. 4715: A --> G
 Char. 4732: C --> T
 Char. 4835: C --> T
 Char. 5128: C --> T
 Char. 5208: A --> C
 Char. 5412: C --> A
 Char. 5505: G --> A
 Char. 5557: A --> G
 Char. 5845: T --> C
 Char. 5911: T --> A
 Char. 5972: A --> G
 Char. 6043: G --> A
 Char. 6211: A --> G
 Char. 6346: T --> C
 Char. 6373: G --> A
 Rhabdalestes_septentrionalis :
 Char. 1519: T --> A
 Char. 1534: A --> G
 Char. 1546: T --> C
 Char. 1555: C --> T
 Char. 1573: G --> A
 Char. 1582: A --> C
 Char. 1585: C --> T
 Char. 1714: AT --> C
 Char. 1720: T --> C
 Char. 1744: A --> G
 Char. 1786: C --> T

Char. 1810: G --> A
 Char. 1825: C --> G
 Char. 1828: A --> G
 Char. 1849: C --> T
 Char. 1852: T --> C
 Char. 1861: A --> T
 Char. 1912: C --> T
 Char. 1915: T --> C
 Char. 1918: A --> G
 Char. 1939: T --> C
 Char. 2062: C --> T
 Char. 2086: T --> G
 Char. 2134: A --> T
 Char. 2224: T --> C
 Char. 2362: T --> C
 Char. 2395: T --> A
 Char. 2551: A --> G
 Char. 2617: C --> T
 Char. 2630: T --> A
Rhabdalestes_yokai :
 Char. 1657: T --> C
 Char. 1723: C --> AG
 Char. 1735: A --> G
 Char. 1744: A --> G
 Char. 1816: A --> G
 Char. 1819: A --> G
 Char. 1825: C --> A
 Char. 1846: C --> T
 Char. 1849: C --> T
 Char. 1852: T --> C
 Char. 1885: T --> C
 Char. 1891: T --> C
 Char. 1915: T --> C
 Char. 1948: T --> C
 Char. 1951: T --> C
 Char. 1972: A --> G
 Char. 1984: T --> C
 Char. 2008: A --> T
 Char. 2045: C --> T
 Char. 2065: A --> G
 Char. 2086: T --> C
 Char. 2087: T --> C
 Char. 2095: T --> C
 Char. 2119: T --> C
 Char. 2134: A --> G
 Char. 2155: A --> G
 Char. 2161: A --> G
Roebooides_bouchellei :
 Char. 3559: G --> A
 Char. 3619: G --> A
 Char. 3832: G --> A
 Char. 3994: C --> A
 Char. 4006: C --> T
 Char. 4018: G --> A
 Char. 4294: C --> T
 Char. 4315: G --> A
 Char. 4323: A --> G
 Char. 4438: C --> T
 Char. 4471: G --> C
 Char. 4526: C --> T
 Char. 4543: C --> A
 Char. 6211: G --> A
Roebooides_xenodon :
 Char. 1633: A --> G
 Char. 1669: A --> G
 Char. 1675: T --> C
 Char. 1684: T --> C
 Char. 1705: T --> G
 Char. 1753: T --> C
 Char. 1756: T --> C
 Char. 1879: G --> A
 Char. 1936: A --> G
 Char. 1969: T --> C
 Char. 1993: A --> G
 Char. 2005: T --> C
 Char. 2050: C --> T
Saccodon_dariensis :
 Char. 1565: C --> T
 Char. 1636: T --> C
 Char. 1657: T --> C
 Char. 1696: A --> G
 Char. 1712: C --> T
 Char. 1753: T --> C
 Char. 1774: T --> A
 Char. 1796: C --> T
 Char. 1801: C --> T
 Char. 1816: A --> G
 Char. 1819: C --> T
 Char. 1822: G --> A
 Char. 1825: A --> G
 Char. 1828: A --> G
 Char. 1840: T --> C
 Char. 1843: T --> A
 Char. 1879: T --> C
 Char. 1915: T --> C
 Char. 1927: C --> G
 Char. 1936: T --> A
 Char. 1939: T --> A
 Char. 1975: A --> G
 Char. 1984: C --> T
 Char. 2002: C --> T
 Char. 2059: T --> G
 Char. 2104: A --> C
 Char. 2119: T --> C
Schizodon_nasutus :
 Char. 1825: A --> G
 Char. 1852: A --> C
 Char. 2050: C --> T
 Char. 2089: A --> G
Schizodon_platae :
 Char. 1636: C --> T
 Char. 1672: A --> G
 Char. 1678: T --> C
 Char. 1696: A --> G
 Char. 1726: A --> G
 Char. 1735: G --> A
 Char. 1750: A --> G
 Char. 1772: C --> T
 Char. 1921: T --> G
 Char. 1960: C --> T
 Char. 1963: T --> C
 Char. 2024: C --> T
 Char. 2047: C --> A
 Char. 2089: A --> C
 Char. 2104: T --> C
 Char. 2131: A --> C
 Char. 2147: C --> T
Serrasalmus_brandtii :
 Char. 1549: A --> G
 Char. 1600: A --> G
 Char. 1879: A --> G
 Char. 2038: T --> C
 Char. 2063: C --> T
Serrasalmus_gouldingi :
 No autapomorphies
Serrasalmus_manueli :
 Char. 1741: T --> C
 Char. 1798: A --> G
 Char. 1807: A --> G
 Char. 1816: G --> A
 Char. 1987: C --> T
 Char. 1993: A --> G
 Char. 2098: G --> A
 Char. 2128: A --> G
 Char. 2134: G --> A
 Char. 6078: C --> T
 Char. 6251: A --> G
 Char. 6345: A --> G
 Char. 6363: T --> C
 Char. 6439: G --> A
Serrasalmus_marginatus :
 Char. 1678: T --> C
 Char. 1693: C --> T
 Char. 2077: T --> C
 Char. 2134: G --> A
 Char. 2137: A --> G
 Char. 6439: G --> A
Steindachnerina_brevipinna :
 Char. 1552: C --> G
 Char. 1561: T --> C
 Char. 1573: A --> G
 Char. 1603: T --> G
 Char. 1642: C --> T
 Char. 1651: A --> T
 Char. 1657: C --> T
 Char. 1672: G --> A
 Char. 1678: T --> C
 Char. 1690: T --> C
 Char. 1703: T --> C
 Char. 1732: T --> C
 Char. 1747: A --> G
 Char. 1756: C --> T
 Char. 1792: T --> C
 Char. 1796: T --> C
 Char. 1810: T --> G
 Char. 1819: C --> A
 Char. 1828: AT --> C
 Char. 1834: C --> T
 Char. 1837: A --> G
 Char. 1840: T --> C
 Char. 1846: T --> C
 Char. 1864: T --> C
 Char. 1873: T --> C
 Char. 1888: T --> C
 Char. 1906: C --> T
 Char. 1927: C --> A
 Char. 1951: T --> C
 Char. 1984: A --> T
 Char. 1990: A --> T
 Char. 2002: A --> C
 Char. 2006: C --> T
 Char. 2014: A --> G
 Char. 2026: A --> T
 Char. 2038: A --> C
 Char. 2044: T --> C
 Char. 2050: C --> T
 Char. 2071: T --> AG
 Char. 2074: A --> G
 Char. 2077: T --> C
 Char. 2119: T --> C
 Char. 2125: T --> C
 Char. 2147: C --> T
 Char. 2152: C --> T
 Char. 2158: C --> T
 Char. 2159: C --> T
Steindachnerina_corumbae :
 Char. 1798: A --> G
Steindachnerina_elegans :
 Char. 2056: C --> T
Synaptolaemus_latofasciatus :
 Char. 1513: C --> T
 Char. 1565: T --> C
 Char. 1573: G --> A
 Char. 1588: G --> A
 Char. 1600: C --> T
 Char. 1624: T --> C
 Char. 1636: C --> T
 Char. 1666: A --> G
 Char. 1672: A --> G
 Char. 1678: T --> C
 Char. 1690: C --> T
 Char. 1693: C --> T
 Char. 1726: A --> G
 Char. 1753: T --> C
 Char. 1756: T --> C
 Char. 1780: T --> C
 Char. 1783: C --> T
 Char. 1789: T --> A
 Char. 1795: A --> G
 Char. 1798: A --> G
 Char. 1804: C --> T
 Char. 1816: A --> G
 Char. 1822: A --> G
 Char. 1825: A --> G
 Char. 1846: T --> C
 Char. 1849: A --> C
 Char. 1852: C --> T
 Char. 1855: C --> T
 Char. 1858: C --> T
 Char. 1879: A --> G
 Char. 1885: C --> T
 Char. 1900: T --> C
 Char. 1903: T --> C
 Char. 1933: T --> C
 Char. 1936: A --> T
 Char. 1939: G --> C
 Char. 1940: G --> T
 Char. 1942: C --> A
 Char. 1951: T --> C

Char. 1954: T --> C
Char. 1969: T --> C
Char. 1978: C --> T
Char. 2041: A --> T
Char. 2050: C --> G
Char. 2053: T --> C

Scopaeocharax_sp. :

Char. 1609: T --> C
Char. 1714: A --> G
Char. 1720: T --> C
Char. 1735: G --> A
Char. 1744: C --> T
Char. 1780: A --> T
Char. 1793: C --> T
Char. 1798: A --> G
Char. 1822: A --> G
Char. 1828: A --> G
Char. 1846: C --> T
Char. 1909: T --> C
Char. 1936: A --> G
Char. 1978: C --> T
Char. 2023: T --> C
Char. 2038: T --> C
Char. 2053: A --> G
Char. 2236: C --> T
Char. 2290: G --> A
Char. 2311: T --> A
Char. 2560: A --> T
Char. 2686: G --> A
Char. 2965: T --> C
Char. 3016: C --> A
Char. 3034: G --> A
Char. 3109: A --> T
Char. 3131: C --> T
Char. 3149: C --> G
Char. 3265: A --> G
Char. 3358: C --> T
Char. 3361: A --> T
Char. 3412: C --> T
Char. 3427: C --> T
Char. 4971: G --> A
Char. 5071: C --> A
Char. 5097: G --> A
Char. 5103: G --> A
Char. 5109: A --> G
Char. 5133: G --> A
Char. 5158: C --> A
Char. 5170: C --> A
Char. 5181: G --> A
Char. 5183: G --> A
Char. 5217: A --> T
Char. 5226: G --> A
Char. 5233: A --> C
Char. 5247: C --> T
Char. 5265: A --> T
Char. 5280: T --> A
Char. 5768: T --> C
Char. 5804: C --> T
Char. 6020: A --> G
Char. 6182: G --> A
Char. 6253: A --> T
Char. 6348: A --> G
Char. 6440: A --> G
Char. 6463: G --> C

Brycon_vermelha :

Char. 2353: C --> T
Char. 2425: G --> T
Char. 2510: T --> C
Char. 2664: C --> T
Char. 2806: C --> T
Char. 2852: G --> A
Char. 2884: A --> G
Char. 3559: G --> A
Char. 3667: G --> A
Char. 3724: T --> C
Char. 3787: A --> T
Char. 3964: C --> T
Char. 4048: T --> C
Char. 4157: A --> G
Char. 4321: T --> A
Char. 4396: G --> A
Char. 4468: T --> C
Char. 4486: G --> A

Char. 6163: A --> G
Char. 6321: A --> G
Char. 6330: A --> T
Char. 6417: G --> A
Char. 6463: G --> A
Char. 6508: A --> T
Char. 6524: A --> G

Copella_nattereri :

Char. 4723: G --> A
Char. 4812: T --> C
Char. 4815: T --> A
Char. 4830: G --> A
Char. 4860: G --> T
Char. 4998: G --> A
Char. 5001: G --> A
Char. 5013: C --> A
Char. 5049: C --> T
Char. 5070: G --> A
Char. 5076: A --> G
Char. 5088: A --> T
Char. 5091: C --> T
Char. 5095: C --> G
Char. 5121: C --> G
Char. 5157: C --> T
Char. 5190: G --> A
Char. 5196: C --> T
Char. 5229: C --> G
Char. 5266: A --> G
Char. 5267: C --> T
Char. 5307: C --> G
Char. 5371: C --> A
Char. 5382: T --> C
Char. 5388: G --> A
Char. 5394: A --> C
Char. 5440: A --> T
Char. 5456: G --> A
Char. 5457: T --> C
Char. 5461: T --> A
Char. 5464: A --> G
Char. 5490: A --> C
Char. 5514: C --> T
Char. 5574: A --> G

Creagrutus_bolivari :

Char. 2992: A --> G
Char. 3010: A --> G
Char. 3088: A --> G
Char. 5970: C --> T
Char. 6024: G --> A
Char. 6046: C --> T
Char. 6048: C --> A

Creagrutus_zephyrus :

Char. 2335: T --> C
Char. 2401: G --> A
Char. 2419: C --> A
Char. 2422: T --> C
Char. 2611: C --> G

Cynopotamus_venezuelae :

Char. 2234: G --> C
Char. 2235: A --> G
Char. 2443: A --> T
Char. 2582: A --> T
Char. 2584: C --> T
Char. 2820: A --> G
Char. 2823: T --> A
Char. 2848: C --> T
Char. 2885: C --> T
Char. 2894: T --> C
Char. 2905: G --> A
Char. 3472: C --> A
Char. 3501: C --> T
Char. 3532: C --> A
Char. 3622: G --> A
Char. 3640: G --> C
Char. 3813: A --> C
Char. 4078: G --> A
Char. 4096: G --> A
Char. 4300: G --> A
Char. 4342: C --> T
Char. 4445: C --> A
Char. 4471: G --> C
Char. 4513: G --> A
Char. 4528: G --> A
Char. 4540: C --> T

Char. 4621: G --> T
Char. 4746: C --> T
Char. 4773: C --> T
Char. 4825: C --> A
Char. 5177: G --> A
Char. 5322: G --> A
Char. 5511: C --> T
Char. 5691: G --> A
Char. 6119: T --> C
Char. 6251: A --> G
Char. 6412: A --> G
Char. 6432: C --> T

Hemiodus_immaculatus :

Char. 2197: A --> T
Char. 2329: G --> T
Char. 2594: C --> T
Char. 2626: C --> T
Char. 2728: G --> A
Char. 2875: A --> C
Char. 2890: A --> T
Char. 3676: C --> T
Char. 3767: G --> A
Char. 4041: C --> G
Char. 4114: C --> T
Char. 4252: G --> A
Char. 4325: A --> G
Char. 4418: G --> A
Char. 4498: A --> C
Char. 4639: C --> T
Char. 4878: G --> A
Char. 4925: C --> T
Char. 4980: T --> C
Char. 5121: C --> G
Char. 5172: G --> T
Char. 5179: C --> T
Char. 5212: C --> A
Char. 5401: A --> G
Char. 5520: G --> T
Char. 5545: G --> C
Char. 5575: G --> C
Char. 5657: A --> C
Char. 5664: C --> T
Char. 5667: T --> C
Char. 5702: A --> C
Char. 5725: T --> G
Char. 5745: A --> T
Char. 6207: C --> T
Char. 6211: A --> G
Char. 6251: A --> G
Char. 6317: A --> G
Char. 6477: A --> G
Char. 6510: T --> A
Char. 6515: AG --> C

Lepidarchus_adonis :

Char. 2203: T --> A
Char. 2206: A --> G
Char. 2212: T --> A
Char. 2213: G --> A
Char. 2230: G --> A
Char. 2236: C --> T
Char. 2260: C --> T
Char. 2296: T --> C
Char. 2359: T --> C
Char. 2383: T --> A
Char. 2404: T --> C
Char. 2455: C --> T
Char. 2461: C --> A
Char. 2482: T --> C
Char. 2494: A --> G
Char. 2509: G --> C
Char. 2686: T --> A
Char. 2725: A --> T
Char. 2758: A --> T
Char. 2767: A --> T
Char. 2773: G --> A
Char. 2776: G --> C
Char. 2794: G --> A
Char. 2800: C --> T
Char. 2806: T --> C

Nannocharax_altus :

Char. 2435: C --> T

Phenacogrammus_polli :

Char. 2428: T --> A
Char. 2863: A --> G
Poecilocharax_weitzmani :
Char. 2356: T --> A
Char. 2367: C --> T
Char. 2449: G --> A
Char. 2497: G --> T
Char. 2591: C --> T
Char. 2641: G --> A
Char. 2671: T --> G
Char. 2704: G --> A
Char. 2710: A --> G
Char. 2836: T --> C
Char. 3477: T --> G
Char. 3501: T --> C
Char. 3539: A --> C
Char. 3559: A --> T
Char. 3655: G --> A
Char. 3785: G --> A
Char. 3895: C --> A
Char. 3916: G --> A
Char. 4022: G --> C
Char. 4159: A --> T
Char. 4201: G --> A
Char. 4279: C --> A
Char. 4297: C --> T
Char. 4306: C --> T
Char. 4399: G --> C
Char. 4471: T --> C
Char. 4519: G --> A
Char. 4588: C --> T
Char. 4646: A --> G
Char. 4650: C --> T
Char. 4651: A --> G
Char. 4682: A --> T
Char. 4722: T --> G
Char. 4734: T --> A
Char. 4761: A --> G
Char. 4788: C --> T
Char. 5031: C --> T
Char. 5043: C --> T
Char. 5214: C --> T
Char. 5277: C --> A
Char. 5278: C --> G
Char. 5325: G --> A
Char. 5490: A --> T
Char. 5504: C --> G
Char. 5537: A --> C
Char. 5558: C --> G
Char. 5577: G --> A
Char. 5602: C --> A
Char. 6163: A --> G
Char. 6207: T --> C
Char. 6229: G --> A
Char. 6245: A --> G
Char. 6247: C --> T
Char. 6295: A --> T
Char. 6324: CT --> A
Char. 6326: T --> A
Char. 6343: A --> C
Char. 6363: A --> G
Char. 6424: T --> C
Char. 6434: G --> A
Char. 6441: A --> C
Char. 6443: A --> C
Char. 6445: T --> C
Char. 6459: G --> A
Char. 6462: A --> C
Char. 6467: T --> C
Char. 6471: T --> C
Char. 6541: T --> C
Char. 6584: A --> G
Char. 6641: C --> A
Salminus_affinis :
Char. 2260: C --> T
Char. 3826: G --> A
Char. 4318: C --> T
Char. 4417: A --> G
Char. 4426: G --> A
Char. 5151: C --> G
Char. 5330: G --> A
Char. 5351: C --> T
Char. 5478: A --> T

Char. 5655: G --> A
Char. 5679: C --> A
Char. 6253: A --> T
Char. 6348: A --> G
Char. 6361: A --> G
Char. 6433: T --> C
Char. 6441: C --> T
Triportheus_culter :
Char. 3960: G --> A
Gephyrocharax_intermedius :
Char. 3031: C --> T
Char. 3169: C --> A
Char. 3490: T --> C
Char. 3877: C --> T
Char. 4097: C --> A
Char. 5061: G --> C
Char. 5499: C --> AT
Char. 5505: G --> A
Char. 6037: T --> C
Char. 6432: A --> G
Landonia_latidens :
Char. 4963: C --> A
Char. 4992: C --> T
Char. 5016: G --> A
Char. 5073: G --> C
Char. 5088: G --> A
Char. 5100: C --> A
Char. 5130: G --> A
Char. 5154: T --> C
Char. 5158: C --> A
Char. 5222: A --> C
Char. 5274: A --> C
Char. 5282: C --> A
Char. 5283: T --> C
Char. 5284: C --> A
Char. 5286: T --> C
Char. 5287: G --> A
Char. 5331: G --> T
Char. 5349: T --> A
Char. 5357: A --> C
Char. 5358: C --> A
Char. 5359: G --> A
Char. 5362: G --> T
Char. 5369: T --> A
Bivibranchia_velox :
Char. 3490: T --> C
Char. 3568: A --> G
Char. 3589: G --> A
Char. 3628: C --> T
Char. 3634: T --> C
Char. 3651: C --> A
Char. 3661: C --> T
Char. 3719: G --> A
Char. 3754: G --> A
Char. 3766: G --> A
Char. 3769: T --> C
Char. 3871: T --> A
Char. 3892: C --> T
Char. 3919: T --> A
Char. 3946: T --> C
Char. 3949: G --> C
Char. 3961: G --> C
Char. 3973: C --> T
Char. 4027: G --> A
Char. 4067: C --> T
Char. 4188: C --> T
Char. 4189: A --> G
Char. 4243: C --> T
Char. 4332: T --> A
Char. 4345: A --> G
Char. 4365: G --> C
Char. 4381: T --> C
Char. 4435: G --> T
Char. 4444: C --> T
Char. 4445: C --> A
Char. 4555: T --> A
Char. 4606: T --> C
Char. 4624: A --> G
Char. 4633: C --> A
Char. 4645: C --> T
Char. 4648: C --> T
Char. 4663: T --> G
Char. 4721: G --> A

Char. 4723: G --> A
Char. 4755: T --> A
Char. 4772: A --> G
Char. 4794: C --> T
Char. 4795: T --> G
Char. 4893: C --> T
Char. 4935: T --> G
Char. 4983: G --> A
Char. 5013: C --> T
Char. 5076: G --> A
Char. 5151: C --> A
Char. 5172: G --> A
Char. 5181: G --> A
Char. 5227: A --> G
Char. 5236: G --> A
Char. 5242: C --> T
Char. 5247: T --> A
Char. 5263: G --> A
Char. 5510: A --> T
Char. 5546: C --> G
Char. 5559: C --> T
Char. 5622: G --> A
Char. 5675: G --> C
Char. 5715: G --> A
Char. 6119: T --> C
Char. 6204: C --> T
Char. 6206: T --> C
Char. 6208: T --> C
Char. 6216: A --> G
Char. 6276: T --> A
Char. 6290: C --> T
Char. 6295: A --> T
Char. 6300: G --> A
Char. 6311: T --> A
Char. 6315: A --> C
Char. 6326: A --> T
Char. 6331: A --> G
Char. 6359: A --> G
Char. 6362: C --> G
Char. 6376: C --> T
Char. 6377: C --> T
Char. 6383: G --> A
Char. 6402: G --> A
Char. 6410: A --> G
Char. 6412: A --> G
Char. 6424: T --> C
Char. 6427: G --> A
Char. 6428: G --> A
Char. 6433: T --> C
Char. 6439: C --> T
Char. 6446: C --> T
Char. 6452: A --> G
Char. 6454: A --> G
Char. 6461: G --> A
Char. 6468: C --> T
Char. 6471: T --> C
Char. 6475: T --> C
Char. 6493: A --> G
Char. 6497: A --> C
Char. 6528: A --> G
Char. 6575: A --> C
Char. 6629: A --> G
Nannostomus_beckfordi :
Char. 3535: T --> C
Char. 3538: A --> G
Char. 3572: C --> T
Char. 3595: C --> A
Char. 3598: G --> A
Char. 3601: G --> A
Char. 3615: G --> A
Char. 3649: C --> T
Char. 3667: G --> A
Char. 3679: C --> A
Char. 3745: T --> G
Char. 3754: G --> A
Char. 3763: C --> T
Char. 3767: G --> A
Char. 3769: T --> C
Char. 3808: G --> T
Char. 3811: G --> A
Char. 3823: C --> T
Char. 3830: C --> T
Char. 3853: C --> T

Char. 3886: G --> T
 Char. 3910: G --> A
 Char. 3973: C --> A
 Char. 4075: C --> T
 Char. 4082: C --> A
 Char. 4109: C --> T
 Char. 4117: C --> T
 Char. 4138: A --> G
 Char. 4165: G --> A
 Char. 4176: T --> A
 Char. 4189: A --> G
 Char. 4192: G --> T
 Char. 4204: T --> C
 Char. 4234: C --> T
 Char. 4294: C --> T
 Char. 4300: G --> A
 Char. 4324: A --> G
 Char. 4331: C --> A
 Char. 4342: C --> T
 Char. 4387: G --> A
 Char. 4408: G --> A
 Char. 4424: A --> C
 Char. 4432: T --> C
 Char. 4459: C --> T
 Char. 4461: G --> A
 Char. 4462: T --> A
 Char. 4510: C --> T
 Char. 4513: G --> A
 Char. 4531: G --> A
 Char. 4543: C --> T
 Char. 4567: C --> A
 Char. 4569: C --> A
 Char. 4636: C --> T
Roeboides guatemalensis :
 Char. 6209: T --> C
Ichthyocephalus humeralis :
 Char. 4920: G --> A
 Char. 5402: G --> A
 Char. 5506: T --> C
 Char. 5672: A --> G
Virilia pabrensis :
 Char. 5265: A --> C
 Char. 6506: G --> A
Mylesinus schomburgkii :
 Char. 5184: T --> C
 Char. 6163: G --> A
 Char. 6251: A --> G
Poptella compressa :
 Char. 6254: T --> C
Prochilodus britskii :
 Char. 4755: T --> A
 Char. 5457: C --> T
 Char. 6245: G --> A
 Char. 6573: T --> C
Acnodon normani :
 Char. 5868: T --> A
 Char. 5936: A --> G
 Char. 6001: A --> T
 Char. 6035: C --> T
 Char. 6040: A --> G
 Char. 6182: G --> T
 Char. 6251: A --> G
 Char. 6254: A --> T
 Char. 6298: A --> T
 Char. 6323: C --> A
 Char. 6326: A --> T
 Char. 6343: A --> G
 Char. 6415: A --> G
 Char. 6432: A --> T
 Char. 6433: T --> A
 Char. 6434: G --> A
 Char. 6450: A --> T
 Char. 6456: C --> T
 Char. 6480: G --> A
 Char. 6487: C --> T
 Char. 6511: A --> C
 Char. 6514: A --> G
 Char. 6515: A --> G
Citharinus latus :
 Char. 6328: C --> T
 Char. 6512: T --> C
Metynniscus hypsauchen :
 Char. 6210: C --> T
 Char. 6254: A --> T
 Char. 6336: T --> C
 Char. 6358: C --> A
 Char. 6359: A --> G
 Char. 6363: T --> A
 Char. 6423: A --> G
 Char. 6573: T --> C
Monostichodus vaillanti :
 Char. 5756: T --> C
 Char. 5866: T --> C
 Char. 5867: T --> C
 Char. 5924: C --> T
 Char. 5936: A --> C
 Char. 5941: C --> T
 Char. 5965: G --> C
 Char. 6002: T --> C
 Char. 6074: A --> G
 Char. 6077: A --> C
 Char. 6087: C --> T
 Char. 6098: C --> T
 Char. 6152: C --> T
 Char. 6230: C --> T
 Char. 6310: G --> T
 Char. 6311: T --> A
 Char. 6315: A --> T
 Char. 6326: T --> A
 Char. 6335: A --> T
 Char. 6343: A --> T
 Char. 6345: A --> T
 Char. 6363: A --> T
 Char. 6374: G --> A
 Char. 6412: A --> G
 Char. 6439: A --> T
 Char. 6450: A --> T
 Char. 6456: C --> T
 Char. 6461: G --> A
 Char. 6468: C --> T
 Char. 6480: G --> A
 Char. 6487: C --> T
 Char. 6514: C --> T
Mylesinus paucisquamatus :
 Char. 5867: T --> C
 Char. 5945: G --> A
 Char. 6048: T --> C
 Char. 6335: T --> C
 Char. 6434: G --> A
 Char. 6441: T --> G
Myleus rhomboidalis :
 Char. 5837: T --> C
 Char. 5866: T --> C
 Char. 5867: T --> C
 Char. 5911: C --> T
 Char. 5933: T --> C
 Char. 5936: A --> G
 Char. 6035: C --> T
 Char. 6037: T --> C
 Char. 6299: G --> A
 Char. 6345: A --> G
 Char. 6363: T --> C
 Char. 6413: C --> T
 Char. 6414: A --> G
 Char. 6442: C --> T
 Char. 6512: C --> T
Myleus setiger :
 No autapomorphies
Myloplus tetmetzi :
 Char. 5867: T --> C
 Char. 5868: C --> T
 Char. 6342: C --> A
 Char. 6513: C --> A
Nannocharax maculicauda :
 Char. 6205: C --> T
 Char. 6292: A --> G
 Char. 6325: G --> T
 Char. 6353: C --> T
 Char. 6355: T --> C
 Char. 6365: C --> T
 Char. 6432: A --> G
 Char. 6461: G --> A
 Char. 6468: C --> T
 Char. 6484: C --> T
 Char. 6497: AT --> C
Neolebias unifasciatus :
 Char. 5912: A --> T
 Char. 5941: C --> T
 Char. 6010: A --> G
 Char. 6020: A --> G
 Char. 6023: A --> G
 Char. 6077: A --> G
 Char. 6253: A --> T
 Char. 6317: A --> T
 Char. 6319: A --> G
 Char. 6327: T --> A
 Char. 6362: C --> T
 Char. 6363: A --> C
 Char. 6382: T --> C
 Char. 6444: CT --> A
 Char. 6494: C --> T
Ossubtus xinguense :
 Char. 5756: T --> G
 Char. 5762: A --> G
 Char. 5852: A --> C
 Char. 5866: T --> C
 Char. 5968: C --> T
 Char. 6035: C --> T
 Char. 6210: C --> T
 Char. 6254: T --> C
 Char. 6384: T --> C
 Char. 6413: C --> T
 Char. 6456: C --> T
Pygopristis denticulata :
 Char. 5902: G --> A
 Char. 5935: A --> C
Serrasalmus altuvei :
 Char. 5936: A --> G
 Char. 6004: A --> T
 Char. 6015: T --> C
 Char. 6072: A --> G
 Char. 6090: T --> C
 Char. 6251: A --> G
 Char. 6410: A --> G
Serrasalmus eigenmanni :
 Char. 5909: G --> A
 Char. 5936: A --> G
 Char. 6012: T --> C
Serrasalmus irritans :
 Char. 5752: A --> C
 Char. 5845: A --> T
 Char. 5865: T --> C
 Char. 5869: C --> T
 Char. 5936: A --> G
 Char. 6003: T --> C
 Char. 6012: T --> C
 Char. 6378: A --> T
 Char. 6410: A --> G
Serrasalmus medinae :
 Char. 6025: T --> C
 Char. 6040: A --> G
 Char. 6309: G --> A
 Char. 6432: A --> C
 Char. 6514: A --> G
Serrasalmus serrulatus :
 Char. 5845: A --> T
 Char. 6074: C --> A
 Char. 6163: G --> A
 Char. 6165: A --> G
 Char. 6363: T --> C
 Char. 6410: A --> G
 Char. 6444: C --> T
Thayeria ifati :
 No autapomorphies
Tometes lebaili :
 No autapomorphies
Acestrorhynchus abbreviatus :
 Char. 6181: G --> A
 Char. 6254: T --> C
 Char. 6321: A --> G
 Char. 6327: A --> C
 Char. 6410: A --> G
 Char. 6492: C --> T
Acestrorhynchus altus :
 No autapomorphies
Acestrorhynchus grandoculis :
 Char. 6210: A --> T
 Char. 6329: C --> T
 Char. 6345: G --> T

Char. 6352: C --> T
 Char. 6356: A --> G
 Char. 6357: A --> G
 Char. 6383: G --> A
 Char. 6511: A --> G
 Acestorhynchus_minimus :
 Char. 6210: A --> C
 Char. 6352: C --> T
 Char. 6361: G --> A
 Char. 6369: T --> C
 Char. 6445: A --> C
 Char. 6513: C --> T
 Astyanacinus_multidens :
 Char. 6152: T --> C
 Char. 6161: A --> G
 Char. 6205: T --> C
 Char. 6211: G --> A
 Char. 6294: C --> A
 Char. 6308: A --> G
 Char. 6311: T --> C
 Char. 6344: A --> G
 Char. 6351: A --> G
 Char. 6377: T --> C
 Char. 6381: G --> C
 Char. 6410: A --> T
 Char. 6415: A --> G
 Char. 6432: A --> G
 Char. 6433: C --> A
 Char. 6443: T --> A
 Char. 6446: T --> C
 Char. 6458: T --> C
 Char. 6485: T --> A
 Char. 6493: A --> T
 Char. 6499: T --> A
 Char. 6506: G --> A
 Char. 6511: A --> T
 Char. 6518: C --> T
 Char. 6528: A --> G
 Char. 6572: T --> C
 Astyanax_maximus :
 Char. 6304: A --> T
 Char. 6326: T --> C
 Char. 6345: A --> C
 Char. 6346: T --> A
 Char. 6463: C --> T
 Char. 6508: A --> G
 Astyanax_microlepis :
 Char. 6438: A --> G
 Brachychalcinus_nummus :
 Char. 6346: T --> C
 Charax_michaeli :
 Char. 6254: T --> C
 Char. 6323: C --> T
 Char. 6326: T --> C
 Char. 6438: G --> A
 Cynopotamus_amazonum :
 Char. 6319: A --> T
 Char. 6322: T --> C
 Char. 6324: C --> T
 Char. 6329: A --> T
 Char. 6342: G --> A
 Char. 6346: T --> C
 Char. 6356: A --> T
 Char. 6361: A --> G
 Char. 6412: A --> G
 Char. 6441: T --> A
 Char. 6496: A --> T
 Char. 6497: A --> T
 Char. 6512: T --> C
 Cynopotamus_magdalanae :
 Char. 6181: G --> A
 Char. 6251: A --> G
 Char. 6294: C --> T
 Char. 6326: T --> C
 Hemibrycon_dentatus :
 Char. 6381: G --> A
 Hyphessobrycon_copelandi :
 Char. 6162: A --> G
 Char. 6205: C --> T
 Char. 6323: C --> T
 Char. 6327: T --> C
 Char. 6333: A --> G
 Char. 6334: A --> G
 Moenkhausia_grandisquamis :
 No autapomorphies
 Moenkhausia_melogramma :
 Char. 6252: A --> G
 Char. 6300: G --> A
 Char. 6330: T --> C
 Char. 6333: A --> G
 Char. 6410: A --> G
 Char. 6441: G --> A
 Char. 6444: T --> C
 Char. 6507: C --> T
 Char. 6516: G --> A
 Char. 6557: A --> C
 Myloplus_planquettei :
 Char. 6254: T --> C
 Char. 6363: T --> C
 Char. 6423: A --> G
 Nannocharax_macropterus :
 Char. 6118: C --> A
 Char. 6130: A --> G
 Char. 6168: T --> C
 Char. 6182: A --> G
 Char. 6211: G --> A
 Char. 6230: C --> T
 Char. 6275: T --> C
 Char. 6276: T --> G
 Char. 6293: C --> T
 Char. 6295: A --> G
 Char. 6300: A --> G
 Char. 6306: C --> T
 Char. 6310: G --> A
 Char. 6314: C --> T
 Char. 6324: T --> C
 Char. 6343: A --> C
 Char. 6345: A --> G
 Char. 6346: T --> C
 Char. 6347: T --> C
 Char. 6351: A --> G
 Char. 6361: G --> A
 Char. 6362: C --> T
 Char. 6389: G --> A
 Char. 6401: C --> G
 Char. 6403: C --> G
 Char. 6404: G --> A
 Char. 6407: G --> A
 Char. 6408: G --> A
 Char. 6417: G --> C
 Char. 6419: C --> A
 Char. 6422: C --> T
 Char. 6423: A --> C
 Char. 6436: G --> T
 Char. 6443: A --> C
 Char. 6474: G --> T
 Char. 6508: T --> C
 Char. 6512: C --> T
 Char. 6516: G --> A
 Char. 6523: C --> A
 Char. 6541: T --> C
 Char. 6542: A --> G
 Char. 6567: C --> T
 Char. 6575: C --> T
 Char. 6584: A --> G
 Parodon_pongoensis :
 Char. 6514: A --> T
 Potamorhina_latior :
 Char. 6253: A --> G
 Char. 6314: C --> T
 Char. 6328: A --> G
 Psectrogaster_rhomboides :
 Char. 6322: T --> C
 Char. 6444: T --> C
 Char. 6475: C --> T
 Char. 6510: T --> C
 Char. 6515: A --> G
 Psectrogaster_rutiloides :
 Char. 6427: G --> A
 Roeboides_bussingi :
 No autapomorphies
 Serrapinnus_heterodon :
 Char. 6307: C --> T
 Char. 6326: T --> C
 Char. 6364: A --> G
 Char. 6513: T --> C
 Serrasalmus_compressus :
 No autapomorphies
 Serrasalmus_elongatus :
 Char. 6363: T --> C
 Char. 6412: A --> G
 Char. 6515: A --> G
 Serrasalmus_geryi :
 Char. 6326: A --> T
 Char. 6442: C --> T
 Serrasalmus_hastatus :
 Char. 6410: A --> G
 Char. 6439: G --> A
 Serrasalmus_hollandi :
 No autapomorphies
 Steindachnerina_guentheri :
 Char. 6252: T --> C
 Char. 6253: A --> G
 Char. 6254: T --> C
 Char. 6433: T --> C
 Node 866 :
 Char. 538: C --> T
 Char. 625: C --> T
 Char. 925: T --> C
 Char. 969: C --> T
 Char. 1216: T --> C
 Char. 1288: A --> C
 Char. 1432: T --> C
 Char. 1579: G --> A
 Char. 1630: C --> T
 Char. 1702: A --> G
 Char. 1978: C --> A
 Char. 2041: T --> C
 Char. 2149: C --> A
 Char. 2152: T --> C
 Char. 2398: A --> G
 Char. 2419: A --> T
 Char. 2521: T --> C
 Char. 3589: A --> G
 Char. 3904: T --> C
 Char. 3937: T --> C
 Char. 3955: T --> C
 Char. 4195: A --> G
 Char. 5281: G --> T
 Char. 5553: T --> C
 Char. 6295: A --> T
 Char. 6573: T --> C
 Node 867 :
 Char. 850: A --> C
 Char. 886: C --> G
 Char. 1003: C --> A
 Char. 1481: C --> T
 Char. 1558: C --> T
 Char. 1648: C --> T
 Char. 1801: A --> CT
 Char. 1828: G --> A
 Char. 2107: T --> C
 Char. 2159: C --> T
 Char. 2485: A --> C
 Char. 2806: T --> C
 Char. 4216: G --> A
 Char. 4582: A --> G
 Char. 4897: A --> G
 Char. 4932: C --> T
 Char. 5274: A --> G
 Char. 5706: C --> T
 Node 868 :
 Char. 1735: G --> A
 Char. 1870: C --> A
 Char. 1930: C --> A
 Char. 1948: T --> C
 Char. 3814: A --> G
 Char. 4669: T --> C
 Char. 5372: A --> G
 Node 869 :
 Char. 676: C --> T
 Char. 940: A --> C
 Char. 1189: C --> T
 Char. 1498: C --> A
 Char. 1834: C --> T
 Char. 1903: C --> T
 Char. 1915: T --> C
 Char. 4034: T --> C
 Char. 5362: G --> A

Char. 5394: A --> G
Char. 5929: G --> A
Char. 6049: G --> A
Node 870 :
Char. 563: A --> G
Char. 628: A --> T
Char. 637: C --> T
Char. 658: C --> T
Char. 661: C --> T
Char. 712: A --> C
Char. 739: A --> CT
Char. 880: C --> T
Char. 925: C --> T
Char. 943: A --> C
Char. 1042: T --> C
Char. 1096: A --> T
Char. 1180: A --> C
Char. 1243: C --> T
Char. 1258: A --> C
Char. 1336: A --> C
Char. 1385: A --> C
Char. 1711: C --> A
Char. 1801: C --> A
Char. 1825: A --> C
Char. 1858: C --> T
Char. 2014: G --> C
Char. 2482: C --> T
Char. 3499: A --> G
Char. 3761: A --> G
Char. 3799: A --> G
Char. 4645: C --> T
Char. 4932: T --> C
Char. 4938: T --> C
Char. 5262: T --> C
Char. 5523: A --> T
Char. 5532: G --> A
Char. 5541: A --> G
Char. 5634: G --> C
Char. 5716: A --> G
Char. 5718: A --> G
Char. 6229: G --> A
Char. 6247: C --> T
Char. 6439: C --> A
Char. 6463: G --> T

Node 871 :

Char. 580: C --> T
Char. 613: C --> T
Char. 620: C --> T
Char. 1063: C --> A
Char. 1075: C --> T
Char. 1177: T --> A
Char. 1390: C --> T
Char. 1708: CT --> A
Char. 1783: C --> T
Char. 1804: C --> T
Char. 1813: T --> A
Char. 1828: A --> G
Char. 2107: C --> T
Char. 2110: C --> T
Char. 2226: G --> C
Char. 2731: T --> C
Char. 2765: C --> T
Char. 2890: A --> T
Char. 3564: T --> C
Char. 3589: G --> A
Char. 3889: T --> C
Char. 4066: C --> G
Char. 4347: C --> A
Char. 4432: T --> C
Char. 4543: C --> T
Char. 4603: C --> T
Char. 4785: T --> C
Char. 4887: T --> C
Char. 5028: T --> C
Char. 5032: C --> T
Char. 5049: C --> T
Char. 5158: C --> A
Char. 5286: T --> C
Char. 5475: A --> G
Char. 6314: C --> T
Char. 6562: C --> T
Char. 6573: C --> T

Node 872 :

Char. 524: C --> T
Char. 595: C --> T
Char. 724: A --> C
Char. 742: C --> T
Char. 1013: G --> A
Char. 1081: C --> A
Char. 1087: A --> T
Char. 1192: C --> T
Char. 1237: C --> A
Char. 1282: C --> T
Char. 1421: C --> G
Char. 1435: C --> T
Char. 1600: A --> T
Char. 1645: C --> T
Char. 1687: A --> G
Char. 1897: C --> T
Char. 1921: G --> T
Char. 2347: T --> C
Char. 2350: C --> T
Char. 2359: T --> C
Char. 2500: G --> A
Char. 2644: G --> A
Char. 2656: C --> T
Char. 2773: G --> A
Char. 2794: C --> C
Char. 2854: T --> C
Char. 2884: A --> T
Char. 3455: A --> C
Char. 3523: A --> G
Char. 3532: C --> G
Char. 3559: A --> G
Char. 3562: A --> G
Char. 3574: A --> G
Char. 3598: G --> A
Char. 3661: C --> A
Char. 3859: T --> C
Char. 3898: G --> A
Char. 3940: C --> T
Char. 3946: T --> C
Char. 3973: C --> T
Char. 4057: C --> T
Char. 4153: T --> C
Char. 4171: C --> T
Char. 4201: G --> A
Char. 4252: G --> A
Char. 4267: C --> T
Char. 4366: C --> T
Char. 4378: C --> T
Char. 4462: T --> A
Char. 4495: T --> C
Char. 4528: G --> C
Char. 4755: T --> G
Char. 4815: T --> C
Char. 4863: G --> A
Char. 5055: T --> C
Char. 5079: T --> C
Char. 5226: T --> C
Char. 5234: A --> G
Char. 5243: T --> C
Char. 5256: T --> C
Char. 5299: C --> A
Char. 5350: G --> T
Char. 5363: T --> C
Char. 5372: G --> A
Char. 5450: A --> G
Char. 5476: T --> G
Char. 5502: T --> A
Char. 5646: T --> C
Char. 5679: C --> G
Char. 5718: C --> A
Char. 6182: G --> T
Char. 6432: A --> CT
Char. 6446: C --> T
Char. 6565: C --> T

Node 873 :

Form_of_fourth_infraorbital (92):
(0)_square_or_more_developed_longitudinally_than_dorsoventrally -->
(1)_longer_dorsoventrally_than_longitudinally
Maxillary_teeth (188): (1)_present -->
(0)_absent
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent

Passage_of_metapterygoid_for_pseudobranch_artery (226): (1)_present --> (0)_absent

Articulation_between_quadrate_and_anguloarticular (237): (1)_posterior_to_lateral_ethmoid -->
(0)_anterior_to_or_at_vertical_through_lateral_ethmoid

Teeth_on_fourth_pharyngobranchial (283):
(0)_present --> (1)_absent

Contact_between_fourth_and_fifth_pharyngobranchial_dentigerous_plates (285): (1)_present -->
(0)_absent

Neural_postzygapophyses_of_fourth_vertebra (328):
(0)_reduced_not_or_slightly_projected_dorsal_to_fifth_vertebra -->
(1)_closely_articulating_with_prezygapophysis_of_fifth_vertebra

Anterior_tip_of_pelvic_bone (379):
(1)_posterior_to_fifth_rib -->
(0)_anterior_to_fifth_rib

Number_of_supraneurals (393):

(1)_six_or_more --> (0)_five_or_fewer

Number_of_supraneurals (394):

(1)_seven_or_more --> (0)_six_or_fewer

Ventral_union_of_gill_membranes (507):
(0)_joined_anteriorly_but_not_covering_isthmus -->
(2)_joined_to_each_other_and_with_isthmus

Char. 757: A --> T

Char. 778: A --> C

Char. 916: C --> A

Char. 1184: C --> A

Char. 1472: T --> A

Char. 1516: T --> C

Char. 1549: C --> T

Char. 1795: C --> A

Char. 1912: C --> T

Char. 1924: C --> T

Char. 2533: T --> C

Char. 2842: A --> C

Char. 3454: T --> C

Char. 3691: C --> G

Char. 3751: A --> G

Char. 3925: T --> C

Char. 3958: T --> G

Char. 4207: A --> G

Char. 4384: C --> T

Char. 4941: T --> C

Char. 5295: C --> G

Char. 5436: T --> C

Char. 5595: T --> C

Char. 5601: T --> C

Char. 5968: T --> C

Char. 6063: C --> T

Node 874 :

Branching_of_laterosensory_canals_of_fourth_or_fifth_infraorbitals (97): (0)_absent --> (1)_present

Ventral_margin_of_anterior_ceratohyal (263):

(0)_smooth_and_without_notches -->

(1)_with_notches_for_articulation_of_branchiostegal_rays

Anterior_limit_of_interosseous_space (352):
(0)_formed_by_dorsal_margins_of_coracoid_and_cleithrum -->

(1)_formed_by_coracoid_and_an_oblique_ridge_of_cleithrum

Lateral_lamella_of_pelvic_bone (373):

(0)_absent_or_reduced_to_posterior_third_of_bone --> (1)_present_and_reaching_two_thirds_of_bone

Number_of_epurals (426): (0)_one_or_two -->

(1)_three

Char. 712: C --> A

Char. 775: G --> A

Char. 853: C --> T

Char. 1015: A --> T

Char. 1147: A --> C

Char. 1346: C --> A

Char. 1438: C --> T

Char. 1822: G --> A

Char. 1834: T --> C

Char. 2104: A --> T
Char. 2260: T --> C
Char. 3532: T --> C
Char. 6020: A --> G
Char. 6024: G --> A
Char. 6028: C --> T
Char. 6046: C --> T
Char. 6307: T --> C
Char. 6589: G --> A
Node 875 :
Lateral_wings_of_mesethmoid (6): (0)_present
--> (1)_absent
Posterior_extent_of_maxilla (143):
(1)_reaching_second_infraorbital -->
(0)_not_reaching_second_infraorbital
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian
cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian
cartilage
Interdigitations_between_dentaries (150):
(1)_present --> (0)_absent
Number_of_cusps_of_anterior_maxillary_teeth
(193): (0)_up_to_three --> (1)_five_or_more_cusps
Number_of_cusps_of_first_maxillary_tooth
(194): (0)_five_or_fewer --> (1)_seven_or_more
First_basibranchial (272):
(1)_well_developed_and_articulating_anteriorly_with_basihyal -->
(0)_absent_or_much_reduced,_not_articulating_with_basihyal
Posterior_margin_of_cleithrum (341):
(0)_without_concavity_ventral_to_first_postcleithrum -->
(1)_with_concavity_ventral_to_first_postcleithrum
Sheath_of_scales_covering_anal-fin_base
(469): (1)_covering_3/4_of_anal-fin_base_or_more -->
(0)_reaching_half_length_of_anal-fin_base_or_less
Mandibular_accessory_tendon (473):
(1)_present --> (0)_absent
Facial_tendon (477): (1)_present --> (0)_absent

Insertion_of_A1_section_of_adductor_mandibulae
(479): (1)_on_lower_jaw --> (0)_on_maxilla

Contact_between_dorsal_margin_of_adductor_mandibulae_and_ventral_margin_of_dilatator_operculi
(480): (1)_present --> (0)_absent
Char. 652: A --> C
Char. 940: C --> A
Char. 1478: A --> G
Char. 1502: T --> C
Char. 1517: C --> T
Char. 1771: T --> A
Char. 2146: T --> C
Char. 2482: T --> C
Char. 4633: T --> C

Node 876 :
Number_of_2n_chromosomes (518):
(0)_50_or_fewer --> (1)_52_or_more
Number_of_2n_chromosomes (519):
(0)_52_or_fewer --> (1)_54_or_more
Char. 634: T --> G
Char. 778: C --> A
Char. 787: A --> C
Char. 1075: T --> C
Char. 1243: A --> C
Char. 1342: A --> C
Char. 1375: T --> C
Char. 1681: A --> G
Char. 1693: T --> C
Char. 1810: G --> A
Char. 1819: A --> C
Char. 2038: C --> AT
Char. 2275: T --> C
Char. 2287: T --> C
Char. 2380: T --> G
Char. 2405: C --> T
Char. 3454: C --> T
Char. 3456: G --> C
Char. 3607: G --> A
Char. 3610: A --> G

Char. 3739: A --> G
Char. 3766: T --> G
Char. 3832: G --> C
Char. 3853: C --> G
Char. 4342: C --> T
Char. 4516: T --> C
Char. 4663: C --> T
Char. 4699: A --> G
Char. 4800: T --> A
Char. 4827: G --> A
Char. 5076: A --> G
Char. 5128: C --> T
Char. 5164: C --> G
Char. 5229: C --> G
Char. 5247: C --> T
Char. 5278: T --> C
Char. 5490: A --> T
Char. 6087: C --> AG
Node 877 :

Position_of_foramen anteromedial_to_auditory_foramen (57):
(1)_as_close_as anterolateral_foramen_from_auditory_foramen -->
(0)_more_distant_than anterolateral_foramen_from_auditory_foramen
Laterosensory_canal_of_sixth_infraorbital (99):
(0)_not_branched --> (1)_branched
Uroneurals (427): (0)_absent_or_just_one_pair -->
(1)_two_pairs
Char. 1930: A --> C
Char. 2020: T --> C
Char. 2062: T --> C
Char. 2602: T --> C
Char. 4207: G --> A
Char. 4225: C --> T
Char. 4992: C --> T
Char. 5272: A --> G
Char. 5664: T --> C
Char. 5688: T --> C
Char. 5700: A --> G
Char. 5798: T --> C
Char. 6300: A --> G
Char. 6376: T --> C
Node 878 :

Anterior_end_of_mesethmoid (1):
(0)_trifurcate,_with_processes_inserted_into_premaxillary_depressions -->
(1)_not_trifurcate,_with_a_triangular_anterior_spine
Lateral_wings_of_mesethmoid (6): (1)_absent -->
(0)_present

Lateral_surface_of_vertical_canal_of_preopercle (107):
(0)_canal_uncovered,_posterior_to_musculature_and_infraorbitals -->
(1)_covered_by_musculature_and/or_infraorbitals
Maxillary_teeth (188): (0)_absent -->
(1)_present
Number_of_maxillary_teeth (189):
(0)_only_one,_or_absent --> (1)_two_or_more
Posterior_margin_of_cleithrum (341):
(1)_with_concavity_ventral_to_first_postcleithrum -->
(0)_without_concavity_ventral_to_first_postcleithrum
Anterior_limit_of_interosseous_space (352):
(1)_formed_by_coracoid_and_an_oblique_ridge_of_cleithrum -->
(0)_formed_by_dorsal_margins_of_coracoid_and_cleithrum
Dorsal-fin_rays_articulating_with_first_dorsal_pterygiophore (404): (1)_three_or_four --> (0)_two
Facial_tendon (477): (0)_absent --> (1)_present
Char. 661: T --> C
Char. 775: A --> G
Char. 853: T --> C
Char. 991: T --> C
Char. 1013: A --> G
Char. 1174: C --> A
Char. 1246: T --> C

Char. 1306: C --> A
Char. 1336: C --> A
Char. 1426: C --> A
Char. 1455: C --> T
Char. 1495: A --> C
Char. 1561: T --> C
Char. 1600: T --> A
Char. 1627: A --> T
Char. 1843: A --> T
Char. 2065: G --> A
Char. 2230: A --> G
Char. 2347: C --> T
Char. 2710: A --> G
Char. 2716: A --> G
Char. 2827: C --> A
Char. 2863: G --> A
Char. 3478: T --> C
Char. 3502: G --> C
Char. 3652: A --> T
Char. 3685: G --> A
Char. 3934: A --> G
Char. 3988: T --> C
Char. 3991: T --> A
Char. 4024: G --> A
Char. 4199: A --> C
Char. 4468: C --> T
Char. 4469: A --> G
Char. 4471: T --> G
Char. 4480: A --> G
Char. 4507: A --> T
Char. 4510: T --> C
Char. 4511: G --> A
Char. 4570: T --> C
Char. 4606: C --> T
Char. 5055: G --> AT
Char. 5244: C --> G
Char. 5319: G --> C
Char. 5427: C --> T
Char. 5470: G --> A
Char. 5545: A --> G
Char. 5673: G --> A
Char. 5691: G --> A
Char. 6308: A --> G
Char. 6329: C --> T
Char. 6358: T --> C
Char. 6361: A --> G
Node 879 :

Char. 580: A --> C
Char. 610: T --> C
Char. 844: C --> A
Char. 850: C --> A
Char. 862: A --> C
Char. 952: C --> A
Char. 1043: C --> T
Char. 1180: C --> A
Char. 1216: C --> T
Char. 1355: C --> T
Char. 1375: A --> T
Char. 1409: C --> A
Char. 1411: C --> A
Char. 1457: A --> C
Char. 1469: A --> C
Char. 1478: C --> A
Char. 1483: C --> T
Char. 1517: A --> C
Char. 1583: G --> A
Char. 1605: A --> G
Char. 1628: C --> A
Char. 1681: G --> A
Char. 1774: A --> CT
Char. 1817: C --> G
Char. 1818: A --> C
Char. 1873: T --> C
Char. 1924: T --> C
Char. 1934: T --> C
Char. 2002: A --> C
Char. 2179: G --> A
Char. 2278: C --> T
Char. 2311: T --> A
Char. 2314: A --> G
Char. 2350: A --> C
Char. 2359: C --> T
Char. 2374: C --> T

Char. 2422: A --> T
Char. 2476: G --> A
Char. 2495: T --> C
Char. 2570: T --> A
Char. 2571: C --> G
Char. 2581: T --> C
Char. 2591: T --> C
Char. 2594: A --> T
Char. 2596: G --> A
Char. 2674: T --> C
Char. 2704: A --> G
Char. 2719: G --> A
Char. 2785: T --> A
Char. 2869: T --> C
Char. 2872: T --> C
Char. 2881: A --> T
Char. 6118: C --> T
Char. 6130: A --> T
Char. 6216: G --> A
Char. 6254: T --> A
Char. 6292: C --> A
Char. 6381: C --> A
Char. 6514: C --> A
Char. 6567: C --> A
Node 880 :
Char. 524: T --> C
Char. 556: A --> C
Char. 666: C --> G
Char. 700: C --> T
Char. 724: C --> A
Char. 745: C --> A
Char. 748: A --> C
Char. 766: T --> C
Char. 817: A --> C
Char. 841: A --> C
Char. 863: T --> A
Char. 865: C --> A
Char. 871: C --> A
Char. 946: A --> C
Char. 955: T --> C
Char. 973: A --> C
Char. 988: A --> C
Char. 1118: T --> C
Char. 1126: A --> C
Char. 1174: T --> C
Char. 1309: A --> C
Char. 1333: C --> A
Char. 1345: A --> C
Char. 1346: A --> C
Char. 1447: T --> C
Char. 1489: A --> C
Char. 1519: T --> A
Char. 1525: C --> T
Char. 1555: T --> C
Char. 1556: T --> C
Char. 1558: A --> T
Char. 1645: T --> C
Char. 2005: A --> C
Char. 2027: G --> A
Char. 2035: C --> T
Char. 2047: A --> T
Char. 2065: T --> G
Char. 2233: A --> G
Char. 2237: G --> T
Char. 2326: T --> C
Char. 2389: C --> T
Char. 2458: T --> C
Char. 2498: T --> C
Char. 2572: C --> T
Char. 2641: A --> G
Char. 2650: T --> A
Char. 2659: G --> A
Char. 2701: A --> G
Char. 2773: A --> G
Char. 2779: T --> C
Char. 2821: A --> G
Char. 5901: C --> T
Char. 5906: G --> A
Char. 5919: G --> A
Char. 5968: A --> T
Char. 5970: T --> C
Char. 6027: A --> C
Char. 6041: A --> G
Char. 6047: T --> C
Char. 6207: C --> T
Char. 6210: A --> T
Char. 6344: G --> A
Char. 6346: T --> C
Char. 6402: A --> G
Char. 6497: C --> A
Char. 6575: T --> A
Node 881 :
Char. 5865: C --> T
Char. 6209: T --> C
Char. 6355: T --> A
Char. 6361: G --> A
Char. 6382: A --> C
Char. 6438: G --> A
Char. 6508: T --> C
Node 882 :
Char. 6005: T --> C
Char. 6254: A --> T
Char. 6325: G --> A
Char. 6528: G --> A
Char. 6575: C --> T
Node 883 :
Char. 634: A --> G
Char. 787: C --> A
Char. 961: T --> A
Char. 991: C --> T
Char. 1018: A --> C
Char. 1027: T --> A
Char. 1129: A --> C
Char. 1261: A --> C
Char. 1387: C --> T
Char. 1417: C --> A
Char. 1561: C --> T
Char. 1570: C --> T
Char. 1690: A --> C
Char. 1777: A --> C
Char. 1978: G --> C
Char. 2038: A --> C
Char. 2284: T --> A
Char. 2313: C --> T
Char. 2441: A --> T
Char. 2569: T --> A
Char. 2590: A --> G
Char. 2635: T --> A
Char. 2734: C --> T
Char. 2830: C --> T
Char. 5752: A --> C
Char. 6365: C --> A
Char. 6379: C --> T
Node 884 :
Char. 524: C --> T
Char. 1054: A --> C
Char. 1342: T --> C
Char. 1954: C --> T
Char. 6229: A --> G
Char. 6245: G --> A
Char. 6247: T --> C
Char. 6438: A --> G
Char. 6494: T --> C
Node 885 :
Char. 580: C --> T
Char. 604: T --> C
Char. 694: C --> T
Char. 746: T --> C
Char. 1123: T --> C
Char. 1153: T --> C
Char. 1240: T --> C
Char. 1370: T --> C
Node 886 :
Char. 583: C --> T
Char. 661: C --> T
Char. 838: T --> C
Char. 1268: T --> C
Char. 1454: G --> A
Node 887 :
Char. 692: T --> C
Char. 694: A --> C
Char. 749: T --> C
Char. 778: A --> C
Char. 901: T --> C
Char. 946: C --> A
Char. 971: T --> C
Char. 988: T --> AG
Char. 1180: A --> T
Char. 1342: C --> T
Char. 1438: T --> C
Char. 1885: T --> C
Char. 2159: C --> T
Char. 2848: T --> C
Char. 6444: C --> T
Node 888 :
Char. 538: C --> T
Char. 544: T --> C
Char. 580: T --> C
Char. 625: T --> C
Char. 640: T --> C
Char. 712: C --> T
Char. 745: T --> C
Char. 766: C --> T
Char. 1117: A --> G
Char. 1387: T --> C
Char. 1423: T --> C
Char. 1471: T --> C
Char. 1531: T --> C
Char. 1765: T --> C
Char. 1789: C --> T
Char. 1843: T --> A
Char. 1978: A --> G
Char. 2107: C --> T
Node 889 :
No synapomorphies
Node 890 :
Ventral_projection_of_lagenar_capsule (70):
(1)_ventral_to_plane_through_parasphenoid_dorsal_margin -->
(0)_not_reaching_to_plane_through_parasphenoid_dorsal_margin
Posterior_dorsoventral_expansion_of_fourth_infraorbital (93): (0)_absent --> (0)_present
Opening_of_epiphyseal_laterosensory_canals (113): (0)_along_margin_of_cranial_fontanel -->
(1)_canals_continue_dorsomedially_in_soft_tissue
Bony_lamella_covering_dentary_foramen_laterally (156): (0)_absent --> (1)_present
Inner_row_of_minute_dentary_teeth (203):
(0)_absent_or_restricted_to_lateral_region_of_dentary -->
(1)_present_from_anterior_region_of_dentary
Posterior_extension_of_ventral_process_of_quadrate (233):
(0)_extended_more_than_posterodorsal_process -->
(1)_with_posterodorsal_process_as_posteriormost_region
Length_of_medial_bony_ridge_of_opercle (254): (1)_less_than_50%_of_opercular_length -->
(0)_60%_or_greater_than_opercular_length
Articulation_between_anterior_and_posterior_ceratohyals (265):
(0)_synchondral_without_bony_interdigitations -->
(1)_with_bony_interdigitations
Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two
Relative_position_of_contralateral_pelvic_bones (381): (0)_close_each_other -->
(1)_much_separated
Scales (454): (0)_cycloid --> (2)_spinoid
Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-fin_base -->
(1)_several_rows_covering_basal_third_of_anal_fin
Anterodorsal_limit_of_pseudotympanum_between_ribs_of_fifth_and_sixth_vertebrae (487):
(0)_lateralis_superficialis_or_bundles_of_epaxial_musculature --> (1)_obliquus_superioris
Char. 1580: C --> T
Char. 1615: A --> G
Char. 1699: C --> T

Char. 1729: A --> T
Char. 1741: T --> C
Char. 1756: T --> C
Char. 1796: T --> C
Char. 1810: C --> AT
Char. 1900: C --> T
Char. 1924: T --> A
Char. 1993: A --> G
Char. 2041: C --> T
Char. 2054: C --> T
Char. 2226: G --> T
Char. 2338: C --> T
Char. 2368: G --> A
Char. 2591: C --> T
Char. 2608: T --> C
Char. 2668: T --> C
Char. 2761: C --> T
Char. 2764: C --> T
Char. 3529: C --> T
Char. 3619: G --> T
Char. 3784: G --> A
Char. 3847: G --> A
Char. 3916: G --> A
Char. 4111: G --> A
Char. 4374: C --> T
Char. 4411: G --> A
Char. 4486: G --> T
Char. 4543: C --> T
Char. 5118: T --> C
Char. 5525: G --> A
Char. 5526: C --> G
Char. 5557: A --> G
Char. 5718: C --> T
Char. 6290: C --> T
Char. 6427: G --> A
Char. 6492: C --> T
Char. 6508: A --> C
Char. 6513: T --> A

Node 891 :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wing -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Rhinosphenoid (34): (1)_present --> (0)_absent

Position_of_sphenotic_spine_relative_to_hyomandibula (49):
(0)_rather_aligned_with_anterior_margin_of_hyomandibula -->
(1)_displaced_anteriorly_relative_to_anterior_margin_of_hyomandibula

Position_of_foramen anteromedial_to_auditory_foramen (57):
(0)_more_distant_than anterolateral_foramen_from_auditory_foramen -->
(1)_as_close_as anterolateral_foramen_from_auditory_foramen
Position_of_intercalar (71):
(1)_on_articulation_between_pterotic_and_exoccipital -->
(0)_on_middle_ventral_surface_of_exoccipital
Pores_of_laterosensory_canal_of_lower_jaw (104): (0)_six_or_less --> (1)_seven_or_more

Morphology_of_premaxillary_maxillary_and_dentary_teeth (165):
(1)_some_teeth_multicuspidate_or_molariform -->
(0)_all_teeth_conical_caniniform_or_mamilliform

Position_of_longitudinal_cartilage_dorsal_to_ectopterygoid (219):
(0)_bordered_medially_by_mesopterygoid -->
(1)_displaced_laterally_and_separated_from_mesopterygoid
Metapterygoid_foramen (228):
(0)_a_well_defined_transverse_foramen -->
(1)_as_a_canal_oblique_to_metapterygoid

Articulation_between_ventral_margin_of_metapterygoid_and_posterodorsal_margin_of_quadrate (229): (0)_absent --> (1)_present

Foramen_on_articular_condyle_of_quadrate (230): (0)_absent --> (1)_present
Form_of_quadrate (231):
(0)_with_ventral_portion_longer_than anterodorsal_region -->
(1)_with anterodorsal_portion_equal_or_longer_than_ventral_region

Articulation_between_quadrate_and_anguloarticular (238):
(0)_anterior_to_or_at_vertical_through_middle_eye --> (1)_posterior_to_middle_eye
Ventral_margin_of_anterior_ceratohyal (263):
(1)_with_notches_for_articulation_of_branchiostegal_rays --> (0)_smooth_and_without_notches

Distance_between_attachment_site_of_first_and_second_branchiostegal_rays (270):
(0)_equal_or_shorter_than_distance_between_second_and_third_rays -->
(1)_longer_than_distance_between_second_and_third_rays

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Length_of_interhyal (307):
(0)_shorter_than_one-third_of_symplectic_length --> (1)_equal_to_or_longer_than_one-half_of_symplectic_length
Anterior_margin_of_cleithrum (339):
(0)_slightly_sinuous -->
(1)_with_anterior_pointed_projection
Number_of_branched_anal-fin_rays (421):
(0)_34_or_fewer --> (1)_35_or_more

Origin_of_A1_section_of_adductor_mandibulae (476):
(0)_principally_on_vertical_arm_of_preopercle -->
(1)_restricted_or_almost_restricted_to_horizontal_arm_of_preopercle
Insertion_of_facial_tendon (478):
(0)_on_quadrate_near_its_articulation_with_preopercle --> (1)_on_preopercle_posterior_to_quadrate
Char. 1570: T --> C
Char. 1573: A --> G
Char. 1675: C --> T
Char. 1921: G --> A
Char. 1942: C --> T
Char. 1981: T --> A
Char. 2002: A --> C
Char. 2395: C --> T
Char. 2441: T --> G
Char. 2491: G --> A
Char. 2611: C --> G
Char. 2683: T --> C
Char. 4716: A --> G
Char. 5347: G --> A
Char. 5538: G --> A
Char. 5911: C --> T
Char. 6230: C --> T
Char. 6294: T --> C
Char. 6334: G --> A
Char. 6346: C --> T
Char. 6347: T --> A

Node 892 :
Foramina_for_glossopharyngeal_and_vagus_nerves (73):
(0)_a_single_foramen_or_two_contiguous_foramina --> (1)_two_well_separated_foramina

Articulation_between_second_and_third_infraorbital (86): (1)_anteroventrally_angled -->
(2)_posteroventrally_angled

Extent_of_implantation_of_teeth_along_maxilla (191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella

Number_of_cusps_of_anterior_maxillary_teeth (192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp

Form_and_degree_of_ossification_of_first_ceratohyal_ranchial_gill_rakers (299):
(0)_laminar_and_not_ossified_distally -->
(1)_rather_thick_and_completely_ossified_distal_region

Pointed_projection_dorsal_to_anterior_axis_of_neural_complex (308): (0)_absent --> (1)_present

Dorsal_development_of_dorsal_process_of_neural_pedicle_of_third vertebra (317):
(0)_not_broadly_overlapping_neural_complex -->
(1)_broadly_overlapping_neural_complex
Anal-fin_position (415):
(0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray -->
(1)_extended_anteriorly_ventral_to_dorsal_fin

Pseudotympanum_between_ribs_of_fifth_and_sixth vertebrae (486):
(0)_absent_or_restricted_to_region_between_these_ribs -->
(1)_small_portion_anterior_to_first_rib_limited_by_lateralis_superficialis
Char. 1549: C --> T
Char. 1597: T --> A
Char. 1687: A --> G
Char. 1723: A --> C
Char. 1843: T --> A
Char. 2062: T --> C
Char. 2098: T --> A
Char. 2620: G --> T
Char. 3614: A --> C
Char. 4242: C --> T
Char. 5915: C --> T
Char. 5968: T --> C
Char. 6037: C --> T
Char. 6299: A --> G
Char. 6462: A --> G
Char. 6531: C --> T

Node 893 :
Frontal_and_pterotic_laterosensory_canals (118):
(0)_without_a_discernible_angle_between_them -->
(1)_with_an_angle_on_pore_receiving_infraorbital_canal
Number_of_teeth_on_inner_premaxillary_row (183): (0)_six_or_fewer --> (1)_seven_or_more
Anterior_portions_of_branchiostegal_rays (268):
(0)_broad_near_their_articulation_with_ceratohyals -->
(1)_slender_near_their_articulation_with_ceratohyals
Transitional vertebrae_with_haemal_canal (331): (0)_present --> (1)_absent
Anal-fin_position (416):
(0)_posterior_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray

Pseudotympanum_between_ribs_of_fifth_and_sixth vertebrae (485): (0)_absent --> (1)_present
Char. 1796: C --> T
Char. 1912: C --> T
Char. 1915: T --> A
Char. 1942: A --> C
Char. 1948: T --> C
Char. 2038: T --> C
Char. 2041: T --> C
Char. 2110: C --> T
Char. 2287: T --> C
Char. 2338: T --> G
Char. 2538: C --> G
Char. 2602: C --> A
Char. 2671: T --> C
Char. 2755: A --> G

Char. 2773: A --> G
Char. 2878: T --> C
Char. 3586: G --> A
Char. 3751: G --> T
Char. 4033: G --> T
Char. 4132: C --> T
Char. 4487: C --> T
Char. 4630: C --> T
Char. 4640: C --> T
Char. 4839: G --> A
Char. 4920: G --> A
Char. 5235: C --> T
Char. 5328: G --> A
Char. 5454: T --> C
Char. 5456: G --> C
Char. 5532: G --> A
Char. 5553: C --> T
Char. 6023: G --> A
Char. 6043: G --> A
Char. 6046: C --> A
Char. 6047: C --> T
Char. 6432: A --> C
Char. 6511: C --> T
Node 894 :
 Ethmopalatine cartilage (208):
(0)_absent_or_reduced_in_size -->
(1)_present_and_conspicuous
 Number_of_supraneurals (392):
(1)_five_or_more --> (0)_four_or_fewer
 Sclerotic_bones (508):
(0)_single_anteroventrally_open_bone -->
(1)_two_bones_separated_by_cartilages
 Char. 772: T --> C
 Char. 847: A --> C
 Char. 854: A --> G
 Char. 955: T --> A
 Char. 1106: G --> A
 Char. 1261: C --> T
 Char. 1723: T --> A
 Char. 1735: G --> A
 Char. 1810: G --> C
 Char. 1981: A --> T
 Char. 2023: T --> C
 Char. 2044: A --> T
 Char. 4414: G --> A
 Char. 4417: G --> A
 Char. 4582: A --> G
 Char. 5181: G --> C
 Char. 5183: G --> A
 Char. 5196: C --> T
 Char. 5229: C --> T
 Char. 6209: C --> T
 Char. 6328: A --> T
 Char. 6334: A --> G
Node 895 :
 Char. 646: A --> G
 Char. 752: C --> T
 Char. 892: C --> T
 Char. 988: T --> C
 Char. 1033: A --> C
 Char. 1390: T --> C
 Char. 1426: C --> T
 Char. 1454: G --> A
 Char. 1494: C --> T
 Char. 2237: G --> A
 Char. 3460: T --> C
 Char. 3604: T --> C
 Char. 3715: G --> A
 Char. 3733: T --> C
 Char. 3751: A --> G
 Char. 3766: C --> T
 Char. 3767: A --> G
 Char. 4067: T --> C
 Char. 4078: C --> G
 Char. 4156: G --> A
 Char. 4219: C --> T
 Char. 4324: A --> G
 Char. 4495: T --> C
 Char. 4600: C --> G
 Char. 4968: T --> G
 Char. 5082: C --> G
 Char. 5540: G --> C
 Char. 5559: C --> T

Char. 5625: G --> A
Char. 5745: C --> T
Char. 6254: A --> T
Char. 6322: C --> T
Char. 6462: G --> A
Node 896 :
 Number_of_teeth_on_inner_premaxillary_row
(182): (0)_five_or_fewer --> (1)_six_or_more
 Number_of_cusps_of_anterior_dentary_teeth
(201): (1)_five_or_more --> (0)_three_or_fewer
 Char. 700: T --> C
 Char. 712: C --> T
 Char. 889: C --> T
 Char. 1105: C --> T
 Char. 1477: C --> T
 Char. 2087: C --> T
 Char. 2125: T --> C
 Char. 4030: A --> G
 Char. 4627: C --> A
 Char. 4884: G --> C
 Char. 4887: T --> C
 Char. 5008: C --> A
 Char. 5157: C --> T
 Char. 5634: G --> A
 Char. 5643: T --> C
Node 897 :
 Articulation_between_second_and_third_infraorbit
als (86): (0)_vertical --> (1)_anteroventrally_angle
d
 Number_of_branched_anal-fin_rays (420):
(0)_24_or_fewer --> (1)_25_or_more
 Number_of_2n_chromosomes (518):
(0)_50_or_fewer --> (1)_52_or_more
 Char. 790: A --> C
 Char. 1091: C --> A
 Char. 1118: C --> T
 Char. 1469: C --> G
 Char. 1537: C --> T
 Char. 1873: C --> T
 Char. 2024: T --> C
 Char. 2062: C --> T
 Char. 2252: C --> T
 Char. 2311: A --> T
 Char. 2449: G --> A
 Char. 2773: G --> A
 Char. 2827: A --> G
 Char. 3514: C --> T
 Char. 3517: A --> T
 Char. 4003: T --> C
 Char. 4441: C --> T
 Char. 4847: A --> T
 Char. 5025: C --> T
 Char. 5217: C --> A
 Char. 5469: T --> G
 Char. 6361: G --> T
 Char. 6510: A --> C
Node 898 :
 Ventral_margin_of_anterior_ceratothyal (263):
(0)_smooth_and_without_notches -->
(1)_with_notches_for_articulation_of_branchiosteg
al_rays
 Form_and_articulation_of_neural_pedicle_of_third
vertebra (310):
(0)_pedicle_articulating_synchondrally_with_neur
al_complex -->
(1)_pedicle_without_an_articular_surface_with_ne
ural_complex
 Node 899 :
 Supraorbital (75): (0)_present --> (1)_absent
 Node 900 :
 Posterior_projection_of_pterotic_spine (53):
(0)_posterior_to_attachment_site_of_ligament_fro
m_hyomandibula -->
(1)_restricted_to_attachment_region_of_hyomandi
bular_ligament
 Posterior_extension_of_supraoccipital_spine
(62):
(1)_reaching_only_to_anterior_limit_of_neural_co
mplex -->
(0)_reaching_at_least_to_middle_length_of_neural
_complex

Posterior_branch_of_posttemporal_laterosensory_c
anal (120): (0)_present --> (1)_absent
Supraneural_anterior_to_neural_spine_of_fourth_v
ertebr (389): (1)_present_and_vertically_elongate
--> (0)_absent_or_small
 Number_of_supraneurals (395):
(1)_eight_or_more --> (0)_seven_or_fewer
 Uroneurals (427): (1)_two_pairs -->
(0)_absent_or_just_one_pair
 Node 901 :
 Length_of_sphenotic_spine (47):
(1)_reaching_to_horizontal_through_dorsal_margin
_of_hyomandibula -->
(0)_not_reaching_to_anterodorsal_angle_of_hyoma
ndibula
Posterior_extent_of_ventral_process_of_quadrate
(234):
(0)_reaching_vertical_through_posterior_margin_o
f_symplectic -->
(1)_falling_short_of_posterior_margin_of_symplec
tic
 Char. 820: C --> A
 Char. 988: C --> T
 Char. 1014: T --> C
 Char. 1096: A --> T
 Char. 1171: C --> A
 Char. 1459: A --> T
 Char. 1672: G --> A
 Char. 1729: C --> A
 Char. 1822: G --> A
 Char. 2584: T --> C
 Char. 3559: A --> G
 Char. 4845: C --> T
 Char. 5358: T --> C
 Char. 5454: G --> T
Node 902 :
 Contact_between_frontals_anterior_to_frontal_fon
tanel (27): (1)_present --> (0)_absent
 Rhinosphenoid (34): (0)_absent --> (1)_present
 Length_of_ascending_process_of_premaxilla
(129): (1)_reaching_just_anterior_end_of_nasal -->
(0)_reaching_at_least_one
third_of_length_of_nasal
 Position_of_coronomeckelian (159):
(1)_situated_mainly_dorsal_to_Meckelian_cartilag
e -->
(0)_situated_mainly_lateral_to_Meckelian_cartilag
e
 Relative_position_of_dorsal
fin_anterior_insertion (403):
(0)_anterior_to_or_at_vertical_through_pelvic
fin_origin -->
(1)_posterior_to_vertical_through_pelvic-fin_origin
 Number_of_dorsal
fin_rays_on_last_pterygiophore (411):
(1)_two_adnate --> (0)_one
 Lateral_lamellae_on_anterior_anal_pterygiophores
(414): (1)_present --> (0)_absent
 Number_of_unbranched_anal-fin_rays (417):
(0)_three_or_fewer --> (1)_four_or_more
 Number_of_branched_anal-fin_rays (419):
(0)_17_or_fewer --> (1)_18_or_more
 Anterior_ventral_procurent_caudal-fin_rays
(436): (0)_paired,_only_distally_fused -->
(1)_fused_in_laminar_medial_bones
 Bony_hooks_on_fin_rays (440): (0)_absent -->
(1)_present_in_adult_males
 Radii_oriented_towards_anterior_field_of_scales
(459): (0)_present --> (1)_absent
 Radii_of_scales (461): (1)_converging_at_focus
--> (0)_not_converging_at_focus
 Char. 544: A --> C
 Char. 742: C --> T
 Char. 787: A --> C
 Char. 805: A --> C
 Char. 1045: A --> C
 Char. 1054: C --> A

Char. 1098: T --> C
Char. 1346: C --> A
Char. 1477: A --> C
Char. 1579: G --> A
Char. 1678: T --> A
Char. 1888: T --> A
Char. 1906: C --> G
Char. 2068: T --> A
Char. 2215: T --> A
Char. 2314: G --> A
Char. 2335: C --> T
Char. 2653: C --> G
Char. 2725: A --> T
Char. 2797: A --> G
Char. 3556: G --> T
Char. 3658: G --> A
Char. 3733: A --> T
Char. 3889: T --> C
Char. 4067: C --> T
Char. 4567: C --> T
Char. 4993: A --> T
Char. 5034: G --> A
Char. 5133: T --> G
Char. 5295: C --> G
Char. 5397: G --> A
Char. 5657: A --> T
Char. 6462: A --> G
Char. 6467: T --> C
Char. 6508: C --> A
Char. 6514: A --> T
Node 903 :
Ventral_diverging_lamellae_of_mesethmoid
(7): (0)_absent --> (1)_present
Ventromedial_opening_of_posttemporal_fossa
(67): (1)_present --> (0)_absent

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base -->
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (80):
(1)_anterior_margin_of_antorbital_posterior_to_first_infraorbital -->
(0)_antorbital_either_aligned_or_anterior_to_first_infraorbital
Ventral_extent_of_third_infraorbital (88):
(0)_reaching_horizontal_arm_of_preopercle -->
(1)_not_reaching_horizontal_arm_of_preopercle_at_least_anteriorly
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Relative_length_of_palatine (209):
(1)_distinctly_longer_than_one_half_length_of_ectopterygoid -->
(0)_approximately_one_half_length_of_ectopterygoid_or_less

Rows_of_gill_rakers_on_second_ceratobranchial (292): (1)_two --> (0)_one

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (294): (0)_16_or_more --> (1)_15_or_fewer

Dorsal_longitudinal_ridge_on_medial_lamella_of_pelvic_bone (372): (0)_present --> (1)_absent
Number_of_supraneurals (395):
(0)_seven_or_fewer --> (1)_eight_or_more
Char. 571: C --> A
Char. 634: T --> A
Char. 694: C --> T
Char. 864: C --> T
Char. 925: C --> T
Char. 964: C --> A
Char. 1003: C --> A
Char. 1081: C --> A
Char. 1106: A --> G
Char. 1330: A --> C
Char. 1363: C --> T

Char. 1459: C --> A
Char. 1502: T --> C
Char. 1676: A --> G
Char. 1738: A --> C
Char. 1741: C --> T
Char. 2002: C --> A
Char. 2024: C --> T
Char. 2491: T --> A
Char. 2660: C --> T
Char. 2758: A --> T
Char. 2806: T --> C
Char. 2866: G --> A
Char. 2890: A --> T
Char. 3464: G --> A
Char. 3466: T --> C
Char. 3511: T --> A
Char. 3532: T --> C
Char. 3605: C --> T
Char. 3640: T --> AG
Char. 3703: T --> C
Char. 3715: A --> G
Char. 3964: T --> C
Char. 4054: T --> C
Char. 4099: G --> A
Char. 4123: C --> T
Char. 4332: T --> A
Char. 4447: G --> A
Char. 4621: C --> G
Char. 4700: T --> C
Char. 4728: A --> G
Char. 4836: A --> G
Char. 4935: T --> C
Char. 4944: T --> A
Char. 5079: T --> C
Char. 5343: C --> G
Char. 5388: G --> A
Char. 5396: A --> C
Char. 5460: A --> T
Char. 5466: T --> C
Char. 5505: C --> G
Char. 5506: T --> C
Char. 5553: T --> C
Char. 5622: G --> A
Char. 5691: A --> G
Char. 5938: C --> T
Char. 6210: T --> A
Char. 6446: C --> T
Node 904 :
Form_of_anterior_process_of_lateral_ethmoid (20):
(0)_broad_in_ventral_view_contacting_vomer_in_its_entire_length -->
(1)_slender_and_separated_from_vomer
Length_of_sphenotic_spine (47):
(0)_not_reaching_toanterodorsal_angle_of_hyomandibula -->
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula
Form_of_lateral_line (121):
(0)_approximately_straight -->
(1)_curved_ventrally_in_abdominal_region
Number_of_cusps_of_anterior_dentary_teeth (201): (0)_three_or_fewer --> (1)_five_or_more
Length_of_medial_bony_ridge_of_opercle (254): (0)_60%_or_greater_than_opercular_length --> (1)_less_than_50%_of_opercular_length

Ascending_process_of_neural_pedicle_of_third_vertebra (316): (0)_absent --> (1)_present
Coracoid_foramen (353):
(0)_absent_or_reduced_to_small_pore -->
(1)_well_developed
Anterior_tip_of_pelvic_bone (379):
(1)_posterior_to_fifth_rib -->
(0)_anterior_to_fifth_rib
Posterior_region_oflevator_arcus_palatini (482):
(1)_limited_by_A2_and_A3_sections_of_adductor_mandibulae -->
(0)_limited_by_adductor_mandibulae_and_adductor_arcus_palatini
Char. 613: C --> T
Char. 637: C --> T

Char. 880: C --> T
Char. 967: A --> C
Char. 1402: C --> T
Char. 1672: A --> G
Char. 1726: A --> C
Char. 2005: C --> T
Char. 2260: T --> C
Char. 3877: T --> C
Char. 4770: T --> C
Char. 4926: A --> C
Char. 5227: A --> G
Char. 5269: C --> T
Char. 5461: T --> C
Char. 5867: T --> C
Char. 6299: G --> A
Char. 6374: G --> A
Node 905 :
Char. 6369: T --> C
Char. 6382: A --> G
Char. 6484: C --> T
Node 906 :
Char. 6162: A --> G
Char. 6211: A --> G
Char. 6324: T --> C
Char. 6629: A --> T
Node 907 :
Char. 6322: C --> A
Char. 6344: G --> A
Char. 6367: A --> C
Char. 6377: C --> T
Char. 6383: G --> A
Char. 6435: G --> A
Char. 6448: C --> T
Char. 6476: C --> A
Char. 6531: C --> A
Char. 6565: C --> T
Node 908 :
Char. 6118: T --> C
Char. 6119: T --> C
Char. 6182: G --> A
Char. 6253: A --> C
Char. 6254: A --> T
Char. 6286: A --> T
Char. 6289: A --> G
Char. 6302: C --> T
Char. 6316: A --> T
Char. 6373: G --> A
Char. 6374: A --> C
Char. 6376: C --> T
Char. 6382: C --> A
Char. 6384: T --> C
Char. 6403: C --> T
Char. 6426: T --> C
Char. 6456: C --> T
Char. 6514: T --> A
Char. 6523: C --> T
Char. 6573: C --> T
Char. 6575: A --> T
Node 909 :
Anterior_extension_of_anguloarticular_laterosensory_canal (106):
(0)_not_reaching_vertical_through_Meckelian_cartilage -->
(1)_reaching_vertical_through_Meckelian_cartilage

Morphology_of_premaxillary_maxillary_and_dentary_teeth (165):
(1)_some_teeth_multicuspidate_or_molariform -->
(0)_all_teeth_conical_caniniform_or_mamilliform

Extent_of_implantation_of_teeth_along_maxilla (191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella
Number_of_cusps_of_anterior_maxillary_teeth (192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Foramen_on_articular_condyle_of_quadrate (230): (0)_absent --> (1)_present

Articulation_between_quadrate_and_anguloarticular (238):
(0)_anterior_to_or_at_vertical_through_middle_eye --> (1)_posterior_to_middle_eye
Anterior_extension_of_interopercle (249):
(0)_extending_anteriorly_beyond_tip_of_horizontal_arm_of_preopercle -->
(1)_not_extending_anteriorly_beyond_anterior_tip_of_preopercle
Length_of_medial_bony_ridge_of_opercle (254): (1)_less_than_50%_of_opercular_length -->
(0)_60%_or_greater_than_opercular_length
Total_number_of_transitional_vertebrae (330):
(0)_four_or_more --> (1)_three_or_fewer
Anal-fin_position (416):
(0)_posterior_ot_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Char. 586: A --> T
Char. 838: C --> A
Char. 1013: G --> A
Char. 1075: T --> C
Char. 1094: C --> T
Char. 1105: A --> C
Char. 1195: A --> G
Char. 1328: G --> A
Char. 1351: C --> T
Char. 1367: A --> G
Char. 1499: T --> C
Char. 1500: G --> T
Char. 2335: T --> A
Char. 2591: C --> T
Char. 2660: T --> C
Char. 2662: G --> A
Char. 2689: C --> T
Char. 2710: G --> A
Char. 2785: A --> T
Char. 3457: C --> T
Char. 3458: T --> G
Char. 3478: C --> T
Char. 3514: C --> T
Char. 3535: T --> C
Char. 3547: C --> A
Char. 3568: A --> G
Char. 3610: A --> G
Char. 3613: G --> A
Char. 3652: T --> C
Char. 3667: G --> A
Char. 3668: T --> G
Char. 3826: A --> T
Char. 3862: G --> A
Char. 3865: C --> T
Char. 3868: G --> A
Char. 3877: C --> T
Char. 3921: G --> A
Char. 3925: T --> G
Char. 3934: G --> C
Char. 3964: C --> T
Char. 3973: C --> T
Char. 3984: A --> T
Char. 4021: A --> G
Char. 4069: G --> A
Char. 4117: C --> A
Char. 4159: A --> T
Char. 4216: G --> A
Char. 4372: A --> G
Char. 4432: T --> C
Char. 4438: C --> G
Char. 4504: G --> T
Char. 4528: G --> C
Char. 4614: T --> A
Char. 4776: G --> A
Char. 4795: A --> G
Char. 4875: A --> C
Char. 4896: C --> T
Char. 4897: A --> G
Char. 4926: C --> T
Char. 4929: C --> A
Char. 5037: G --> A
Char. 5076: A --> G
Char. 5079: C --> T
Char. 5160: A --> G
Char. 5163: A --> T
Char. 5177: G --> A
Char. 5178: G --> A
Char. 5316: A --> C
Char. 5343: G --> A
Char. 5346: C --> T
Char. 5362: G --> C
Char. 5409: G --> C
Char. 5508: T --> C
Char. 5519: A --> T
Char. 5583: A --> T
Char. 5664: C --> T
Char. 5724: T --> C
Char. 6329: T --> C
Char. 6344: A --> G
Char. 6346: C --> T
Char. 6497: A --> C
Node 910 :
Dorsal_expansion_of_rhinosphenoid (35):
(0)_absent -->
(1)_present_and_forming_a_bony_wall_between_olfactory_nerves
Form_of_third_postcleithrum (364):
(1)_with_a_posterior_lamella -->
(0)_slender_without_associated_lamella
Char. 625: C --> T
Char. 856: A --> T
Char. 952: A --> T
Char. 1228: C --> T
Char. 1345: C --> A
Char. 1468: A --> C
Char. 1483: T --> C
Char. 1639: A --> C
Char. 1885: CT --> A
Char. 2281: T --> A
Char. 2356: T --> C
Char. 2404: T --> C
Char. 2605: C --> T
Char. 2680: T --> C
Char. 2713: T --> A
Char. 4276: T --> A
Char. 4338: A --> C
Char. 4474: G --> A
Char. 4555: T --> C
Char. 4749: T --> C
Char. 5062: C --> A
Char. 5067: T --> A
Char. 5124: C --> T
Char. 5509: T --> C
Char. 5718: C --> G
Char. 6324: C --> T
Node 911 :
Char. 6193: T --> C
Char. 6327: A --> G
Char. 6368: C --> A
Node 912 :
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more
Char. 1609: T --> C
Char. 1720: T --> C
Char. 1930: T --> C
Char. 2353: C --> A
Char. 2626: G --> A
Char. 4033: G --> A
Char. 4057: C --> T
Char. 4060: C --> T
Char. 4577: G --> A
Char. 5124: C --> T
Char. 6362: T --> C
Char. 6433: T --> A
Node 913 :
Char. 835: C --> T
Char. 1045: C --> T
Char. 1141: A --> T
Char. 1285: T --> A
Char. 1309: T --> C
Char. 1369: A --> C
Char. 1459: A --> T
Char. 1675: C --> A
Char. 1819: T --> C
Char. 1849: C --> A
Char. 1867: T --> C
Char. 2002: C --> A
Char. 2050: T --> A
Char. 2320: C --> T
Char. 3160: T --> C
Char. 5055: A --> G
Char. 5509: T --> C
Char. 6023: G --> A
Char. 6028: C --> T
Char. 6047: C --> T
Char. 6346: C --> T
Char. 6347: T --> A
Node 914 :
Palatine_foramen (210):
(0)_absent_or_reduced_in_size -->
(1)_present_and_very_conspicuous
Char. 535: A --> T
Char. 658: C --> T
Char. 694: T --> C
Char. 838: C --> T
Char. 904: C --> T
Char. 1118: T --> C
Char. 1456: C --> T
Char. 1846: C --> T
Char. 4863: G --> T
Char. 6322: C --> T
Node 915 :
Epiphyseal_branch_of_supraorbital_canal (111): (0)_present --> (1)_absent
Number_of_supraneurals (395):
(0)_seven_or_fewer --> (1)_eight_or_more
Char. 1564: T --> C
Char. 1580: C --> T
Char. 2302: T --> C
Char. 2530: T --> C
Char. 3901: T --> G
Char. 5499: A --> C
Char. 5913: T --> C
Node 916 :
Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial
Char. 1585: C --> T
Char. 1591: C --> T
Char. 1732: C --> T
Char. 1772: C --> T
Char. 2002: A --> C
Char. 2024: C --> T
Char. 2047: T --> C
Char. 2056: A --> C
Char. 2320: T --> C
Char. 2329: C --> A
Char. 2455: C --> T
Char. 2497: G --> C
Char. 2671: T --> A
Char. 4321: T --> A
Char. 4361: C --> A
Char. 4441: T --> C
Char. 4591: T --> G
Char. 4627: C --> T
Char. 4663: C --> A
Char. 5472: T --> A
Char. 5586: C --> G
Char. 6028: T --> C
Char. 6037: C --> T
Node 917 :
Anterior_convergence_of_ventral_diverging_lamellae_with_nasal_septum_of_mesethmoid (8):
(0)_absent_or_confluent_near_anterior_end_of_nasal_septum -->
(1)_confluent_at_posterior_end_of_nasal_septum
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial

Form_of_third_postcleithrum (364):
(1)_with_a_posterior_lamella -->
(0)_slender_without_associated_lamella
Number_of_dorsal_pterygiophores (400):
(1)_10_or_more --> (0)_nine_or_fewer
Number_of_branched_rays_on_dorsal_fin
(409): (1)_nine_or_more --> (0)_eight_or_fewer
Anal-fin_position (416):
(0)_posterior_or_at_vertical_through_base_of_1st_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Bony_hooks_on_last_pelvic-fin_ray_of_adult_males (447):
(0)_absent_or_reduced_in_number -->
(1)_as_numerous_as_in_other_rays
Distribution_of_bony_hooks_on_pelvic-fin_branched_rays_of_males (449):
(1)_restricted_to_medial_branches -->
(0)_on_all_branches
Form_of_sperm_nucleus (504):
(0)_spherical_or_ovoid --> (1)_much_elongated
Insemination (514): (0)_absent --> (1)_present
Char. 1717: A --> G
Char. 1795: C --> A
Char. 1879: A --> G
Char. 1897: C --> T
Char. 2241: A --> G
Char. 2607: A --> G
Char. 3616: A --> G
Char. 4093: C --> G
Char. 5154: C --> T
Char. 5361: T --> C
Char. 5396: C --> A
Char. 5496: T --> C
Char. 6299: A --> G
Char. 6343: G --> A
Node 918 :

Ventral_margin_of_horizontal_process_of_anguloarticular (162):
(0)_posterioventrally_angled_relative_to_dentary_laterosensory_canal -->
(1)_perpendicular_to_laterosensory_canal_of_dentary
Number_of_teeth_on_inner_premaxillary_row
(181): (1)_five_or_more --> (0)_four_or_fewer
Number_of_maxillary_teeth (190):
(1)_four_or_more --> (0)_up_to_three

Lateral_expansion_of_middle_region_of_ectopterygoid (215):
(0)_not_expanded_lateral_to_lateral_ethmoid -->
(1)_expanded_lateral_to_lateral_ethmoid_and_reaching_infraorbitals
Char. 523: T --> C
Char. 637: T --> C
Char. 742: T --> C
Char. 863: A --> G
Char. 910: C --> A
Char. 970: C --> T
Char. 1033: A --> T
Char. 1088: A --> G
Char. 1090: T --> A
Char. 1330: C --> A
Char. 1459: T --> A
Char. 1485: A --> G
Char. 1570: T --> C
Char. 1612: C --> T
Char. 1648: C --> T
Char. 1858: A --> C
Char. 1957: A --> T
Char. 1972: A --> G
Char. 2050: C --> T
Char. 2225: G --> A
Char. 2389: T --> G
Char. 2401: A --> G
Char. 2470: G --> A
Char. 2626: T --> G
Char. 2818: C --> G
Char. 3010: G --> A
Char. 3388: A --> G
Char. 3535: T --> C

Char. 3640: AG --> C
Char. 3664: G --> A
Char. 3805: C --> T
Char. 3823: C --> T
Char. 3826: A --> G
Char. 3889: C --> T
Char. 4072: T --> C
Char. 4231: T --> G
Char. 4513: G --> A
Char. 4570: C --> T
Char. 4573: C --> T
Char. 4598: C --> G
Char. 4722: C --> A
Char. 4881: T --> G
Char. 4935: G --> T
Char. 4936: C --> G
Char. 5022: C --> T
Char. 5121: C --> G
Char. 5211: G --> A
Char. 5343: G --> A
Char. 5350: G --> T
Char. 5352: A --> G
Char. 5637: T --> A
Char. 5718: C --> T
Char. 5724: T --> C
Char. 5915: C --> T
Char. 6328: A --> T
Char. 6334: A --> G
Char. 6514: T --> A
Node 919 :

Extent_of_implantation_of_teeth_along_maxilla (191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella
Number_of_cusps_of_anterior_maxillary_teeth
(192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp
Number_of_cusps_of_anterior_dentary_teeth
(201): (1)_five_or_more --> (0)_three_or_fewer

Articulation_between_quadrate_and_anguloarticular (238):
(0)_anterior_to_or_at_vertical_through_middle_eye -->
(1)_posterior_to_middle_eye

Teeth_on_lamella_dorsal_to_fourth_basibranchial (277): (0)_absent --> (1)_present
Number_of_epurals (425): (1)_two_or_three -->
(0)_one
Char. 539: C --> T
Char. 604: C --> T
Char. 613: T --> C
Char. 740: G --> A
Char. 772: T --> C
Char. 793: A --> G
Char. 845: G --> A
Char. 892: C --> T
Char. 964: A --> G
Char. 970: A --> C
Char. 994: A --> G
Char. 1085: G --> A
Char. 1108: A --> G
Char. 1171: A --> C
Char. 1201: A --> G
Char. 1219: A --> C
Char. 1267: C --> T
Char. 1369: A --> C
Char. 1396: A --> C
Char. 3500: G --> A
Char. 3565: A --> G
Char. 3792: C --> A
Char. 3805: C --> T
Char. 3830: C --> A
Char. 3900: G --> C
Char. 3916: G --> A
Char. 3947: C --> T
Char. 4057: C --> T
Char. 4066: C --> T
Char. 4082: C --> A
Char. 4402: G --> A
Char. 4501: G --> A

Char. 4519: G --> T
Node 920 :
Relative_position_of_anterior_margin_of_antorbital_1_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base
Form_of_quadrate (231):
(0)_with_ventral_portion_longer_than_anterodorsal_region -->
(1)_with_anterodorsal_portion_equal_or_longer_than_ventral_region
Char. 524: AC --> T
Char. 544: C --> T
Char. 733: T --> C
Char. 757: A --> C
Char. 826: T --> C
Char. 829: A --> C
Char. 850: A --> T
Char. 877: A --> G
Char. 889: C --> A
Char. 1003: A --> C
Char. 1012: A --> C
Char. 1015: C --> T
Char. 1045: C --> A
Char. 1192: T --> C
Char. 1264: A --> G
Char. 1285: T --> C
Char. 1306: A --> C
Char. 1309: A --> T
Char. 1336: A --> C
Char. 1387: A --> T
Char. 1444: A --> G
Char. 2182: T --> G
Char. 2227: C --> T
Char. 2269: C --> T
Char. 2314: A --> G
Char. 2335: T --> C
Char. 2341: A --> G
Char. 2351: C --> A
Char. 2383: T --> A
Char. 2389: T --> C
Char. 2407: G --> C
Char. 2425: G --> T
Char. 2443: A --> G
Char. 2474: T --> C
Char. 2482: T --> C
Char. 2485: A --> G
Char. 2527: C --> T
Char. 2533: T --> C
Char. 2545: C --> T
Char. 2698: C --> T
Char. 2731: T --> A
Char. 2776: G --> A
Char. 2800: A --> G
Char. 2803: C --> T
Char. 2885: C --> G
Char. 2887: G --> A
Char. 2890: T --> C
Char. 2893: G --> A
Char. 3523: A --> T
Char. 3533: T --> A
Char. 3559: G --> A
Char. 3793: G --> A
Char. 3984: A --> T
Char. 4267: C --> T
Char. 4361: C --> A
Char. 4441: C --> T
Node 921 :
Edentulous_basihyal_lamella (257): (0)_absent --> (1)_present
Laminar_base_of_epibranchial_gill_rakers (290):
(0)_absent_or_not_reaching_posterior_margin_of_epibranchial -->
(1)_reaching_or_projecting_from_posterior_margin_of_epibranchial
Char. 568: C --> A
Char. 823: A --> CT
Char. 1136: C --> T
Char. 1426: C --> A

Char. 1447: C --> A
Char. 1484: A --> T
Char. 1485: A --> T
Char. 1495: C --> A
Char. 2299: C --> A
Char. 3601: G --> A
Char. 3634: C --> A
Char. 3646: T --> C
Char. 3730: G --> A
Char. 3733: T --> A
Char. 3748: T --> C
Char. 3826: A --> T
Char. 3862: G --> T
Char. 3901: T --> A
Char. 3955: A --> T
Char. 3967: T --> C
Char. 4135: T --> A
Char. 4303: A --> T
Char. 4333: G --> A
Char. 4351: A --> G
Char. 4450: G --> C
Char. 4480: G --> T
Char. 4546: G --> A
Char. 4594: T --> C
Char. 4737: G --> A
Char. 4767: C --> T
Char. 4806: C --> G
Char. 4866: G --> A
Char. 4872: T --> C
Char. 4893: C --> T
Char. 4897: A --> G
Char. 4929: C --> T
Char. 4963: C --> T
Char. 5133: G --> T
Char. 5157: C --> T
Char. 5175: C --> T
Char. 5208: A --> T
Char. 5209: G --> A
Char. 5295: G --> A
Char. 5358: C --> T
Char. 5361: T --> A
Char. 5466: C --> A
Char. 5469: T --> C
Char. 5502: T --> G
Char. 5505: G --> A
Char. 5553: C --> T
Char. 5649: G --> A
Char. 5708: A --> T

Node 922 :
Position_of_antorbital_relative_to_lateral_ethmoid_in_lateral_view (78):
(0)_antorbital_entirely_anterior_to_lateral_ethmoid --> (1)_antorbital_overlapping_lateral_ethmoid
 Ventral_extent_of_third_infraorbital (88):
(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly -->
(0)_reaching_horizontal_arm_of_preopercle
 Number_of_maxillary_teeth (190):
(1)_four_or_more --> (0)_up_to_three
 Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present,_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_cleithrum

Radii_oriented_towards_anterior_field_of_scales (459): (1)_absent --> (0)_present
Char. 586: A --> C
Char. 901: C --> T
Char. 1100: G --> A
Char. 1101: C --> T
Char. 1180: A --> C
Char. 1198: T --> C
Char. 1219: C --> A
Char. 1411: A --> G
Char. 1565: C --> T
Char. 1609: T --> C
Char. 1705: T --> A
Char. 1780: A --> C
Char. 1810: G --> A
Char. 1852: T --> C

Char. 1978: C --> A
Char. 2074: A --> T
Char. 2215: A --> T
Char. 2221: T --> A
Char. 2353: C --> G
Char. 3466: C --> T
Char. 3569: G --> A
Char. 3583: G --> A
Char. 3619: G --> A
Char. 3921: G --> A
Char. 4354: G --> A
Char. 4376: G --> A
Char. 4435: G --> A
Char. 4474: G --> A
Char. 4621: G --> A
Char. 6413: C --> A

Node 923 :
 Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioccipital -->
(1)_posterior_to_lateral_margin_of_epioccipital
 Char. 752: C --> T
 Char. 970: C --> A
 Char. 1013: G --> A
 Char. 1286: G --> A
 Char. 1498: C --> A
 Char. 1516: T --> C
 Char. 1765: C --> T
 Char. 1892: C --> T
 Char. 1921: G --> A
 Char. 2695: G --> A
 Char. 3511: A --> T
 Char. 3715: G --> A
 Char. 4135: G --> T
 Char. 4207: A --> G
 Char. 4521: G --> C
 Char. 4902: T --> C
 Char. 5177: G --> A
 Char. 5272: G --> A
 Char. 5457: T --> C
 Char. 5559: C --> T
 Char. 5867: C --> T

Node 924 :
Char. 595: C --> T
Char. 598: C --> T
Char. 694: A --> G
Char. 790: C --> T
Char. 829: C --> T
Char. 1048: C --> T
Char. 1099: T --> C
Char. 1114: A --> G
Char. 1135: T --> C
Char. 1438: T --> C
Char. 1445: A --> G
Char. 1494: T --> C
Char. 1537: C --> T
Char. 1720: T --> C
Char. 1780: A --> G
Char. 1861: A --> G
Char. 1909: T --> C
Char. 1930: C --> T
Char. 2131: A --> G
Char. 2353: T --> C
Char. 2664: C --> T

Node 925 :
Char. 541: A --> G
Char. 631: T --> C
Char. 634: T --> C
Char. 643: C --> T
Char. 646: A --> G
Char. 658: C --> T
Char. 676: C --> T
Char. 685: C --> T
Char. 697: C --> T
Char. 775: G --> T
Char. 826: T --> C
Char. 895: C --> T
Char. 967: C --> T
Char. 988: C --> T
Char. 994: A --> G
Char. 997: A --> C
Char. 1003: C --> T

Char. 1019: T --> C
Char. 1036: C --> T
Char. 1057: C --> T
Char. 1075: T --> G
Char. 1081: T --> C
Char. 1240: C --> T
Char. 1289: C --> T
Char. 1358: C --> T
Char. 1363: C --> T
Char. 1414: A --> G
Char. 1432: T --> C
Char. 1465: C --> T
Char. 1468: A --> C
Char. 1483: T --> C
Char. 1588: G --> A
Char. 1591: C --> A
Char. 1753: T --> C
Char. 1765: C --> T
Char. 1819: A --> C
Char. 1822: G --> A
Char. 1825: C --> T
Char. 1888: T --> A
Char. 1894: A --> T
Char. 1987: C --> T
Char. 2006: T --> C
Char. 2027: A --> G
Char. 2035: T --> C
Char. 2045: C --> T
Char. 2053: C --> T
Char. 2063: C --> T
Char. 2074: C --> T
Char. 2146: T --> C
Char. 2314: G --> A
Char. 2332: T --> A
Char. 2695: G --> A

Node 926 :
Char. 553: C --> T
Char. 589: C --> A
Char. 604: T --> C
Char. 607: A --> C
Char. 637: T --> C
Char. 778: C --> T
Char. 847: C --> T
Char. 1015: T --> C
Char. 1282: T --> C
Char. 1288: C --> T
Char. 1513: C --> T
Char. 1516: C --> T
Char. 1648: C --> T
Char. 1669: T --> C
Char. 1741: C --> T
Char. 1804: C --> T
Char. 1849: C --> G
Char. 1855: T --> C
Char. 2005: T --> C
Char. 2050: C --> A
Char. 2056: C --> T
Char. 2062: C --> T
Char. 2110: C --> T
Char. 2152: C --> T
Char. 4842: A --> G
Char. 4926: C --> T
Char. 4962: G --> A
Char. 5353: C --> T
Char. 6286: T --> C
Char. 6445: C --> T

Node 927 :
Char. 1456: C --> A
Char. 1657: T --> C
Char. 1696: A --> G
Char. 1756: C --> T
Char. 1885: T --> C
Char. 2023: C --> T
Char. 2128: T --> C
Char. 5055: A --> G
Char. 6255: A --> C
Char. 6294: T --> C
Char. 6361: A --> G

Node 928 :
Char. 556: C --> A
Char. 620: A --> G
Char. 621: T --> C
Char. 817: C --> A

Char. 916: A --> T
Char. 1019: C --> T
Char. 1081: C --> T
Char. 1098: T --> C
Char. 1198: C --> A
Char. 1326: A --> G
Char. 1387: T --> C
Char. 1454: A --> G
Char. 1466: A --> G
Char. 1467: T --> C
Char. 1603: A --> G
Char. 1723: G --> C
Char. 1852: C --> T
Char. 1858: C --> T
Char. 2083: A --> G
Char. 2095: C --> T
Char. 2251: C --> T
Char. 2689: T --> C
Char. 4959: G --> A
Char. 5052: A --> G
Char. 5313: G --> A
Char. 5762: G --> A
Char. 5858: C --> T
Char. 5859: C --> T
Char. 5863: C --> T
Char. 5864: T --> C
Char. 5971: G --> A
Char. 6023: T --> C
Char. 6118: T --> C
Char. 6299: A --> G
Char. 6323: C --> A
Char. 6381: A --> G
Char. 6444: T --> C
Char. 6528: A --> G

Node 929 :

Relative_number_of_precaudal_vertebrae

(324):

(0)_exceeding_caudal_vertebrae_in_two_or_more_elements -->

(1)_equal_or_less_numerous_than_caudal_vertebrae

Char. 808: T --> C
Char. 943: C --> T
Char. 1459: C --> A
Char. 1477: T --> C
Char. 5756: T --> G
Char. 6047: T --> C
Char. 6063: T --> C
Char. 6361: T --> A
Char. 6436: A --> G
Char. 6475: T --> C

Node 930 :

Char. 586: T --> A
Char. 667: C --> T
Char. 766: C --> T
Char. 862: C --> T
Char. 985: C --> T
Char. 1101: C --> G
Char. 1183: C --> A
Char. 1441: C --> A
Char. 1834: T --> C
Char. 1939: C --> T
Char. 1960: T --> C
Char. 2237: A --> G
Char. 6244: G --> A
Char. 6245: A --> G
Char. 6254: A --> T
Char. 6456: C --> T

Node 931 :

Char. 565: C --> T
Char. 571: C --> A
Char. 588: C --> T
Char. 649: C --> A
Char. 682: C --> T
Char. 854: G --> A
Char. 1096: A --> T
Char. 1099: A --> T
Char. 1198: T --> C
Char. 1384: A --> T
Char. 1454: G --> A
Char. 1478: A --> C
Char. 1494: C --> T
Char. 1579: G --> A

Char. 1636: T --> A
Char. 1672: G --> A
Char. 1723: A --> G
Char. 1796: C --> T
Char. 1864: C --> T
Char. 2006: C --> T
Char. 2083: G --> A
Char. 2128: A --> T
Char. 2236: C --> T
Char. 2623: T --> C
Char. 4809: C --> G
Char. 4858: C --> T
Char. 5205: T --> C
Char. 5227: G --> A
Char. 5295: C --> G
Char. 5424: C --> T
Char. 5978: A --> G
Char. 6037: C --> T
Char. 6361: G --> T
Char. 6382: C --> A

Node 932 :

Char. 529: A --> C
Char. 535: A --> T
Char. 604: C --> T
Char. 674: C --> T
Char. 740: G --> A
Char. 790: A --> C
Char. 856: A --> T
Char. 907: A --> C
Char. 1013: G --> A
Char. 1085: G --> C
Char. 1126: C --> A
Char. 1135: C --> T
Char. 1138: A --> C
Char. 1225: C --> A
Char. 1234: A --> C
Char. 1273: A --> T
Char. 1306: A --> C
Char. 1355: T --> C
Char. 1387: A --> T
Char. 1408: A --> C
Char. 1466: G --> A
Char. 1467: C --> T
Char. 1477: A --> T
Char. 1497: G --> C
Char. 1503: T --> A
Char. 1504: A --> C
Char. 1606: C --> G
Char. 1687: A --> C
Char. 1897: C --> T
Char. 1906: C --> A
Char. 1939: G --> C
Char. 2020: C --> T
Char. 2233: G --> A
Char. 2237: T --> A
Char. 2248: C --> A
Char. 2290: G --> A
Char. 2329: GC --> A
Char. 2353: C --> T
Char. 2377: A --> G
Char. 2482: T --> C
Char. 2510: T --> C
Char. 2518: A --> G
Char. 2527: C --> A
Char. 2617: T --> C
Char. 2630: A --> T
Char. 2638: T --> G
Char. 2689: C --> T
Char. 2815: G --> A
Char. 2894: T --> G
Char. 2902: T --> C
Char. 3478: C --> T
Char. 3524: G --> A
Char. 3529: C --> T
Char. 3550: T --> C
Char. 3564: T --> C
Char. 3592: C --> T
Char. 3610: A --> G
Char. 3622: G --> A
Char. 3637: C --> T
Char. 3640: T --> C
Char. 3679: C --> A
Char. 3835: C --> T

Char. 3868: G --> A
Char. 3882: T --> C
Char. 3946: T --> C
Char. 3970: T --> C
Char. 3976: T --> C
Char. 4124: C --> A
Char. 4156: G --> A
Char. 4168: C --> A
Char. 4176: T --> A
Char. 4245: A --> G
Char. 4246: G --> T
Char. 4247: C --> A
Char. 4252: G --> A
Char. 4273: C --> T
Char. 4285: T --> C
Char. 4315: G --> A
Char. 4318: T --> A
Char. 4357: G --> A
Char. 4403: A --> T
Char. 4453: G --> A
Char. 4480: G --> A
Char. 4525: G --> A
Char. 4537: G --> C
Char. 4555: T --> A
Char. 4633: T --> C
Char. 4688: C --> T
Char. 4705: C --> T
Char. 4721: G --> T
Char. 4731: C --> G
Char. 4800: T --> G
Char. 4835: C --> T
Char. 4917: G --> A
Char. 4929: C --> T
Char. 4958: T --> G
Char. 4965: T --> A
Char. 4980: A --> T
Char. 5034: G --> A
Char. 5160: A --> C
Char. 5181: G --> C
Char. 5229: C --> T
Char. 5242: C --> T
Char. 5325: G --> A
Char. 5443: C --> A
Char. 5451: G --> A
Char. 5498: C --> A
Char. 5520: G --> T
Char. 5532: G --> A
Char. 5565: A --> T
Char. 5676: A --> T
Char. 5742: C --> T
Char. 5802: G --> A
Char. 5803: A --> C
Char. 5840: C --> T
Char. 5856: C --> T
Char. 5869: C --> A
Char. 5938: C --> G
Char. 5974: G --> A
Char. 6022: C --> T
Char. 6023: G --> T
Char. 6047: C --> T
Char. 6152: C --> T
Char. 6182: G --> A
Char. 6222: T --> C
Char. 6311: T --> C
Char. 6315: A --> C
Char. 6334: A --> T
Char. 6402: G --> A
Char. 6403: C --> T
Char. 6408: G --> A
Char. 6417: G --> A
Char. 6436: G --> A
Char. 6496: A --> T
Char. 6565: C --> T
Char. 6634: T --> C

Node 933 :

Char. 586: A --> T
Char. 700: T --> C
Char. 736: A --> C
Char. 808: C --> T
Char. 1270: A --> C
Char. 1516: T --> C
Char. 1552: A --> T
Char. 1600: A --> C

Char. 1960: A --> T
Char. 2074: A --> C
Char. 2185: C --> T
Char. 2275: T --> A
Char. 2452: C --> T
Char. 2494: G --> A
Char. 2800: A --> C
Char. 2852: G --> A
Char. 2875: A --> C
Char. 2905: G --> A
Char. 3505: T --> A
Char. 3515: G --> A
Char. 3609: G --> A
Char. 3646: T --> C
Char. 3694: C --> T
Char. 3925: T --> C
Char. 3931: G --> A
Char. 3947: C --> T
Char. 4021: A --> G
Char. 4231: T --> A
Char. 4306: C --> T
Char. 4384: C --> T
Char. 4398: A --> T
Char. 4414: G --> A
Char. 4450: G --> A
Char. 4534: G --> A
Char. 4625: C --> A
Char. 4729: A --> G
Char. 4806: C --> T
Char. 5097: G --> A
Char. 5106: T --> A
Char. 5130: G --> T
Char. 5236: G --> A
Char. 5304: T --> A
Char. 5373: T --> C
Char. 5670: A --> C
Char. 5718: C --> T
Char. 5745: C --> T
Char. 5865: T --> C
Char. 5866: T --> C
Char. 5933: T --> C
Char. 6003: A --> C
Char. 6024: G --> A
Char. 6040: A --> G
Char. 6087: C --> T
Char. 6286: A --> T
Char. 6344: A --> G
Char. 6347: T --> A
Char. 6445: A --> T

Node 934 :
Char. 1549: A --> G
Char. 1594: A --> G
Char. 1600: A --> G
Char. 1609: C --> T
Char. 1732: T --> C
Char. 1759: A --> G
Char. 1789: T --> C
Char. 1810: A --> G
Char. 1852: T --> C
Char. 1855: C --> T
Char. 1858: T --> C
Char. 1900: T --> C
Char. 1924: C --> T
Char. 2038: T --> C
Char. 2047: T --> C
Char. 2050: A --> C
Char. 2054: C --> T
Char. 2071: C --> G
Char. 6140: C --> T

Node 935 :
Char. 1561: C --> T
Char. 1579: A --> G
Char. 1648: C --> T
Char. 1744: C --> T
Char. 1777: T --> A
Char. 1807: C --> T
Char. 1825: A --> C
Char. 1861: T --> G
Char. 1888: C --> A
Char. 1930: T --> C
Char. 2020: A --> G
Char. 2053: A --> C
Char. 2104: A --> T

Char. 2131: A --> C
Char. 2143: A --> C

Node 936 :
Char. 1549: C --> A
Char. 1723: A --> G
Char. 1780: A --> C
Char. 1792: T --> C

Node 937 :
Char. 1693: C --> T
Char. 1732: C --> T
Char. 1777: C --> T
Char. 1861: A --> T
Char. 1873: C --> T
Char. 1888: T --> C
Char. 1891: C --> T
Char. 1892: C --> T
Char. 1912: C --> T
Char. 2020: C --> A
Char. 2023: T --> C
Char. 2041: T --> C
Char. 2044: T --> C

Node 938 :
Char. 1579: G --> A
Char. 1582: T --> A
Char. 1855: T --> C
Char. 1858: C --> T
Char. 1930: C --> T
Char. 1939: G --> T
Char. 2029: T --> C
Char. 2059: AC --> T

Node 939 :
Anterior_convergence_of_ventral_diverging_lamellae_with_nasal_septum_of_mesethmoid (8):
(0)_absent_or_confluent_near_anterior_end_of_nasal_septum -->
(1)_confluent_at_posterior_end_of_nasal_septum
Development_of_sagittal_capsule (69):
(0)_not_reaching_posterior_margin_of_lagenar_capsule -->
(1)_reaching_or_surpassing_posterior_margin_of_lagenar_capsule
Lateral_line (123): (1)_interrupted -->
(0)_complete
Lateral_ridge_of_anguloarticular (160):
(0)_absent --> (1)_present
Inner_row_of_minute_dentary_teeth (203):
(0)_absent_or_restricted_to_lateral_region_of_dentary -->
(1)_present_from_anterior_region_of_dentary
Bony_hooks_on_first_pelvic-fin_ray_of_adult_males (448): (0)_absent -->
(1)_present
Node 940 :
Form_of_mesethmoid_spine (3):
(0)_long_extending_between_premaxillae -->
(1)_relatively_short_with_premaxillae_articulating_anteriorly
Posterior_extension_of_vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection
Large_foramen_on_pterospheoid (45):
(0)_absent --> (1)_present_well_developed
Posterior_extension_of_supraoccipital_spine (62):
(0)_reaching_at_least_to_middle_length_of_neural_complex -->
(1)_reaching_only_to_anterior_limit_of_neural_complex
Lateral_line (123): (0)_complete -->
(1)_interrupted
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage
Number_of_rows_of_premaxillary_teeth (170):
(1)_two_or_three --> (0)_one

Fossa_for_inner_row_of_replacement_premaxillary_teeth (187): (0)_absent --> (1)_present
Size_and_number_of_anterior_dentary_teeth (199):
(0)_four_or_five_relatively_broad_teeth_at_front_of_dentary -->
(1)_eight_or_more_small_and_slender_teeth_at_front_of_dentary
Relative_length_of_palatine (209):
(0)_approximately_one_half_length_of_ectopterygoid_or_less -->
(1)_distinctly_longer_than_one_half_length_of_ectopterygoid
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex_straight_or_slightly_concave -->
(1)_distinctly_concave_forming_an_angle_of_45°
Number_of_branched_anal-fin_rays (420):
(1)_25_or_more --> (0)_24_or_fewer
Squamation_of_isthmus (464):
(0)_with_two_or_more_rows_of_scales -->
(1)_with_only_one_row_or_a_triad_of_scales
Char. 2278: T --> C
Char. 2293: C --> G
Char. 2315: A --> C
Char. 2464: T --> C
Char. 2473: A --> C
Char. 2482: T --> C
Char. 2503: T --> C
Char. 2521: T --> C
Char. 2554: A --> G
Char. 2608: T --> C
Char. 2740: A --> C
Char. 6154: T --> C
Char. 6162: A --> G
Char. 6163: A --> G
Char. 6253: A --> T
Char. 6254: T --> A
Char. 6323: C --> T
Char. 6343: G --> A
Char. 6345: A --> G
Char. 6443: A --> T
Char. 6523: C --> T

Node 941 :
Form_of_caudal_peduncle_in_mature_males (424): (0)_not_decurved_ventrally -->
(1)_decurved_ventrally_in_mature_males
Node 942 :
Ventral_extent_of_third_infraorbital (88):
(0)_reaching_horizontal_arm_of_preopercle -->
(1)_not_reaching_horizontal_arm_of_preopercle_at_least_anteriorly

Morphology_of_premaxillary_maxillary_and_dentary_teeth (165):
(1)_some_teeth_multicuspidate_or_molariform -->
(0)_all_teeth_conical_caniniform_or_mamilliform
Number_of_cusps_of_anterior_maxillary_teeth (192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp
Position_of_anterior_teeth_of_dentary (206):
(0)_along_margin_of_dentary -->
(1)_internally_situated_with_dentary_forming_anterior_ridge

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more --> (0)_six_or_less
Form_and_length_of_anterior_anal-fin_rays (422): (0)_similar_to_posterior_rays -->
(1)_longer_and_more_compressed_laterally_than_posterior_rays
Ventral_procurrent_caudal-fin_rays_of_adult_males (432): (0)_slender -->
(1)_laminar
Bony_hooks_on_last_pelvic-fin_ray_of_adult_males (447):
(0)_absent_or_reduced_in_number -->
(1)_as_numerous_as_in_other_rays

Node 943 :
 Anterior_paired_projections_of_parasphenoid (43): (1)_present --> (0)_absent
 Facial_foramen (58): (0)_present --> (1)_absent
 Dorsal_extension_of_antorbital (81):
 (0)_leaving_a_broad_space_with_frontal -->
 (1)_approximating_frontal_to_a_distance_less_than_antorbital_width
 Length_of_maxilla_relative_to_dentary (145):
 (0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
 (1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage

Morphology_of_premaxillary_maxillary_and_dentary_teeth (165):
 (1)_some_teeth_multicuspidate_or_molariform -->
 (0)_all_teeth_conical_caniniform_or_mamilliform
 Number_of_teeth_on_inner_premaxillary_row (182): (0)_five_or_fewer --> (1)_six_or_more
 Number_of_teeth_on_inner_premaxillary_row (183): (0)_six_or_fewer --> (1)_seven_or_more
 Number_of_teeth_on_inner_premaxillary_row (184): (0)_seven_or_fewer --> (1)_eight_or_more

Fossa_for_inner_row_of_replacement_premaxillary_teeth (187): (0)_absent --> (1)_present
 Size_and_number_of_anterior_dentary_teeth (199):
 (0)_four_or_five_relatively_broad_teeth_at_front_of_dentary -->
 (1)_eight_or_more_small_and_slender_teeth_at_front_of_dentary
 Anterior_extension_of_interopercle (249):
 (0)_extending_anteriorly_beyond_tip_of_horizontal_arm_of_preopercle -->
 (1)_not_extending_anteriorly_beyond_anterior_tip_of_preopercle
 Urohyal_lateral_processes (305):
 (0)_well_developed -->
 (1)_as_expanded_as_anterior_region_of_bone_or_less
 Transitional_vertebrae_with_haemal_canal (331): (0)_present --> (1)_absent

Node 944 :
 Form_of_mesethmoid_spine (3):
 (0)_long_extending_between_premaxillae -->
 (1)_relatively_short_with_premaxillae_articulating_anteriorly
 Anterior_articulation_of_epioccipital_bridge (65): (0)_with_both_parietal_and_pterotic -->
 (1)_only_with_parietal
 Number_of_rows_of_premaxillary_teeth (170):
 (1)_two_or_three --> (0)_one
 Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
 Dorsal-fin_rays_articulating_with_first_dorsal_pterygiophore (404): (1)_three_or_four --> (0)_two

Pseudotympanum_between_ribs_of_fifth_and_sixth_vertebrae (485): (0)_absent --> (1)_present

Pseudotympanum_between_ribs_of_fifth_and_sixth_vertebrae (486):
 (0)_absent_or_restricted_to_region_between_these_ribs -->
 (1)_small_portion_anterior_to_first_rib_limited_by_lateralis_superficialis
 Char. 5967: T --> C
 Char. 6043: G --> C
 Char. 6226: T --> C
 Char. 6240: A --> G
 Char. 6325: C --> T
 Char. 6444: T --> A
 Char. 6516: G --> A
 Char. 6584: A --> G

Node 945 :
 Posterior_extension_of_vomer (18):
 (0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
 (1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection

Posterior_extension_of_supraoccipital_spine (62):
 (0)_reaching_at_least_to_middle_length_of_neural_complex -->
 (1)_reaching_only_to_anterior_limit_of_neural_complex

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
 (0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
 (1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
 (0)_with_cusps_forming_anteriorly_concave_arch --> (1)_with_cusps_aligned_in_straight_series
 Ethmopalatine_cartilage (208):
 (0)_absent_or_reduced_in_size -->
 (1)_present_and_conspicuous
 Char. 574: C --> T
 Char. 661: C --> T
 Char. 757: A --> T
 Char. 863: G --> A
 Char. 976: C --> T
 Char. 982: C --> A
 Char. 1237: T --> A
 Char. 1405: A --> G
 Char. 1430: A --> G
 Char. 1438: T --> C
 Char. 1465: C --> T
 Char. 1501: A --> G
 Char. 1616: G --> A
 Char. 1618: A --> T
 Char. 1676: G --> A
 Char. 1684: T --> C
 Char. 1690: C --> G
 Char. 1729: A --> C
 Char. 1765: C --> T
 Char. 1834: A --> G
 Char. 1861: A --> C
 Char. 1885: T --> C
 Char. 2014: T --> C
 Char. 2086: T --> C
 Char. 2125: T --> G
 Char. 2134: A --> G
 Char. 5046: C --> T
 Char. 5151: C --> T
 Char. 5214: C --> G
 Char. 6016: T --> C
 Char. 6037: T --> C
 Char. 6049: G --> A
 Char. 6342: G --> A
 Char. 6358: C --> T
 Char. 6507: C --> T

Node 946 :
 Char. 580: C --> T
 Char. 637: T --> C
 Char. 742: T --> C
 Char. 772: T --> C
 Char. 787: A --> CT
 Char. 844: A --> CT
 Char. 970: C --> T
 Char. 1098: C --> T
 Char. 1309: T --> A
 Char. 1408: A --> CT
 Char. 1474: C --> T
 Char. 1480: C --> T
 Char. 2686: G --> A
 Char. 4058: A --> G
 Char. 4417: G --> A
 Char. 4501: G --> A
 Char. 4519: G --> T
 Char. 5085: G --> A
 Char. 5673: A --> G
 Char. 5706: C --> T
 Char. 5911: T --> A
 Char. 6294: T --> C
 Char. 6347: A --> T

Node 947 :
 Char. 604: T --> C
 Char. 814: G --> C

Char. 938: C --> A
 Char. 988: A --> T
 Char. 1013: A --> G
 Char. 1018: A --> C
 Char. 1174: T --> A
 Char. 1240: T --> C
 Char. 1270: A --> T
 Char. 1331: C --> T
 Char. 1363: T --> C
 Char. 1456: C --> A
 Char. 1595: T --> A
 Char. 1669: A --> T
 Char. 1771: T --> C
 Char. 1882: T --> C
 Char. 2035: T --> C
 Char. 2902: T --> C
 Char. 4666: C --> T
 Char. 5607: A --> T
 Char. 5762: G --> A
 Char. 6300: A --> G
 Char. 6361: G --> A
 Char. 6376: T --> C

Node 948 :
 Relative_length_of_frontal_fontanel (29):
 (0)_up_to_2/3_length_of_parietal_fontanel -->
 (1)_3/4_or_more_of_length_of_parietal_fontanel
 Number_of_supraneurals (392):
 (1)_five_or_more --> (0)_four_or_fewer
 Char. 539: C --> T
 Char. 574: T --> C
 Char. 661: T --> C
 Char. 943: A --> T
 Char. 1099: A --> C
 Char. 1370: C --> T
 Char. 1417: T --> C
 Char. 1636: C --> T
 Char. 1825: A --> T
 Char. 1897: C --> T
 Char. 2159: C --> T
 Char. 2236: C --> T

Node 949 :
 Anterior_paired_projections_of_parasphenoid (43): (0)_absent --> (1)_present
 Char. 544: C --> T
 Char. 712: C --> T
 Char. 766: C --> T
 Char. 1573: A --> G
 Char. 5457: T --> C
 Char. 5559: G --> T

Node 950 :
 Laterosensorial_pore_just_anterior_to_dilatator_fossa (115): (1)_lateroventral_to_laterosensory_canal --> (0)_dorsomedial_to_laterosensory_canal
 Lateral_line (123): (0)_complete -->
 (1)_interrupted
 Char. 529: A --> T
 Char. 631: T --> C
 Char. 781: C --> T
 Char. 1013: G --> A
 Char. 1171: A --> C
 Char. 1252: A --> T
 Char. 1387: A --> T
 Char. 1556: C --> T
 Char. 1660: C --> T
 Char. 1732: C --> T
 Char. 2050: C --> A
 Char. 2137: A --> T
 Char. 3877: C --> T
 Char. 3889: C --> T
 Char. 4600: C --> G
 Char. 5866: T --> C
 Char. 5910: C --> T
 Char. 6444: A --> T
 Char. 6445: A --> T

Node 951 :
 Length_of_sphenotic_spine (47):
 (0)_not_reaching_to_anterodorsal_angle_of_hyomandibula -->
 (1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula

Dorsal-
fin_rays_articulating_with_first_dorsal_ptyerygioph
ore (404): (0)_two --> (1)_three_or_four
Char. 787: C --> A
Char. 863: A --> G
Char. 988: T --> A
Char. 1348: C --> A
Char. 1369: A --> C
Char. 1393: A --> T
Char. 1465: T --> C
Char. 3501: C --> T
Char. 3502: C --> G
Char. 3517: A --> G
Char. 3562: A --> G
Char. 3605: T --> C
Char. 3685: A --> G
Char. 3829: G --> A
Char. 3896: T --> C
Char. 3946: T --> C
Char. 4048: T --> A
Char. 4078: C --> A
Char. 4117: C --> T
Char. 4159: A --> T
Char. 4180: T --> A
Char. 4345: A --> T
Char. 4378: C --> T
Char. 4391: C --> T
Char. 4398: A --> T
Char. 4451: C --> T
Char. 4555: T --> G
Char. 4699: A --> T
Char. 4721: G --> A
Char. 4878: G --> C
Char. 4966: G --> A
Char. 5082: C --> T
Char. 5095: C --> T
Char. 5209: G --> T
Char. 5352: A --> G
Char. 5394: A --> C
Char. 5418: A --> G
Char. 5508: T --> C
Char. 5532: G --> A
Char. 5547: A --> T
Char. 5553: C --> T
Char. 5559: C --> G
Char. 5565: A --> C
Char. 5643: T --> C
Char. 5697: T --> C
Char. 6130: T --> A
Char. 6152: C --> T
Char. 6161: G --> A
Char. 6210: A --> T
Char. 6212: G --> A
Char. 6276: T --> A
Char. 6347: T --> A
Char. 6463: G --> C
Char. 6485: A --> T
Node 952 :
Form_of_fourth_infraorbital (92):
(0)_square_or_more_developed_longitudinally_tha
n_dorsoventrally -->
(1)_longer_dorsoventrally_than_longitudinally
Char. 1198: T --> AC
Char. 1246: C --> T
Char. 1466: G --> AT
Char. 2226: G --> T
Char. 2510: T --> C
Char. 2607: A --> G
Char. 3511: A --> G
Char. 4165: G --> A
Char. 4363: A --> G
Char. 4447: A --> G
Char. 4640: C --> T
Char. 5680: A --> G
Char. 5743: A --> T
Char. 6182: G --> A
Char. 6300: G --> A
Char. 6346: C --> T
Char. 6376: C --> T
Char. 6377: C --> T
Char. 6402: G --> A
Node 953 :
Char. 692: T --> C

Char. 694: A --> C
Char. 697: T --> C
Char. 880: T --> C
Char. 937: C --> T
Char. 982: A --> G
Char. 1108: A --> C
Char. 1192: T --> C
Char. 1268: C --> T
Char. 1279: C --> T
Char. 1375: C --> T
Char. 1384: C --> T
Char. 1408: A --> C
Char. 2695: A --> G
Char. 4672: C --> T
Char. 6485: A --> T
Node 954 :
Char. 640: T --> C
Char. 649: C --> A
Char. 752: C --> T
Char. 808: C --> T
Char. 814: G --> T
Char. 832: C --> T
Char. 833: C --> T
Char. 970: A --> T
Char. 997: A --> C
Char. 1042: C --> T
Char. 1085: G --> A
Char. 1096: T --> A
Char. 1133: C --> T
Char. 1211: T --> C
Char. 1228: C --> T
Char. 1338: T --> A
Char. 1381: C --> T
Char. 1396: A --> T
Char. 2206: A --> G
Char. 2227: C --> A
Char. 2524: T --> C
Char. 2593: T --> C
Char. 3560: C --> T
Char. 3586: G --> A
Char. 3826: A --> T
Char. 3838: C --> T
Char. 3907: A --> T
Char. 3913: A --> G
Char. 3979: C --> T
Char. 4045: G --> A
Char. 4351: A --> T
Char. 4462: T --> G
Char. 4480: G --> A
Char. 4552: G --> A
Char. 4573: C --> T
Char. 4636: G --> T
Char. 4926: C --> T
Char. 5235: C --> T
Char. 6182: G --> A
Char. 6193: A --> C
Char. 6306: G --> A
Char. 6317: A --> G
Char. 6322: T --> A
Char. 6343: A --> C
Char. 6361: T --> C
Char. 6412: A --> G
Char. 6413: C --> A
Char. 6422: C --> T
Char. 6446: A --> C
Char. 6463: G --> T
Node 955 :
Relative_position_of_anterior_margin_of_antorbital
and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_a
ntorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of
_antorbital_base
Dorsal_projection_of_maxilla (149):
(0)_not_overlaps_second_infraorbital -->
(1)_overlaps_second_infraorbital
Cartilage_from_first_epibranchial_to_second_phar
yngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pha
ryngobranchial -->

(0)_attached_to_middle_region_of_second_pharyn
gobranchial
Dorsal_development_of_third_postcleithrum
(365):
(0)_projects_dorsally_to_posterior_region_of_scap
ula -->
(1)_not_projects_dorsally_to_posterior_region_of_
scapula
Number_of_branched_anal-fin_rays (420):
(1)_25_or_more --> (0)_24_or_fewer
Char. 658: C --> T
Char. 661: T --> C
Char. 679: C --> T
Char. 703: C --> A
Char. 866: C --> T
Char. 889: T --> G
Char. 950: G --> A
Char. 971: C --> A
Char. 1076: C --> T
Char. 1101: C --> T
Char. 1156: C --> T
Char. 1222: C --> T
Char. 1279: A --> C
Char. 1288: C --> A
Char. 1384: A --> C
Char. 2738: A --> T
Char. 3484: G --> T
Char. 3607: G --> A
Char. 4435: G --> A
Char. 4836: G --> A
Char. 4842: G --> T
Char. 4911: C --> T
Char. 5097: G --> A
Char. 5106: T --> A
Char. 5512: T --> A
Char. 6442: A --> T
Char. 6443: A --> T
Char. 6562: C --> T
Node 956 :
Posterior_extension_of_supraoccipital_spine
(62):
(0)_reaching_at_least_to_middle_length_of_neural
_complex -->
(1)_reaching_only_to_anterior_limit_of_neural_co
mplex
Foramen_on_ventral_lamella_of_supraoccipital
(63): (0)_absent -->
(1)_with_a_large_foramen_or_concavity_posteriorl
y_open
Fourth_infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_
infraorbitals -->
(1)_absent_or_excluded_from_posterior_margin_of_
_infraorbital_series
Parietal_branch_of_laterosensory_canal (116):
(0)_present_reaching_parietal_bone_or_not -->
(1)_completely_absent
Extension_of_parietal_branch_of_laterosensory_ca
nal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent
Isolated_pored_scale_in_caudal_peduncle
(124): (0)_absent --> (1)_present
Char. 586: G --> C
Char. 667: C --> T
Char. 692: C --> T
Char. 700: C --> T
Char. 781: C --> T
Char. 829: A --> T
Char. 901: C --> T
Char. 1019: C --> T
Char. 1031: C --> T
Char. 1162: C --> A
Char. 1172: C --> T
Char. 1174: T --> A
Char. 1237: T --> A
Char. 1243: A --> CT
Char. 1328: G --> A
Char. 1334: A --> G
Char. 1335: C --> T
Char. 1363: T --> C
Char. 1375: T --> C
Char. 2329: T --> C

Char. 2347: T --> C
 Char. 2481: A --> G
 Char. 2491: A --> T
 Char. 2498: C --> T
 Char. 2593: G --> T
 Char. 2744: G --> T
 Char. 2813: A --> C
 Char. 3454: C --> T
 Char. 3559: A --> G
 Char. 3595: C --> T
 Char. 3661: C --> A
 Char. 3700: G --> A
 Char. 3766: C --> T
 Char. 3832: G --> T
 Char. 4000: C --> A
 Char. 4147: G --> A
 Char. 4171: C --> T
 Char. 4201: C --> T
 Char. 4303: A --> T
 Char. 4447: A --> G
 Char. 4448: C --> A
 Char. 4654: C --> T
 Char. 4877: G --> A
 Char. 4908: C --> G
 Char. 5025: T --> C
 Char. 5284: C --> A
 Char. 5347: G --> A
 Char. 5679: C --> G
 Char. 6161: G --> T
 Char. 6193: T --> A
 Char. 6211: G --> A
 Char. 6290: C --> T
 Char. 6306: C --> G
 Char. 6322: C --> T
 Char. 6323: C --> T
 Char. 6324: C --> A
 Char. 6326: T --> A
 Char. 6333: AC --> T
 Char. 6334: A --> G
 Char. 6343: G --> A
 Char. 6355: A --> T
 Char. 6376: C --> T
 Char. 6383: G --> A
 Char. 6417: G --> A
 Char. 6433: T --> A
 Char. 6458: C --> A
 Char. 6477: A --> T
 Char. 6493: A --> T
 Char. 6519: C --> T
 Char. 6584: A --> G
 Node 957 :
 Char. 853: T --> C
 Char. 1045: C --> A
 Char. 1087: A --> T
 Char. 1135: C --> A
 Char. 1246: C --> T
 Char. 1348: C --> T
 Char. 2236: C --> T
 Char. 2311: T --> A
 Char. 2344: G --> A
 Char. 2695: G --> A
 Char. 2866: A --> G
 Char. 3556: T --> C
 Char. 3613: G --> A
 Char. 3943: C --> T
 Char. 4081: A --> G
 Char. 4405: G --> A
 Char. 4498: A --> T
 Char. 4615: C --> T
 Char. 4840: A --> G
 Char. 4929: C --> T
 Char. 4947: C --> A
 Char. 5082: C --> G
 Char. 5658: C --> T
 Node 958 :
 Char. 526: A --> T
 Char. 544: CT --> A
 Char. 586: A --> G
 Char. 589: A --> C
 Char. 640: C --> T
 Char. 940: C --> T
 Char. 969: T --> C
 Char. 1138: A --> T
 Char. 1225: C --> T
 Char. 1267: A --> C
 Char. 1288: T --> C
 Char. 1346: A --> C
 Char. 1358: C --> T
 Char. 1426: C --> A
 Char. 1456: C --> T
 Char. 1459: T --> A
 Char. 1478: A --> G
 Char. 2515: T --> C
 Char. 2767: A --> T
 Char. 3466: C --> T
 Char. 3505: T --> C
 Char. 3841: A --> G
 Char. 4630: C --> T
 Char. 4779: G --> C
 Char. 4812: T --> C
 Char. 4893: C --> T
 Char. 5067: T --> A
 Char. 5183: G --> A
 Char. 5281: G --> T
 Char. 5427: T --> C
 Char. 6299: A --> G
 Node 959 :
 Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present
 Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one-third_of_length_of_nasal --> (1)_reaching_just_anterior_end_of_nasal
 Number_of_rows_of_premaxillary_teeth (170): (1)_two_or_three --> (0)_one
 Transitional_vertebrae_with_haemal_canal (331): (0)_present --> (1)_absent
 Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (0)_present --> (1)_absent
 Medial_apophysis_of_sclerotic (509): (0)_cartilaginous_with_sclerotic_as_an_incomplete_ring --> (1)_present_as_a_bony_projection_oriented_medially_to_eye
 Char. 916: A --> C
 Char. 1276: C --> T
 Char. 1502: C --> G
 Char. 1582: A --> G
 Char. 1627: T --> A
 Char. 1723: T --> G
 Char. 1780: A --> C
 Char. 1840: T --> A
 Char. 1882: T --> C
 Char. 1906: A --> C
 Char. 2002: A --> C
 Char. 2023: T --> A
 Char. 2137: A --> T
 Char. 2395: C --> T
 Char. 2440: A --> G
 Char. 3361: A --> G
 Char. 3559: G --> A
 Char. 3605: T --> C
 Char. 3620: T --> C
 Char. 3724: T --> A
 Char. 3970: T --> C
 Char. 4019: C --> A
 Char. 4058: A --> G
 Char. 4201: G --> C
 Char. 4261: C --> T
 Char. 4591: T --> A
 Char. 4636: A --> G
 Char. 4648: T --> A
 Char. 4842: A --> G
 Char. 5743: A --> T
 Char. 6003: A --> T
 Char. 6335: A --> C
 Node 960 :
 Char. 676: A --> G
 Char. 1048: C --> T
 Char. 1066: T --> C
 Char. 1105: T --> A
 Char. 1106: G --> A
 Char. 1165: C --> T
 Char. 1186: T --> C
 Char. 1237: A --> T
 Char. 1276: C --> T
 Char. 3581: T --> C
 Char. 4057: C --> T
 Char. 6252: A --> T
 Char. 6562: T --> C
 Node 961 :
 Posterior_extension_of_vomer (18):
 (1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection -->
 (0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection
 Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
 (1)_distant_from_lateral_ethmoids -->
 (0)_contacting_or_almost_contacting_lateral_ethmoids
 Number_of_supraneurals (392):
 (0)_four_or_fewer --> (1)_five_or_more
 Char. 533: C --> T
 Char. 733: T --> C
 Char. 745: T --> A
 Char. 934: C --> T
 Char. 949: T --> C
 Char. 982: C --> T
 Char. 1090: T --> C
 Char. 1100: A --> C
 Char. 1207: C --> T
 Char. 1271: C --> T
 Char. 1291: T --> C
 Char. 1309: T --> C
 Char. 1318: T --> C
 Char. 1345: C --> T
 Char. 1387: G --> A
 Char. 1417: C --> T
 Char. 1459: C --> T
 Char. 3640: G --> A
 Char. 3813: A --> C
 Char. 3880: G --> A
 Char. 4036: G --> A
 Char. 4093: C --> T
 Char. 4779: C --> G
 Char. 4809: C --> G
 Char. 4890: C --> T
 Char. 4897: G --> A
 Char. 5109: A --> T
 Char. 5115: T --> C
 Char. 5187: G --> A
 Node 962 :
 Char. 5607: T --> A
 Char. 6424: C --> T
 Char. 6443: T --> C
 Node 963 :
 Char. 5088: G --> A
 Char. 6229: A --> G
 Char. 6247: T --> C
 Node 964 :
 Char. 625: C --> T
 Char. 742: T --> C
 Char. 1385: A --> G
 Char. 1468: A --> C
 Char. 2602: C --> T
 Char. 4543: C --> T
 Char. 5331: G --> A
 Node 965 :
 Posterior_extension_of_vomer (18):
 (0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
 (1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection
 Posterior_extension_of_supraoccipital_spine (62):
 (0)_reaching_at_least_to_middle_length_of_neural_complex -->
 (1)_reaching_only_to_anterior_limit_of_neural_complex
 Ethmopalatine_cartilage (208):
 (0)_absent_or_reduced_in_size -->
 (1)_present_and_conspicuous
 Gill_filaments_attached_to_leading_edge_of_first

ceratobranchial (303): (1)_18_or_more -->
(0)_17_or_fewer
Char. 1276: C --> T
Char. 1318: A --> T
Char. 1384: A --> G
Char. 1387: T --> G
Char. 1459: T --> C
Char. 1687: A --> G
Char. 1771: C --> T
Char. 1804: A --> C
Char. 1813: T --> A
Char. 2632: A --> G
Char. 3490: C --> T
Char. 3592: C --> T
Char. 4123: T --> C
Char. 4447: G --> C
Char. 4469: G --> A
Char. 4471: G --> C
Char. 5115: C --> T
Node 966 :
Char. 1615: A --> G
Char. 1669: T --> A
Char. 1672: A --> G
Char. 1711: A --> C
Char. 2038: T --> C
Char. 6304: A --> T
Char. 6361: A --> G
Char. 6463: C --> T
Char. 6567: A --> G
Node 967 :
Char. 1555: C --> T
Char. 1565: T --> C
Char. 1642: T --> C
Char. 1648: C --> T
Char. 1796: C --> T
Char. 1825: T --> A
Char. 1834: A --> G
Char. 1885: T --> C
Char. 2029: A --> T
Char. 6286: A --> T
Char. 6358: C --> T
Char. 6382: C --> T
Char. 6408: G --> A
Char. 6441: T --> A
Char. 6511: T --> C
Node 968 :
Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids
Char. 523: T --> C
Char. 613: T --> C
Char. 632: A --> C
Char. 973: T --> A
Char. 1006: C --> T
Char. 1031: A --> T
Char. 1231: A --> T
Char. 1467: T --> C
Char. 1540: A --> C
Char. 1570: T --> C
Char. 1732: T --> C
Char. 1786: T --> C
Char. 1831: A --> C
Char. 1864: C --> T
Char. 1918: C --> T
Char. 2062: C --> T
Char. 3802: C --> A
Char. 3997: A --> C
Char. 4779: G --> C
Char. 5214: C --> T
Char. 5634: G --> A
Char. 5866: C --> T
Char. 5867: C --> T
Char. 6205: C --> T
Char. 6565: C --> T
Node 969 :
Hypertrophied_ventral-caudal-peduncle_squamation (472): (0)_absent -->
(1)_present_restricted_to_scales_below_lateral_line
Enlarged_pouch_scale (513):
(0)_absent_or_similar_to_a_regular_lateral-

line_scale -->
(1)_present_and_enlarged,_with_numerous_radii
Char. 3451: G --> C
Char. 3502: C --> G
Char. 3679: C --> G
Char. 3724: T --> C
Char. 3817: G --> A
Char. 3847: G --> A
Char. 4019: C --> A
Char. 4118: A --> G
Char. 4163: A --> C
Char. 4253: C --> T
Char. 4337: G --> A
Char. 4345: C --> A
Char. 4498: A --> G
Char. 4546: G --> A
Char. 4577: G --> A
Char. 4687: C --> T
Char. 4690: C --> T
Char. 5382: T --> C
Char. 5509: T --> C
Char. 6027: C --> T
Char. 6041: G --> A
Char. 6317: A --> G
Char. 6329: A --> T
Char. 6346: C --> A
Char. 6379: A --> C
Char. 6511: C --> T
Char. 6515: A --> C
Node 970 :
Branching_of_laterosensory_canals_of_fourth_or_fifth_infraorbitals (97): (0)_absent --> (1)_present
Pectoral-
fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (443): (0)_absent --> (1)_present
Dorsal-
fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (444): (0)_absent --> (1)_present
Caudal-
fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (445): (0)_absent --> (1)_present
Distribution_of_bony_hooks_on_pelvic-fin_branched_rays_of_males (449):
(1)_restricted_to_medial_branches -->
(0)_on_all_branches
Distribution_of_bony_hooks_on_anal-fin_branches_of_adult_males (453):
(1)_restricted_or_almost_restricted_to_posterior_primary_branch --> (0)_on_all_branches
Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Papillae_on_tongue (506): (0)_not_aligned -->
(1)_forming_longitudinal_rows_anteriorly
Char. 529: C --> T
Char. 577: C --> T
Char. 674: C --> T
Char. 685: C --> T
Char. 766: C --> T
Char. 835: C --> T
Char. 901: C --> T
Char. 922: C --> T
Char. 931: C --> T
Char. 1006: C --> T
Char. 1015: C --> T
Char. 1102: A --> C
Char. 1138: A --> G
Char. 1211: C --> T
Char. 1357: C --> T
Char. 1363: C --> T
Char. 1537: T --> C
Char. 1543: G --> A
Char. 1564: G --> T
Char. 1601: C --> T
Char. 1609: T --> C
Char. 1618: A --> T
Char. 1621: T --> C
Char. 1714: T --> C

Char. 1717: A --> G
Char. 1732: C --> T
Char. 1813: A --> T
Char. 1858: T --> C
Char. 1933: T --> C
Char. 2056: C --> T
Char. 2063: T --> C
Char. 2098: T --> C
Char. 2158: C --> T
Char. 6319: A --> T
Node 971 :
Ventral_margin_of_horizontal_process_of_angular_rticular (162):
(0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal -->
(1)_perpendicular_to_laterosensory_canal_of_dentary
Lateroventral_expansion_of_ectopterygoid (214):
(0)_absent,_articulating_almost_exclusively_with_cartilage_of_palatine -->
(1)_present,_expanded_twice_length_of_palatine_cartilage
Char. 613: T --> C
Char. 907: A --> C
Char. 988: A --> T
Char. 1105: C --> A
Char. 1306: T --> C
Char. 1441: C --> T
Char. 1556: C --> T
Char. 1582: T --> C
Char. 1735: G --> A
Char. 1777: C --> A
Char. 1804: A --> C
Char. 1873: C --> T
Char. 1879: G --> A
Char. 2024: C --> T
Char. 2095: C --> T
Char. 2107: C --> T
Char. 2140: C --> T
Char. 2161: A --> C
Char. 2464: T --> C
Char. 2509: G --> T
Char. 2591: C --> T
Char. 2632: A --> C
Char. 2752: C --> T
Char. 2776: G --> A
Char. 4791: C --> T
Char. 5055: T --> G
Char. 5540: G --> A
Char. 5914: A --> T
Char. 6025: C --> T
Char. 6342: G --> A
Char. 6433: T --> C
Char. 6573: C --> T
Node 972 :
Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_than_dorsoventrally
Char. 1615: A --> G
Char. 1708: T --> C
Char. 1744: C --> T
Char. 1796: T --> C
Char. 1843: T --> A
Char. 2059: C --> T
Node 973 :
Char. 1565: C --> T
Char. 1573: A --> G
Char. 1630: A --> G
Char. 1813: T --> A
Char. 1924: T --> C
Char. 2116: C --> T
Node 974 :
Char. 1537: C --> T
Char. 1549: C --> A
Char. 1552: A --> T
Char. 1564: T --> G
Char. 1591: C --> A
Char. 1762: C --> T
Char. 1792: T --> C
Char. 1879: A --> G

Char. 1960: T --> C
Char. 2014: T --> C
Char. 2024: T --> C
Char. 2050: C --> T
Char. 2059: A --> C
Char. 2110: C --> T
Node 975 :
Tubules_for_passage_of_blood_vessels_on_lamella_r_portion_of_maxilla (142):
(0)_a_single_tubule_parallel_to_dorsal_margin_of_maxilla -->
(1)_with_anterior_branch_running_parallel_to_anterior_margin_of_maxilla
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Char. 580: C --> T
Char. 700: T --> C
Char. 712: C --> A
Char. 739: A --> T
Char. 886: G --> C
Char. 1036: C --> T
Char. 1060: C --> T
Char. 1085: G --> A
Char. 1186: A --> C
Char. 1240: T --> C
Char. 1270: A --> C
Char. 1285: T --> A
Char. 1306: A --> T
Char. 1363: T --> C
Char. 1455: T --> C
Char. 1459: T --> C
Char. 1543: A --> G
Char. 1648: C --> T
Char. 1897: C --> A
Char. 2089: A --> T
Char. 2467: C --> T
Char. 2521: T --> C
Char. 3499: A --> G
Char. 3670: A --> G
Char. 3799: A --> G
Char. 3802: C --> A
Char. 3871: T --> C
Char. 3970: T --> C
Char. 3976: T --> C
Char. 4785: T --> G
Char. 5456: G --> A
Char. 5945: A --> G
Char. 6001: A --> G
Char. 6002: T --> C
Char. 6022: C --> T
Char. 6041: G --> A
Char. 6099: C --> T
Node 976 :
Form_of_fourth_infraorbital (92):
(0)_square_or_more_developed_longitudinally_than_dorsoventrally -->
(1)_longer_dorsoventrally_than_longitudinally
Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent
Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
Large_medial_foramen_on_hyomandibula (241): (0)_absent -->
(1)_present_communicating_with_hyomandibular_canal
Char. 1564: G --> A
Char. 1681: A --> G
Char. 1708: C --> A
Char. 1939: G --> A
Char. 2020: T --> C
Char. 6326: T --> C
Char. 6346: T --> C
Node 977 :
Ventral_margin_of_horizontal_process_of_anguloa

rticular (162):
(0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal -->
(1)_perpendicular_to_laterosensory_canal_of_dentary
Lateroventral_expansion_of_ectopterygoid (214):
(0)_absent_articulating_almost_exclusively_with_cartilage_of_palatine -->
(1)_present_expanded_twice_length_of_palatine_cartilage
Char. 694: T --> C
Char. 715: C --> T
Char. 733: T --> C
Char. 736: T --> C
Char. 739: T --> C
Char. 778: C --> T
Char. 781: C --> T
Char. 802: A --> G
Char. 895: T --> C
Char. 1057: C --> T
Char. 1081: T --> C
Char. 1096: T --> C
Char. 1285: A --> G
Char. 1414: A --> T
Char. 1471: T --> C
Char. 1588: A --> G
Char. 1843: A --> T
Char. 1885: T --> C
Char. 1888: A --> G
Char. 1894: A --> C
Char. 1927: C --> T
Char. 1933: T --> C
Char. 1987: T --> C
Char. 2050: T --> C
Char. 6294: C --> A
Node 978 :
Char. 523: T --> C
Char. 526: A --> C
Char. 533: C --> T
Char. 574: T --> C
Char. 631: T --> C
Char. 661: T --> C
Char. 703: C --> A
Char. 709: C --> T
Char. 712: A --> T
Char. 742: T --> C
Char. 757: A --> GT
Char. 772: T --> C
Char. 941: C --> T
Char. 943: A --> T
Char. 976: C --> T
Char. 1063: C --> T
Char. 1123: T --> C
Char. 1132: C --> T
Char. 1283: C --> T
Char. 1331: C --> T
Char. 1332: T --> C
Char. 1358: C --> T
Char. 1450: C --> A
Char. 1489: A --> G
Char. 1675: AC --> T
Char. 1687: A --> G
Char. 1706: A --> G
Char. 1822: A --> G
Char. 1861: A --> G
Char. 1951: T --> C
Char. 1969: T --> C
Char. 2006: T --> C
Char. 2027: G --> A
Char. 2044: T --> C
Char. 3490: T --> C
Char. 3733: T --> A
Char. 3952: C --> T
Char. 4081: A --> T
Char. 4150: A --> G
Char. 4166: A --> T
Char. 4375: G --> T
Char. 4541: C --> G
Char. 4600: C --> G
Char. 4645: C --> T
Char. 4684: C --> T
Char. 5148: C --> A

Char. 5415: C --> T
Char. 5493: A --> G
Char. 5756: T --> A
Char. 5911: T --> A
Char. 5925: A --> G
Char. 5935: A --> T
Char. 6441: T --> C
Char. 6443: T --> C
Node 979 :
Ventral_margin_of_horizontal_process_of_anguloa_rticular (162):
(0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal -->
(1)_perpendicular_to_laterosensory_canal_of_dentary
Alignment_of_cusps_of_medial_teeth_on_inner_premaxillary_row (179):
(1)_forming_shallow_arch_or_aligned_in_straight_series -->
(0)_forming_anteriorly_concave_semicircle_from_ventral_view
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_less
Number_of_supraneurals (392):
(1)_five_or_more --> (0)_four_or_fewer
Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal-fin_base_or_less --> (1)_covering_3/4_of_anal-fin_base_or_more
Papillae_on_tongue (506): (0)_not_aligned -->
(1)_forming_longitudinal_rows_anteriorly
Char. 1546: T --> C
Char. 1558: A --> G
Char. 1561: C --> T
Char. 1598: C --> T
Char. 1666: A --> G
Char. 1675: C --> T
Char. 1702: A --> G
Char. 1735: G --> A
Char. 1817: G --> A
Char. 1818: C --> T
Char. 1819: T --> A
Char. 1864: C --> T
Char. 1885: T --> C
Char. 1969: T --> C
Char. 1987: T --> G
Char. 2047: T --> C
Char. 2053: A --> C
Char. 2125: T --> C
Char. 6140: C --> T
Char. 6209: C --> T
Char. 6298: A --> T
Char. 6311: T --> A
Char. 6315: A --> C
Char. 6316: A --> C
Char. 6317: A --> C
Char. 6319: A --> T
Char. 6327: A --> C
Char. 6344: A --> T
Char. 6356: A --> G
Node 980 :
Number_of_supraneurals (393):
(0)_five_or_fewer --> (1)_six_or_more
Node 981 :
Char. 781: C --> T
Char. 1043: T --> A
Char. 1076: T --> C
Char. 1118: T --> C
Node 982 :
Char. 565: C --> T
Char. 622: T --> C
Char. 752: T --> C
Char. 787: A --> C
Char. 895: T --> C
Char. 946: A --> G
Char. 1075: T --> C
Char. 1123: T --> C

Char. 1192: T --> C
Char. 1282: C --> T
Char. 1351: C --> T
Char. 1459: C --> T
Char. 1591: A --> G
Char. 1606: C --> T
Char. 1816: A --> G
Char. 1948: C --> T
Char. 6445: T --> C
Node 983 :
Char. 706: C --> T
Char. 985: C --> T
Char. 1225: C --> T
Char. 1813: A --> C
Char. 2074: T --> A
Node 984 :
Char. 544: C --> T
Char. 556: C --> T
Char. 668: A --> G
Char. 697: C --> T
Char. 712: A --> G
Char. 755: G --> T
Char. 805: T --> C
Char. 817: C --> A
Char. 838: C --> A
Char. 1000: C --> T
Char. 1267: A --> T
Char. 1330: C --> T
Char. 1385: A --> T
Char. 1490: C --> T
Char. 1549: A --> G
Char. 1636: C --> T
Char. 1678: A --> T
Char. 1702: A --> G
Char. 1705: T --> A
Char. 1765: C --> T
Char. 1771: C --> T
Char. 1786: C --> T
Char. 1861: A --> C
Char. 1885: T --> C
Char. 1888: A --> T
Char. 1897: A --> T
Char. 1913: C --> T
Char. 1990: A --> G
Char. 2005: T --> C
Char. 2023: T --> C
Char. 2077: T --> C
Char. 6253: A --> G
Char. 6445: A --> T
Char. 6485: T --> C
Char. 6507: C --> T
Char. 6516: G --> A
Char. 6565: C --> T
Node 985 :
Rhinosphenoid (34): (1)_present --> (0)_absent
Posterior_extension_of_supraoccipital_spine (62):
(0)_reaching_at_least_to_middle_length_of_neural_complex -->
(1)_reaching_only_to_anterior_limit_of_neural_complex
Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one-third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage
Number_of_rows_of_premaxillary_teeth (170):
(1)_two_or_three --> (0)_one
Number_of_teeth_on_inner_premaxillary_row (182): (0)_five_or_fewer --> (1)_six_or_more
Number_of_cusps_of_anterior_maxillary_teeth (192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Contact_between_ectopterygoid_and_anterodorsal_region_of_quadrate (220): (0)_present -->
(1)_absent
Transitional_vertebrae_with_haemal_canal (331): (0)_present --> (1)_absent
Haemal_prezygapophysis_on_anterior_caudal_vertebrae (333): (0)_present --> (1)_completely_absent
Number_of_supraneurals (392):
(1)_five_or_more --> (0)_four_or_fewer
Anal-fin_position (416):
(0)_posterior_ot_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Number_of_unbranched_anal-fin_rays (417):
(1)_four_or_more --> (0)_three_or_fewer
Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Pseudotympanum_between_ribs_of_fifth_and_sixth_vertebrae (485): (0)_absent --> (1)_present
Node 986 :
Char. 3328: T --> C
Char. 5049: T --> C
Char. 5178: G --> A
Char. 5183: G --> A
Char. 5346: T --> C
Char. 6070: A --> T
Char. 6206: T --> C
Char. 6207: T --> C
Char. 6254: A --> T
Node 987 :
Char. 1609: T --> C
Char. 1705: T --> A
Char. 1772: T --> C
Char. 1774: A --> C
Char. 1855: T --> A
Char. 1927: T --> C
Char. 1987: T --> C
Char. 2020: T --> C
Char. 2312: T --> C
Char. 2329: A --> G
Char. 2437: A --> T
Char. 2569: A --> T
Char. 2632: G --> A
Char. 4963: C --> G
Char. 5211: A --> G
Char. 6205: T --> C
Node 988 :
Char. 1585: T --> C
Char. 1600: G --> T
Char. 1651: G --> A
Char. 1706: G --> A
Char. 1735: A --> G
Char. 1738: C --> T
Char. 1792: C --> A
Char. 1828: A --> T
Char. 1897: A --> C
Char. 1915: A --> T
Char. 2083: G --> A
Char. 6406: G --> A
Char. 6420: C --> T
Char. 6508: A --> T
Char. 6511: C --> A
Node 989 :
Rhinosphenoid (34): (1)_present --> (0)_absent
Ventral_margin_of_horizontal_process_of_angular_ricular (162):
(1)_perpendicular_to_laterosensory_canal_of_dentary -->
(0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal
Size_of_teeth_on_outer_premaxillary_row (173): (0)_smaller_than_those_on_inner_row -->
(1)_longer_than_those_on_inner_row
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Char. 1846: T --> C
Char. 3049: T --> C
Char. 3160: C --> G
Node 990 :
Char. 700: T --> C
Char. 712: C --> T
Char. 730: C --> T
Char. 739: A --> G
Char. 763: A --> G
Char. 874: A --> G
Char. 910: A --> G
Char. 949: T --> C
Char. 973: A --> C
Char. 982: C --> T
Char. 1009: C --> T
Char. 1177: T --> C
Char. 1201: A --> G
Char. 1255: AT --> C
Char. 1300: A --> T
Char. 1480: C --> T
Char. 2024: T --> C
Char. 2152: T --> C
Char. 3046: T --> C
Char. 3205: T --> C
Char. 3211: A --> G
Char. 3361: A --> G
Node 991 :
Foramen_on_ventral_lamella_of_supraoccipital (63): (0)_absent -->
(1)_with_a_large_foramen_or_concavity_posteriorly_open
Char. 667: C --> T
Char. 787: C --> A
Char. 1147: A --> C
Char. 1264: A --> G
Char. 1326: A --> G
Char. 1426: C --> T
Char. 1771: T --> A
Char. 1849: A --> C
Char. 1867: C --> A
Char. 1897: T --> A
Char. 1903: T --> C
Char. 1915: T --> A
Char. 2047: C --> T
Char. 2158: C --> T
Char. 2794: G --> A
Char. 2965: T --> C
Char. 3130: T --> C
Char. 3221: T --> C
Char. 3520: A --> G
Char. 4498: A --> G
Char. 4721: G --> A
Char. 4858: C --> T
Char. 5025: T --> A
Char. 5046: C --> T
Char. 5049: C --> T
Char. 5538: G --> A
Node 992 :
Palatine_foramen (210):
(1)_present_and_very_conspicuous -->
(0)_absent_or_reduced_in_size
Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Number_of_supraneurals (394):
(1)_seven_or_more --> (0)_six_or_fewer
Number_of_supraneurals (395):
(1)_eight_or_more --> (0)_seven_or_fewer
Insemination (514): (1)_present --> (0)_absent
Char. 592: C --> T
Char. 595: C --> T
Char. 658: T --> C
Char. 1300: C --> A
Char. 1732: T --> C
Char. 2510: T --> C
Char. 2527: C --> T
Char. 3052: T --> C
Char. 3286: A --> G
Node 993 :

Contact_between_ectopterygoid_and_anterodorsal_region_of_quadrate (220): (0)_present --> (1)_absent

Char. 991: T --> C
Char. 1006: C --> T
Char. 1345: C --> T
Char. 1618: T --> C
Char. 1621: T --> C
Char. 1879: G --> A
Char. 2014: C --> T
Char. 2146: T --> C
Char. 2953: G --> C
Char. 2974: T --> C
Char. 3073: T --> C
Char. 3091: A --> G
Char. 3100: T --> C
Char. 3229: A --> G
Char. 3361: G --> A
Char. 3385: A --> G
Char. 3608: A --> C
Char. 4447: A --> G
Char. 5313: G --> A
Char. 5346: C --> T
Char. 5436: T --> C
Char. 5499: C --> A
Char. 6323: C --> T

Node 994 :

Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one-third_of_length_of_nasal --> (1)_reaching_just_anterior_end_of_nasal

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more

Posterior_extent_of_ventral_process_of_quadrate (234): (0)_reaching_vertical_through_posterior_margin_of_f_symplectic --> (1)_falling_short_of_posterior_margin_of_symplectic

Rows_of_gill_rakers_on_first_ceratobranchial (291): (1)_two --> (0)_one

Denticles_on_gill_rakers (300): (0)_present --> (1)_absent

Node 995 :

Posterior_pore_of_pterotic_canal (119): (0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal --> (1)_in_a_vertical_line_through_ventral_pterotic_pore

Position_of_ventral_margin_of_posttemporal (335): (1)_lateral_or_posterior_to_lateral_margin_of_epioccipital --> (0)_anterior_to_lateral_margin_of_epioccipital

Node 996 :

Bony_hooks_on_last_pelvic_fin_ray_of_adult_males (447): (1)_as_numerous_as_in_other_rays --> (0)_absent_or_reduced_in_number

Node 997 :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps

Number_of_supraneurals (393): (1)_six_or_more --> (0)_five_or_fewer

Sheath_of_scales_covering_anal-fin_base (469): (0)_reaching_half_length_of_anal_fin_base_or_less --> (1)_covering_3/4_of_anal_fin_base_or_more

Scales_covering_caudal-fin_lobes (470): (0)_covering_only_their_base --> (1)_covering_one-third_of_their_length

Char. 1753: T --> C
Char. 1834: T --> A
Char. 2119: T --> C
Char. 2134: A --> G
Char. 2422: T --> A
Char. 3553: T --> C

Char. 3709: A --> T
Char. 3919: T --> G
Char. 4375: A --> C
Char. 4624: A --> G
Char. 5343: A --> C
Char. 6028: T --> C
Char. 6040: A --> T

Node 998 :

Char. 1772: T --> C
Char. 2312: T --> G
Char. 2510: C --> T
Char. 2527: T --> C
Char. 3079: T --> C
Char. 3088: A --> G
Char. 3124: T --> C
Char. 3226: A --> G
Char. 3328: T --> C
Char. 3508: A --> G
Char. 3565: A --> G
Char. 3997: A --> G
Char. 4054: A --> G
Char. 4358: C --> A
Char. 5868: T --> C

Node 999 :

Char. 2312: G --> T
Char. 2395: C --> T
Char. 2518: A --> G
Char. 2569: A --> G
Char. 2872: C --> T
Char. 2875: A --> C
Char. 3724: T --> C
Char. 4234: C --> T
Char. 4258: T --> C
Char. 4264: G --> A
Char. 4420: G --> A
Char. 4647: C --> G
Char. 5170: C --> T
Char. 5250: C --> G
Char. 5281: G --> T
Char. 5347: G --> A
Char. 5502: T --> G
Char. 5681: C --> G
Char. 5736: C --> T
Char. 5743: T --> A
Char. 6210: T --> C
Char. 6252: C --> T
Char. 6434: G --> A
Char. 6498: A --> T

Node 1000 :

Char. 2659: A --> G
Char. 3775: A --> G
Char. 4409: C --> T
Char. 4474: G --> A
Char. 4555: G --> A
Char. 4630: C --> T
Char. 4636: A --> T
Char. 5019: G --> C
Char. 5464: A --> G
Char. 5565: C --> T
Char. 6251: A --> T
Char. 6253: A --> T
Char. 6346: T --> C
Char. 6406: G --> A
Char. 6413: C --> T
Char. 6435: G --> A
Char. 6448: C --> T
Char. 6456: C --> T
Char. 6475: T --> C
Char. 6579: C --> T
Char. 6628: A --> G

Node 1001 :

Anterior_paired_projections_of_parasphenoid (43): (0)_absent --> (1)_present

Posterior_extension_of_supraoccipital_spine (62): (0)_reaching_at_least_to_middle_length_of_neural_complex --> (1)_reaching_only_to_anterior_limit_of_neural_complex

Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present

Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33

Parallel_longitudinal_ridges_on_posterior_field_of_scales (457): (0)_absent --> (1)_present

Number_of_scales_in_lateral_series (467): (0)_33_or_more --> (1)_32_or_fewer

Scales_covering_caudal-fin_lobes (470): (0)_covering_only_their_base --> (1)_covering_one-third_of_their_length

Char. 1603: A --> G
Char. 1672: A --> G
Char. 1819: T --> C
Char. 1924: T --> C
Char. 1969: T --> C
Char. 2062: C --> T
Char. 4645: C --> A
Char. 5055: A --> G
Char. 5364: T --> C
Char. 5564: C --> A
Char. 5840: A --> T
Char. 5845: T --> A
Char. 5929: G --> A
Char. 5941: C --> T
Char. 5978: G --> A
Char. 6026: A --> G
Char. 6037: T --> C
Char. 6042: T --> C
Char. 6078: T --> C
Char. 6207: T --> C
Char. 6252: A --> C
Char. 6255: A --> C
Char. 6345: A --> C
Char. 6382: C --> A
Char. 6514: T --> A
Char. 6562: C --> T
Char. 6589: G --> A

Node 1002 :

Char. 676: C --> T
Char. 1015: C --> T
Char. 1019: T --> C
Char. 1024: C --> T
Char. 1123: T --> C
Char. 1135: C --> T
Char. 1162: C --> A
Char. 1172: C --> T
Char. 1210: C --> T
Char. 1303: C --> A
Char. 1450: C --> T
Char. 1480: C --> T
Char. 1543: A --> G
Char. 1708: T --> C
Char. 1828: A --> G
Char. 1858: T --> C
Char. 1873: C --> T
Char. 1906: A --> T
Char. 4721: A --> G
Char. 4722: C --> G
Char. 5209: T --> G
Char. 5248: A --> C
Char. 5372: G --> A
Char. 5688: C --> T
Char. 6348: A --> C
Char. 6449: T --> C

Node 1003 :

Ethmopalatine_cartilage (208): (0)_absent_or_reduced_in_size --> (1)_present_and_conspicuous

Char. 553: C --> T
Char. 892: C --> T
Char. 988: A --> C
Char. 1042: C --> T
Char. 1063: C --> T
Char. 1118: T --> T
Char. 1270: A --> T
Char. 1393: T --> C
Char. 1456: C --> T
Char. 1723: T --> C
Char. 1735: G --> A
Char. 2101: C --> T
Char. 2164: T --> C
Char. 4540: C --> T
Char. 5456: G --> C
Char. 6211: G --> A

Node 1004 :

Char. 535: A --> T
 Char. 588: C --> T
 Char. 589: C --> T
 Char. 595: C --> T
 Char. 609: A --> G
 Char. 706: C --> T
 Char. 724: A --> T
 Char. 740: G --> A
 Char. 755: G --> A
 Char. 756: T --> C
 Char. 766: C --> A
 Char. 769: A --> C
 Char. 826: T --> C
 Char. 841: C --> A
 Char. 845: G --> A
 Char. 878: A --> C
 Char. 928: C --> T
 Char. 950: G --> A
 Char. 968: G --> A
 Char. 976: C --> T
 Char. 997: A --> C
 Char. 1013: G --> A
 Char. 1021: A --> C
 Char. 1031: G --> A
 Char. 1073: A --> G
 Char. 1074: T --> C
 Char. 1094: C --> T
 Char. 1107: C --> T
 Char. 1198: T --> A
 Char. 1267: C --> A
 Char. 1271: C --> T
 Char. 1279: T --> C
 Char. 1339: C --> T
 Char. 1359: T --> C
 Char. 1375: T --> A
 Char. 1399: A --> G
 Char. 1414: A --> T
 Char. 1426: A --> C
 Char. 1456: C --> T
 Char. 1474: C --> T
 Char. 1477: T --> A
 Char. 1489: C --> A
 Char. 1490: C --> G
 Char. 1491: T --> C
 Char. 2584: T --> C
 Char. 6162: A --> G
 Char. 6209: C --> T
 Char. 6292: A --> C
 Char. 6317: T --> G
 Char. 6334: A --> T
 Char. 6348: A --> T
 Char. 6352: C --> T
 Char. 6361: G --> A
 Char. 6363: A --> T
 Char. 6369: T --> A
 Char. 6440: A --> T
 Char. 6496: A --> T
 Char. 6497: A --> T
 Char. 6523: C --> T
 Char. 6565: C --> T
 Char. 6566: C --> T
 Node 1005 :
 Char. 634: T --> G
 Char. 708: A --> T
 Char. 711: T --> C
 Char. 775: G --> C
 Char. 829: A --> C
 Char. 854: G --> A
 Char. 926: G --> A
 Char. 955: C --> T
 Char. 1075: T --> C
 Char. 1085: G --> A
 Char. 1087: A --> C
 Char. 1088: A --> C
 Char. 1105: A --> C
 Char. 1168: C --> T
 Char. 1186: A --> C
 Char. 1211: C --> T
 Char. 1231: A --> C
 Char. 1234: A --> C
 Char. 1286: G --> A
 Char. 1291: A --> C
 Char. 1329: G --> C
 Char. 1345: C --> A
 Char. 1360: A --> G
 Char. 1405: A --> C
 Char. 1493: G --> C
 Char. 1495: C --> T
 Char. 2647: G --> A
 Char. 2806: T --> C
 Char. 3479: G --> A
 Char. 3484: G --> A
 Char. 3497: A --> G
 Char. 3628: C --> T
 Char. 3637: C --> T
 Char. 3730: G --> A
 Char. 3736: G --> A
 Char. 3751: A --> G
 Char. 3868: G --> A
 Char. 3895: C --> T
 Char. 3946: T --> A
 Char. 4196: C --> T
 Char. 4409: C --> T
 Char. 4411: G --> A
 Char. 4476: T --> C
 Char. 4481: T --> G
 Char. 4482: G --> T
 Char. 4570: C --> A
 Char. 4594: T --> C
 Char. 4690: C --> T
 Char. 4806: C --> G
 Char. 4811: G --> A
 Char. 5016: G --> A
 Char. 5164: C --> A
 Char. 5253: A --> T
 Char. 5401: A --> G
 Char. 5406: T --> C
 Char. 5469: T --> C
 Char. 5505: C --> T
 Char. 5532: G --> A
 Char. 5548: G --> A
 Char. 5613: T --> C
 Char. 5640: T --> C
 Char. 5680: A --> G
 Char. 5756: T --> A
 Char. 5762: A --> G
 Char. 5858: C --> T
 Char. 5909: T --> A
 Char. 6026: A --> C
 Char. 6028: C --> T
 Char. 6029: A --> G
 Char. 6098: C --> T
 Char. 6118: T --> C
 Char. 6216: A --> G
 Char. 6229: G --> A
 Char. 6247: C --> T
 Char. 6307: T --> C
 Char. 6333: A --> C
 Char. 6402: G --> A
 Char. 6452: A --> G
 Char. 6475: T --> C
 Char. 6493: A --> T
 Node 1006 :
 Parietal_branch_of_laterosensory_canal (116):
 (0)_present_reaching_parietal_bone_or_not -->
 (1)_completely_absent
 Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
 (1)_not_reaching_parietal_or_absent
 Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (294): (0)_16_or_more -->
 (1)_15_or_fewer
 Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (0)_11_or_more -->
 (1)_ten_or_fewer
 Third_postcleithrum (363): (0)_present -->
 (1)_absent
 Number_of_dorsal_ptyerygiophores (401):
 (1)_11_or_more --> (0)_10_or_fewer
 Relative_position_of_dorsal-fin_anterior_insertion (403):
 (0)_anterior_to_or_at_vertical_through_pelvic-
 fin_origin -->
 (1)_posterior_to_vertical_through_pelvic-fin_origin
 Distance_between_bases_of_caudal-fin_rays_10_and_11 (437):
 (1)_equal_or_shorter_than_posterior_margin_of_third_hypural -->
 (0)_longer_than_posterior_margin_of_third_hypural
 1
 Char. 571: C --> A
 Char. 580: C --> A
 Char. 808: C --> T
 Char. 862: C --> T
 Char. 863: A --> G
 Char. 1073: C --> A
 Char. 1097: A --> T
 Char. 1112: C --> T
 Char. 1279: A --> T
 Char. 1297: A --> C
 Char. 1348: C --> A
 Char. 1358: C --> T
 Char. 1368: C --> T
 Char. 1469: C --> A
 Char. 1494: C --> T
 Char. 1499: T --> C
 Char. 1500: G --> T
 Char. 1525: T --> C
 Char. 1630: C --> T
 Char. 1639: A --> C
 Char. 1712: C --> T
 Char. 1726: A --> C
 Char. 2002: C --> A
 Char. 2053: C --> A
 Char. 2419: A --> T
 Char. 2440: A --> G
 Char. 2521: T --> C
 Char. 2594: T --> A
 Char. 2596: A --> G
 Char. 2611: C --> T
 Char. 2644: G --> A
 Char. 2662: G --> C
 Char. 2671: T --> C
 Char. 2695: G --> A
 Char. 2755: A --> G
 Char. 2776: G --> A
 Char. 2779: C --> T
 Char. 2866: G --> C
 Char. 3501: T --> C
 Char. 3514: T --> C
 Char. 3515: G --> A
 Char. 3529: C --> T
 Char. 3565: A --> G
 Char. 3719: G --> A
 Char. 3778: A --> G
 Char. 3862: G --> A
 Char. 4033: G --> A
 Char. 4099: G --> C
 Char. 4123: C --> T
 Char. 4135: G --> A
 Char. 4188: C --> T
 Char. 4370: C --> A
 Char. 4381: T --> G
 Char. 4391: C --> T
 Char. 4399: G --> A
 Char. 4451: C --> T
 Char. 4465: G --> A
 Char. 4525: G --> A
 Char. 4546: G --> A
 Char. 4555: T --> A
 Char. 4573: C --> T
 Char. 4636: A --> C
 Char. 4654: C --> T
 Char. 4687: C --> T
 Char. 4693: C --> T
 Char. 4721: G --> A
 Char. 4743: C --> T
 Char. 4825: C --> A
 Char. 4902: T --> C
 Char. 4903: G --> A
 Char. 5004: C --> T
 Char. 5037: G --> A
 Char. 5082: C --> T
 Char. 5151: C --> T
 Char. 5177: G --> A

Char. 5202: C --> G
 Char. 5217: C --> T
 Char. 5352: AG --> C
 Char. 5421: C --> T
 Char. 5580: C --> T
 Char. 5598: A --> C
 Char. 5604: T --> A
 Char. 5622: G --> A
 Char. 5649: G --> A
 Char. 5657: A --> T
 Char. 5863: C --> T
 Char. 5915: C --> T
 Char. 5935: A --> C
 Char. 6180: T --> C
 Char. 6182: G --> A
 Char. 6204: C --> T
 Char. 6317: A --> T
 Char. 6322: C --> T
 Char. 6345: A --> T
 Char. 6362: C --> T
 Node 1007 :
 Bony_lamellae_bordering_sensory_canal_of_nasal
 (12):
 (0)_absent_or_more_slender_than_tubular_region -
 -> (1)_wider_than_tubular_region_at_some_point
 Dilator_fossa_on_lateral_surface_of_frontal
 (31): (1)_present --> (0)_absent
 Parietal_fontanel_in_adult_specimens (59):
 (0)_present --> (1)_absent
 Ventromedial_opening_of_posttemporal_fossa
 (67): (1)_present --> (0)_absent
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Anterior_development_of_fourth_cartilaginous_ph
 aryngobranchial (281):
 (0)_not_developed_medial_to_third_pharyngobran
 chial -->
 (1)_extended_medial_to_third_pharyngobranchial
 Scales_covering_supraocscipital_spine (463):
 (0)_absent -->
 (1)_present_and_completely_covering_supraoccipit
 al_spine
 Number_of_2n_chromosomes (516):
 (1)_46_or_more --> (0)_36_to_42
 Number_of_2n_chromosomes (517):
 (1)_50_or_more --> (0)_48_or_fewer
 Char. 694: C --> A
 Char. 1363: C --> T
 Char. 1477: A --> T
 Char. 1510: C --> T
 Char. 1570: T --> C
 Char. 1735: G --> A
 Char. 1855: T --> C
 Char. 2428: C --> T
 Char. 4264: G --> A
 Char. 4581: G --> A
 Char. 4675: G --> A
 Char. 4905: A --> G
 Char. 5043: C --> T
 Char. 5064: C --> T
 Char. 5127: C --> T
 Char. 5607: A --> G
 Char. 6510: AT --> C
 Node 1008 :
 Char. 6345: A --> G
 Node 1009 :
 Char. 664: T --> C
 Char. 673: C --> T
 Char. 712: T --> C
 Char. 715: C --> T
 Char. 829: C --> T
 Char. 901: C --> T
 Char. 904: T --> C
 Char. 940: T --> C
 Char. 955: C --> T
 Char. 1078: T --> C
 Char. 1132: C --> T
 Char. 1180: T --> C
 Char. 1370: T --> C
 Char. 5250: C --> A
 Char. 5372: G --> A
 Char. 5505: G --> A
 Char. 6343: G --> A
 Node 1010 :
 Number_of_supraneurals (391):
 (1)_four_or_more --> (0)_three
 Relative_position_of_dorsal-
 fin_anterior_insertion (403):
 (1)_posterior_to_vertical_through_pelvic-fin_origin
 --> (0)_anterior_to_or_at_vertical_through_pelvic-
 fin_origin
 Anteriorly_oriented_spine_formed_by_first_dorsal-
 fin_ray (405): (0)_absent --> (1)_present
 Char. 538: T --> C
 Char. 634: C --> T
 Char. 823: T --> A
 Char. 866: C --> T
 Char. 1091: C --> T
 Char. 1237: C --> A
 Char. 1304: T --> A
 Char. 2315: A --> C
 Char. 2731: T --> A
 Char. 3514: C --> T
 Char. 3742: C --> T
 Char. 4486: G --> A
 Char. 4621: G --> A
 Char. 4716: A --> T
 Char. 4985: A --> C
 Char. 5037: G --> A
 Char. 5244: A --> G
 Char. 5694: T --> A
 Node 1011 :
 Char. 541: A --> T
 Char. 679: C --> T
 Char. 748: T --> C
 Char. 757: A --> T
 Char. 829: A --> C
 Char. 850: C --> T
 Char. 886: G --> A
 Char. 986: C --> T
 Char. 988: T --> A
 Char. 1045: C --> T
 Char. 1063: C --> A
 Char. 1087: A --> T
 Char. 1100: A --> T
 Char. 1180: A --> T
 Char. 1222: C --> T
 Char. 1231: T --> C
 Char. 1285: T --> C
 Char. 1318: A --> C
 Char. 1358: C --> T
 Char. 1363: C --> T
 Char. 1375: T --> C
 Char. 1429: C --> T
 Char. 1469: C --> G
 Char. 1490: C --> T
 Char. 3808: G --> A
 Char. 4052: A --> T
 Char. 4066: C --> G
 Char. 4205: C --> A
 Char. 4603: C --> T
 Char. 4723: G --> A
 Char. 4737: G --> A
 Char. 4809: C --> G
 Char. 5607: T --> A
 Char. 5634: A --> G
 Char. 5664: C --> T
 Char. 5697: C --> T
 Node 1012 :
 Prootic_foramen_anteromedial_to_auditory_forame
 n (56): (0)_visible_as_a_pore_lateral_to_myodome
 -->
 (1)_an_oblique_canal_near_anterior_margin_of_pr
 ootic
 Position_of_anterior_margin_of_supraoccipital
 (60):
 (0)_behind_vertical_through_posterior_orbital_mar
 gin -->
 (1)_anterior_to_vertical_through_posterior_orbital_
 margin
 Posterior_extension_of_supraoccipital_spine
 (61):
 (1)_dorsal_of_one_half_or_less_of_extent_of_neur
 al_complex -->
 (0)_dorsal_of_entire_neural_complex_of>Weberian
 _apparatus
 Posterior_margin_of_subtemporal_fossa (72):
 (0)_not_well_delimited_by_pterotic -->
 (1)_limited_by_a_well_developed_transverse_ptero
 tic_ridge
 Lateral_line (123): (1)_interrupted -->
 (0)_complete
 Canal_of_lateral_line_on-caudal-
 fin_membrane (125): (0)_absent --> (1)_present
 Laminar_base_of_epibranchial_gill_rakers
 (290):
 (0)_absent_or_not_reaching_posterior_margin_of_
 epibranchial -->
 (1)_reaching_or_projecting_from_posterior_margin
 _of_epibranchial
 Lateral_lamella_of_pelvic_bone (373):
 (0)_absent_or_reduced_to_posterior_third_of_bone
 --> (1)_present_and_reaching_two_thirds_of_bone
 Main_axis_of_supraneurals (396):
 (0)_not_bifurcated -->
 (1)_at_least_some_of_them_distally_bifurcated
 Proximal_and_medial_radials_of_anal_fins
 (413): (0)_fused_on_anterior_five_pterygiophores -
 -> (1)_fused_in_most_pterygiophores
 Number_of_branched_anal-fin_rays (420):
 (0)_24_or_fewer --> (1)_25_or_more
 Char. 634: A --> C
 Char. 781: T --> C
 Char. 949: T --> C
 Char. 985: C --> T
 Char. 1219: C --> T
 Char. 1291: T --> A
 Char. 1304: C --> T
 Char. 1309: T --> C
 Char. 1332: T --> C
 Char. 1591: C --> T
 Char. 1627: T --> A
 Char. 1702: A --> G
 Char. 1819: T --> C
 Char. 1879: G --> A
 Char. 1918: T --> C
 Char. 2110: C --> T
 Char. 2665: T --> A
 Char. 3589: G --> A
 Char. 3601: G --> A
 Char. 3613: G --> A
 Char. 3640: G --> C
 Char. 4441: C --> T
 Char. 5845: T --> A
 Char. 6022: C --> T
 Char. 6025: C --> T
 Char. 6043: G --> A
 Char. 6443: T --> C
 Node 1013 :
 Char. 565: C --> T
 Char. 646: A --> G
 Char. 796: A --> G
 Char. 826: T --> C
 Char. 994: A --> G
 Char. 1309: T --> C
 Char. 1331: C --> T
 Char. 1591: A --> G
 Char. 1699: T --> C
 Char. 1795: T --> C
 Node 1014 :
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Char. 694: T --> C
 Char. 853: T --> C
 Char. 1097: A --> T
 Char. 1162: C --> T
 Char. 1639: A --> T
 Char. 1876: A --> G
 Char. 1999: A --> G
 Node 1015 :
 Char. 607: A --> T
 Char. 620: A --> G
 Char. 679: C --> T
 Char. 739: A --> T
 Char. 745: C --> T

Char. 784: C --> T
Char. 6254: T --> A
Char. 6308: G --> A
Char. 6345: A --> G
Char. 6353: T --> C
Char. 6362: C --> T
Node 1016 :
Char. 538: C --> T
Char. 565: T --> C
Char. 676: C --> T
Char. 766: T --> C
Char. 772: C --> T
Char. 781: C --> T
Char. 6314: T --> C
Char. 6444: T --> C
Char. 6562: C --> T
Char. 6589: G --> A
Char. 6642: G --> A
Node 1017 :
Char. 539: C --> T
Char. 595: C --> T
Char. 1222: C --> T
Char. 1234: C --> T
Char. 4890: C --> T
Char. 5664: C --> T
Char. 5670: C --> T
Char. 5703: G --> A
Char. 5740: C --> T
Char. 6353: A --> T
Char. 6448: C --> T
Node 1018 :
Char. 574: C --> A
Char. 775: G --> A
Char. 832: C --> T
Char. 1033: A --> C
Char. 1291: AT --> C
Char. 1384: T --> C
Char. 1543: A --> G
Char. 1561: C --> T
Char. 1565: C --> T
Char. 1600: C --> T
Char. 1693: T --> C
Char. 1819: A --> G
Char. 1933: T --> C
Char. 2392: C --> T
Char. 2713: T --> C
Char. 5364: C --> T
Char. 5682: C --> A
Node 1019 :
Char. 592: C --> T
Char. 808: T --> C
Char. 994: A --> G
Char. 1144: C --> T
Char. 1156: C --> T
Char. 1189: C --> T
Char. 1318: C --> T
Char. 1375: C --> T
Char. 1504: T --> C
Char. 2296: T --> C
Char. 2389: T --> G
Char. 2443: A --> G
Char. 2617: T --> C
Char. 2875: A --> G
Char. 4752: T --> C
Char. 5680: A --> G
Char. 6467: T --> C
Node 1020 :
Char. 562: C --> T
Char. 679: C --> T
Char. 793: A --> G
Char. 844: C --> T
Char. 902: A --> C
Char. 904: C --> T
Char. 916: A --> C
Char. 982: C --> T
Char. 1089: T --> C
Char. 1135: C --> T
Char. 1262: C --> T
Char. 1291: C --> A
Char. 1295: C --> G
Char. 1345: C --> T
Char. 1867: C --> T
Char. 2056: G --> A
Char. 3896: T --> C
Char. 4381: T --> G
Char. 4708: T --> C
Char. 4841: G --> A
Char. 4926: C --> G
Char. 6324: T --> C
Node 1021 :
Char. 703: C --> A
Char. 787: C --> A
Char. 847: C --> T
Char. 928: C --> T
Char. 937: T --> C
Char. 946: A --> C
Char. 1063: C --> A
Char. 1088: A --> G
Char. 1093: T --> C
Char. 1111: C --> A
Char. 1433: A --> G
Char. 1591: G --> T
Char. 1606: C --> T
Char. 1630: T --> C
Char. 1636: T --> C
Char. 1672: A --> G
Char. 1699: T --> C
Char. 1772: C --> T
Char. 1792: A --> CT
Char. 1804: C --> A
Char. 1855: T --> C
Char. 1879: G --> A
Char. 1900: C --> T
Char. 1906: G --> A
Char. 1966: T --> C
Char. 1972: A --> G
Char. 2020: C --> T
Char. 2027: A --> G
Char. 2029: T --> A
Char. 2053: C --> T
Char. 2095: C --> T
Char. 2101: C --> T
Char. 2119: T --> C
Char. 2353: C --> T
Char. 2510: T --> C
Char. 3581: T --> C
Char. 4201: G --> A
Char. 4409: C --> T
Char. 4522: A --> C
Char. 5220: T --> C
Char. 6163: A --> G
Char. 6327: A --> C
Char. 6328: A --> T
Node 1022 :
Anterior_margin_of_lamellar_region_of_vomer (16): (0)_narrower_than_anterior_region -->
(1)_as_wide_as_posterior_margin_of_anterior_region
Posterior_extent_of_ventral_process_of_quadrate (234):
(1)_falling_short_of_posterior_margin_of_symplectic -->
(0)_reaching_vertical_through_posterior_margin_of_symplectic
Laminar_base_of_epibranchial_gill_rakers (290):
(0)_absent_or_not_reaching_posterior_margin_of_epibranchial -->
(1)_reaching_or_projecting_from_posterior_margin_of_epibranchial
Node 1023 :
Length_of_sphenotic_spine (47):
(0)_not_reaching_to_anterodorsal_angle_of_hyomandibula -->
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula
Interdigitations_between_premaxillae (127):
(1)_absent --> (0)_present
Position_of_coronomeckelian (159):
(0)_situated_mainly_lateral_to_Meckelian_cartilage -->
(1)_situated_mainly_dorsal_to_Meckelian_cartilage
Horizontal_process_of_anguloarticular (161):
(0)_laterally_covered_by_dentary_only_anteriorly ->
(1)_broadly_covered_by_dentary_to_tip_of_Meckelian_cartilage
Premaxillary_dentition (168):
(0)_one_or_more_series_of_similar_teeth -->
(1)_with_a_recognizable_triad_of_larger_teeth_within_rounded_base
Number_of_rows_of_premaxillary_teeth (171):
(0)_one_or_two --> (1)_three
Polymorphism_of_teeth_on_inner_premaxillary_row (185): (0)_absent -->
(1)_present,_with_two_medial_teeth_somewhat_larger
Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
Symphyseal_dentary_tooth (204): (0)_absent --> (1)_present
Relative_length_of_dentigerous_regions_of_fourth_and_fifth_epibranchials (286):
(1)_that_of_fourth_epibranchial_longer -->
(0)_about_same_length_or_that_of_fifth_epibranchial_longer
Form_of_third_postcleithrum (364):
(1)_with_a_posterior_lamella -->
(0)_slender,_without_associated_lamella
Node 1024 :
Char. 3718: T --> C
Char. 3871: T --> C
Char. 3994: C --> G
Char. 4117: C --> A
Char. 4135: T --> G
Char. 4372: A --> T
Char. 4435: G --> A
Char. 4447: A --> G
Char. 4621: G --> A
Char. 6211: A --> G
Node 1025 :
Char. 2182: T --> A
Char. 2347: T --> C
Char. 2623: T --> C
Char. 2638: T --> C
Char. 2731: T --> C
Char. 6118: T --> C
Char. 6140: C --> A
Char. 6204: C --> T
Char. 6254: A --> T
Char. 6324: C --> T
Char. 6346: C --> T
Char. 6444: A --> C
Char. 6462: G --> A
Char. 6467: C --> T
Char. 6580: G --> A
Node 1026 :
Char. 557: T --> C
Char. 567: C --> A
Char. 596: T --> A
Char. 597: G --> C
Char. 623: A --> C
Char. 632: A --> C
Char. 668: A --> C
Char. 710: C --> G
Char. 717: A --> T
Char. 742: T --> A
Char. 761: A --> G
Char. 762: T --> C
Char. 808: C --> T
Char. 863: A --> C
Char. 864: T --> A
Char. 873: A --> G
Char. 938: C --> A
Char. 988: T --> G
Char. 1000: C --> A
Char. 1054: A --> C
Char. 1085: G --> C
Char. 1093: A --> T
Char. 1141: A --> CT
Char. 1150: A --> C
Char. 1172: C --> A
Char. 1184: C --> A
Char. 1291: T --> C

Char. 1303: C --> A
 Char. 1367: A --> C
 Char. 1368: C --> T
 Char. 1385: A --> G
 Char. 1408: A --> C
 Char. 1416: T --> C
 Char. 1422: A --> C
 Char. 1466: G --> A
 Char. 1502: C --> T
 Char. 1504: A --> T
 Char. 1561: C --> T
 Char. 1669: A --> T
 Char. 1792: T --> A
 Char. 1900: T --> C
 Char. 1948: T --> C
 Char. 1990: A --> C
 Char. 2014: T --> C
 Char. 2197: A --> G
 Char. 2371: T --> C
 Char. 2401: A --> G
 Char. 2521: T --> C
 Char. 2671: T --> C
 Char. 3826: A --> G
 Char. 4471: G --> A
 Char. 4480: G --> A
 Char. 4555: T --> C
 Char. 4581: G --> A
 Char. 4705: C --> T
 Char. 6361: G --> A
 Char. 6485: A --> C
 Char. 6514: T --> A
 Node 1027 :
 Char. 940: C --> T
 Char. 1207: C --> T
 Char. 2287: T --> C
 Char. 2296: T --> C
 Char. 2389: T --> G
 Char. 2441: G --> T
 Char. 2443: A --> G
 Char. 4555: C --> T
 Char. 5460: AT --> C
 Node 1028 :
 Char. 526: T --> C
 Char. 538: C --> T
 Char. 607: A --> T
 Char. 685: C --> T
 Char. 877: A --> G
 Char. 892: T --> C
 Char. 1246: C --> T
 Char. 1462: T --> C
 Char. 4752: T --> C
 Char. 6298: T --> C
 Char. 6377: T --> C
 Char. 6381: G --> A
 Node 1029 :
 Char. 655: C --> T
 Char. 850: C --> T
 Char. 854: G --> A
 Char. 856: A --> T
 Char. 970: A --> C
 Char. 988: C --> T
 Char. 1024: C --> T
 Char. 1045: C --> A
 Char. 1072: C --> T
 Char. 1136: C --> T
 Char. 1229: C --> T
 Char. 1261: C --> A
 Char. 1300: C --> T
 Char. 1339: C --> T
 Char. 4839: G --> A
 Char. 6153: T --> C
 Char. 6319: A --> C
 Char. 6444: C --> T
 Node 1030 :
 Char. 637: T --> C
 Char. 781: C --> T
 Char. 808: T --> C
 Char. 823: A --> G
 Char. 919: A --> G
 Char. 1048: C --> T
 Char. 1135: C --> T
 Char. 1261: A --> G
 Char. 1645: G --> A
 Char. 1876: A --> G
 Char. 1975: A --> G
 Char. 2510: C --> T
 Char. 2584: C --> T
 Char. 2695: A --> G
 Char. 2773: G --> A
 Char. 2852: G --> A
 Node 1031 :
 Char. 674: C --> T
 Char. 3703: C --> T
 Char. 4360: C --> T
 Char. 4663: C --> G
 Char. 5424: C --> A
 Node 1032 :
 Char. 1783: T --> C
 Char. 1885: T --> C
 Char. 4519: G --> C
 Char. 5281: G --> A
 Char. 6253: A --> C
 Node 1033 :
 Char. 2386: A --> G
 Char. 2422: A --> T
 Char. 2497: C --> G
 Node 1034 :
 Char. 1597: C --> T
 Char. 1624: T --> C
 Char. 1774: A --> C
 Char. 2005: T --> C
 Char. 2035: T --> C
 Char. 2098: A --> T
 Char. 5253: A --> C
 Char. 5433: T --> C
 Node 1035 :
 Char. 1825: A --> G
 Char. 1843: T --> C
 Char. 3382: G --> C
 Char. 3467: G --> T
 Char. 3508: G --> A
 Char. 6327: A --> C
 Char. 6329: T --> A
 Node 1036 :
 Char. 2569: A --> G
 Char. 2968: A --> G
 Char. 3073: C --> G
 Char. 3232: A --> G
 Char. 3277: A --> G
 Node 1037 :
 Char. 1639: A --> G
 Char. 1735: A --> G
 Char. 2045: C --> T
 Node 1038 :
 Char. 523: C --> T
 Char. 524: C --> T
 Char. 577: C --> T
 Char. 616: C --> A
 Char. 634: T --> A
 Char. 748: C --> A
 Char. 790: C --> A
 Char. 841: C --> T
 Char. 980: C --> T
 Char. 1003: C --> A
 Char. 1012: C --> T
 Char. 1057: C --> T
 Char. 1135: T --> C
 Char. 1171: C --> T
 Char. 1255: A --> C
 Char. 1282: T --> C
 Char. 1295: C --> T
 Char. 1307: C --> T
 Char. 1351: C --> T
 Char. 1414: A --> T
 Char. 1429: C --> T
 Char. 1453: C --> A
 Char. 1483: T --> C
 Char. 1510: C --> T
 Char. 1540: A --> C
 Char. 1549: A --> C
 Char. 1552: T --> C
 Char. 1580: C --> T
 Char. 1588: G --> A
 Char. 1601: C --> T
 Char. 1609: C --> T
 Char. 1636: A --> G
 Char. 1712: C --> T
 Char. 1771: T --> C
 Char. 1789: T --> C
 Char. 1813: T --> A
 Char. 1816: A --> G
 Char. 1819: A --> C
 Char. 1867: T --> G
 Char. 1870: C --> A
 Char. 1879: G --> A
 Char. 1885: T --> A
 Char. 1912: C --> T
 Char. 1981: T --> C
 Char. 2005: T --> C
 Char. 2027: A --> G
 Char. 2029: T --> AG
 Char. 2032: A --> G
 Char. 2077: T --> C
 Char. 2143: A --> T
 Char. 2338: T --> C
 Char. 2443: A --> G
 Char. 2482: C --> T
 Char. 2545: C --> T
 Char. 2581: C --> T
 Char. 2664: C --> T
 Char. 2779: C --> T
 Char. 2830: C --> T
 Node 1039 :
 Anterior_margin_of_lamellar_region_of_vomer
 (16):
 (1)_as_wide_as_posterior_margin_of_anterior_regi
 on --> (0)_narrower_than_anterior_region
 Char. 1618: C --> T
 Char. 1810: A --> G
 Char. 1849: C --> T
 Char. 1852: A --> C
 Char. 2134: G --> A
 Node 1040 :
 Number_of_cusps_of_anterior_maxillary_teeth
 (193): (0)_up_to_three --> (1)_five_or_more_cusps
 Char. 1678: A --> T
 Char. 2131: A --> C
 Char. 2833: A --> G
 Char. 3905: G --> T
 Char. 3964: C --> T
 Node 1041 :
 Char. 1624: T --> C
 Char. 1642: T --> C
 Char. 1861: A --> G
 Char. 1912: C --> T
 Char. 1918: T --> C
 Char. 1933: T --> C
 Char. 2047: T --> A
 Char. 6329: T --> A
 Char. 6412: A --> G
 Node 1042 :
 Char. 1783: C --> T
 Char. 1927: T --> A
 Char. 1934: T --> C
 Char. 2059: C --> T
 Char. 2362: T --> C
 Char. 2596: A --> T
 Char. 2728: A --> G
 Char. 2738: A --> T
 Char. 3891: G --> C
 Char. 4364: C --> T
 Char. 5909: T --> A
 Char. 6048: C --> A
 Char. 6253: A --> G
 Char. 6361: T --> C
 Node 1043 :
 Horizontal_process_of_anguloarticular (161):
 (1)_broadly_covered_by_dentary_to_tip_of_Meckel
 lian_cartilage -->
 (0)_laterally_covered_by_dentary_only_anteriorly
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Char. 568: C --> T
 Char. 616: A --> G
 Char. 664: C --> T
 Char. 928: C --> A
 Char. 949: T --> C
 Char. 979: C --> T
 Char. 1003: A --> T

Char. 1045: T --> C
Char. 1198: T --> A
Char. 1216: T --> C
Char. 1297: A --> T
Char. 2632: G --> A
Char. 6004: T --> C
Char. 6306: C --> T
Node 1044 :
Char. 613: C --> T
Char. 904: T --> C
Char. 1144: C --> T
Char. 1706: G --> A
Char. 1741: T --> C
Char. 2312: T --> C
Char. 2569: A --> G
Node 1045 :
Anterior_margin_of_lamellar_region_of_vomer
(16): (0)_narrower_than_anterior_region -->
(1)_as_wide_as_posterior_margin_of_anterior_regi
on
Char. 550: C --> T
Char. 640: C --> T
Char. 742: C --> T
Char. 868: A --> C
Char. 892: C --> T
Char. 898: A --> T
Char. 1267: A --> C
Char. 1331: C --> T
Char. 1345: T --> C
Char. 1358: C --> T
Char. 1387: A --> G
Char. 1453: C --> A
Char. 1513: C --> T
Char. 1687: A --> G
Char. 1762: T --> C
Char. 1777: C --> A
Char. 1828: A --> T
Char. 1864: C --> T
Char. 1957: T --> C
Char. 1978: C --> T
Char. 2032: A --> T
Char. 2041: T --> C
Char. 2059: A --> C
Char. 2125: T --> G
Char. 2296: C --> T
Char. 2305: C --> A
Char. 2401: G --> C
Char. 3891: C --> G
Char. 4510: C --> G
Char. 4639: C --> A
Char. 4648: T --> A
Char. 4651: G --> A
Char. 4926: C --> T
Char. 5264: C --> T
Char. 5913: C --> A
Char. 6028: T --> C
Node 1046 :
Char. 1720: T --> C
Char. 1822: A --> G
Char. 1903: C --> T
Node 1047 :
Fused_gill_filaments_associated_with_gland_cells
(511): (1)_present --> (0)_absent
Char. 1933: C --> T
Char. 1999: A --> G
Node 1048 :
Char. 1684: T --> C
Char. 1714: A --> G
Char. 1747: G --> T
Char. 1750: A --> G
Char. 1867: C --> A
Char. 1885: T --> C
Char. 1924: G --> A
Char. 1942: A --> G
Char. 1984: C --> T
Char. 2062: A --> G
Node 1049 :
Char. 6361: T --> C
Node 1050 :
Char. 6440: A --> T
Char. 6441: T --> A
Node 1051 :
Char. 1729: A --> C
Char. 1747: A --> G
Char. 1783: T --> C
Char. 1948: T --> C
Char. 1978: C --> A
Char. 2002: A --> G
Char. 2005: T --> C
Char. 5866: T --> C
Char. 5968: T --> C
Char. 6037: T --> C
Node 1052 :
Insemination (514): (1)_present --> (0)_absent
Char. 1909: T --> C
Char. 3564: T --> C
Char. 6326: T --> C
Node 1053 :
Char. 1621: C --> T
Char. 2038: C --> T
Node 1054 :
Number_of_cusps_of_anterior_maxillary_teeth
(193): (1)_five_or_more_cusps --> (0)_up_to_three
Number_of_gill_rakers_on_first_hypobranchial_and
ceratobranchial (295): (1)_ten_or_fewer -->
(0)_11_or_more
Node 1055 :
Form_of_anterior_expansion_of_basihyal
(260):
(0)_slender_with_anterior_margin_less_than_two-
thirds_of_its_length -->
(1)_expanded_anterior_margin_with_two-
thirds_or_more_of_its_length
Char. 4018: G --> T
Char. 4591: G --> A
Char. 4637: C --> A
Char. 4639: A --> T
Node 1056 :
Foramen_in_posterior_region_of_metapterygoid
(227):
(1)_present_encircled_by_metapterygoid_or_borde
red_by_cartilage -->
(0)_an_incomplete_arch_bordered_posteriorly_by_
hyomandibula
Anteromedial_process_of_third_epibranchial
(280):
(0)_reaching_to_longitudinal_axis_of_third_pharyn
gobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_ph
aryngobranchial
Pectoral-
fin_bony_hooks_in_adult_males_of_species_bearin
g_hooks_on_fins (443): (0)_absent --> (1)_present
Dorsal-
fin_bony_hooks_in_adult_males_of_species_bearin
g_hooks_on_fins (444): (0)_absent --> (1)_present
Longitudinal_position_of_insertion_of_mandibular
_accessory_tendon (474):
(1)_on_vertical_through_Meckelian_cartilage_mid
dle_or_anterior_half -->
(0)_on_vertical_through_Meckelian_cartilage_post
erior_half
Char. 3451: G --> T
Node 1057 :
Articulation_between_second_and_third_infraorbit
als (86): (1)_anteroventrally_angled --> (0)_vertical
Char. 1708: T --> A
Char. 1765: C --> T
Char. 1789: T --> C
Char. 1810: G --> A
Char. 1834: T --> C
Char. 1840: T --> C
Char. 1855: T --> C
Char. 1879: A --> T
Char. 1885: T --> C
Char. 2029: T --> C
Char. 2041: T --> C
Char. 2056: A --> C
Char. 2062: T --> A
Char. 2080: A --> C
Char. 2632: A --> G
Char. 2641: G --> A
Char. 2932: C --> T
Char. 3031: T --> C
Char. 3076: C --> T
Char. 3289: C --> A
Char. 4045: A --> T
Char. 5271: T --> A
Char. 5688: T --> C
Char. 6254: A --> C
Node 1058 :
Rhinosphenoid (34): (1)_present --> (0)_absent
Length_of_sphenotic_spine (47):
(0)_not_reaching_to_anterodorsal_angle_of_hyoma
ndibula -->
(1)_reaching_to_horizontal_through_dorsal_margin
_of_hyomandibula
Lateral_coverage_of_dilatator_fossa_by_infraorbita
l_series (94):
(1)_leaving_a_conspicuous_naked_area_in_anterio
r_region_of_fossa -->
(0)_almost_complete_at_least_in_its_ventral_bord
er
Tubules_for_passage_of_blood_vessels_on_lamella
r_portion_of_maxilla (142):
(0)_a_single_tubule_parallel_to_dorsal_margin_of
_maxilla -->
(1)_with_anterior_branch_running_parallel_to_ante
rior_margin_of_maxilla
Position_of_ventral_end_of_posttemporal
(336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioc
cipital -->
(1)_posterior_to_lateral_margin_of_epioccipital
Dorsal-
fin_rays_articulating_with_first_dorsal_pterygioph
ore (404): (0)_two --> (1)_three_or_four
Uroneurals (427): (0)_absent_or_just_one_pair
--> (1)_two_pairs
Longitudinal_position_of_insertion_of_mandibular
_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_post
erior_half -->
(1)_on_vertical_through_Meckelian_cartilage_mid
dle_or_anterior_half
Char. 631: T --> C
Char. 757: A --> C
Char. 772: T --> C
Char. 1036: C --> T
Char. 1076: C --> T
Char. 1222: C --> T
Char. 1363: T --> C
Char. 1426: C --> A
Char. 1432: T --> C
Char. 1435: T --> C
Char. 1594: A --> T
Char. 1606: C --> T
Char. 1798: A --> G
Char. 1909: T --> C
Char. 2023: T --> C
Char. 2671: T --> C
Char. 3142: G --> A
Char. 3169: C --> A
Char. 3292: C --> T
Char. 3295: C --> T
Char. 3364: C --> T
Char. 3370: G --> A
Char. 4291: G --> A
Char. 4681: C --> T
Char. 4705: C --> T
Char. 4746: C --> T
Char. 4845: T --> C
Char. 4893: C --> T
Char. 4929: C --> T
Char. 5055: A --> G
Char. 5346: C --> T
Char. 5694: T --> C
Char. 5913: T --> C
Char. 5945: A --> G
Char. 6016: T --> C
Char. 6063: T --> C

Char. 6168: T --> C
Char. 6322: C --> T
Char. 6324: C --> T
Char. 6342: G --> A
Node 1059 :
Anterior_tip_of_pelvic_bone (377):
(1)_posterior_to_third_rib -->
(0)_anterior_to_third_rib
Bony_hooks_on_last_pelvic-fin_ray_of_adult_males (447):
(1)_as_numerous_as_in_other_rays -->
(0)_absent_or_reduced_in_number
Char. 2470: A --> G
Char. 5097: G --> T
Char. 5909: T --> C
Char. 6332: A --> C
Char. 6492: C --> T
Node 1060 :
Anterior_tip_of_pelvic_bone (377):
(1)_posterior_to_third_rib -->
(0)_anterior_to_third_rib
Char. 1684: T --> C
Char. 1795: A --> G
Char. 1843: T --> A
Char. 1867: A --> G
Char. 1876: G --> A
Char. 1939: G --> A
Char. 1969: T --> C
Node 1061 :
Char. 565: C --> T
Char. 752: C --> T
Char. 814: T --> C
Char. 850: A --> T
Char. 862: T --> C
Char. 1291: T --> A
Char. 1306: A --> C
Char. 1312: C --> T
Char. 1429: C --> T
Char. 1618: C --> T
Char. 1621: C --> T
Char. 1681: A --> G
Char. 1735: A --> G
Char. 1780: A --> T
Char. 1807: T --> C
Char. 1861: A --> T
Char. 1879: A --> G
Char. 1921: G --> A
Char. 2050: A --> C
Char. 2062: A --> T
Char. 2063: C --> T
Char. 2083: G --> A
Char. 4627: T --> C
Node 1062 :
Char. 5091: C --> T
Char. 5586: C --> T
Node 1063 :
Char. 1576: A --> G
Char. 1609: T --> C
Char. 1744: C --> A
Char. 1780: A --> C
Char. 1796: C --> T
Char. 1798: G --> A
Char. 1934: T --> C
Char. 2011: T --> C
Char. 2083: G --> A
Char. 2749: T --> G
Char. 6041: G --> A
Char. 6362: T --> A
Char. 6440: A --> G
Node 1064 :
Char. 2237: G --> A
Char. 2362: T --> C
Char. 3871: T --> A
Char. 5157: C --> T
Char. 5352: G --> A
Char. 5490: A --> T
Char. 5724: C --> T
Char. 6209: C --> T
Char. 6294: T --> C
Char. 6321: A --> G
Char. 6362: T --> C
Node 1065 :
Char. 1517: C --> T
Char. 1546: T --> A
Char. 1753: T --> C
Char. 1769: C --> T
Char. 1795: A --> C
Char. 1865: C --> T
Char. 1876: G --> A
Char. 1957: C --> T
Char. 2053: A --> C
Char. 2062: A --> T
Char. 2071: C --> A
Char. 2084: C --> T
Char. 2671: A --> T
Char. 2845: A --> G
Node 1066 :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wing -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Branching_of_laterosensory_canals_of_fourth_or_fifth_infraorbitals (97): (0)_absent --> (1)_present
Inner_row_of_minute_dentary_teeth (203):
(0)_absent_or_restricted_to_lateral_region_of_dentary -->
(1)_present_from_anterior_region_of_dentary
Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two
Dorsal-fin_rays_articulating_with_first_dorsal_pterygiophore (404): (0)_two --> (1)_three_or_four
Uroneurals (427): (0)_absent_or_just_one_pair --> (1)_two_pairs
Node 1067 :
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Extent_of_expansion_of_first_infraorbital_lateral_tro_maxilla (83):
(0)_covering_less_than_one_half_length_of_maxilla --> (1)_covering_most_of_maxilla
Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94):
(1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa -->
(0)_almost_complete_at_least_in_its_ventral_border
Mamilliform_teeth_outside_mouth (167):
(0)_absent --> (1)_present
Extent_of_implantation_of_teeth_along_maxilla (191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella
Number_of_cusps_of_anterior_maxillary_teeth (192): (1)_three_or_more_cusps -->
(0)_conical_a_single_cusp
Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Number_of_branched_anal-fin_rays (420):
(1)_25_or_more --> (0)_24_or_fewer
Char. 525: T --> C
Char. 598: C --> T
Char. 692: C --> T
Char. 736: A --> C
Char. 775: A --> T
Char. 880: T --> C
Char. 895: T --> A
Char. 967: C --> A
Char. 1094: C --> A
Char. 1109: T --> A
Char. 1162: C --> A
Char. 1174: T --> C
Char. 1294: A --> C
Char. 1336: A --> C
Char. 1339: C --> T
Char. 1355: T --> C
Char. 1367: A --> G
Char. 1373: G --> A
Char. 1385: A --> T
Char. 1457: C --> T
Char. 1466: G --> A
Char. 1467: C --> T
Char. 1483: A --> T
Char. 1502: C --> A
Char. 1534: A --> G
Char. 1537: T --> C
Char. 1555: C --> T
Char. 1573: A --> T
Char. 1595: T --> G
Char. 1606: C --> T
Char. 1636: T --> C
Char. 1648: C --> T
Char. 1699: C --> T
Char. 1729: A --> T
Char. 1732: C --> T
Char. 1819: T --> C
Char. 1891: C --> T
Char. 1933: T --> C
Char. 1934: T --> C
Char. 1990: A --> C
Char. 2027: A --> G
Char. 2054: C --> T
Char. 2147: C --> T
Char. 2389: T --> G
Char. 2404: T --> C
Char. 2441: T --> G
Char. 2461: C --> A
Char. 2476: A --> G
Char. 2515: T --> C
Char. 2660: T --> C
Char. 2746: T --> C
Char. 2776: G --> A
Char. 3484: G --> A
Char. 3493: C --> T
Char. 3508: A --> T
Char. 3529: C --> A
Char. 3560: C --> T
Char. 3568: A --> T
Char. 3598: G --> A
Char. 3694: C --> T
Char. 3754: G --> A
Char. 3895: C --> T
Char. 3910: G --> T
Char. 3967: T --> C
Char. 3994: C --> T
Char. 4189: A --> T
Char. 4192: C --> T
Char. 4246: G --> A
Char. 4303: A --> T
Char. 4312: T --> C
Char. 4444: C --> T
Char. 4507: T --> C
Char. 4597: A --> G
Char. 4642: G --> C
Char. 4702: G --> A
Char. 4720: C --> T
Char. 4806: C --> A
Char. 4985: A --> C
Char. 4986: C --> A
Char. 5034: A --> G
Char. 5037: G --> A
Char. 5079: C --> T
Char. 5277: C --> T
Char. 5355: G --> T
Char. 5424: C --> T
Char. 5436: T --> A
Char. 5454: T --> A
Char. 5484: A --> G
Char. 5503: G --> A
Char. 5526: C --> T
Char. 5538: G --> A
Char. 5682: C --> T
Node 1068 :
Char. 6163: A --> G
Char. 6206: T --> C
Char. 6321: A --> G
Char. 6347: T --> C

Char. 6363: A --> C
Char. 6413: C --> T
Char. 6514: T --> A
Node 1069 :
Char. 2251: C --> T
Char. 2353: C --> A
Char. 2644: G --> A
Char. 2776: G --> C
Char. 2791: T --> C
Char. 3466: C --> T
Char. 3947: C --> T
Char. 4067: T --> C
Char. 4114: C --> T
Char. 4183: G --> A
Char. 4450: G --> T
Char. 4591: T --> C
Char. 4702: G --> T
Char. 5198: T --> A
Char. 5272: G --> A
Char. 5304: T --> C
Char. 5352: A --> G
Char. 5395: C --> G
Char. 5424: C --> A
Char. 5519: A --> G
Char. 5529: C --> T
Char. 5607: A --> C
Char. 5691: G --> A
Char. 6190: G --> A
Char. 6203: C --> A
Char. 6316: A --> T
Char. 6382: C --> A
Char. 6432: A --> C
Char. 6433: T --> C
Char. 6443: A --> T
Node 1070 :
Number_of_maxillary_teeth (190):
(1)_four_or_more --> (0)_up_to_three
Ventral_margin_of_anterior_ceratohyal (263):
(0)_smooth_and_without_notches -->
(1)_with_notches_for_articulation_of_branchiostegal_rays
Total_number_of_vertebrae (326):
(0)_40_or_fewer --> (1)_41_or_more
Neural_postzygapophyses_of_fourth_vertebra (328):
(0)_reduced_not_or_slightly_projected_dorsal_to_fifth_vertebra -->
(1)_closely_articulating_with_prezygapophysis_of_fifth_vertebra
Char. 697: C --> T
Char. 712: C --> A
Char. 814: CT --> T
Char. 844: A --> T
Char. 907: A --> C
Char. 934: C --> T
Char. 973: A --> T
Char. 1101: C --> G
Char. 1231: A --> C
Char. 1243: A --> T
Char. 1285: T --> A
Char. 1385: A --> T
Char. 1435: C --> T
Char. 1450: C --> A
Char. 2167: T --> G
Char. 2275: T --> A
Char. 2408: C --> T
Char. 2467: C --> T
Char. 2484: C --> T
Char. 2518: A --> C
Char. 2530: T --> C
Char. 2671: T --> C
Char. 2788: T --> C
Char. 2815: G --> A
Char. 3465: A --> G
Char. 3481: T --> C
Char. 3490: T --> C
Char. 3520: A --> G
Char. 3562: A --> T
Char. 3619: G --> C
Char. 3676: T --> C
Char. 3767: G --> A
Char. 3814: A --> G
Char. 3844: A --> G
Char. 3997: A --> C
Char. 4255: A --> G
Char. 4321: T --> C
Char. 4351: A --> G
Char. 4363: A --> C
Char. 4381: T --> A
Char. 4465: G --> A
Char. 4468: T --> C
Char. 4477: G --> C
Char. 4521: G --> C
Char. 4581: G --> A
Char. 4633: T --> C
Char. 4636: A --> C
Char. 4657: A --> G
Char. 4690: C --> T
Char. 4708: T --> C
Char. 4770: C --> T
Char. 4841: G --> C
Char. 5052: A --> G
Char. 5055: A --> G
Char. 5091: C --> T
Char. 5100: A --> G
Char. 5121: C --> G
Char. 5208: A --> G
Char. 5211: G --> C
Char. 5232: T --> C
Char. 5439: A --> C
Char. 5442: C --> T
Char. 5449: A --> C
Char. 5481: G --> A
Char. 5499: A --> G
Char. 5510: A --> T
Char. 5543: A --> G
Char. 5565: A --> G
Char. 5616: A --> C
Char. 5694: A --> C
Char. 6417: G --> A
Char. 6444: A --> T
Char. 6445: A --> T
Char. 6493: A --> T
Node 1071 :
Form_of_mesethmoid_spine (3):
(0)_long_extending_between_premaxillae -->
(1)_relatively_short_with_premaxillae_articulating_anteriorly
Posterior_portion_of_mesethmoid_spine (5):
(0)_relatively_slender -->
(1)_as_broad_as_lateral_wings_of_mesethmoid
Posterior_extension_of_vomer (18):
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection -->
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection
Frontal_and_pterotic_laterosensory_canals (118):
(0)_without_a_discernible_angle_between_them -->
(1)_with_an_angle_on_pore_receiving_infraorbital_canal
Ontogenetic_lengthening_of_maxilla (146):
(0)_absent --> (1)_present
Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch --> (1)_with_cusps_aligned_in_straight_series
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Ontogenetic_acquisition_of_conical_teeth_on_maxilla (195): (0)_absent --> (1)_present
Orientation_of_anterior_dentary_teeth (197):
(0)_oriented_dorsally_or_anterodorsally -->
(1)_oriented_anteriorly_almost_parallel_to_main_axis_of_dentary
Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
Node 1072 :
Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epio-

cipital -->
(1)_posterior_to_lateral_margin_of_epio-
Main_axis_of_supraneurals (396):
(0)_not_bifurcated -->
(1)_at_least_some_of_them_distally_bifurcated
Anterior_rays_of_dorsal_fin_of_adult_males (406): (0)_not_elongate -->
(1)_elongate_and_reaching_posteriorly_close_to_a_dipose_fin
Char. 1546: T --> C
Char. 1615: A --> G
Char. 1786: T --> C
Char. 1795: T --> A
Char. 1861: A --> T
Char. 2005: T --> C
Char. 2006: T --> C
Char. 2024: T --> C
Char. 2056: C --> A
Char. 2068: A --> T
Char. 2101: T --> C
Char. 6378: A --> G
Char. 6441: T --> A
Char. 6508: A --> T
Node 1073 :
Char. 1540: A --> G
Char. 1585: C --> T
Char. 1675: C --> T
Char. 1729: A --> T
Char. 1801: A --> T
Char. 1846: C --> T
Char. 1986: T --> C
Char. 2044: T --> A
Node 1074 :
Char. 1519: A --> G
Char. 1555: C --> T
Char. 1579: A --> G
Char. 1765: C --> T
Char. 1891: C --> T
Char. 1897: C --> T
Char. 2047: T --> C
Char. 2053: A --> C
Char. 2071: T --> C
Char. 2134: A --> G
Char. 2159: C --> T
Node 1075 :
Posterior_extension_of_vomer (18):
(0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection -->
(1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection
Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present
Ventral_extent_of_third_infraorbital (88):
(1)_not_reaching_horizontal_arm_of_preopercle_at_least_anteriorly -->
(0)_reaching_horizontal_arm_of_preopercle
Char. 577: C --> T
Char. 583: C --> T
Char. 901: C --> T
Char. 1085: G --> A
Char. 1258: A --> C
Char. 1306: A --> C
Char. 1495: C --> T
Char. 1822: A --> G
Char. 1913: C --> T
Char. 1930: A --> T
Char. 2062: C --> A
Char. 2236: C --> T
Char. 2323: C --> T
Char. 3619: G --> T
Char. 3766: C --> T
Char. 3769: T --> A
Char. 3775: A --> G
Char. 3802: C --> A
Char. 4189: A --> G
Char. 4253: C --> T
Char. 4255: A --> G
Char. 4579: C --> T
Char. 4582: A --> G
Char. 4618: C --> T
Char. 4627: C --> T
Char. 4666: C --> T

Char. 5073: G --> A
Char. 5235: C --> T
Char. 5322: C --> T
Char. 6048: T --> C
Char. 6358: C --> T
Node 1076 :
Ventral_projection_of_mesethmoid_spine_forming_a_keeel_between_premaxillae (2): (0)_absent --> (1)_present
Anterior_convergence_of_ventral_diverging_lamellae_with_nasal_septum_of_mesethmoid (8): (1)_confluent_at_posterior_end_of_nasal_septum --> (0)_absent_or_confluent_near_anterior_end_of_nasal_septum
Anterior_margin_of_lamellar_region_of_vomer (16): (0)_narrower_than_anterior_region --> (1)_as_wide_as_posterior_margin_of_anterior_region
Ligament_from_middle_length_of_ascending_maxillary_process_to_premaxilla (135): (0)_absent --> (1)_present
Ligament_from_maxilla_to_distal_tip_of_premaxillary_alveolar_arm (137): (0)_weak_premaxilla_moderately_bifurcated_in_its_attachment_point --> (1)_strong_premaxilla_deeply_bifurcated_in_its_attachment_point
Flexion_on_maxilla_posterior_to_alveolar_premaxillary_arm (138): (0)_absent_or_not_pronounced_maxilla_rather_straight --> (1)_pronounced
Form_and_attachment_of_primordial_ligament (147): (0)_flat_and_attached_to_ascending_process_of_maxilla --> (1)_rotund_and_attached_to_distal_half_of_maxillary_lamella
Form_of_posterodorsal_portion_of_anguloarticular (163): (1)_anterodorsally_angled --> (0)_vertical
Number_of_rows_of_premaxillary_teeth (171): (0)_one_or_two --> (1)_three
Posterior_development_of_mesopterygoid (222): (0)_overlapping_metapterygoid --> (1)_separate_from_metapterygoid
Longitudinal_ridge_in_quadrate_bordering_adductor_or_mandibulae_muscle_ventrally_and_to_some_degree_laterally (235): (0)_absent --> (1)_present
Teeth_on_third_pharyngobranchial (282): (0)_present --> (1)_absent
Relative_length_of_dentigerous_regions_of_fourth_and_fifth_epibranchials (286): (1)_that_of_fourth_epibranchial_longer --> (0)_about_same_length_or_that_of_fifth_epibranchial_longer
Node 1077 :
Rhinosphenoid (34): (1)_present --> (0)_absent
Position_of_opening_on_neurocranium_communicating_with_sixth_infraorbital_laterosensory_canal (102): (0)_lateral_to_or_slightly_anterior_to_vertical_semicircular_canal --> (1)_distinctly_anterior_to_vertical_semicircular_canal
Epiphyseal_branch_of_supraorbital_canal (111): (1)_absent --> (0)_present
Position_of_lateralmost_tooth_from_outer_premaxillary_row (176): (1)_aligned_with_remaining_teeth_of_that_row --> (0)_anteriorly_displaced_relative_to_remaining_teeth_of_that_row

Haemal_prezygapophysis_on_anterior_caudalvertebrae (333): (0)_present --> (1)_completely_absent
Articulation_between_ventral_process_of_mesocoracoid_and_dorsal_margin_of_scapula (356): (0)_absent_or_small --> (1)_present_and_broad
Number_of_supraneurals (393): (1)_six_or_more --> (0)_five_or_fewer
Anterior_extension_of_adductor_arcus_palatini (481): (1)_covering_only_half_of_dorsal_surface_of_mesopterygoid --> (0)_covering_most_of_dorsal_surface_of_mesopterygoid
Node 1078 :
Char. 532: A --> C
Char. 565: C --> T
Char. 571: A --> T
Char. 586: C --> AT
Char. 588: T --> C
Char. 616: C --> A
Char. 620: G --> A
Char. 622: A --> C
Char. 640: C --> A
Char. 664: C --> T
Char. 674: T --> C
Char. 676: C --> A
Char. 697: C --> T
Char. 703: C --> T
Char. 736: A --> T
Char. 740: G --> A
Char. 743: C --> T
Char. 745: T --> A
Char. 796: A --> C
Char. 805: C --> T
Char. 832: C --> T
Char. 835: C --> A
Char. 850: A --> T
Char. 892: C --> T
Char. 896: G --> A
Char. 931: C --> T
Char. 940: T --> A
Char. 951: C --> T
Char. 1000: C --> A
Char. 1031: G --> A
Char. 1032: C --> T
Char. 1066: C --> T
Char. 1100: A --> T
Char. 1108: A --> T
Char. 1109: A --> T
Char. 1172: C --> T
Char. 1273: A --> T
Char. 1276: C --> T
Char. 1375: C --> T
Char. 1385: C --> T
Char. 1414: A --> T
Char. 1426: C --> A
Char. 1428: T --> A
Char. 1459: T --> G
Char. 1469: C --> T
Char. 1477: C --> T
Char. 3569: A --> G
Char. 3574: A --> T
Char. 3742: C --> T
Char. 3938: C --> A
Char. 3949: G --> A
Char. 4048: T --> C
Char. 4108: G --> T
Char. 4171: C --> T
Char. 4441: C --> T
Char. 4474: A --> T
Char. 4477: G --> A
Char. 4526: C --> T
Char. 4576: A --> C
Char. 4579: C --> A
Char. 6205: C --> T
Char. 6206: C --> T
Char. 6251: A --> T
Char. 6252: A --> T
Char. 6322: C --> T
Char. 6324: C --> T
Char. 6368: C --> T

Char. 6436: G --> A
Char. 6447: C --> T
Node 1079 :
Char. 553: C --> T
Char. 562: C --> T
Char. 592: C --> T
Char. 643: C --> T
Char. 652: C --> T
Char. 667: C --> T
Char. 730: C --> T
Char. 778: C --> T
Char. 838: G --> A
Char. 853: T --> C
Char. 886: C --> A
Char. 901: T --> C
Char. 922: C --> T
Char. 980: C --> T
Char. 1014: C --> T
Char. 1015: C --> T
Char. 1063: C --> T
Char. 1075: T --> A
Char. 1129: C --> A
Char. 1165: C --> T
Char. 1237: C --> A
Char. 1258: A --> T
Char. 1303: C --> T
Char. 1333: C --> T
Char. 1348: C --> T
Char. 1369: A --> T
Char. 1447: C --> T
Char. 6299: G --> A
Char. 6347: T --> A
Char. 6363: A --> T
Char. 6462: G --> A
Char. 6467: C --> T
Node 1080 :
Char. 550: C --> T
Char. 622: T --> A
Char. 854: G --> A
Char. 856: A --> T
Char. 898: T --> C
Char. 925: T --> C
Char. 943: A --> T
Char. 982: C --> A
Char. 1076: C --> T
Char. 1118: C --> T
Char. 1177: T --> A
Char. 1229: C --> T
Char. 1429: C --> T
Char. 6118: T --> C
Char. 6247: C --> T
Char. 6326: A --> T
Node 1081 :
Posterior_extension_of_vomer (18): (0)_reaching_posterior_half_of_ethmoid_cartilage_posterior_projection --> (1)_limited_to_anterior_half_of_ethmoid_cartilage_posterior_projection
Articulation_of_medial_region_of_lateral_ethmoid_dorsal_margin (25): (0)_mostly_with_ventral_diverging_lamellae_of_mesethmoid --> (1)_extensive_articulation_with_mesethmoid_dorsal_lamella
Frontal_fontanel (28): (0)_present --> (1)_totally_occluded_by_frontals
Longitudinal_ridge_on_dorsal_surface_of_frontal (30): (0)_absent --> (1)_present
Concavity_on_posterior_margin_of_orbitosphenoid (42): (0)_absent_or_reduced --> (1)_very_pronounced_reaching_articulation_with_pterosphenoid
Parietal_fontanel_in_adult_specimens (59): (0)_present --> (1)_absent
Ventral_projection_of_lagenar_capsule (70): (0)_not_reaching_to_plane_through_parasphenoid_dorsal_margin --> (1)_ventral_to_plane_through_parasphenoid_dorsal_margin

Ventral_longitudinal_lamellae_of_basioccipital (74): (1)_reaching_posterior_border_of_cranium --> (0)_falling_short_of_posterior_border_of_basioccipital

Supraorbital (75): (0)_present --> (1)_absent

Parietal_branch_of_laterosensory_canal (116): (0)_present_reaching_parietal_bone_or_not --> (1)_completely_absent

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal --> (1)_not_reaching_parietal_or_absent

Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one-third_of_length_of_nasal --> (1)_reaching_just_anterior_end_of_nasal

Form_of_posterodorsal_portion_of_anguloarticular (163): (1)_anterodorsally_angled --> (0)_vertical

Number_of_teeth_on_inner_premaxillary_row (182): (0)_five_or_fewer --> (1)_six_or_more

Number_of_teeth_on_inner_premaxillary_row (183): (0)_six_or_fewer --> (1)_seven_or_more

Number_of_teeth_on_inner_premaxillary_row (184): (0)_seven_or_fewer --> (1)_eight_or_more

Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer

Form_of_anterior_portion_of_ectopterygoid (213): (0)_broad_and_broadly_articulating_with_palatine --> (1)_slender_and_articulating_only_to_lateral_margin_of_palatine

Form_of_quadrate (231): (0)_with_ventral_portion_longer_than_anterodorsal_region --> (1)_with_anterodorsal_portion_equal_or_longer_than_ventral_region

Profile_of_posterodorsal_margin_of_opercle (251): (1)_concave --> (0)_straight_or_convex

Anterior_development_of_basihyal (258): (1)_broadly_extending_beyond_anterior_margin_of_hypohyals --> (0)_slightly_surpassing_anterior_margin_of_hypohyals

Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33

Ventral_expansion_of_lateral_lamella_of_cleithrum (345): (0)_covering_part_of_scapular_foramen_from_lateral_view --> (1)_following_dorsal_margin_of_scapular_foramen_from_lateral_view

Development_of_medial_lamella_of_coracoid (346): (0)_not_expanded --> (1)_expanded_as_a_keel

Fusion_of_coracoids (347): (0)_absent --> (1)_present

First_postcleithrum (361): (0)_present --> (1)_absent

Dorsal_myorhabdoi (386): (0)_absent --> (1)_present

Relative_length_of_anterior_dorsal-fin_rays (410): (1)_reaching_tip_of_posterior_rays_when_adpressed --> (0)_not_reaching_tip_of_posterior_rays_when_adpressed

Proximal_and_medial_radials_of_anal_fins (413): (0)_fused_on_anterior_five_pterygiophores --> (2)_medial_radials_absent_or_completely_fused_with_proximal_ones

Char. 712: C --> A

Char. 863: A --> T

Char. 864: T --> C

Char. 886: G --> C

Char. 907: A --> C

Char. 1059: T --> A

Char. 1109: T --> A

Char. 1198: C --> A

Char. 1286: A --> G

Char. 1291: T --> A

Char. 1298: G --> A

Char. 1330: C --> A

Char. 1345: C --> T

Char. 1373: G --> A

Char. 1385: A --> C

Char. 2410: G --> T

Char. 2441: T --> G

Char. 2495: C --> T

Char. 2497: G --> A

Char. 2503: T --> C

Char. 2572: T --> C

Char. 2602: T --> A

Char. 2611: C --> T

Char. 2659: A --> G

Char. 2665: T --> C

Char. 2737: T --> C

Char. 2761: C --> A

Char. 2785: A --> T

Char. 2797: G --> A

Char. 2824: A --> G

Char. 2881: T --> A

Char. 6163: A --> G

Char. 6213: T --> C

Char. 6308: G --> A

Char. 6309: T --> A

Char. 6413: A --> T

Char. 6424: C --> T

Char. 6426: T --> A

Node 1082 :

Ventral_diverging_lamellae_of_mesethmoid (7): (1)_present --> (0)_absent

Form_of_anterior_process_of_lateral_ethmoid (20): (1)_slender_and_separated_from_vomer --> (0)_broad_in_ventral_view_contacting_vomer_in_its_entire_length

Rhinospheonid (34): (1)_present --> (0)_absent

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40): (1)_distant_from_lateral_ethmoids --> (0)_contacting_or_almost_contacting_lateral_ethmoids

Fourth_infraorbital (90): (0)_present --> (1)_absent

Fourth_infraorbital (91): (0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals --> (1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series

Laterosensory_canal_of_first_infraorbital (96): (1)_absent_or_does_not_project_dorsally --> (0)_projects_dorsally_from_main_body_of_first_infraorbital

Alignment_of_ascending_process_of_premaxilla (130): (0)_aligned_with_medial_margin_of_nasal --> (1)_medially_shifted_and_separated_from_nasal

Teeth_on_third_pharyngobranchial (282): (0)_present --> (1)_absent

Shape_of_dentigerous_plate_of_fifth_ceratobranchial (287): (1)_elongated_without_posterior_notch --> (0)_rounded_with_posterior_notch

Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two

Ascending_process_of_neural_pedicle_of_third_vertebra (316): (1)_present --> (0)_absent

Neural_prezygapophyses_of_fifth_vertebra (329): (0)_not_reaching_fourth_vertebra --> (1)_reaching_fourth_vertebra

Total_number_of_transitional_vertebrae (330): (0)_four_or_more --> (1)_three_or_fewer

Fusion_between_posttemporal_and_supracleithrum (338): (0)_absent --> (1)_present

Supraneural_anterior_to_neural_spine_of_fourth_vertebra (389): (1)_present_and_vertically_elongate --> (0)_absent_or_small

Number_of_unbranched_anal-fin_rays (417): (1)_four_or_more --> (0)_three_or_fewer

Uroneurals (427): (1)_two_pairs --> (0)_absent_or_just_one_pair

Anterior_ventral_procurrent_caudal-fin_rays (436): (1)_fused_in_laminar_medial_bones --> (0)_paired_only_distally_fused

Scales_covering_supraocci,cipital_spine (463): (0)_absent --> (1)_present_and_completely_covering_supraoccipital_spine

Char. 836: C --> T

Char. 838: C --> G

Char. 865: A --> T

Char. 950: G --> A

Char. 970: A --> T

Char. 985: C --> T

Char. 1105: A --> T

Char. 1171: A --> C

Char. 1243: A --> T

Char. 1351: C --> A

Char. 1357: C --> T

Char. 1358: C --> T

Char. 1370: C --> T

Char. 1384: A --> C

Char. 2317: A --> G

Char. 2591: C --> T

Char. 2680: T --> C

Char. 4884: G --> A

Char. 5032: C --> T

Char. 5055: A --> G

Char. 5100: A --> G

Char. 5235: C --> T

Char. 5499: A --> G

Char. 5610: G --> A

Char. 5688: C --> T

Char. 6206: T --> C

Char. 6328: A --> T

Char. 6358: C --> T

Char. 6562: C --> T

Char. 6565: C --> T

Node 1083 :

Char. 547: A --> G

Char. 577: C --> T

Char. 613: T --> C

Char. 631: C --> T

Char. 649: C --> A

Char. 655: C --> T

Char. 667: C --> T

Char. 706: C --> T

Char. 710: C --> T

Char. 712: C --> A

Char. 746: C --> T

Char. 769: A --> T

Char. 781: C --> T

Char. 880: T --> C

Char. 886: G --> A

Char. 898: A --> T

Char. 901: C --> T

Char. 937: C --> T

Char. 940: C --> A

Char. 949: T --> C

Char. 970: C --> A

Char. 976: C --> T

Char. 985: C --> T

Char. 988: C --> T

Char. 1006: C --> T

Char. 1087: A --> T

Char. 1102: C --> G

Char. 1136: C --> T

Char. 1165: C --> T

Char. 1172: C --> T

Char. 1201: A --> G

Char. 1204: A --> G

Char. 1237: C --> A

Char. 1300: C --> T

Char. 1307: C --> T

Char. 1309: A --> G

Char. 1325: C --> A

Char. 1333: A --> T

Char. 1355: T --> C

Char. 1366: A --> G

Char. 1393: A --> G

Char. 1408: A --> C
Char. 1447: C --> T
Char. 1456: C --> A
Char. 1469: C --> T
Char. 1483: T --> C
Char. 1490: C --> T
Char. 1495: C --> G
Char. 1510: C --> T
Char. 3559: A --> G
Char. 3637: C --> T
Char. 3706: A --> T
Char. 3799: A --> C
Char. 3877: C --> T
Char. 3973: C --> A
Char. 4098: A --> G
Char. 4115: T --> G
Char. 4177: C --> T
Char. 4225: T --> G
Char. 4270: T --> C
Char. 4294: C --> T
Char. 4396: G --> A
Char. 4511: A --> G
Char. 4591: T --> C
Char. 4639: C --> T
Char. 4806: C --> T
Char. 4871: C --> T
Char. 4896: C --> T
Char. 4941: T --> C
Char. 4994: G --> C
Char. 5058: T --> C
Char. 5082: C --> T
Char. 5151: C --> T
Char. 5241: T --> C
Char. 5307: C --> A
Char. 5347: G --> A
Char. 5410: A --> G
Char. 5505: G --> A
Char. 5540: G --> A
Char. 5623: C --> T
Char. 5667: T --> G
Char. 5733: G --> A
Char. 5740: C --> A
Char. 6209: C --> T
Char. 6245: A --> G
Char. 6345: A --> G
Char. 6374: A --> G
Char. 6408: G --> T
Char. 6417: G --> A
Char. 6453: A --> T
Char. 6516: G --> A

Node 1084 :

Char. 529: A --> C
Char. 580: C --> A
Char. 588: C --> T
Char. 611: T --> C
Char. 620: A --> C
Char. 752: C --> T
Char. 766: C --> T
Char. 841: C --> A
Char. 892: C --> T
Char. 972: T --> C
Char. 1063: C --> A
Char. 1107: C --> T
Char. 1129: C --> A
Char. 1195: A --> G
Char. 1285: T --> C
Char. 1286: G --> A
Char. 1295: C --> T
Char. 1303: C --> A
Char. 1304: C --> A
Char. 1329: G --> C
Char. 1342: A --> G
Char. 1367: A --> G
Char. 2209: T --> A
Char. 2221: T --> C
Char. 2222: G --> A
Char. 2224: T --> C
Char. 2225: G --> A
Char. 2287: T --> C
Char. 2395: T --> C
Char. 2416: G --> A
Char. 2425: G --> A
Char. 2476: A --> G

Char. 2484: C --> T
Char. 2520: A --> G
Char. 2539: T --> G
Char. 2665: T --> C
Char. 2765: C --> T
Char. 2782: T --> A
Char. 2833: A --> G
Char. 2876: C --> A
Char. 2878: T --> C
Char. 2894: T --> G
Char. 3517: A --> T
Char. 3520: A --> C
Char. 3521: G --> C
Char. 3535: T --> C
Char. 3550: T --> C
Char. 3565: A --> G
Char. 3620: T --> C
Char. 3625: T --> C
Char. 3661: C --> A
Char. 3736: G --> C
Char. 3751: A --> G
Char. 3765: C --> A
Char. 3787: A --> G
Char. 3859: T --> C
Char. 3907: A --> G
Char. 3970: T --> C
Char. 3985: C --> T
Char. 3997: A --> G
Char. 4085: G --> T
Char. 4090: A --> G
Char. 4132: T --> C
Char. 4138: A --> G
Char. 4144: T --> C
Char. 4282: T --> C
Char. 4297: C --> T
Char. 4331: C --> A
Char. 4338: A --> G
Char. 4341: A --> G
Char. 4363: A --> G
Char. 4403: A --> C
Char. 4426: G --> A
Char. 4435: G --> A
Char. 4461: G --> A
Char. 4468: T --> C
Char. 4469: G --> A
Char. 4522: A --> G
Char. 4564: C --> T
Char. 4573: C --> T
Char. 4576: A --> G
Char. 4647: C --> G
Char. 4651: A --> T
Char. 4708: T --> C
Char. 4746: C --> T
Char. 4752: T --> C
Char. 4764: A --> C
Char. 4800: T --> C
Char. 4841: G --> A
Char. 4870: C --> A
Char. 4872: T --> C
Char. 4897: A --> G
Char. 4902: T --> C
Char. 4980: A --> G
Char. 4992: T --> C
Char. 5004: C --> T
Char. 5055: A --> G
Char. 5059: A --> G
Char. 5064: C --> G
Char. 5067: T --> C
Char. 5160: A --> G
Char. 5184: T --> A
Char. 5247: C --> T
Char. 5257: G --> C
Char. 5292: T --> C
Char. 5373: T --> G
Char. 5382: T --> C
Char. 5383: C --> A
Char. 5406: T --> C
Char. 5418: A --> G
Char. 5427: T --> C
Char. 5457: T --> C
Char. 5491: G --> T
Char. 5565: A --> C
Char. 5589: T --> C

Char. 5634: G --> A
Char. 5643: T --> G
Char. 5739: T --> C
Char. 6211: A --> G
Char. 6254: A --> C
Char. 6331: A --> C
Char. 6377: C --> T
Char. 6445: A --> C
Char. 6498: A --> T
Char. 6510: A --> C
Char. 6515: A --> G
Char. 6528: A --> G

Node 1085 :

Char. 724: T --> C
Char. 739: T --> C
Char. 745: T --> A
Char. 748: C --> A
Char. 751: C --> T
Char. 785: T --> C
Char. 817: C --> T
Char. 823: C --> T
Char. 850: A --> C
Char. 866: T --> C
Char. 928: C --> T
Char. 940: C --> T
Char. 979: C --> T
Char. 982: A --> C
Char. 991: T --> C
Char. 1003: T --> C
Char. 1019: T --> C
Char. 1138: A --> C
Char. 1147: A --> T
Char. 1198: A --> C
Char. 1234: A --> C
Char. 1237: T --> C
Char. 1271: C --> T
Char. 1405: A --> C
Char. 1513: A --> G
Char. 1618: T --> C
Char. 1660: C --> T
Char. 1822: A --> G
Char. 1891: C --> T
Char. 1948: C --> T
Char. 2014: A --> G
Char. 2032: A --> G

Node 1086 :

Char. 1519: G --> A
Char. 1597: T --> C
Char. 1612: C --> T
Char. 1645: C --> T
Char. 1762: C --> T
Char. 1792: T --> C
Char. 1795: T --> A
Char. 1796: C --> T
Char. 1816: A --> G
Char. 1852: T --> C
Char. 1855: T --> C
Char. 1897: C --> T
Char. 1921: G --> T
Char. 1936: T --> A
Char. 1957: C --> T
Char. 2020: T --> G
Char. 2047: T --> A
Char. 2053: C --> T
Char. 2065: G --> A
Char. 2074: A --> T
Char. 2083: G --> A
Char. 2089: A --> C
Char. 2101: C --> T

Node 1087 :

Char. 4841: G --> A
Char. 4845: C --> T
Char. 4917: G --> A
Char. 5177: G --> A
Char. 5328: G --> A
Char. 5406: C --> T
Char. 5409: G --> A
Char. 5520: T --> A
Char. 5539: G --> A
Char. 5673: G --> A
Char. 5739: T --> C
Char. 6188: G --> A
Char. 6210: T --> C

Char. 6230: C --> T
 Char. 6310: G --> A
 Char. 6314: C --> T
 Char. 6344: A --> G
 Char. 6366: A --> C
 Char. 6367: A --> C
 Char. 6369: T --> G
 Char. 6377: C --> T
 Char. 6434: G --> T
 Char. 6516: G --> A
 Node 1088 :
 Char. 613: C --> T
 Char. 646: A --> G
 Char. 808: C --> T
 Char. 892: C --> T
 Char. 955: C --> T
 Char. 988: C --> T
 Char. 1063: C --> A
 Char. 1177: G --> C
 Char. 1297: A --> G
 Char. 1490: C --> A
 Char. 1493: G --> A
 Char. 1495: A --> C
 Char. 3451: G --> A
 Char. 3619: G --> A
 Char. 3658: G --> A
 Char. 3661: C --> T
 Char. 3667: G --> A
 Char. 3709: A --> T
 Char. 3718: T --> G
 Char. 3719: G --> A
 Char. 3916: G --> A
 Char. 3937: T --> C
 Char. 3958: T --> C
 Char. 3988: T --> C
 Char. 3996: C --> G
 Char. 4069: G --> T
 Char. 4093: C --> T
 Char. 4141: C --> T
 Char. 4176: T --> A
 Char. 4351: A --> T
 Char. 4453: G --> C
 Char. 5046: C --> T
 Char. 6301: C --> T
 Char. 6322: C --> T
 Char. 6376: T --> C
 Node 1089 :
 Char. 862: C --> T
 Char. 946: C --> A
 Char. 976: C --> T
 Char. 1447: C --> T
 Char. 1585: C --> T
 Char. 1912: C --> T
 Char. 1913: C --> T
 Char. 2027: A --> G
 Char. 2029: T --> A
 Char. 2095: C --> T
 Node 1090 :
 Char. 586: A --> T
 Char. 634: T --> A
 Char. 694: C --> A
 Char. 724: A --> T
 Char. 740: G --> A
 Char. 745: A --> T
 Char. 1108: A --> C
 Char. 1114: A --> C
 Char. 1177: T --> G
 Char. 1270: A --> C
 Char. 1279: A --> C
 Char. 1333: A --> C
 Char. 1336: C --> T
 Char. 1357: C --> T
 Char. 1402: C --> T
 Char. 1477: A --> T
 Char. 1481: C --> T
 Char. 1483: T --> A
 Node 1091 :
 Char. 604: C --> T
 Char. 667: C --> T
 Char. 674: C --> T
 Char. 766: C --> A
 Char. 785: C --> T
 Char. 901: C --> T
 Char. 937: C --> T
 Char. 950: G --> A
 Char. 956: G --> A
 Char. 967: A --> C
 Char. 985: C --> T
 Char. 1019: C --> T
 Char. 1129: C --> A
 Char. 1288: C --> A
 Char. 1318: A --> C
 Char. 2182: A --> C
 Char. 2222: G --> A
 Char. 2227: C --> T
 Char. 2237: T --> A
 Char. 2248: C --> A
 Char. 2461: C --> T
 Char. 2494: G --> A
 Char. 2510: T --> C
 Char. 2521: T --> C
 Char. 2539: T --> A
 Char. 2623: T --> A
 Char. 2629: C --> T
 Char. 2689: C --> T
 Char. 2839: C --> T
 Char. 3472: C --> T
 Char. 3475: C --> A
 Char. 3595: C --> T
 Char. 3668: T --> G
 Char. 3691: C --> G
 Char. 3694: C --> T
 Char. 3700: G --> A
 Char. 3760: C --> T
 Char. 3802: C --> A
 Char. 3813: A --> C
 Char. 3892: C --> T
 Char. 3964: T --> C
 Char. 4039: G --> A
 Char. 4048: C --> T
 Char. 4120: C --> T
 Char. 4124: C --> A
 Char. 4150: C --> T
 Char. 4291: G --> A
 Char. 4328: T --> C
 Char. 4347: C --> G
 Char. 4364: C --> T
 Char. 4435: G --> A
 Char. 4447: G --> A
 Char. 4489: G --> T
 Char. 4512: A --> T
 Char. 4543: C --> A
 Char. 4573: C --> T
 Char. 4594: T --> C
 Char. 4705: C --> T
 Char. 4744: C --> A
 Char. 4770: T --> C
 Char. 4777: C --> T
 Char. 4791: C --> G
 Char. 4806: C --> T
 Char. 4857: G --> A
 Char. 4960: C --> T
 Char. 5007: T --> C
 Char. 5023: C --> A
 Char. 5034: G --> A
 Char. 5082: C --> T
 Char. 5086: T --> G
 Char. 5088: A --> C
 Char. 5112: G --> A
 Char. 5130: G --> A
 Char. 5133: T --> C
 Char. 5231: T --> A
 Char. 5242: C --> A
 Char. 5259: C --> T
 Char. 5269: C --> T
 Char. 5278: T --> C
 Char. 5304: T --> A
 Char. 5307: C --> T
 Char. 5382: T --> C
 Char. 5388: G --> A
 Char. 5448: A --> T
 Char. 5520: G --> T
 Char. 5598: A --> T
 Char. 5610: G --> A
 Char. 5682: C --> T
 Char. 5703: G --> A
 Char. 5733: G --> A
 Char. 6362: C --> T
 Char. 6382: C --> T
 Char. 6438: A --> G
 Char. 6445: A --> T
 Char. 6493: A --> T
 Node 1092 :
 Char. 1834: A --> G
 Char. 1837: A --> G
 Char. 1858: C --> T
 Char. 1912: T --> C
 Char. 1978: C --> T
 Char. 1981: A --> T
 Char. 1990: A --> C
 Node 1093 :
 Char. 6355: G --> T
 Char. 6379: A --> T
 Char. 6424: T --> C
 Char. 6497: A --> C
 Node 1094 :
 Char. 6216: G --> A
 Char. 6230: T --> C
 Char. 6301: T --> C
 Char. 6327: A --> C
 Char. 6328: T --> A
 Node 1095 :
 Char. 3877: C --> T
 Char. 4216: G --> T
 Char. 4517: C --> T
 Char. 4581: G --> A
 Char. 4708: T --> C
 Char. 5226: G --> A
 Char. 5244: A --> G
 Char. 6484: C --> A
 Node 1096 :
 Char. 1717: A --> G
 Char. 1915: A --> G
 Char. 2005: T --> C
 Char. 2110: T --> C
 Char. 6309: T --> C
 Char. 6414: A --> C
 Node 1097 :
 Posterior_extension_of_supraoccipital_spine
 (61):
 (1)_dorsal_of_one_half_or_less_of_extent_of_neural_complex -->
 (0)_dorsal_of_entire_neural_complex_of_Weberian_apparatus
 Longitudinal_ridge_covering_laterosensory_pores_of_dentary (157): (0)_absent --> (1)_present
 Form_of_posterior_margin_of_cleithrum (340):
 (0)_convex_or_slightly_sinuous_just_dorsal_to_pectoral-fin_insertion -->
 (1)_with_notch_just_anterior_to_pectoral-fin_insertion
 Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
 (1)_wider_than_primary_axis_of_supraneurals
 Number_of_anal_pterygiophores_anterior_to_first_haemal_spine (412): (0)_three_or_fewer -->
 (1)_four_or_more
 Char. 1633: T --> A
 Char. 1657: T --> C
 Char. 1672: A --> G
 Char. 1708: T --> A
 Char. 1819: T --> C
 Char. 1879: A --> G
 Char. 2027: A --> G
 Char. 2029: T --> AG
 Char. 2053: T --> C
 Char. 2293: C --> T
 Char. 2572: T --> C
 Char. 5796: G --> A
 Char. 5871: C --> A
 Char. 6025: T --> C
 Char. 6317: A --> T
 Char. 6329: A --> T
 Char. 6357: A --> G
 Node 1098 :
 Char. 670: T --> C
 Char. 731: A --> G

Char. 1112: C --> T
Char. 1204: A --> G
Char. 1321: A --> G
Char. 1333: A --> G
Char. 4345: C --> T
Node 1099 :
Char. 580: T --> C
Char. 640: C --> T
Char. 676: C --> T
Char. 755: G --> A
Char. 756: T --> C
Char. 901: T --> C
Char. 1135: C --> A
Char. 1150: A --> C
Char. 1171: A --> C
Char. 1279: C --> T
Char. 1348: T --> C
Char. 1375: A --> G
Char. 1405: A --> G
Char. 1430: A --> G
Char. 1445: A --> G
Char. 2269: C --> A
Char. 2329: A --> C
Char. 3514: C --> T
Char. 3613: T --> A
Char. 3893: A --> G
Char. 4469: G --> A
Char. 4663: C --> T
Char. 4863: G --> T
Char. 4935: G --> A
Char. 5079: C --> T
Char. 5094: C --> T
Char. 5209: G --> A
Char. 5232: T --> C
Char. 5505: G --> A
Char. 5525: G --> A
Char. 5681: C --> T
Char. 5736: C --> T
Char. 6326: T --> C
Char. 6410: A --> T
Char. 6512: T --> C
Node 1100 :
Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
Sclerotic_bones (508):
(0)_single_anteroventrally_open_bone -->
(1)_two_bones_separated_by_cartilages
Char. 583: C --> T
Char. 592: C --> T
Char. 643: C --> T
Char. 661: T --> C
Char. 682: T --> C
Char. 766: T --> C
Char. 838: C --> A
Char. 866: C --> T
Char. 871: C --> A
Char. 886: C --> T
Char. 928: C --> A
Char. 938: C --> T
Char. 943: T --> C
Char. 1060: T --> C
Char. 1075: T --> C
Char. 1126: C --> A
Char. 1294: A --> G
Char. 1318: T --> A
Char. 1326: A --> G
Char. 1331: C --> T
Char. 1346: A --> C
Char. 1369: CT --> A
Char. 1441: C --> A
Char. 1493: G --> A
Char. 1494: C --> T
Char. 2441: T --> G
Char. 2484: C --> T
Char. 2623: T --> G
Char. 2707: G --> A
Char. 2833: A --> G
Char. 3499: C --> A
Char. 3717: T --> C
Char. 3739: A --> G
Char. 3752: G --> T
Char. 3766: C --> T
Char. 3767: A --> G
Char. 3841: A --> G
Char. 3853: C --> T
Char. 3898: G --> A
Char. 3925: G --> A
Char. 3940: C --> A
Char. 3994: C --> T
Char. 4036: G --> A
Char. 4201: C --> T
Char. 4247: C --> A
Char. 4267: C --> T
Char. 4348: T --> G
Char. 4372: A --> G
Char. 4375: G --> A
Char. 4839: G --> A
Char. 4842: G --> A
Char. 4866: G --> A
Char. 5179: C --> T
Char. 5238: G --> A
Char. 5563: A --> G
Char. 6344: A --> G
Char. 6351: A --> T
Char. 6381: A --> T
Char. 6471: T --> C
Node 1101 :
Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two
Char. 604: T --> C
Char. 1237: T --> C
Char. 1270: C --> T
Char. 1429: C --> T
Char. 1483: A --> C
Char. 2313: T --> C
Char. 2773: A --> T
Char. 4905: T --> A
Char. 5001: G --> A
Char. 5016: G --> A
Char. 6467: C --> T
Node 1102 :
Number_of_dentary_teeth_on_outer_row (198):
(1)_ten_or_more --> (0)_eight_or_fewer
Relative_length_of_palatine (209):
(0)_approximately_one_half_length_of_ectopterygoid_or_less -->
(1)_distinctly_longer_than_one_half_length_of_ectopterygoid
Process_of_scapula_forming_anterior_border_of_scapular_foramen (359): (1)_absent --> (0)_present
Char. 736: A --> T
Char. 814: G --> T
Char. 889: T --> C
Char. 1136: C --> T
Char. 1348: C --> T
Char. 1393: A --> T
Char. 2827: G --> A
Char. 3559: A --> G
Char. 3871: T --> C
Char. 4249: A --> G
Char. 4627: A --> G
Node 1103 :
Foramen_on_ventral_lamella_of_supraoccipital (63): (0)_absent -->
(1)_with_a_large_foramen_or_concavity_posteriorly_open
Expansion_of_lamellar_portion_of_maxilla_just_posterior_to_toothed_region (141):
(0)_absent_or_not_pronounced -->
(1)_very_pronounced
Premaxillary,_maxillary,_and_dentary_teeth (166):
(0)_not_pedunculate,_or_pedunculate_only_in_some_of_these_bones -->
(1)_pedunculate_and_uniformly_shaped
Number_of_teeth_on_inner_premaxillary_row (182): (1)_six_or_more --> (0)_five_or_fewer
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Number_of_cusps_of_first_maxillary_tooth (194): (0)_five_or_fewer --> (1)_seven_or_more
Number_of_cusps_of_anterior_dentary_teeth (201): (0)_three_or_fewer --> (1)_five_or_more
Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
Abrupt_posterior_expansion_of_interopercle (250): (0)_absent --> (1)_present
Dorsal-fin_rays_articulating_with_first_dorsal_pterygiophore (404): (0)_two --> (1)_three_or_four
Number_of_branched_anal-fin_rays (420):
(1)_25_or_more --> (0)_24_or_fewer
Char. 631: T --> C
Char. 637: T --> C
Char. 673: C --> T
Char. 742: T --> A
Char. 853: T --> C
Char. 863: A --> G
Char. 901: C --> T
Char. 940: C --> A
Char. 941: C --> T
Char. 951: C --> T
Char. 1081: A --> CT
Char. 1088: A --> G
Char. 1118: T --> C
Char. 1270: A --> C
Char. 2371: T --> C
Char. 3481: T --> C
Char. 3514: T --> C
Char. 3550: T --> C
Char. 3700: G --> A
Char. 3727: G --> A
Char. 3751: A --> G
Char. 3775: A --> G
Char. 3817: G --> A
Char. 3838: C --> T
Char. 3921: G --> A
Char. 3964: C --> T
Char. 4034: C --> T
Char. 4180: T --> C
Char. 4318: T --> C
Char. 4333: G --> A
Char. 4417: G --> A
Char. 4435: G --> A
Char. 4651: G --> A
Char. 4764: A --> T
Char. 4947: C --> A
Char. 5013: C --> T
Char. 5316: A --> C
Char. 5475: A --> G
Char. 5481: G --> A
Char. 5496: T --> A
Char. 5631: T --> C
Char. 6290: C --> T
Char. 6325: C --> T
Char. 6425: G --> A
Char. 6462: G --> A
Char. 6492: C --> T
Node 1104 :
Length_of_maxilla_relative_to_dentary (145):
(0)_maxilla_reaching_posterior_end_of_Meckelian_cartilage -->
(1)_maxilla_not_reaching_posterior_end_of_Meckelian_cartilage
Lateral_ridge_of_anguloarticular (160):
(0)_absent --> (1)_present
Number_of_maxillary_teeth (190):
(1)_four_or_more --> (0)_up_to_three
Char. 712: T --> A
Char. 886: G --> C
Char. 943: A --> T
Char. 988: T --> A
Char. 1013: G --> A
Char. 1100: G --> A
Char. 1105: T --> A
Char. 1174: T --> A
Char. 1297: A --> T
Char. 1349: G --> A
Char. 1355: T --> C
Char. 1367: A --> G
Char. 1375: T --> A

Char. 2194: T --> C
Char. 2222: T --> G
Char. 2226: G --> T
Char. 2311: T --> G
Char. 2353: C --> G
Char. 2473: A --> C
Char. 2503: T --> C
Char. 2518: A --> G
Char. 2665: T --> C
Char. 2683: T --> C
Char. 2737: T --> C
Char. 2848: C --> T
Char. 2866: A --> C
Char. 3502: C --> G
Char. 3613: G --> T
Char. 3640: AG --> C
Char. 3670: A --> T
Char. 3717: C --> T
Char. 3721: T --> C
Char. 3832: G --> T
Char. 4249: C --> A
Char. 4396: G --> A
Char. 4402: G --> A
Char. 4451: C --> T
Char. 4657: A --> G
Char. 4785: T --> C
Char. 4818: A --> C
Char. 4871: C --> T
Char. 4905: A --> T
Char. 5060: C --> A
Char. 5064: C --> T
Char. 5095: C --> T
Char. 5100: A --> G
Char. 5170: C --> T
Char. 5271: T --> A
Char. 5325: G --> A
Char. 5343: G --> T
Char. 5688: T --> C
Char. 6309: T --> C
Char. 6310: G --> A
Char. 6363: A --> C
Char. 6383: G --> A
Char. 6443: A --> T
Char. 6444: A --> T
Node 1105 :

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch -->
(1)_with_cusps_aligned_in_straight_series
Number_of_supraneurals (393):
(0)_five_or_fewer --> (1)_six_or_more
Number_of_branched_rays_on_dorsal_fin
(409): (1)_nine_or_more --> (0)_eight_or_fewer
Node 1106 :
Nasal (10): (0)_present --> (1)_absent
Length_of_laterosensory_canal_of_dentary (103):
(0)_piercing_almost_entire_length_of_dentary -->
(1)_reduced_or_absent
Parietal_branch_of_laterosensory_canal (116):
(0)_present_reaching_parietal_bone_or_not -->
(1)_completely_absent
Denticles_on_gill_rakers (300): (0)_present -->
(1)_absent
Number_of_vertebrae (325): (1)_34_or_more -->
(0)_up_to_33
Number_of_scales_in_lateral_series (467):
(0)_33_or_more --> (1)_32_or_fewer
Node 1107 :

Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (0)_five_or_fewer --> (1)_six_or_more
Char. 1606: C --> T
Char. 1616: G --> A
Char. 1618: A --> T
Char. 1675: C --> T
Char. 1723: T --> C
Char. 1804: A --> C
Char. 1819: T --> A
Char. 1873: C --> T
Char. 1990: A --> G
Char. 2023: T --> A

Char. 2048: C --> T
Char. 2119: T --> C
Char. 2602: C --> A
Char. 2827: A --> G
Char. 3501: T --> C
Char. 3940: C --> T
Char. 4078: A --> G
Char. 4451: T --> C
Char. 4519: G --> T
Char. 4606: T --> G
Char. 4809: C --> G
Char. 4878: C --> G
Char. 4881: T --> A
Char. 4968: T --> A
Char. 5088: G --> A
Char. 5091: C --> T
Char. 5121: C --> T
Char. 5452: G --> A
Char. 5589: T --> C
Char. 5736: C --> T
Char. 6206: T --> C
Char. 6308: A --> G
Char. 6347: A --> T
Char. 6415: A --> G
Char. 6426: T --> A
Node 1108 :

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (303): (1)_18_or_more -->
(0)_17_or_fewer
Char. 1708: T --> C
Char. 1913: C --> T
Char. 2047: T --> A
Char. 2071: T --> A
Char. 2467: C --> T
Char. 4177: C --> T
Char. 4722: C --> G
Char. 4863: G --> A
Char. 4966: A --> G
Char. 5118: T --> C
Char. 6207: T --> C
Char. 6331: A --> T
Char. 6424: C --> T
Node 1109 :

Anterior_convergence_of_ventral_diverging_lamellae_with_nasal_septum_of_mesethmoid (8):
(0)_absent_or_confluent_near_anterior_end_of_nasal_septum -->
(1)_confluent_at_posterior_end_of_nasal_septum
Rhinosphenoid (34): (0)_absent --> (1)_present
Bony_hooks_on_last_pelvic-fin_ray_of_adult_males (447):
(1)_as_numerous_as_in_other_rays -->
(0)_absent_or_reduced_in_number
Char. 3118: C --> G
Char. 3205: T --> C
Node 1110 :

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (475):
(0)_ventral_to_Meckelian_cartilage -->
(1)_anterior_to_Meckelian_cartilage
Char. 3172: T --> C
Char. 3232: A --> G
Char. 3394: T --> C
Char. 3772: A --> G
Node 1111 :
Char. 1771: T --> C
Char. 3298: T --> C
Char. 4144: T --> C
Char. 4521: G --> A
Char. 4522: A --> G
Node 1112 :
Anterior_process_of_maxilla (133):
(0)_slender_relative_to_laminar_region -->
(1)_as_thick_as_posterior_region

Ligament_from_distal_tip_of_ascending_maxillary_process_to_premaxilla (134): (0)_absent -->
(1)_present

Expansion_of_dentary_lateral_to_anguloarticular (158):
(0)_closer_to_Meckelian_cartilage_than_to_articular_socket -->
(1)_closer_to_articular_socket_than_to_Meckelian_cartilage
Medial_dorsal_ridge_of_quadrate (236):
(0)_absent -->
(1)_present_covering_symplectic_from_lateral_view

Shape_of_dentigerous_plate_of_fifth_ceratobranchial (287): (1)_elongated_without_posterior_notch -->
(0)_rounded_with_posterior_notch
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_d_cleithrum
Char. 1580: T --> C
Char. 1706: G --> A
Char. 1711: C --> T
Char. 1717: G --> A
Char. 1786: C --> T
Char. 1789: T --> C
Char. 1819: C --> T
Char. 2056: C --> T
Char. 2083: G --> A
Char. 2569: A --> G
Char. 3115: T --> C
Char. 3211: A --> G
Char. 5196: C --> T
Char. 5866: T --> A
Char. 5867: C --> A
Char. 5868: T --> C
Char. 6361: T --> C
Char. 6414: A --> G
Char. 6484: C --> T
Node 1113 :
Temporal_fossa (51):
(1)_absent_or_much_reduced -->
(0)_well_developed
Anterior_process_of_maxilla (133):
(1)_as_thick_as_posterior_region -->
(0)_slender_relative_to_laminar_region

Form_of_posterodorsal_portion_of_anguloarticular (163): (0)_vertical --> (1)_anterodorsally_angled
Number_of_rows_of_premaxillary_teeth (171):
(1)_three --> (0)_one_or_two

Position_of_lateralmost_tooth_from_outer_premaxillary_row (176):
(0)_anteriorly_displaced_relative_to_remaining_teeth_of_that_row -->
(1)_aligned_with_remaining_teeth_of_that_row

Extent_of_implantation_of_teeth_along_maxilla (191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella
Number_of_dentary_teeth_on_outer_row (198):
(0)_eight_or_fewer --> (1)_ten_or_more
Number_of_cusps_of_anterior_dentary_teeth (201): (0)_three_or_fewer --> (1)_five_or_more
Node 1114 :
Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (1)_ten_or_fewer -->
(0)_11_or_more
Number_of_branched_anal-fin_rays (418):
(1)_11_or_more --> (0)_ten_or_fewer
Char. 2944: T --> G
Char. 6028: T --> C
Node 1115 :
Temporal_fossa (51):
(1)_absent_or_much_reduced -->
(0)_well_developed
Node 1116 :
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Char. 1597: A --> G

Char. 1621: C --> T
Char. 1630: C --> T
Char. 1648: T --> C
Char. 1885: T --> C
Char. 1942: C --> T
Char. 1987: T --> C
Char. 2566: T --> C
Char. 4962: A --> G
Char. 5274: A --> T
Char. 5289: G --> A
Char. 5538: G --> A
Char. 5808: C --> T
Char. 6001: A --> G
Char. 6074: C --> T
Char. 6099: C --> T
Char. 6441: T --> A
Char. 6442: A --> T
Node 1117 :
Char. 2527: T --> C
Char. 2839: G --> T
Char. 3493: C --> G
Char. 6027: C --> T
Node 1118 :
Char. 1825: A --> T
Char. 1984: T --> C
Char. 2038: T --> C
Char. 2068: A --> G
Char. 2077: T --> C
Char. 3298: C --> T
Char. 3565: A --> G
Char. 5837: T --> C
Char. 5871: C --> A
Char. 6209: C --> T
Char. 6324: C --> A
Char. 6342: G --> A
Node 1119 :
Contact_between_lamella_on_anterior_portion_of_first_basibranchial_with_lamella_on_posterior_portion_of_second_basibranchial (273): (0)_absent --> (1)_present
Number_of_supraneurals (392):
(1)_five_or_more --> (0)_four_or_fewer
Char. 3613: G --> A
Char. 6016: T --> C
Char. 6025: C --> T
Char. 6043: G --> A
Char. 6512: C --> T
Node 1120 :
Char. 2312: T --> C
Char. 5145: C --> T
Char. 5721: T --> A
Char. 6342: G --> A
Node 1121 :
Posterior_extension_of_supraoccipital_spine (61):
(1)_dorsal_of_one_half_or_less_of_extent_of_neural_complex -->
(0)_dorsal_of_entire_neural_complex_of>Weberian_apparatus
Proximal_and_medial_radials_of_anal_fins (413): (0)_fused_on_anterior_five_pterygiophores --> (1)_fused_in_most_pterygiophores
Anal-fin_position (416):
(0)_posterior_of_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Scales (454): (0)_cycloid --> (2)_spinoid
Char. 6205: T --> C
Char. 6251: A --> T
Char. 6252: A --> T
Char. 6255: A --> C
Char. 6308: A --> G
Char. 6314: T --> C
Char. 6330: T --> C
Char. 6351: A --> G
Char. 6382: C --> T
Char. 6413: C --> A
Char. 6432: A --> G
Char. 6485: T --> C
Node 1122 :
Char. 1580: T --> C
Char. 1600: G --> A
Char. 1741: C --> T
Char. 1750: A --> G
Char. 1777: A --> C
Char. 1882: T --> C
Char. 1891: C --> T
Char. 1892: C --> T
Char. 1957: C --> T
Char. 2074: A --> G
Char. 5935: A --> T
Node 1123 :
Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (1)_ten_or_fewer --> (0)_11_or_more
Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more --> (0)_six_or_less
Char. 1678: A --> T
Char. 1735: A --> G
Char. 1765: C --> T
Char. 1909: T --> C
Char. 2048: C --> T
Char. 2065: A --> G
Char. 2071: C --> A
Char. 2101: C --> T
Char. 2602: A --> G
Char. 2962: T --> C
Char. 3205: T --> C
Char. 3298: T --> C
Char. 4261: C --> T
Char. 4654: C --> T
Char. 4926: T --> C
Char. 5166: T --> A
Char. 6402: G --> A
Char. 6497: A --> T
Node 1124 :
Char. 6040: A --> G
Char. 6041: G --> A
Char. 6253: A --> C
Char. 6254: A --> G
Char. 6382: A --> C
Char. 6452: A --> G
Node 1125 :
Char. 1726: C --> T
Char. 1825: A --> G
Char. 1828: T --> G
Char. 1885: T --> C
Char. 3966: T --> C
Char. 5082: C --> G
Char. 6334: G --> A
Node 1126 :
Char. 4445: C --> A
Char. 4498: G --> A
Node 1127 :
Lateral_line (123): (0)_complete --> (1)_interrupted
Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
First_postcleithrum (361): (0)_present --> (1)_absent
Anal-fin_position (415):
(0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray -->
(1)_extended_anteriorly_ventral_to_dorsal_fin
Char. 1792: C --> T
Char. 1846: T --> C
Char. 1912: C --> T
Char. 2515: T --> A
Char. 4090: A --> C
Char. 4417: G --> A
Char. 4476: T --> C
Char. 5866: T --> C
Char. 6413: T --> C
Node 1128 :
Char. 2087: C --> T
Char. 6525: A --> G
Node 1129 :
Char. 1621: C --> T
Char. 1708: T --> C
Char. 1712: C --> T
Char. 1861: A --> G
Char. 1903: C --> T
Char. 2041: C --> A
Char. 2084: C --> T
Char. 4950: G --> A
Char. 5060: C --> A
Char. 5196: C --> T
Char. 5229: C --> A
Char. 5925: A --> G
Char. 6357: A --> G
Node 1130 :
Epioccipital_bridge_over_posttemporal_fossa (64): (1)_present --> (0)_absent
Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal --> (1)_not_reaching_parietal_or_absent
Lateral_line (123): (0)_complete --> (1)_interrupted
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (0)_11_or_more --> (1)_ten_or_fewer
Number_of_branched_anal-fin_rays (420):
(1)_25_or_more --> (0)_24_or_fewer
Char. 1765: C --> T
Char. 1855: T --> C
Char. 2005: T --> A
Char. 2020: T --> A
Char. 2071: C --> A
Char. 2308: A --> G
Char. 2557: A --> G
Char. 2584: C --> T
Char. 2653: G --> A
Char. 2743: A --> G
Char. 3241: G --> A
Char. 3328: T --> A
Char. 5151: C --> A
Char. 5177: G --> A
Char. 5264: C --> T
Char. 5268: T --> C
Char. 5909: T --> A
Char. 6024: G --> A
Char. 6026: A --> G
Char. 6046: C --> T
Char. 6323: C --> T
Char. 6326: T --> A
Char. 6328: T --> C
Char. 6402: G --> A
Char. 6507: C --> T
Char. 6516: G --> A
Node 1131 :
Char. 580: C --> T
Char. 620: C --> T
Char. 682: T --> C
Char. 697: C --> T
Char. 721: A --> G
Char. 772: C --> T
Char. 802: A --> G
Char. 835: C --> T
Char. 880: C --> T
Char. 892: C --> T
Char. 904: C --> T
Char. 973: A --> C
Char. 1019: C --> T
Char. 1057: C --> T
Char. 1060: C --> T
Char. 1112: C --> T
Char. 1141: A --> C
Char. 1303: C --> A
Char. 1309: C --> T
Char. 1358: C --> T
Char. 1432: T --> C
Char. 1445: A --> G
Char. 1552: A --> C
Char. 1561: C --> T
Char. 1603: A --> T
Char. 1690: C --> T
Char. 1762: C --> T
Char. 1822: A --> G
Char. 1864: C --> T
Char. 1879: T --> C
Char. 1882: C --> T
Char. 1909: C --> T

Char. 2053: A --> C
 Char. 2128: T --> C
 Char. 3596: A --> G
 Char. 3739: G --> C
 Char. 3865: T --> C
 Char. 4144: T --> C
 Char. 4312: T --> C
 Char. 4361: C --> A
 Char. 4468: T --> C
 Char. 4597: A --> G
 Char. 4657: G --> A
 Char. 6252: C --> T
 Char. 6322: T --> C
 Char. 6424: T --> C
 Char. 6439: C --> A
 Node 1132 :
 Char. 752: C --> T
 Char. 1003: C --> T
 Char. 1159: C --> T
 Char. 1262: C --> T
 Char. 1840: C --> T
 Char. 1867: A --> C
 Char. 2080: C --> T
 Char. 2083: G --> A
 Char. 2401: A --> G
 Char. 2607: A --> G
 Char. 3694: T --> C
 Char. 3724: A --> G
 Char. 3737: A --> C
 Char. 3748: T --> C
 Char. 3826: T --> C
 Char. 3907: A --> G
 Char. 3964: A --> C
 Char. 4150: C --> G
 Char. 4300: G --> A
 Char. 4306: C --> T
 Char. 4489: G --> A
 Char. 4501: G --> A
 Char. 4546: A --> G
 Char. 4585: C --> T
 Char. 4624: A --> G
 Char. 4647: C --> G
 Node 1133 :
 Char. 1517: C --> T
 Char. 1765: C --> T
 Char. 1873: C --> T
 Char. 2071: C --> T
 Char. 2146: C --> T
 Node 1134 :
 Char. 1612: C --> T
 Char. 1703: C --> T
 Char. 1744: C --> T
 Char. 1792: C --> T
 Char. 1807: AC --> T
 Char. 1858: C --> T
 Char. 1906: A --> C
 Char. 1930: T --> A
 Char. 2056: A --> C
 Char. 2128: A --> T
 Char. 2131: A --> C
 Node 1135 :
 Char. 538: C --> T
 Char. 539: C --> T
 Char. 574: C --> A
 Char. 646: A --> C
 Char. 661: C --> T
 Char. 814: G --> A
 Char. 823: A --> C
 Char. 863: A --> G
 Char. 1000: A --> C
 Char. 1012: C --> A
 Char. 1091: C --> A
 Char. 1145: C --> G
 Char. 1147: C --> A
 Char. 1158: C --> T
 Char. 1348: C --> A
 Char. 1414: A --> T
 Char. 1595: T --> G
 Char. 1741: C --> T
 Char. 1799: G --> T
 Char. 1831: A --> T
 Char. 1840: T --> C
 Char. 1861: A --> C
 Char. 1984: C --> A
 Char. 2086: T --> A
 Char. 2102: C --> A
 Char. 2215: T --> G
 Char. 2368: A --> G
 Char. 2374: T --> A
 Char. 2381: T --> G
 Char. 2405: T --> C
 Char. 2407: G --> C
 Char. 2509: G --> T
 Char. 2510: T --> C
 Char. 2680: T --> C
 Char. 2788: T --> C
 Char. 2848: C --> T
 Char. 2854: T --> C
 Char. 3458: T --> G
 Char. 3469: A --> T
 Char. 3574: A --> C
 Char. 3607: A --> C
 Char. 3646: T --> C
 Char. 3715: A --> G
 Char. 3767: G --> A
 Char. 3793: A --> G
 Char. 3841: G --> A
 Char. 3850: C --> T
 Char. 3964: T --> A
 Char. 3984: A --> T
 Char. 4021: A --> G
 Char. 4042: T --> C
 Char. 4054: T --> C
 Char. 4069: G --> A
 Char. 4138: A --> G
 Char. 4303: A --> C
 Char. 4372: A --> G
 Char. 4393: G --> C
 Char. 4435: G --> C
 Char. 4450: G --> C
 Char. 4465: G --> A
 Char. 4633: C --> T
 Char. 4640: C --> T
 Char. 4657: A --> G
 Char. 4666: T --> C
 Char. 4875: A --> T
 Char. 4998: G --> T
 Char. 5010: A --> G
 Char. 5021: A --> T
 Char. 5128: T --> C
 Char. 5145: C --> T
 Char. 5184: T --> A
 Char. 5197: T --> C
 Char. 5208: A --> G
 Char. 5212: C --> G
 Char. 5215: T --> A
 Char. 5247: T --> A
 Char. 5336: A --> T
 Char. 5350: G --> A
 Char. 5380: C --> T
 Char. 5634: G --> C
 Char. 5685: C --> T
 Char. 6322: C --> T
 Char. 6381: A --> G
 Char. 6446: C --> T
 Char. 6475: T --> C
 Char. 6573: C --> T
 Node 1136 :
 Char. 742: C --> A
 Char. 826: T --> C
 Char. 886: C --> G
 Char. 1489: C --> A
 Char. 1517: T --> C
 Char. 1642: T --> C
 Char. 1780: A --> C
 Char. 1824: C --> T
 Char. 1895: A --> G
 Char. 1930: C --> T
 Char. 2524: T --> C
 Char. 3694: C --> T
 Char. 3772: A --> G
 Char. 4081: A --> T
 Char. 4546: G --> A
 Char. 5088: A --> G
 Char. 5616: A --> G
 Char. 5619: A --> G
 Char. 5890: C --> T
 Char. 6028: T --> C
 Node 1137 :
 Anterior_end_of_mesethmoid (1):
 (1)_not_trifurcate_with_a_triangular_anterior_spin
 e -->
 (0)_trifurcate_with_processes_inserted_into_prema
 xillary_depressions
 Teeth_on_fifth_pharyngobranchial (284):
 (0)_present --> (1)_absent
 Teeth_on_fifth_ceratobranchial (288):
 (0)_present --> (1)_absent
 Gill_filaments_attached_to_leading_edge_of_first
 ceratobranchial (304): (0)_24_or_fewer -->
 (1)_25_or_more
 Char. 988: C --> A
 Char. 1270: A --> C
 Char. 1657: T --> C
 Char. 1726: A --> C
 Char. 1846: C --> T
 Char. 1891: C --> T
 Char. 1906: C --> A
 Char. 2087: C --> T
 Char. 2296: T --> C
 Char. 2356: T --> C
 Char. 2728: G --> A
 Char. 3904: T --> A
 Char. 4752: T --> C
 Char. 4890: C --> G
 Char. 4960: C --> T
 Char. 5056: C --> T
 Char. 5447: A --> G
 Char. 5913: T --> C
 Node 1138 :
 Anterior_extension_of_nasal (11):
 (0)_extending_slightly_anterior_to_mesethmoid_wi
 ng -->
 (1)_projecting_mesethmoid_wing_longer_than_nas
 al_width
 Distance_between_posterodorsal_margin_of_ethmo
 id_cartilage_and_lateral_ethmoids (40):
 (0)_contacting_or_almost_contacting_lateral_eth
 moids --> (1)_distant_from_lateral_ethmoids
 Posterior_pore_of_pterotic_canal (119):
 (0)_posterior_or_posterodorsal_to_pore_receiving_
 preopercular_canal -->
 (1)_in_a_vertical_line_through_ventral_pterotic_po
 re
 Margins_of_toothed_region_of_maxilla (140):
 (0)_roughly_parallel --> (1)_dorsally_divergent
 Position_of_coronomeckelian (159):
 (0)_situated_mainly_lateral_to_Meckelian_cartilag
 e -->
 (1)_situated_mainly_dorsal_to_Meckelian_cartilag
 e
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Posterior_extent_of_ventral_process_of_quadrate
 (234):
 (1)_falling_short_of_posterior_margin_of_symplec
 tic -->
 (0)_reaching_vertical_through_posterior_margin_o
 f_symplectic
 Development_of_transverse_process_of_neural_arc
 h_of_third_vertebra (312):
 (0)_not_reaching_anterior_margin_of_tripus -->
 (1)_well_developed_and_extending_beyond_arteri
 or_margin_of_tripus
 Main_axis_of_supraneurals (396):
 (0)_not_bifurcated -->
 (1)_at_least_some_of_them_distally_bifurcated
 Relative_position_of_dorsal-
 fin_anterior_insertion (403):
 (1)_posterior_to_vertical_through_pelvic-fin_origin
 --> (0)_anterior_to_or_at_vertical_through_pelvic-
 fin_origin
 Char. 1621: C --> T
 Char. 1963: T --> C
 Char. 1966: T --> C

Node 1139 :

Laterosensorial_pore_just_anterior_to_dilatator_fos
sa (115): (0)_dorsomedial_to_laterosensory_canal -
-> (1)_lateroventral_to_laterosensory_canal
Lateral_line (123): (1)_interrupted -->
(0)_complete
Canal_of_lateral_line_on_caudal-
fin_membrane (125): (0)_absent --> (1)_present
Cusps_of_teeth_on_outer_premaxillary_row
(177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Uroneurals (427): (0)_absent_or_just_one_pair
--> (1)_two_pairs
Char. 1651: T --> C
Char. 1687: A --> G
Char. 1705: A --> G
Char. 1720: T --> C
Char. 1756: T --> C
Char. 1777: C --> T
Char. 1816: A --> G
Char. 1879: A --> G
Node 1140 :

Posterior_margin_of_subtemporal_fossa (72):
(0)_not_well_delimited_by_pterotic -->
(1)_limited_by_a_well_developed_transverse_ptero-
tic_ridge
Number_of_cusps_of_anterior_maxillary_teeth
(193): (0)_up_to_three --> (1)_five_or_more_cusps
Number_of_cusps_of_first_maxillary_tooth
(194): (0)_five_or_fewer --> (1)_seven_or_more
Char. 1555: C --> T
Char. 1591: C --> A
Char. 1648: C --> T
Char. 1672: A --> G
Char. 1690: C --> A
Char. 1706: G --> A
Char. 1712: C --> T
Char. 1729: A --> T
Char. 1732: T --> C
Char. 1765: C --> T
Char. 1768: A --> G
Char. 1787: C --> T
Char. 1834: A --> G
Char. 1897: C --> T
Char. 1912: C --> T
Char. 1945: T --> C
Char. 1969: T --> C
Char. 2045: C --> T
Char. 2054: C --> T
Char. 2062: C --> T
Char. 2128: A --> G
Char. 4848: G --> T
Char. 4854: A --> G
Char. 5037: G --> A
Char. 5079: C --> T
Char. 5097: G --> A
Char. 5109: A --> G
Char. 5124: C --> T
Char. 5331: G --> A
Char. 5559: T --> G
Char. 5643: C --> T
Node 1141 :

Gill_filaments_attached_to_leading_edge_of_first-
ceratobranchial (303): (0)_17_or_fewer -->
(1)_18_or_more
Hypertrophied_ventral-caudal-
peduncle_squamation (472): (0)_absent -->
(1)_present_restricted_to_scales_below_lateral_lin-
e
Char. 1651: G --> A
Char. 1678: T --> A
Char. 1735: G --> A
Char. 1771: A --> T
Char. 1807: T --> C
Char. 1957: C --> T
Char. 1978: T --> C
Char. 2041: C --> T
Char. 2113: T --> C
Char. 2143: A --> G
Char. 5351: C --> T
Node 1142 :

Char. 1936: A --> G
Char. 6333: G --> A
Node 1143 :

Form_of_fourth_infraorbital (92):
(1)_longer_dorsoventrally_than_longitudinally -->
(0)_square_or_more_developed_longitudinally_tha-
n_dorsoventrally
Char. 1546: T --> C
Char. 1598: C --> T
Char. 1609: T --> C
Char. 1969: T --> C
Char. 2048: C --> T
Char. 2095: C --> T
Node 1144 :

Concavity_on_posterior_margin_of_orbitosphenoid
(42): (0)_absent_or_reduced -->
(1)_very_pronounced_reaching_articulation_with-
pterosphenoid
Ventral_extent_of_third_infraorbital (88):
(1)_not_reaching_horizontal_arm_of_preopercle,_a-
t_least_anteriorly -->
(0)_reaching_horizontal_arm_of_preopercle
Coracoid_foramen (353): (1)_well_developed --
> (0)_absent_or_reduced_to_small_pore
Char. 2281: A --> T
Char. 2312: G --> C
Char. 2377: A --> G
Char. 2617: T --> C
Char. 2761: C --> T
Char. 3472: C --> T
Char. 3536: A --> C
Char. 3896: T --> C
Char. 3901: T --> G
Char. 4282: T --> C
Char. 4341: A --> G
Char. 4364: C --> T
Char. 4567: T --> C
Node 1145 :

Char. 523: T --> C
Char. 703: C --> G
Char. 845: G --> A
Char. 847: C --> T
Char. 886: G --> T
Char. 961: A --> C
Char. 973: A --> C
Char. 986: C --> T
Char. 988: C --> A
Char. 1003: A --> C
Char. 1028: G --> A
Char. 1106: G --> A
Char. 1135: C --> T
Char. 1171: C --> G
Char. 1390: T --> C
Char. 1441: C --> A
Char. 2179: A --> G
Char. 2386: A --> G
Char. 2596: A --> G
Char. 2607: A --> G
Char. 3658: A --> C
Char. 3670: A --> T
Char. 4006: T --> C
Char. 4118: A --> G
Char. 4276: A --> C
Char. 4312: T --> C
Char. 4328: T --> C
Char. 6205: T --> C
Char. 6315: A --> C
Node 1146 :

Posterior_extension_of_supraoccipital_spine
(62):
(0)_reaching_at_least_to_middle_length_of_neural-
_complex -->
(1)_reaching_only_to_anterior_limit_of_neural_co-
mplex
Articulation_between_second_and_third_infraorbit-
als (86): (0)_vertical --> (1)_anteroventrally_angled
Number_of_gill_rakers_on_first_hypobranchial_an-
d_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Char. 574: T --> C

Char. 950: G --> A
Char. 973: T --> C
Char. 1009: C --> T
Char. 1015: C --> A
Char. 1112: C --> T
Char. 1171: C --> A
Char. 1288: A --> T
Char. 1387: T --> A
Char. 1426: AC --> T
Char. 1441: C --> T
Char. 1447: C --> T
Char. 1477: C --> T
Char. 1489: A --> C
Char. 1561: C --> T
Char. 1601: C --> T
Char. 1616: G --> A
Char. 1618: A --> T
Char. 1711: A --> G
Char. 1714: A --> T
Char. 1753: T --> C
Char. 1981: A --> C
Char. 1987: T --> C
Char. 2038: T --> C
Char. 2074: A --> T
Char. 2146: T --> C
Char. 6255: A --> C
Char. 6382: C --> A
Char. 6484: C --> T
Char. 6525: A --> G
Node 1147 :

Median_predorsal_scales (465):
(0)_covering_entire_predorsal_region -->
(1)_leaving_naked_area_anterior_to_dorsal_fin
Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-
fin_base -->
(1)_several_rows_covering_basal_third_of_anal_fi-
n
Char. 2293: C --> A
Char. 3793: A --> G
Char. 4318: C --> T
Char. 4836: G --> A
Char. 4847: A --> T
Char. 5358: C --> T
Char. 6412: A --> G
Node 1148 :

Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one,_or_absent
Number_of_dentary_teeth_on_outer_row (198):
(1)_ten_or_more --> (0)_eight_or_fewer
Char. 2311: A --> T
Char. 2323: C --> T
Char. 2539: T --> C
Char. 2626: T --> A
Char. 3499: A --> G
Char. 3502: G --> A
Char. 3619: G --> A
Char. 3813: A --> C
Char. 3976: T --> C
Char. 4045: A --> T
Char. 4048: A --> C
Char. 4097: C --> A
Char. 4225: T --> A
Char. 4243: G --> A
Char. 4417: G --> A
Char. 4646: A --> T
Char. 4669: T --> C
Char. 4878: C --> T
Char. 5301: T --> C
Char. 5352: G --> T
Char. 5467: A --> T
Char. 5540: G --> C
Char. 5564: C --> A
Char. 5623: C --> T
Char. 6211: G --> A
Char. 6362: C --> T
Char. 6374: A --> G
Char. 6377: T --> C
Char. 6444: T --> C
Node 1149 :

Char. 1531: C --> T
Char. 1543: G --> A
Char. 1561: C --> T

Char. 1666: A --> G
Char. 1747: A --> T
Char. 1819: T --> C
Char. 1831: C --> T
Char. 1864: T --> C
Char. 1873: C --> T
Char. 1990: A --> C
Char. 2044: T --> C
Char. 2050: A --> T
Char. 2087: C --> T
Char. 2119: T --> C
Node 1150 :

Laterosensorial_pore_just_anterior_to_dilatator_fos sa (115): (1)_lateroventral_to_laterosensory_canal -> (0)_dorsomedial_to_laterosensory_canal
Transitional_vertebrae_with_haemal_canal (331): (0)_present --> (1)_absent
Char. 568: C --> T
Char. 632: C --> T
Char. 697: C --> T
Char. 889: C --> A
Char. 928: C --> T
Char. 949: T --> C
Char. 1135: C --> T
Char. 1153: C --> T
Char. 1331: T --> C
Char. 1495: C --> T
Char. 1570: C --> T
Char. 1624: T --> C
Char. 1672: A --> G
Char. 1675: C --> T
Char. 1849: C --> T
Char. 1915: A --> G
Char. 2023: G --> C
Char. 5274: A --> G
Char. 6326: T --> A
Node 1151 :

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(1)_distant_from_lateral_ethmoids -->
(0)_contacting_or_almost_contacting_lateral_ethmoids
Posterior_pore_of_pterotic_canal (119):
(1)_in_a_vertical_line_through_ventral_pterotic_pore -->
(0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal
Ethmopalatine_cartilage (208):
(0)_absent_or_reduced_in_size -->
(1)_present_and_conspicuous
Char. 694: T --> A
Char. 700: T --> C
Char. 778: C --> A
Char. 787: A --> C
Char. 850: C --> A
Char. 958: A --> T
Char. 1141: A --> T
Char. 1228: C --> T
Char. 1271: C --> AG
Char. 1345: C --> T
Char. 1348: A --> C
Char. 1600: A --> C
Char. 1690: C --> A
Char. 1699: C --> T
Char. 1885: T --> A
Char. 1996: C --> T
Char. 2035: C --> T
Char. 2362: T --> C
Char. 3778: A --> G
Char. 3896: C --> T
Char. 4393: G --> A
Char. 5085: G --> A
Char. 5242: C --> T
Char. 5350: G --> A
Char. 6363: A --> T
Char. 6378: A --> G
Char. 6499: A --> C
Node 1152 :
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Char. 2177: A --> C

Char. 2251: C --> T
Char. 2317: A --> G
Char. 2408: C --> T
Char. 3484: G --> A
Char. 3499: A --> T
Char. 3565: A --> T
Char. 4243: G --> A
Char. 5673: A --> G
Char. 6216: G --> A
Char. 6311: T --> C
Char. 6342: G --> A
Char. 6413: C --> A
Node 1153 :

Laterosensorial_pore_just_anterior_to_dilatator_fos sa (115): (0)_dorsomedial_to_laterosensory_canal -> (1)_lateroventral_to_laterosensory_canal
Lateral_line (123): (1)_interrupted -->
(0)_complete
Char. 2584: C --> T
Char. 2602: C --> T
Char. 2803: C --> G
Char. 4253: C --> T
Char. 4809: C --> G
Char. 5457: C --> T
Char. 6211: G --> A
Char. 6304: A --> C
Char. 6308: A --> G
Char. 6446: T --> C
Node 1154 :
Char. 1513: T --> C
Char. 1897: A --> G
Char. 2038: C --> T
Node 1155 :
Char. 1591: T --> C
Char. 1630: C --> T
Char. 1651: G --> A
Char. 1717: G --> A
Char. 1720: C --> T
Char. 1726: C --> T
Char. 1732: T --> C
Char. 1741: T --> C
Char. 1753: T --> C
Char. 1759: A --> G
Char. 1777: C --> G
Char. 1780: A --> G
Char. 1831: A --> C
Char. 1861: A --> G
Char. 1912: C --> T
Char. 1921: G --> A
Char. 1939: G --> A
Char. 1999: A --> G
Char. 2017: A --> G
Char. 2053: A --> C
Char. 5762: A --> G
Char. 5774: A --> G
Char. 5865: T --> C
Char. 5911: T --> C
Char. 5936: A --> T
Char. 5938: T --> A
Char. 6002: T --> C
Node 1156 :
Char. 1601: C --> T
Char. 1708: T --> C
Char. 1738: C --> T
Char. 1762: T --> C
Char. 1768: A --> G
Char. 2044: T --> C
Node 1157 :
Char. 1630: C --> T
Char. 1651: G --> A
Char. 3370: G --> A
Char. 4420: G --> A
Char. 5499: C --> T
Char. 6346: T --> C
Node 1158 :

Extent_of_implantation_of_teeth_along_maxilla (191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella

Pectoral-
fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (443): (0)_absent --> (1)_present
Dorsal-
fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (444): (0)_absent --> (1)_present
Char. 1573: A --> G
Char. 1705: T --> C
Char. 1772: T --> C
Char. 1846: T --> C
Char. 1987: T --> C
Char. 2006: T --> C
Char. 6343: A --> G
Node 1159 :
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one_or_absent
Urohyal_lateral_processes (305):
(0)_well_developed -->
(1)_as_expanded_as_anterior_region_of_bone_or_less
Number_of_branched_anal-fin_rays (419):
(1)_18_or_more --> (0)_17_or_fewer

Parallel_longitudinal_ridges_on_posterior_field_of_scales (457): (0)_absent --> (1)_present
Scales_covering_caudal-fin_lobes (470):
(0)_covering_only_their_base -->
(1)_covering_one-third_of_their_length
Coloration_of_head (491):
(0)_same_color_of_body_sides -->
(1)_distinctively_red_especially_snout
Node 1160 :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids
Node 1161 :
Char. 2302: C --> T
Char. 2494: G --> A
Char. 4725: T --> C
Char. 4737: G --> A
Char. 6140: C --> T
Char. 6254: T --> C
Char. 6255: A --> T
Char. 6310: G --> A
Char. 6344: A --> G
Char. 6363: T --> C
Node 1162 :
Char. 574: C --> T
Char. 580: C --> T
Char. 592: C --> T
Char. 706: C --> T
Char. 715: T --> C
Char. 751: C --> T
Char. 775: A --> G
Char. 856: A --> T
Char. 943: T --> C
Char. 982: C --> T
Char. 1183: A --> C
Char. 1210: C --> T
Char. 1261: C --> T
Char. 1357: C --> T
Char. 1477: C --> T
Char. 1483: T --> A
Char. 4117: T --> C
Char. 5250: C --> T
Char. 6368: C --> T
Char. 6446: C --> T
Char. 6531: C --> T
Node 1163 :
Char. 817: C --> T
Char. 823: C --> T
Char. 950: T --> C
Char. 961: A --> G
Char. 1096: C --> T
Char. 1144: C --> T
Char. 1174: A --> T
Char. 1295: T --> C
Char. 1384: A --> T

Char. 1441: C --> T
Char. 1474: C --> T
Char. 1490: C --> T
Char. 4926: C --> T
Char. 5025: C --> T
Char. 5177: G --> A
Char. 5181: G --> A
Char. 5242: T --> A
Char. 5322: C --> T
Char. 5347: G --> A
Char. 6361: A --> G
Char. 6424: C --> T
Char. 6435: G --> A
Char. 6448: C --> T
Char. 6522: T --> C
Node 1164 :

Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids
Posterior_pore_of_pterotic_canal (119):
(0)_posterior_or_posterodorsal_to_pore_receiving_preopercular_canal -->
(1)_in_a_vertical_line_through_ventral_pterotic_pore
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex,_straight,_or_slightly_concave -->
(1)_distinctly_concave,_forming_an_angle_of_45°

Laminar_bony_ridge_on_dorsal_margin_of_abdominal_ribs (321): (0)_absent --> (1)_present
Char. 2296: T --> C
Char. 2584: C --> T
Char. 2671: T --> G
Char. 2674: C --> T
Char. 5079: C --> T
Char. 5128: C --> T
Char. 5259: C --> T
Char. 5543: A --> G
Char. 5664: C --> T
Node 1165 :

Canal_of_lateral_line_on_caudal_fin_membrane (125): (0)_absent --> (1)_present
Char. 706: C --> A
Char. 772: T --> C
Char. 829: A --> T
Char. 1258: A --> T
Char. 1438: T --> C
Char. 1454: G --> C
Char. 3970: T --> G
Char. 4228: G --> A
Char. 4361: C --> A
Char. 4441: C --> T
Char. 4447: C --> G
Char. 4517: C --> T
Char. 4565: T --> G
Char. 4621: G --> A
Char. 4669: T --> C
Char. 4925: C --> G
Char. 5177: G --> A
Char. 5372: G --> A
Char. 5388: A --> G
Char. 5412: C --> T
Char. 6334: A --> G
Char. 6426: T --> C
Char. 6463: T --> C
Node 1166 :

Dark_conspicuous_spot_on_dorsal_fin (496):
(0)_absent --> (1)_present
Char. 6207: T --> C
Char. 6245: G --> A
Char. 6294: T --> G
Char. 6363: A --> T
Char. 6376: C --> T
Char. 6378: A --> G
Char. 6388: C --> T
Char. 6413: T --> C
Char. 6511: C --> T
Char. 6514: T --> C
Char. 6636: C --> T
Node 1167 :

Char. 539: C --> T
Char. 622: A --> T
Char. 649: C --> T
Char. 697: C --> T
Char. 700: T --> C
Char. 740: G --> A
Char. 826: T --> C
Char. 844: A --> C
Char. 871: C --> T
Char. 949: C --> T
Char. 1228: C --> T
Char. 1268: C --> T
Char. 1477: A --> C
Char. 1558: C --> T
Char. 1576: A --> G
Char. 1588: A --> G
Char. 1591: A --> G
Char. 1759: A --> G
Char. 1792: T --> C
Char. 1804: C --> T
Char. 1909: C --> T
Char. 1912: C --> T
Char. 2024: C --> T
Char. 2053: A --> C
Char. 2087: C --> T
Char. 2104: T --> C
Node 1168 :

Char. 1570: T --> C
Char. 1609: T --> C
Char. 1720: T --> C
Char. 1789: T --> C
Char. 1810: A --> G
Char. 1834: C --> T
Char. 1852: T --> C
Char. 1864: C --> T
Char. 1930: C --> A
Char. 1981: A --> C
Char. 2017: A --> G
Char. 2062: C --> T
Node 1169 :

Char. 1684: T --> C
Char. 1843: T --> C
Char. 1948: T --> C
Char. 2008: A --> G
Char. 2143: A --> C
Node 1170 :

Char. 2362: T --> C
Char. 2548: C --> T
Char. 2671: T --> C
Char. 2740: A --> G
Char. 2776: G --> A
Char. 2854: T --> C
Char. 2899: G --> T
Char. 4540: C --> T
Char. 4555: T --> C
Char. 4581: G --> A
Char. 6333: A --> C
Node 1171 :

Char. 4018: G --> A
Char. 4118: A --> G
Char. 4231: T --> A
Char. 4699: G --> A
Char. 4773: T --> C
Char. 4815: T --> C
Char. 5259: C --> A
Char. 5577: G --> A
Char. 6210: T --> C
Char. 6294: A --> C
Char. 6345: A --> G
Char. 6346: C --> T
Char. 6403: C --> T
Char. 6443: A --> C
Char. 6588: G --> A
Node 1172 :

Char. 3501: T --> C
Char. 3511: T --> A
Char. 3562: A --> T
Char. 3685: A --> G
Char. 3793: A --> T
Char. 3891: C --> G
Char. 4033: G --> A
Char. 4099: G --> C
Char. 4201: G --> T

Char. 4258: T --> C
Char. 4273: C --> A
Char. 4285: T --> C
Char. 4337: A --> C
Char. 4360: C --> T
Char. 4420: G --> A
Char. 4441: C --> T
Char. 4461: G --> A
Char. 4469: G --> T
Char. 4525: G --> A
Char. 4564: C --> T
Char. 4640: C --> T
Char. 4807: G --> A
Char. 4833: C --> T
Char. 4869: G --> A
Char. 4901: G --> A
Char. 4980: A --> T
Char. 4986: C --> T
Char. 5157: C --> T
Char. 5244: G --> A
Char. 5262: T --> A
Char. 5355: G --> A
Char. 5499: A --> T
Char. 5538: G --> A
Char. 5554: C --> G
Char. 5634: G --> A
Char. 5688: C --> T
Char. 5718: C --> T
Char. 5724: T --> C
Char. 5745: C --> A
Char. 6152: C --> T
Char. 6153: T --> C
Char. 6163: A --> G
Char. 6314: C --> A
Char. 6321: A --> C
Char. 6325: C --> A
Char. 6343: A --> G
Char. 6492: C --> T
Char. 6516: G --> A
Char. 6562: C --> T
Char. 6563: C --> T
Node 1173 :

Foramina_for_glossopharyngeal_and_vagus_nerves (73): (1)_two_well_separated_foramina -->
(0)_a_single_foramen_or_two_contiguous_foramina
Metapterygoid_foramen (228):
(1)_as_a_canal_oblique_to_metapterygoid -->
(0)_a_well_defined_transverse_foramen
Foramen_on_articular_condyle_of_quadrate (230): (1)_present --> (0)_absent
Node 1174 :

Ventral_longitudinal_lamellae_of_basioccipital (74): (1)_reaching_posterior_border_of_cranium -->
(0)_falling_short_of_posterior_border_of_basioccipital
Opening_of_epiphyseal_laterosensory_canals (113): (0)_along_margin_of_cranial_fontanel -->
(1)_canals_continue_dorsomedially_in_soft_tissue
Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one_third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal
Inner_row_of_minute_dentary_teeth (203):
(0)_absent_or_restricted_to_lateral_region_of_dentary -->
(1)_present_from_anterior_region_of_dentary
Profile_of_posterodorsal_margin_of_opercle (252): (0)_convex,_straight,_or_slightly_concave -->
(1)_distinctly_concave,_forming_an_angle_of_45°

Processes_on_ventral_margin_of_second vertebral_centrum (309): (0)_absent --> (1)_present
Number_of_vertebrae (325): (1)_34_or_more -->
(0)_up_to_33
Number_of_supraneurals (394):
(1)_seven_or_more --> (0)_six_or_fewer
Number_of_supraneurals (395):
(1)_eight_or_more --> (0)_seven_or_fewer

Pelvic-
fin_bony_hooks_in_adult_males_of_species_bearin
g_hooks_on_fins (442): (1)_present --> (0)_absent

Node 1175 :

Char. 1519: A --> T
Char. 1585: C --> T
Char. 1708: C --> A
Char. 1897: C --> T
Char. 2024: T --> C
Char. 2056: C --> T
Char. 2083: A --> G
Char. 2137: T --> G

Node 1176 :

Char. 1522: A --> G
Char. 1525: T --> C
Char. 1555: C --> T
Char. 1582: T --> C
Char. 1588: A --> G
Char. 1601: C --> T
Char. 1615: A --> G
Char. 1651: T --> C
Char. 1669: A --> T
Char. 1693: T --> C
Char. 1771: T --> C
Char. 1804: A --> T
Char. 1876: A --> T
Char. 1879: A --> T
Char. 1882: T --> C
Char. 1984: C --> T
Char. 2011: T --> C
Char. 2032: A --> G
Char. 2044: T --> A
Char. 2110: C --> T

Node 1177 :

Char. 1558: T --> C

Node 1178 :

Char. 550: C --> T
Char. 563: A --> G
Char. 646: AG --> C
Char. 745: A --> C
Char. 757: A --> CT
Char. 796: A --> C
Char. 838: C --> A
Char. 844: A --> C
Char. 845: G --> A
Char. 850: A --> C
Char. 889: C --> A
Char. 910: C --> A
Char. 926: G --> A
Char. 940: C --> A
Char. 1123: C --> T
Char. 1153: C --> T
Char. 1177: T --> G
Char. 1180: A --> C
Char. 1189: C --> T
Char. 1213: A --> C
Char. 1219: C --> T
Char. 1243: A --> C
Char. 1246: C --> T
Char. 1279: A --> C
Char. 1283: C --> A
Char. 1291: A --> T
Char. 1294: A --> C
Char. 1306: A --> T
Char. 1309: C --> A
Char. 1384: A --> C
Char. 1426: A --> T
Char. 1672: A --> G
Char. 1675: A --> T
Char. 1684: T --> C
Char. 1687: A --> G
Char. 1714: A --> C
Char. 1762: C --> T
Char. 1795: C --> G
Char. 1810: G --> C
Char. 1870: C --> A
Char. 1996: T --> C
Char. 2035: T --> C
Char. 2206: A --> T
Char. 2311: A --> T
Char. 2386: A --> T
Char. 2392: C --> T
Char. 2527: C --> T

Char. 2539: T --> C
Char. 2541: A --> T
Char. 2548: C --> T
Char. 2563: T --> G
Char. 2594: T --> C
Char. 3539: A --> C
Char. 3583: G --> A
Char. 3620: T --> C
Char. 3688: T --> C
Char. 3767: G --> A
Char. 3845: C --> T
Char. 3865: T --> C
Char. 3877: T --> C
Char. 3889: T --> C
Char. 3893: A --> G
Char. 4009: G --> A
Char. 4048: C --> T
Char. 4054: T --> G
Char. 4177: C --> T
Char. 4240: G --> A
Char. 4273: C --> T
Char. 4276: T --> A
Char. 4318: T --> C
Char. 4339: C --> A
Char. 4349: C --> A
Char. 4361: C --> A
Char. 4366: C --> A
Char. 6208: T --> C
Char. 6212: G --> A
Char. 6299: G --> A
Char. 6304: A --> T
Char. 6377: C --> T
Char. 6381: A --> T
Char. 6452: A --> C
Char. 6457: A --> T
Char. 6461: G --> A
Char. 6468: C --> T

Node 1179 :

Char. 532: A --> C
Char. 557: T --> G
Char. 724: A --> C
Char. 790: A --> C
Char. 864: C --> T
Char. 956: G --> A
Char. 979: C --> A
Char. 1000: C --> A
Char. 1014: T --> C
Char. 1045: A --> C
Char. 1120: A --> C
Char. 1207: C --> T
Char. 1229: C --> T
Char. 1318: A --> C
Char. 1330: A --> C
Char. 1386: T --> C
Char. 1430: A --> G
Char. 1549: C --> T
Char. 1555: C --> T
Char. 1582: T --> A
Char. 1595: T --> G
Char. 1598: C --> T
Char. 1603: A --> T
Char. 1738: A --> C
Char. 1744: C --> A
Char. 1780: A --> C
Char. 1824: C --> T
Char. 1895: A --> G
Char. 1981: A --> T
Char. 2021: G --> A
Char. 2065: A --> T
Char. 2087: C --> T
Char. 2167: T --> C
Char. 2221: T --> G
Char. 2225: G --> T
Char. 2226: G --> T
Char. 2227: C --> A
Char. 2248: C --> T
Char. 2275: T --> C
Char. 2287: T --> C
Char. 2305: C --> T
Char. 2332: T --> C
Char. 2344: G --> A
Char. 2435: C --> T
Char. 2500: G --> A

Char. 2510: T --> C
Char. 2536: C --> T
Char. 2584: T --> C
Char. 2593: AG --> T
Char. 2599: C --> A
Char. 2656: C --> T
Char. 2659: A --> G
Char. 2660: C --> T
Char. 2713: T --> C
Char. 2791: T --> A
Char. 2876: C --> A
Char. 2894: T --> G
Char. 3484: G --> C
Char. 3505: T --> A
Char. 3532: T --> C
Char. 3535: T --> A
Char. 3562: A --> T
Char. 3610: A --> G
Char. 3670: A --> T
Char. 3691: C --> G
Char. 3739: A --> G
Char. 3763: C --> T
Char. 3793: A --> T
Char. 3808: G --> A
Char. 3820: C --> T
Char. 3853: C --> G
Char. 3886: G --> C
Char. 3917: C --> A
Char. 3919: T --> G
Char. 3925: T --> A
Char. 3947: C --> G
Char. 3952: C --> T
Char. 3961: G --> C
Char. 3964: T --> C
Char. 4067: C --> T
Char. 4085: G --> A
Char. 4087: T --> C
Char. 4097: C --> G
Char. 4126: A --> G
Char. 4153: T --> C
Char. 4192: G --> T
Char. 4201: G --> A
Char. 4205: C --> A
Char. 4213: A --> G
Char. 4231: T --> G
Char. 4279: C --> T
Char. 4336: A --> G
Char. 4346: A --> T
Char. 4354: G --> T
Char. 4384: C --> T
Char. 4417: A --> G
Char. 4448: C --> A
Char. 4486: G --> A
Char. 4534: G --> A
Char. 4582: A --> G
Char. 4606: T --> G
Char. 4663: C --> G
Char. 4711: G --> A
Char. 6153: T --> C
Char. 6163: A --> G
Char. 6210: T --> C
Char. 6254: A --> C
Char. 6290: C --> T
Char. 6314: C --> T
Char. 6374: G --> A
Char. 6383: G --> A
Char. 6485: A --> T
Char. 6562: C --> T
Char. 6565: C --> T
Char. 6566: C --> T
Char. 6573: C --> T
Char. 6589: G --> T

Node 1180 :

Lateral_coverage_of_dilatator_fossa_by_infraorbita
l_series (94):
(0)_almost_complete,_at_least_in_its_ventral_bord
er -->
(1)_leaving_a_conspicuous_naked_area_in_anterio
r_region_of_fossa
Anguloarticular_laterosensory_canal (105):
(0)_present --> (1)_absent

Laterosensorial_pore_just_anterior_to_dilatator_fos
sa (115): (1)_lateroventral_to_laterosensory_canal -
-> (0)_dorsomedial_to_laterosensory_canal

Extension_of_parietal_branch_of_laterosensory_ca
nal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent
Lateral_line (123): (0)_complete -->
(1)_interrupted
Canal_of_lateral_line_on_caudal-
fin_membrane (125): (1)_present --> (0)_absent
Length_of_ascending_process_of_premaxilla
(129): (0)_reaching_at_least_one-
third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal
Position_of_coronomeckelian (159):
(1)_situated_mainly_dorsal_to_Meckelian_cartilag
e -->
(0)_situated_mainly_lateral_to_Meckelian_cartilag
e
Cusps_of_teeth_on_outer_premaxillary_row
(177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps

Maximum_number_of_cusps_of_anterior_dentary_
teeth (202): (0)_five_or_fewer --> (1)_six_or_more

Posterior_extent_of_ventral_process_of_quadrate
(234):
(0)_reaching_vertical_through_posterior_margin_o
f_symplectic -->
(1)_falling_short_of_posterior_margin_of_symplec
tic

Gill_filaments_attached_to_leading_edge_of_first_
ceratobranchial (303): (1)_18_or_more -->
(0)_17_or_fewer
Anterior_tip_of_pelvic_bone (376):
(1)_posterior_to_second_rib -->
(0)_anterior_to_second_rib
Number_of_branched_anal-fin_rays (420):
(0)_24_or_fewer --> (1)_25_or_more
Node 1181 :

Extension_of_parietal_branch_of_laterosensory_ca
nal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent
Lateral_line (123): (0)_complete -->
(1)_interrupted
Canal_of_lateral_line_on_caudal-
fin_membrane (125): (1)_present --> (0)_absent

Gill_filaments_attached_to_leading_edge_of_first_
ceratobranchial (303): (1)_18_or_more -->
(0)_17_or_fewer
Number_of_vertebrae (325): (1)_34_or_more --
> (0)_up_to_33
Char. 6344: A --> G
Char. 6449: T --> C
Node 1187 :
Posterior_extension_of_supraoccipital_spine
(62):
(0)_reaching_at_least_to_middle_length_of_neural
_complex -->
(1)_reaching_only_to_anterior_limit_of_neural_co
mplex
Char. 538: T --> C
Char. 539: T --> C
Char. 568: T --> C
Char. 574: C --> T
Char. 592: C --> T
Char. 595: C --> T
Char. 622: T --> A
Char. 661: C --> T
Char. 697: C --> T
Char. 766: T --> C
Char. 868: A --> G
Char. 886: G --> C
Char. 889: A --> T
Char. 973: T --> C
Char. 1054: A --> C
Char. 1153: C --> T
Char. 1240: T --> C
Char. 1348: T --> C
Char. 1381: C --> T
Char. 1387: T --> C
Char. 1402: T --> C
Char. 1478: A --> G
Char. 2584: C --> T
Char. 5856: C --> T
Char. 6027: C --> T

Char. 6161: A --> G
Char. 6516: G --> A
Node 1188 :
Char. 544: T --> C
Char. 631: C --> T
Char. 712: T --> A
Char. 863: G --> A
Char. 934: C --> T
Char. 997: A --> C
Char. 1030: C --> T
Char. 1045: C --> T
Char. 1063: C --> T
Char. 1135: C --> T
Char. 1222: C --> T
Char. 1225: C --> T
Char. 1228: C --> T
Char. 1355: T --> C
Char. 1368: C --> T
Char. 1429: C --> T
Char. 1462: C --> T
Char. 3625: T --> C
Char. 3670: A --> G
Char. 4651: G --> A
Char. 5197: C --> T
Char. 5215: T --> A
Char. 5697: C --> T
Char. 5945: A --> G
Char. 6078: T --> C
Char. 6390: G --> A
Char. 6400: C --> T
Char. 6402: A --> G
Char. 6424: C --> T
Char. 6434: G --> A
Char. 6435: G --> A
Char. 6448: C --> T
Char. 6562: C --> T
Node 1189 :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wi
ng -->
(1)_projecting_mesethmoid_wing_longer_than_nas
al_width
Posterior_margin_of_subtemporal_fossa (72):
(0)_not_well_delimited_by_pterotic -->
(1)_limited_by_a_well_developed_transverse_ptero
tic_ridge
Lateral_line (123): (1)_interrupted -->
(0)_complete
Canal_of_lateral_line_on_caudal-
fin_membrane (125): (0)_absent --> (1)_present
Char. 607: A --> G
Char. 805: C --> A
Char. 826: T --> C
Char. 889: C --> A
Char. 967: C --> T
Char. 1048: C --> T
Char. 1252: T --> C
Char. 1267: A --> C
Char. 1309: T --> C
Char. 1348: A --> T
Char. 1483: T --> C
Char. 1582: T --> C
Char. 1615: A --> G
Char. 1675: C --> A
Char. 1909: T --> C
Char. 1960: T --> C
Char. 2023: T --> A
Char. 2095: C --> T
Char. 2131: A --> G
Char. 5208: A --> G
Char. 5823: T --> C
Char. 5970: C --> T
Char. 5983: A --> G
Char. 6022: C --> T
Char. 6037: T --> C
Char. 6063: T --> A
Char. 6512: T --> C
Node 1190 :
Metapterygoid_foramen (228):
(0)_a_well_defined_transverse_foramen -->
(1)_as_a_canal_oblique_to_metapterygoid

Anterior_tip_of_pelvic_bone (375):
(1)_posterior_to_first_rib -->
(0)_anterior_to_first_rib
Char. 1598: C --> T
Char. 1618: A --> T
Char. 1627: T --> C
Char. 1678: A --> T
Char. 1699: C --> T
Char. 1738: C --> A
Char. 1753: T --> C
Char. 1777: C --> T
Char. 1804: A --> T
Char. 1822: G --> T
Char. 1840: T --> C
Char. 1882: C --> T
Char. 1897: T --> C
Char. 1934: C --> T
Char. 1951: T --> C
Char. 2041: T --> C
Char. 2116: C --> T
Char. 5688: C --> T
Char. 5845: T --> A
Char. 6003: A --> C
Char. 6016: T --> A
Char. 6063: T --> A
Char. 6302: C --> T
Char. 6331: A --> T
Char. 6361: A --> G
Char. 6362: C --> T
Char. 6447: C --> T
Node 1191 :
Char. 1579: A --> G
Char. 1684: T --> C
Char. 1717: A --> G
Char. 1769: C --> T
Char. 1801: A --> G
Char. 1810: T --> C
Char. 1825: T --> C
Char. 1864: C --> T
Char. 1969: T --> C
Char. 1993: A --> G
Char. 2006: C --> T
Char. 2026: G --> A
Char. 2053: C --> T
Char. 2074: A --> G
Char. 2102: C --> T
Char. 2128: A --> C
Char. 2134: A --> G
Char. 2137: T --> G
Node 1192 :
Extension_of_parietal_branch_of_laterosensory_canal (117): (1)_not_reaching_parietal_or_absent -->
(0)_reaching_parietal
Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (294): (1)_15_or_fewer -->
(0)_16_or_more
Anterior_tip_of_pelvic_bone (371):
(0)_rounded_and_capped_by_a_small_cartilage -->
(1)_pointed_and_without_cartilage
Number_of_branched_anal-fin_rays (420):
(0)_24_or_fewer --> (1)_25_or_more
Red_iridescent_humeral_spot (493): (0)_absent --> (1)_present
Char. 1543: A --> G
Char. 1567: A --> G
Char. 1663: T --> C
Char. 1858: C --> T
Node 1193 :
Anterior_margin_of_lamellar_region_of_vomer (16):
(1)_as_wide_as_posterior_margin_of_anterior_region -->
(0)_narrower_than_anterior_region
Node 1194 :
Ventral_extent_of_third_infraorbital (88):
(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly -->
(0)_reaching_horizontal_arm_of_preopercle
Lateral_coverage_of_dilatator_fossa_by_infraorbital_series (94):
(0)_almost_complete,_at_least_in_its_ventral_bord
er -->
(1)_leaving_a_conspicuous_naked_area_in_anterior_region_of_fossa
Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one-third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal
Posterior_extent_of_maxilla (143):
(1)_reaching_second_infraorbital -->
(0)_not_reaching_second_infraorbital
Medial_process_of_dentary_bordering_Meckelian_cartilage_dorsally_and_medially (155): (0)_absent -->
(1)_present,_with_mandibular_accessory_tendon_inserted_on_it
Position_of_coronomeckelian (159):
(0)_situated_mainly_lateral_to_Meckelian_cartilage -->
(1)_situated_mainly_dorsal_to_Meckelian_cartilage
Horizontal_process_of_anguloarticular (161):
(0)_laterally_covered_by_dentary_only_anteriorly -->
(1)_broadly_covered_by_dentary_to_tip_of_Meckelian_cartilage
Relative_length_of_palatine (209):
(0)_approximately_one-half_length_of_ectopterygoid,_or_less -->
(1)_distinctly_longer_than_one-half_length_of_ectopterygoid
Dorsal_process_of_ectopterygoid_oriented_towards_lateral_ethmoid (216): (0)_absent --> (1)_present
Shape_of_metapterygoid-quadrate_fenestra (225):
(0)_rounded_or_ovate,_anteriorly_limited_by_quadrate -->
(1)_anteriorly_collapsed_by_metapterygoid_and_quadrate
Posterior_extent_of_ventral_process_of_quadrate (234):
(0)_reaching_vertical_through_posterior_margin_of_symplectic -->
(1)_falling_short_of_posterior_margin_of_symplectic
Longitudinal_ridge_in_quadrate_bordering_adductor_mandibulae_muscle_ventrally_and_to_some_degree,_laterally (235): (0)_absent --> (1)_present
Articulation_between_quadrate_and_anguloarticular (237): (1)_posterior_to_lateral_ethmoid -->
(0)_anterior_to_or_at_vertical_through_lateral_ethmoid
Shape_of_dentigerous_plate_of_fifth_ceratobranchial (287): (1)_elongated,_without_posterior_notch -->
(0)_rounded,_with_posterior_notch
Rows_of_gill_rakers_on_first_ceratobranchial (291): (0)_one --> (1)_two
Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two
Anterior_tip_of_pelvic_bone (379):
(0)_anterior_to_fifth_rib -->
(1)_posterior_to_fifth_rib
Supraneural_anterior_to_neural_spine_of_fourth_vertebra (389): (1)_present_and_vertically_elongate --> (0)_absent_or_small
Number_of_anal_pterygiophores_anterior_to_first_haemal_spine (412): (0)_three_or_fewer -->
(1)_four_or_more
Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Origin_of_A1_section_of_adductor_mandibulae (476):
(0)_principally_on_vertical_arm_of_preopercle -->
(1)_restricted_or_almost_restricted_to_horizontal_arm_of_preopercle
Ventral_union_of_gill_membranes (507):
(0)_joined_anteriorly,_but_not_covering_isthmus -->
(1)_joined_along_length_of_isthmus_but_not_attached_to_it
Char. 524: C --> T
Char. 532: A --> G
Char. 652: A --> T
Char. 730: C --> T
Char. 739: A --> T
Char. 743: C --> T
Char. 754: A --> T
Char. 854: G --> A
Char. 904: C --> T
Char. 937: C --> T
Char. 953: A --> G
Char. 1003: A --> C
Char. 1045: C --> A
Char. 1270: A --> C
Char. 1271: C --> T
Char. 1357: C --> T
Char. 1381: C --> T
Char. 1428: T --> A
Char. 1441: C --> G
Char. 1459: A --> C
Char. 3559: A --> G
Char. 3637: C --> T
Char. 3670: A --> G
Char. 3688: T --> C
Char. 3826: A --> G
Char. 4034: T --> C
Char. 4207: A --> G
Char. 4210: C --> T
Char. 4555: C --> A
Char. 6353: A --> T
Node 1195 :
Humeral_spot (492): (0)_absent_or_vertically_elongate --> (1)_horizontally-ovate
Node 1196 :
Cusps_of_teeth_on_outer_premaxillary_row (177): (0)_one_to_three_cusps -->
(1)_five_or_more_cusps
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (295): (0)_11_or_more -->
(1)_ten_or_fewer
Posterior_margin_of_cleithrum (341):
(1)_with_concavity_ventral_to_first_postcleithrum -->
(0)_without_concavity_ventral_to_first_postcleithrum
Posterior_projection_of_ischiatic_process (374): (0)_well_developed --> (1)_absent
Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Node 1197 :
Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(0)_contacting,_or_almost_contacting,_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids
Posterior_extent_of_ventral_process_of_quadrate (234):
(1)_falling_short_of_posterior_margin_of_symplectic -->
(0)_reaching_vertical_through_posterior_margin_of_symplectic
Anterior_tip_of_pelvic_bone (371):
(0)_rounded_and_capped_by_a_small_cartilage -->
(1)_pointed_and_without_cartilage
Anterior_tip_of_pelvic_bone (375):
(1)_posterior_to_first_rib -->
(0)_anterior_to_first_rib

Char. 5214: C --> G
Char. 5589: T --> C
Char. 6326: T --> C
Char. 6327: A --> T
Char. 6331: A --> T
Char. 6346: T --> C
Char. 6362: C --> T
Char. 6463: C --> T
Char. 6476: C --> A
Node 1198 :
Posterior_margin_of_subtemporal_fossa (72):
(0)_not_well_delimited_by_pterotic -->
(1)_limited_by_a_well_developed_transverse_pterotic_ridge
Anterior_tip_of_pelvic_bone (371):
(0)_rounded_and_capped_by_a_small_cartilage -->
(1)_pointed_and_without_cartilage
Posterior_projection_of_ischiatic_process (374): (0)_well_developed --> (1)_absent
Node 1199 :
Number_of_cusps_of_first_maxillary_tooth (194): (0)_five_or_fewer --> (1)_seven_or_more
Char. 1702: A --> G
Char. 1741: C --> T
Char. 1913: C --> T
Char. 1918: C --> G
Char. 1939: G --> T
Char. 1960: T --> C
Char. 4180: T --> C
Char. 4222: A --> G
Char. 4381: T --> C
Char. 4663: A --> G
Char. 6229: G --> A
Char. 6245: A --> G
Char. 6247: C --> T
Char. 6253: A --> G
Char. 6342: G --> A
Char. 6346: T --> C
Char. 6440: A --> T
Char. 6454: A --> G
Char. 6458: C --> A
Node 1200 :
Number_of_gill_rakers_on_first_hypobranchial_and_d_ceratobranchial (295): (1)_ten_or_fewer -->
(0)_11_or_more
Char. 6252: A --> C
Char. 6255: A --> C
Char. 6381: A --> C
Char. 6452: A --> G
Char. 6513: T --> C
Node 1201 :
Char. 1711: C --> T
Char. 1729: A --> C
Char. 1732: C --> T
Char. 1753: T --> C
Char. 1894: A --> G
Char. 1913: C --> T
Char. 2569: A --> G
Char. 2731: T --> A
Char. 2739: C --> G
Char. 2740: A --> C
Char. 5055: G --> A
Char. 6322: T --> C
Char. 6344: A --> G
Node 1202 :
Length_of_sphenotic_spine (47):
(0)_not_reaching_to_anterodorsal_angle_of_hyomandibula -->
(1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula
Ventral_projection_of_lagenar_capsule (70):
(0)_not_reaching_to_plane_through_parasphenoid_dorsal_margin -->
(1)_ventral_to_plane_through_parasphenoid_dorsal_margin
Epiphyseal_branch_of_corresponding_supraorbital_canals (112):
(0)_both_aligned_with_epiphyseal_bar -->
(1)_oriented_obliquely,_opening_posteriorly_to_epiphyseal_bar
Anterodorsal_lobe_of_metapterygoid_oriented_towards_mesopterygoid (223):
(0)_absent_or_small_and_dorsally_oriented -->
(1)_present_conspicuous_and_anteriorly_oriented
Medial_laminar_expansion_at_dorsal_tip_of_cleithrum (343): (0)_absent --> (1)_present
Dorsal_development_of_cleithrum (344):
(0)_much_extended_dorsally_to_mesocoracoid -->
(1)_ending_in_a_position_just_dorsal_of_tip_of_mesocoracoid
Development_of_medial_lamella_of_coracoid (346): (0)_not_expanded -->
(1)_expanded_as_a_keeel
Char. 598: C --> T
Char. 631: C --> T
Char. 694: T --> C
Char. 752: T --> C
Char. 859: A --> G
Char. 940: T --> C
Char. 967: C --> A
Char. 1000: C --> A
Char. 1054: A --> C
Char. 1216: T --> C
Char. 1333: AC --> T
Char. 1345: C --> A
Char. 1459: T --> C
Char. 1498: A --> C
Char. 3479: G --> A
Char. 3508: A --> G
Char. 3724: T --> C
Char. 3871: T --> C
Char. 6523: C --> T
Node 1203 :
Char. 6153: T --> C
Char. 6325: C --> A
Char. 6328: A --> T
Char. 6342: T --> C
Char. 6440: A --> C
Node 1204 :
Char. 6290: T --> C
Char. 6295: A --> C
Char. 6319: A --> G
Char. 6322: G --> C
Char. 6379: C --> A
Char. 6381: T --> C
Char. 6383: A --> G
Char. 6439: G --> A
Char. 6475: T --> C
Char. 6513: C --> T
Char. 6584: A --> G
Node 1205 :
Char. 526: A --> C
Char. 634: G --> A
Char. 967: A --> C
Char. 1135: C --> T
Char. 2380: G --> A
Char. 4403: A --> G
Char. 5082: C --> G
Char. 5095: G --> A
Char. 5361: T --> C
Char. 5934: A --> C
Char. 6345: A --> G
Node 1206 :
Char. 754: A --> C
Char. 775: G --> T
Char. 982: A --> C
Char. 1013: G --> A
Char. 1014: T --> C
Char. 1105: A --> T
Char. 1111: C --> A
Char. 1120: A --> C
Char. 1231: A --> C
Char. 1318: A --> T
Char. 1349: A --> G
Char. 1396: A --> C
Char. 1498: C --> A
Char. 1499: T --> C
Char. 1500: G --> T
Char. 1531: C --> A
Char. 1552: AG --> C
Char. 1603: A --> G
Char. 1819: C --> T
Char. 2068: T --> C
Char. 2134: A --> G
Char. 2146: T --> C
Char. 2500: G --> A
Char. 2686: C --> T
Char. 2752: C --> T
Char. 2761: C --> T
Char. 3532: T --> C
Char. 3539: A --> C
Char. 3553: T --> C
Char. 3604: A --> T
Char. 3619: G --> C
Char. 3643: A --> CT
Char. 3850: C --> T
Char. 3851: C --> T
Char. 4066: CT --> A
Char. 4210: C --> A
Char. 4249: C --> T
Char. 4252: G --> T
Char. 4294: C --> T
Char. 4309: G --> A
Char. 4507: T --> C
Char. 4570: C --> T
Char. 4591: T --> C
Char. 4794: C --> T
Char. 4837: C --> T
Char. 5061: C --> A
Char. 5091: C --> T
Char. 5325: G --> A
Char. 5454: G --> A
Char. 5511: C --> T
Char. 5658: C --> T
Char. 6210: T --> C
Char. 6344: G --> A
Char. 6427: G --> A
Char. 6441: A --> T
Node 1207 :
Char. 5807: A --> G
Char. 6252: T --> C
Char. 6321: A --> G
Char. 6424: T --> C
Char. 6573: C --> T
Node 1208 :
Char. 5863: C --> T
Char. 5945: A --> G
Char. 6163: A --> G
Char. 6180: T --> C
Char. 6204: C --> T
Char. 6308: G --> A
Char. 6322: C --> G
Char. 6335: A --> T
Char. 6342: G --> T
Char. 6363: A --> T
Char. 6381: A --> T
Char. 6439: A --> G
Node 1209 :
Ventral_diverging_lamellae_of_mesethmoid (7): (0)_absent --> (1)_present
Relative_position_of_anterior_margin_of_antorbital_1_and_first_infraorbital (79):
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base -->
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base
Relative_position_of_anterior_margin_of_antorbital_1_and_first_infraorbital (80):
(1)_anterior_margin_of_antorbital_posterior_to_first_infraorbital -->
(0)_antorbital_either_aligned_or_anterior_to_first_infraorbital
Overlap_of_maxilla_by_second_infraorbital (85): (0)_absent --> (1)_present
Ventral_extent_of_third_infraorbital (88):
(0)_reaching_horizontal_arm_of_preopercle -->
(1)_not_reaching_horizontal_arm_of_preopercle,_at_least_anteriorly
Length_of_ascending_process_of_premaxilla (129): (1)_reaching_just_anterior_end_of_nasal -->
(0)_reaching_at_least_one-third_of_length_of_nasal

Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers

Gill_filaments_attached_to_leading_edge_of_first_ceratobranchial (304): (0)_24_or_fewer -->
(1)_25_or_more
Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioccipital -->
(1)_posterior_to_lateral_margin_of_epioccipital

Dorsal_longitudinal_ridge_on_medial_lamella_of_pelvic_bone (372): (0)_present --> (1)_absent
Number_of_branched_pelvic-fin_rays (384):
(1)_seven_or_more --> (0)_six_or_less

Lateral_lamellae_on_anterior_anal_pterygiophores (414): (1)_present --> (0)_absent
Number_of_unbranched_anal-fin_rays (417):
(0)_three_or_fewer --> (1)_four_or_more
Number_of_branched_anal-fin_rays (419):
(0)_17_or_fewer --> (1)_18_or_more
Radii_on_scales (458):
(1)_present_and_numerous_on_most_scales -->
(0)_absent_or_reduced_in_number
Scales_covering_anal-fin_base (468):
(0)_one_or_two_rows_of_scales_covering_anal-fin_base -->
(1)_several_rows_covering_basal_third_of_anal_fin

Char. 535: A --> C
Char. 700: T --> C
Char. 1093: A --> C
Char. 1177: T --> C
Char. 1306: A --> C
Char. 1516: T --> C
Char. 1618: T --> C
Char. 1642: T --> C
Char. 1723: A --> CT
Char. 2035: T --> C
Char. 2296: T --> C
Char. 3916: G --> A
Char. 4435: G --> A
Char. 5856: C --> T
Char. 5974: G --> A
Char. 6078: T --> C
Char. 6252: A --> T
Char. 6344: A --> G
Char. 6379: A --> C
Char. 6512: AT --> C
Char. 6528: A --> G

Node 1210 :
Char. 1579: A --> G
Char. 1897: T --> C
Char. 2092: A --> G
Char. 2518: G --> A
Char. 2630: T --> A
Char. 2668: T --> C

Node 1211 :
Char. 1561: C --> T
Char. 1660: T --> C
Char. 1684: T --> C
Char. 1720: T --> C
Char. 1756: C --> T
Char. 1777: C --> T
Char. 1963: C --> T
Char. 2059: T --> C
Char. 2101: C --> T
Char. 2113: C --> T

Node 1212 :
Char. 1513: C --> T
Char. 1615: G --> A
Char. 1681: A --> G
Char. 1711: C --> T
Char. 1759: A --> G
Char. 1762: C --> T
Char. 1786: C --> T
Char. 1813: T --> A

Char. 1879: G --> A
Char. 1912: C --> T
Char. 2023: C --> T
Char. 2026: A --> T
Char. 2044: A --> T
Char. 2062: C --> T
Char. 2110: C --> T

Node 1213 :
Char. 778: C --> T
Char. 886: G --> C
Char. 913: A --> C
Char. 916: T --> C
Char. 940: C --> T
Char. 991: C --> T
Char. 1085: C --> T
Char. 1111: C --> T
Char. 1237: C --> T
Char. 1240: C --> T
Char. 1288: C --> G
Char. 1297: A --> T
Char. 1363: C --> T
Char. 1390: C --> T
Char. 1426: A --> C
Char. 1445: A --> G
Char. 1489: C --> A
Char. 1588: G --> A
Char. 1888: T --> A
Char. 2269: C --> T
Char. 6463: G --> A

Node 1214 :
Char. 538: C --> T
Char. 580: C --> A
Char. 589: C --> T
Char. 706: C --> A
Char. 740: A --> G
Char. 775: G --> T
Char. 787: A --> C
Char. 838: C --> A
Char. 854: A --> G
Char. 863: A --> G
Char. 961: C --> T
Char. 967: C --> T
Char. 976: C --> T
Char. 982: A --> T
Char. 1027: A --> C
Char. 1030: C --> T
Char. 1042: T --> C
Char. 1072: C --> T
Char. 1076: C --> T
Char. 1084: C --> T
Char. 1099: T --> C
Char. 1222: C --> T
Char. 1234: C --> A
Char. 1264: A --> T
Char. 1303: C --> T
Char. 1306: C --> A
Char. 1402: T --> C
Char. 1417: A --> T
Char. 1459: A --> T
Char. 1570: T --> C
Char. 1597: C --> T
Char. 1600: C --> AT
Char. 1612: C --> T
Char. 1717: A --> G
Char. 1729: C --> T
Char. 1793: C --> T
Char. 1834: C --> T
Char. 1873: C --> T
Char. 1892: C --> T
Char. 1984: C --> T
Char. 1990: A --> T
Char. 2032: A --> T
Char. 2107: C --> T
Char. 2125: T --> A
Char. 2146: T --> C
Char. 2312: G --> T
Char. 2329: A --> G
Char. 2368: A --> G
Char. 2401: A --> G
Char. 2404: T --> C
Char. 2435: C --> T
Char. 2494: A --> G
Char. 2524: T --> C

Char. 2569: A --> C
Char. 2587: G --> A
Char. 2607: A --> G
Char. 2620: G --> C
Char. 2728: A --> G
Char. 2746: T --> A
Char. 2791: T --> C
Char. 2848: C --> A
Char. 4722: T --> C
Char. 4767: G --> A
Char. 4837: C --> A
Char. 4971: G --> A
Char. 5034: A --> G
Char. 5043: C --> T
Char. 5094: C --> T
Char. 5178: G --> A
Char. 5184: C --> T
Char. 5229: T --> G
Char. 5241: T --> A
Char. 5268: T --> A
Char. 5292: T --> C
Char. 5295: G --> T
Char. 5349: C --> T
Char. 5352: A --> T
Char. 5381: C --> A
Char. 5470: A --> G
Char. 5472: T --> A
Char. 5491: G --> A
Char. 5670: C --> G
Char. 5682: C --> A
Char. 6226: T --> C
Char. 6240: A --> G
Char. 6353: A --> T
Char. 6465: C --> T
Char. 6471: T --> A
Char. 6476: C --> A
Char. 6527: G --> A

Node 1215 :
Char. 1793: C --> T
Char. 1879: G --> A
Char. 1903: T --> C
Char. 1933: T --> C
Char. 1966: T --> C
Char. 1972: G --> A
Char. 1984: C --> T
Char. 2026: A --> G
Char. 6325: C --> T
Char. 6348: A --> T

Node 1216 :
Char. 1846: C --> T
Char. 4978: A --> T
Char. 5145: C --> G
Char. 5209: G --> T
Char. 5280: T --> A
Char. 5337: G --> A
Char. 5349: T --> A
Char. 5538: G --> A
Char. 5565: A --> T
Char. 5675: G --> C
Char. 5743: A --> T
Char. 6413: C --> T

Node 1217 :
Bony_lamella_dorsal_to_fourth_basibranchial (275): (0)_present --> (1)_absent
First_postcleithrum (361): (0)_present -->
(1)_absent
Relative_length_of_anterior_dorsal-fin_rays (410):
(1)_reaching_tip_of_posterior_rays_when_addressed -->
(0)_not_reaching_tip_of_posterior_rays_when_addressed
Anal-fin_position (415):
(0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray -->
(1)_extended_anteriorly_ventral_to_dorsal_fin
Number_of_anal-fin_hooks_of_adult_males (452):
(0)_three_or_more_on_each_ray_with_hooks -->
(1)_only_one_or_two_hooks_on_each_ray
Char. 661: T --> C
Char. 730: C --> T
Char. 841: C --> T

Char. 985: C --> T
 Char. 1036: C --> T
 Char. 1045: C --> T
 Char. 1060: C --> T
 Char. 1147: A --> T
 Char. 1153: C --> T
 Char. 1255: AC --> T
 Char. 1271: C --> T
 Char. 1375: T --> C
 Char. 1642: T --> C
 Char. 1804: A --> C
 Char. 1807: T --> A
 Char. 1858: C --> T
 Char. 1873: T --> C
 Char. 1897: T --> C
 Char. 1927: T --> C
 Char. 1942: A --> C
 Char. 2014: C --> A
 Char. 2087: C --> T
 Char. 2194: T --> C
 Char. 2329: A --> G
 Char. 2459: A --> G
 Char. 2533: T --> C
 Char. 2566: T --> C
 Char. 3564: T --> C
 Char. 3634: C --> A
 Char. 3889: T --> G
 Char. 3893: A --> G
 Char. 4471: G --> A
 Char. 4474: G --> T
 Char. 4521: G --> A
 Char. 4577: G --> A
 Char. 4651: G --> T
 Char. 4926: C --> T
 Char. 5139: C --> T
 Char. 5158: C --> A
 Char. 5177: G --> A
 Char. 5190: G --> A
 Char. 5260: A --> G
 Char. 5367: C --> G
 Char. 6300: G --> A
 Char. 6326: T --> A
 Char. 6346: C --> T
 Char. 6376: C --> T
 Char. 6513: T --> A
 Node 1218 :
 Lateral_line (123): (0)_complete -->
 (1)_interrupted
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Number_of_cusps_of_anterior_dentary_teeth
 (201): (1)_five_or_more --> (0)_three_or_fewer
 Caudal_fins_rays_11_and_12 (438):
 (0)_not_ventrally_durved -->
 (1)_durved_ventrally_and_forming_a_caudal_pu
 mp_in_some_species
 Char. 781: C --> T
 Char. 787: C --> T
 Char. 808: C --> T
 Char. 847: A --> CT
 Char. 1015: C --> A
 Char. 1276: C --> T
 Char. 1430: A --> G
 Char. 1600: A --> C
 Char. 1717: G --> A
 Char. 1729: A --> T
 Char. 1786: C --> T
 Char. 1855: T --> C
 Char. 1867: T --> A
 Char. 1948: T --> C
 Char. 2095: C --> T
 Char. 2131: A --> G
 Char. 2134: A --> T
 Char. 2158: C --> T
 Char. 2296: C --> T
 Char. 2341: A --> G
 Char. 2389: G --> A
 Char. 2539: T --> G
 Char. 2738: A --> T
 Char. 3508: A --> T
 Char. 3535: C --> T
 Char. 3605: T --> C
 Char. 4150: A --> G
 Char. 4469: G --> A
 Char. 4661: C --> A
 Char. 4675: G --> A
 Char. 4812: T --> C
 Char. 4917: G --> A
 Char. 4977: C --> A
 Char. 5353: C --> T
 Char. 5394: A --> C
 Char. 5418: A --> G
 Char. 6024: G --> A
 Char. 6040: A --> G
 Char. 6344: A --> T
 Char. 6402: G --> A
 Node 1219 :
 Char. 2260: T --> C
 Char. 2290: G --> A
 Char. 2302: C --> T
 Char. 2377: A --> G
 Char. 2530: C --> T
 Char. 2539: T --> G
 Char. 2602: C --> T
 Char. 2779: C --> T
 Char. 3640: G --> A
 Char. 3976: T --> C
 Char. 4102: C --> T
 Char. 4120: C --> T
 Char. 4174: T --> A
 Char. 4291: G --> A
 Char. 4441: C --> T
 Char. 4469: G --> A
 Char. 4471: G --> T
 Char. 4487: C --> T
 Char. 4669: T --> C
 Char. 4759: C --> A
 Char. 4806: C --> T
 Char. 4848: G --> A
 Char. 5010: G --> A
 Char. 5067: T --> A
 Char. 5117: G --> C
 Char. 5130: G --> A
 Char. 5292: C --> T
 Char. 5351: C --> T
 Char. 5664: C --> T
 Char. 5679: C --> T
 Char. 5685: C --> T
 Node 1220 :
 Posterior_margin_of_subtemporal_fossa (72):
 (1)_limited_by_a_well_developed_transverse_ptero
 tic_ridge --> (0)_not_well_delimited_by_pterotic
 Scales_covering_caudal-fin_lobes (470):
 (0)_covering_only_their_base -->
 (1)_covering_one-third_of_their_length
 Node 1221 :
 Number_of_teeth_on_inner_premaxillary_row
 (182): (0)_five_or_fewer --> (1)_six_or_more
 Number_of_cusps_of_anterior_maxillary_teeth
 (193): (0)_up_to_three --> (1)_five_or_more_cusps
 Development_of_transverse_process_of_neural_arc
 h_of_third vertebra (312):
 (0)_not_reaching_anterior_margin_of_tripus -->
 (1)_well_developed_and_extending_beyond_anteri
 or_margin_of_tripus
 Node 1222 :
 Char. 547: A --> G
 Char. 550: C --> T
 Char. 631: C --> T
 Char. 637: T --> C
 Char. 643: C --> T
 Char. 667: T --> C
 Char. 694: T --> C
 Char. 745: T --> C
 Char. 785: C --> T
 Char. 854: A --> G
 Char. 886: G --> A
 Char. 928: C --> A
 Char. 970: C --> G
 Char. 988: T --> C
 Char. 1009: C --> T
 Char. 1018: C --> T
 Char. 1066: C --> T
 Char. 1081: A --> G
 Char. 1105: C --> A
 Char. 1108: A --> T
 Char. 1111: C --> T
 Char. 1112: C --> T
 Char. 1118: C --> T
 Char. 1172: C --> T
 Char. 1189: T --> C
 Char. 1201: A --> G
 Char. 1258: A --> G
 Char. 1273: A --> C
 Char. 1291: T --> C
 Char. 1300: A --> T
 Char. 1309: T --> C
 Char. 1432: T --> C
 Char. 1459: T --> C
 Char. 2293: C --> T
 Char. 2419: C --> T
 Char. 2629: C --> T
 Char. 3559: G --> C
 Char. 3979: C --> T
 Char. 4108: G --> C
 Char. 4216: G --> A
 Char. 4252: G --> A
 Char. 4329: A --> T
 Char. 4920: G --> C
 Char. 5352: G --> A
 Char. 6362: C --> T
 Char. 6444: T --> C
 Node 1223 :
 Char. 3615: G --> A
 Char. 3640: G --> A
 Char. 3832: G --> A
 Char. 3925: G --> A
 Char. 4396: G --> A
 Char. 4720: C --> G
 Char. 5343: G --> A
 Char. 5718: C --> T
 Char. 6254: T --> C
 Char. 6363: A --> G
 Char. 6378: A --> G
 Node 1224 :
 Char. 6290: C --> T
 Char. 6346: T --> C
 Char. 6383: G --> A
 Char. 6423: A --> G
 Char. 6514: T --> C
 Node 1225 :
 Number_of_maxillary_teeth (189):
 (1)_two_or_more --> (0)_only_one_or_absent
 Profile_of_posterodorsal_margin_of_opercle
 (252): (0)_convex_straight_or_slightly_concave --
 >
 (1)_distinctly_concave_forming_an_angle_of_45°
 Char. 1633: A --> G
 Char. 1681: A --> G
 Char. 1696: A --> G
 Char. 1723: T --> C
 Char. 1780: A --> C
 Char. 1828: A --> T
 Char. 1843: T --> C
 Char. 1858: T --> C
 Char. 1866: T --> A
 Char. 1945: T --> C
 Char. 1990: A --> G
 Char. 2011: T --> C
 Char. 2026: A --> G
 Char. 2038: T --> C
 Char. 2068: A --> G
 Char. 6205: T --> C
 Char. 6207: T --> C
 Node 1226 :
 Posterior_extension_of_vomer (18):
 (0)_reaching_posterior_half_of_ethmoid_cartilage_
 posterior_projection -->
 (1)_limited_to_anterior_half_of_ethmoid_cartilage_
 _posterior_projection
 Posterior_extent_of_ventral_process_of_quadrate
 (234):
 (1)_falling_short_of_posterior_margin_of_symplec
 tic -->
 (0)_reaching_vertical_through_posterior_margin_o
 f_symplectic

Large_medial_foramen_on_hyomandibula (241): (0)_absent -->

(1)_present_communicating_with_hyomandibular_canal

Main_axis_of_supraneurals (396):

(0)_not_bifurcated -->

(1)_at_least_some_of_them_distally_bifurcated

Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->

(1)_wider_than_primary_axis_of_supraneurals

Node 1227 :

Ventral_ridge_of_prootic (55): (0)_absent -->

(1)_present_from_anterior_margin_of_prootic_to_auditory_foramen

Number_of_branched_anal-fin_rays (420):

(0)_24_or_fewer --> (1)_25_or_more

Char. 2401: A --> G

Char. 2656: C --> T

Char. 2848: T --> C

Char. 2902: C --> T

Char. 4721: A --> C

Char. 4728: G --> A

Char. 4876: G --> A

Char. 4920: G --> A

Char. 4926: C --> T

Char. 5007: T --> C

Char. 5037: G --> A

Char. 5445: G --> A

Char. 6299: A --> T

Char. 6614: T --> C

Node 1228 :

Char. 1723: C --> T

Char. 1913: C --> T

Char. 2425: T --> A

Char. 3541: A --> G

Node 1229 :

Pelvic-

fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (442): (1)_present --> (0)_absent

Char. 2632: A --> G

Char. 4330: C --> T

Char. 4418: G --> A

Char. 4663: C --> G

Char. 4700: C --> A

Char. 4976: C --> A

Char. 6368: C --> T

Char. 6424: C --> T

Char. 6445: T --> C

Node 1230 :

Ventral_ridge_of_prootic (55): (0)_absent -->

(1)_present_from_anterior_margin_of_prootic_to_auditory_foramen

Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps

Posterior_extent_of_ventral_process_of_quadrate (234):

(1)_falling_short_of_posterior_margin_of_symplectic -->

(0)_reaching_vertical_through_posterior_margin_of_symplectic

Main_axis_of_supraneurals (396):

(0)_not_bifurcated -->

(1)_at_least_some_of_them_distally_bifurcated

Last_unbranched_dorsal-fin_ray_of_adult_males (407):

(0)_approximately_as_long_as_first_branched_ray -->

(1)_distinctly_longer_than_first_branched_ray_and_filamentous

Char. 778: C --> T

Char. 2287: A --> T

Char. 2671: T --> G

Char. 4180: C --> T

Node 1238 :

Char. 700: C --> T

Char. 805: C --> A

Char. 886: C --> T

Char. 901: T --> C

Char. 1172: C --> T

Char. 1462: C --> T

Node 1239 :

Char. 610: C --> T

Char. 712: A --> T

Char. 766: T --> C

Char. 835: C --> T

Char. 871: C --> A

Char. 904: T --> C

Char. 952: A --> T

Char. 967: C --> T

Char. 971: C --> T

Char. 976: C --> T

Char. 985: T --> C

Char. 1060: T --> C

Char. 1136: T --> C

Char. 1156: C --> T

Char. 1279: C --> T

Char. 1300: T --> C

Char. 1306: A --> T

Char. 1348: T --> C

Char. 1402: T --> C

Char. 6254: A --> T

(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->

(1)_on_vertical_through_Meckelian_cartilage_mid_dle_or_anterior_half

Char. 1939: G --> A

Char. 1972: A --> G

Char. 2024: T --> C

Node 1232 :

Char. 532: A --> C

Char. 658: C --> T

Char. 676: C --> T

Char. 703: AC --> G

Char. 781: T --> C

Char. 814: C --> T

Char. 832: C --> T

Char. 874: A --> G

Char. 886: G --> A

Char. 904: T --> C

Char. 934: C --> T

Char. 971: C --> T

Char. 1057: C --> T

Char. 1192: T --> C

Char. 1231: T --> C

Char. 1270: T --> A

Char. 1285: T --> A

Char. 1370: T --> C

Char. 1462: C --> T

Char. 1504: A --> C

Char. 1507: A --> G

Char. 1565: T --> C

Char. 1580: C --> T

Char. 1591: C --> T

Char. 1594: A --> G

Char. 1601: C --> T

Char. 1732: C --> T

Char. 1765: C --> T

Char. 1783: T --> A

Char. 1891: C --> T

Char. 1892: C --> T

Char. 1927: T --> C

Char. 1954: T --> C

Char. 1969: T --> C

Char. 1987: C --> T

Char. 2005: T --> A

Char. 6314: T --> C

Char. 6514: T --> A

Node 1233 :

Relative_length_of_first_pelvic-fin_ray_of_adult_males (383):

(0)_not_extending_beyond_margin_of_other_rays --> (1)_extending_beyond_margin_of_other_rays

Char. 6209: C --> T

Char. 6254: A --> T

Char. 6311: T --> C

Char. 6462: A --> G

Char. 6463: G --> A

Node 1234 :

Char. 904: T --> C

Char. 1054: C --> T

Char. 1450: C --> T

Char. 2011: T --> C

Char. 2902: T --> C

Char. 3467: G --> A

Char. 3619: G --> C

Char. 3905: G --> C

Char. 3970: C --> A

Char. 4507: T --> A

Node 1235 :

Char. 535: A --> T

Char. 574: C --> A

Char. 880: T --> C

Char. 1042: C --> T

Char. 1045: C --> T

Char. 1333: A --> C

Char. 1355: C --> T

Char. 1370: C --> T

Char. 1481: C --> T

Char. 1615: A --> G

Char. 1706: A --> G

Char. 2050: C --> AG

Char. 2077: T --> C

Char. 2278: T --> C

Char. 2338: T --> C

Char. 2395: T --> C

Char. 3523: A --> G

Char. 4447: A --> T

Char. 4521: G --> C

Char. 4636: G --> C

Char. 4901: G --> A

Char. 4926: C --> T

Char. 5034: A --> G

Char. 5217: A --> G

Char. 5541: A --> C

Char. 5550: A --> C

Char. 6251: A --> T

Char. 6363: C --> T

Char. 6444: T --> A

Node 1236 :

Relative_length_of_first_pelvic-fin_ray_of_adult_males (383):

(0)_not_extending_beyond_margin_of_other_rays --> (1)_extending_beyond_margin_of_other_rays

Char. 577: C --> T

Char. 766: C --> T

Char. 775: A --> G

Char. 832: C --> T

Char. 1042: T --> C

Char. 1282: T --> C

Char. 1333: C --> T

Char. 1348: C --> T

Char. 1358: C --> T

Char. 1366: A --> G

Char. 4132: C --> T

Char. 4184: T --> A

Char. 4381: T --> A

Char. 4489: G --> A

Char. 4609: C --> T

Char. 4627: G --> A

Char. 5478: A --> G

Char. 5688: C --> T

Node 1237 :

Dorsal_extension_of_antorbital (81):

(0)_leaving_a_broad_space_with_frontal -->

(1)_approximating_frontal_to_a_distance_less_than_antorbital_width

Main_axis_of_supraneurals (396):

(0)_not_bifurcated -->

(1)_at_least_some_of_them_distally_bifurcated

Last_unbranched_dorsal-fin_ray_of_adult_males (407):

(0)_approximately_as_long_as_first_branched_ray -->

(1)_distinctly_longer_than_first_branched_ray_and_filamentous

Char. 778: C --> T

Char. 2287: A --> T

Char. 2671: T --> G

Char. 4180: C --> T

Node 1238 :

Char. 700: C --> T

Char. 805: C --> A

Char. 886: C --> T

Char. 901: T --> C

Char. 1172: C --> T

Char. 1462: C --> T

Node 1239 :

Char. 610: C --> T

Char. 712: A --> T

Char. 766: T --> C

Char. 835: C --> T

Char. 871: C --> A

Char. 904: T --> C

Char. 952: A --> T

Char. 967: C --> T

Char. 971: C --> T

Char. 976: C --> T

Char. 985: T --> C

Char. 1060: T --> C

Char. 1136: T --> C

Char. 1156: C --> T

Char. 1279: C --> T

Char. 1300: T --> C

Char. 1306: A --> T

Char. 1348: T --> C

Char. 1402: T --> C

Char. 6254: A --> T

Expansion_of_lamellar_portion_of_maxilla_just_posterior_to_toothed_region (141):

(0)_absent_or_not_pronounced -->

(1)_very_pronounced

Form_of_teeth_of_inner_premaxillary_tooth_row (180):

(0)_with_cusps_forming_anteriorly_concave_arch --> (1)_with_cusps_aligned_in_straight_series

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):

Char. 6352: C --> T
Char. 6493: A --> G
Node 1240 :

Dorsal_end_of_laterosensory_canal_of_preopercle_and_suprapercle (108):
(0)_not_overlapping_anterodorsal_process_of_opercle -->
(1)_overlapping_anterodorsal_process_of_opercle
Number_of_supraneurals (392):
(1)_five_or_more --> (0)_four_or_fewer
Char. 1112: C --> T
Char. 2359: T --> C
Char. 2425: T --> C
Char. 2660: T --> C
Char. 2734: T --> C
Char. 3511: A --> G
Char. 3745: T --> G
Char. 3781: T --> C
Char. 3813: A --> C
Char. 4045: G --> A
Char. 4148: A --> C
Char. 4255: A --> G
Char. 4360: G --> T
Char. 4474: G --> T
Char. 4483: T --> C
Char. 4636: C --> T
Node 1241 :

Contact_between_dorsal_margin_of_adductor_mandibulae_and_ventral_margin_of_dilatator_operculi (480): (1)_present --> (0)_absent
Char. 736: T --> C
Char. 772: T --> C
Char. 913: A --> C
Char. 1948: T --> C
Char. 2147: C --> T
Char. 2287: T --> A
Char. 3892: C --> T
Char. 4225: T --> G
Char. 4725: T --> C
Char. 5264: C --> T
Node 1242 :

Articulation_between_ventral_margin_of_metapterygoid_and_posterodorsal_margin_of_quadrate (229): (0)_absent --> (1)_present
Anal-fin_position (416):
(0)_posterior_or_at_vertical_through_base_of_last_dorsal-fin_ray -->
(1)_anterior_to_vertical_through_base_of_last_dorsal-fin_ray
Node 1243 :

Form_and_degree_of_ossification_of_first_ceratobranchial_gill_rakers (299):
(0)_laminar_and_not_ossified_distally -->
(1)_rather_thick_and_completely_ossified_distal_region
Node 1244 :
Char. 1861: G --> A
Char. 1879: G --> A
Char. 1894: A --> G
Char. 1915: A --> G
Char. 1930: A --> G
Char. 1969: C --> T
Char. 2014: C --> A
Node 1245 :
Form_of_distal_tip_of_sphenotic_spine (48):
(0)_slender_or_somewhat_expanded -->
(1)_notched_limiting_adductor_operculi_anterior_and_dorsally

Posterior_dorsoventral_expansion_of_fourth_infraorbital (93): (0)_absent --> (0)_present
Pores_of_laterosensory_canal_of_lower_jaw (104): (0)_six_or_less --> (1)_seven_or_more

Anterior_extension_of_anguloarticular_laterosensory_canal (106):
(0)_not_reaching_vertical_through_Meckelian_cartilage -->
(1)_reaching_vertical_through_Meckelian_cartilage

A_pair_of_large_conical_teeth_in_premaxilla (169): (0)_absent --> (1)_present

Form_of_teeth_of_inner_premaxillary_tooth_row (180):
(0)_with_cusps_forming_anteriorly_concave_arch --> (1)_with_cusps_aligned_in_straight_series
Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more --> (0)_four_or_fewer
Abrupt_decrease_in_size_of_dentary_teeth (207): (0)_absent --> (1)_present
Form_of_quadrate (231):
(0)_with_ventral_portion_longer_than_anterodorsal_region -->
(1)_with_anterodorsal_portion_equal_or_longer_than_ventral_region
Bony_lamellae_associated_with_supraneurals (397):
(1)_wider_than_primary_axis_of_supraneurals --> (0)_absent_or_small
Node 1246 :
Anterior_extension_of_nasal (11):
(0)_extending_slightly_anterior_to_mesethmoid_wing -->
(1)_projecting_mesethmoid_wing_longer_than_nasal_width
Temporal_fossa (51):
(1)_absent_or_much_reduced -->
(0)_well_developed

Articulation_between_second_and_third_infraorbital (86): (0)_vertical -->
(2)_posterovertrally_angled
Number_of_maxillary_teeth (190):
(0)_up_to_three --> (1)_four_or_more

Extent_of_implantation_of_teeth_along_maxilla (191):
(0)_not_reaching_middle_of_maxillary_lamella -->
(1)_extending_across_almost_entire_maxillary_lamella
Number_of_cusps_of_anterior_maxillary_teeth (193): (1)_five_or_more_cusps --> (0)_up_to_three
Lateroventral_expansion_of_ectopterygoid (214):
(0)_absent_articulating_almost_exclusively_with_cartilage_of_palatine -->
(1)_present_expanded_twice_length_of_palatine_cartilage
Ectopterygoid_teeth_row (217): (0)_absent --> (1)_present

Position_of_longitudinal_cartilage_dorsal_to_ectopterygoid (219):
(0)_bordered_medially_by_mesopterygoid -->
(1)_displaced_laterally_and_separated_from_mesopterygoid

Articulation_between_quadrate_and_anguloarticular (238):
(0)_anterior_to_or_at_vertical_through_middle_eye --> (1)_posterior_to_middle_eye

Bony_lamellae_bordering_laterosensory_canal_of_suprapercle (245): (0)_absent --> (1)_present

Cartilage_from_first_epibranchial_to_second_pharyngobranchial (278):
(1)_attached_near_anterior_margin_of_second_pharyngobranchial -->
(0)_attached_to_middle_region_of_second_pharyngobranchial
Distribution_of_denticles_on_gill_rakers (301):
(0)_restricted_to_margins_or_absent -->
(1)_along_entire_surface_of_gill_rakers
Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioccipital -->
(1)_posterior_to_lateral_margin_of_epioccipital
Uroneurals (427): (0)_absent_or_just_one_pair --> (1)_two_pairs
Node 1247 :

Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present
Position_of_intercalar (71):
(1)_on_articulation_between_pterotic_and_exoccipital -->
(0)_on_middle_ventral_surface_of_exoccipital
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Length_of_interhyal (307):
(0)_shorter_than_one-third_of_symplectic_length --> (1)_equal_to_or_longer_than_one-half_of_symplectic_length
Node 1248 :
Char. 5169: C --> T
Char. 5231: T --> A
Char. 5235: C --> T
Char. 5502: T --> A
Char. 5508: C --> T
Node 1249 :
Lateral_ridge_of_anguloarticular (160):
(0)_absent --> (1)_present
Number_of_teeth_on_inner_premaxillary_row (181): (1)_five_or_more --> (0)_four_or_fewer
Node 1250 :
Insertion_of_pterotic_aponeurosis (490):
(0)_on_pterotic_spine_semicircular_canal_or_just_dorsal_to_it -->
(1)_on_pterotic_or_sphenotic_at_middle_depth_of_temporal_fossa
Lateral_band (495):
(0)_absent_or_if_present_ending_in_middle_caudal-fin_rays -->
(1)_oriented_to_dorsal_margin_of_caudal_peduncle
Char. 5752: A --> C
Char. 5909: A --> G
Char. 6026: A --> G
Char. 6028: T --> C
Char. 6040: A --> G
Char. 6042: T --> C
Char. 6162: A --> G
Char. 6211: G --> A
Char. 6255: A --> C
Char. 6298: A --> T
Char. 6347: T --> A
Char. 6362: C --> A
Char. 6413: C --> T
Char. 6414: A --> T
Char. 6443: T --> A
Char. 6445: T --> A
Node 1251 :
Rhinosphenoid (34): (1)_present --> (0)_absent
Anteromedial_process_of_third_epibranchial (280):
(0)_reaching_to_longitudinal_axis_of_third_pharyngobranchial -->
(1)_not_reaching_to_longitudinal_axis_of_third_pharyngobranchial
Number_of_supraneurals (395):
(0)_seven_or_fewer --> (1)_eight_or_more
Proximal_and_medial_radials_of_anal_fins (413): (0)_fused_on_anterior_five_pterygiophores --> (1)_fused_in_most_pterygiophores
Number_of_branched_anal-fin_rays (421):
(0)_34_or_fewer --> (1)_35_or_more
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Char. 570: C --> T
Char. 938: C --> A
Char. 964: A --> T
Char. 1072: C --> T
Char. 1078: A --> C
Char. 1118: T --> C
Char. 1129: C --> T
Char. 1165: C --> A
Char. 1270: A --> T
Char. 1408: A --> C
Char. 3502: C --> G
Char. 3583: G --> A
Char. 3614: A --> C

Char. 3652: T --> G
Char. 3685: A --> G
Char. 3751: A --> C
Char. 3799: A --> T
Char. 3850: C --> T
Char. 3921: G --> A
Char. 4111: G --> A
Char. 4148: A --> C
Char. 4420: G --> A
Char. 4507: T --> A
Char. 4582: A --> G
Char. 4848: G --> A
Char. 4863: G --> T
Char. 4926: C --> T
Char. 5026: A --> G
Char. 5061: C --> T
Char. 5506: C --> T
Char. 5688: T --> C
Char. 6345: A --> C
Char. 6508: T --> C
Char. 6515: A --> G
Node 1252 :
Anterior_paired_projections_of_parasphenoid
(43): (1)_present --> (0)_absent

Relative_position_of_anterior_margin_of_antorbital_and_first_infraorbital (79):
(0)_first_infraorbital_reaching_middle_length_of_antorbital_base -->
(1)_first_infraorbital_reaching_anterior_margin_of_antorbital_base

Dorsal_end_of_laterosensory_canal_of_preopercle_and_suprapreopercle (108):
(0)_not_overlapping_anterodorsal_process_of_opercle -->
(1)_overlapping_anterodorsal_process_of_opercle

Laterosensory_pore_just_anterior_to_dilatator_fossa (115): (0)_dorsomedial_to_laterosensory_canal --> (1)_lateroventral_to_laterosensory_canal
Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one_third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal

Fossa_for_inner_row_of_replacement_premaxillary_teeth (187): (0)_absent --> (1)_present

Number_of_gill_rakers_on_first_hypobranchial_and_ceratobranchial (294): (1)_15_or_fewer --> (0)_16_or_more

Laminar_bony_ridge_on_dorsal_margin_of_abdominal_ribs (321): (0)_absent --> (1)_present
Bony_lamellae_associated_with_supraneurals (397): (0)_absent_or_small -->
(1)_wider_than_primary_axis_of_supraneurals
Relative_position_of_dorsal-fin_anterior_insertion (403):
(1)_posterior_to_vertical_through_pelvic-fin_origin --> (0)_anterior_to_or_at_vertical_through_pelvic-fin_origin
Node 1253 :
Large_foramen_just_ventromedial_to_dentary_laterosensory_canal (154): (0)_absent --> (1)_present

Arrangement_of_teeth_on_outer_premaxillary_row (174): (0)_continuous -->
(1)_separated_in_medial_and_lateral_series_by_a_gap
Ventral_exit_of_hyomandibular_nerve (242):
(1)_on_posterior_margin_of_bone -->
(0)_on_lateral_surface_of_bone_through_an_ovate_foramen

Anterior_projection_of_dorsal_process_of_scapula (358): (0)_reaching_medial_lamella_of_cleithrum -->
(1)_separated_from_medial_lamella_of_cleithrum
Char. 1546: GT --> C
Char. 1564: T --> A

Char. 1588: A --> G
Char. 1598: T --> G
Char. 1633: T --> C
Char. 1708: T --> C
Char. 1712: C --> T
Char. 1726: C --> A
Char. 1780: A --> T
Char. 1798: A --> G
Char. 1807: A --> G
Char. 1811: G --> A
Char. 1813: T --> C
Char. 1840: T --> C
Char. 1852: T --> C
Char. 1855: T --> C
Char. 1882: T --> C
Char. 1945: T --> C
Char. 1960: T --> C
Char. 1978: C --> T
Char. 2006: T --> C
Char. 2008: A --> T
Char. 2017: A --> G
Char. 2020: T --> A
Char. 2023: C --> T
Char. 2059: AT --> C
Char. 2080: A --> T
Char. 2111: A --> T
Char. 2113: A --> T
Char. 2119: T --> C
Char. 2134: A --> G
Char. 2147: C --> T
Char. 2158: C --> T
Node 1254 :
Ventral_margin_of_toothed_region_of_maxilla (139): (1)_approximately_straight -->
(1)_strongly_concave
Margins_of_toothed_region_of_maxilla (140):
(0)_roughly_parallel --> (1)_dorsally_divergent
Medial_anteroventral_notch_of_dentary (153):
(0)_absent --> (1)_present

Longitudinal_ridge_in_quadrate_bordering_adductor_or_mandibulae_muscle_ventrally_and_to_some_degree_laterally (235): (0)_absent --> (1)_present
Total_number_of_vertebrae (326):
(0)_40_or_fewer --> (1)_41_or_more
Number_of_dorsal_pterygiophores (400):
(1)_10_or_more --> (0)_nine_or_fewer
Number_of_branched_rays_on_dorsal_fin (409): (1)_nine_or_more --> (0)_eight_or_fewer

Longitudinal_position_of_insertion_of_mandibular_accessory_tendon (474):
(0)_on_vertical_through_Meckelian_cartilage_posterior_half -->
(1)_on_vertical_through_Meckelian_cartilage_middle_or_anterior_half
Char. 2581: C --> T
Char. 2599: C --> T
Char. 3592: C --> T
Char. 3659: G --> A
Char. 3716: G --> C
Char. 3805: C --> T
Char. 3895: C --> T
Char. 4003: C --> T
Char. 4058: G --> A
Char. 4207: A --> G
Char. 4234: C --> T
Char. 4358: C --> A
Char. 4361: C --> A
Char. 4459: C --> A
Char. 4528: G --> A
Char. 4650: C --> T
Char. 4800: T --> C
Char. 4983: G --> A
Char. 5079: C --> T
Char. 5151: C --> T
Char. 5235: C --> T
Char. 5343: G --> A
Char. 5376: G --> A
Char. 5460: C --> T
Char. 5534: A --> C
Char. 6381: A --> G
Char. 6477: A --> G

Char. 6492: C --> T
Char. 6498: A --> T
Char. 6528: G --> A
Node 1255 :
Char. 541: A --> G
Char. 544: C --> T
Char. 562: C --> T
Char. 568: C --> T
Char. 583: C --> A
Char. 655: C --> T
Char. 742: A --> G
Char. 745: A --> G
Char. 763: A --> G
Char. 772: C --> T
Char. 781: C --> T
Char. 847: C --> G
Char. 889: C --> G
Char. 913: A --> G
Char. 916: C --> A
Char. 934: C --> T
Char. 940: A --> T
Char. 946: A --> T
Char. 971: C --> T
Char. 985: C --> T
Char. 988: C --> T
Char. 1013: G --> A
Char. 1014: T --> C
Char. 1018: A --> C
Char. 1073: C --> T
Char. 1094: C --> A
Char. 1106: A --> G
Char. 1111: C --> G
Char. 1138: A --> G
Char. 1141: A --> G
Char. 1156: C --> T
Char. 1201: A --> G
Char. 1228: C --> T
Char. 1258: C --> T
Char. 1279: A --> T
Char. 1286: A --> G
Char. 1303: C --> A
Char. 1342: C --> T
Char. 1372: A --> G
Char. 1375: C --> A
Char. 1459: A --> T
Char. 1468: A --> G
Char. 1486: C --> T
Char. 1489: C --> T
Char. 4814: G --> A
Char. 4875: A --> G
Char. 5151: C --> T
Char. 5517: C --> T
Char. 5667: T --> C
Node 1256 :
Char. 682: C --> T
Char. 808: C --> T
Char. 1123: C --> T
Char. 1306: C --> A
Char. 1318: A --> C
Char. 1366: A --> G
Char. 1429: C --> T
Char. 1454: G --> A
Char. 1600: A --> C
Char. 1639: A --> G
Char. 1699: C --> T
Char. 1705: A --> G
Char. 1708: C --> T
Char. 1720: C --> T
Char. 1811: G --> A
Char. 1822: G --> A
Char. 1918: C --> T
Char. 1975: A --> G
Char. 1987: C --> T
Char. 2023: T --> C
Char. 2062: C --> T
Char. 2269: C --> T
Char. 2299: C --> A
Char. 2404: T --> C
Char. 2482: T --> C
Char. 2842: A --> G
Char. 3586: G --> A
Char. 3664: G --> A
Char. 3724: A --> G

Char. 3877: T --> C
Char. 3921: G --> A
Char. 4360: C --> T
Char. 4525: G --> A
Char. 5100: A --> G
Char. 5457: T --> C
Char. 5565: A --> G
Char. 5910: C --> T
Char. 6040: A --> G
Char. 6229: G --> A
Char. 6347: C --> A

Node 1257 :
Char. 694: C --> A
Char. 742: C --> A
Char. 784: C --> A
Char. 940: C --> A
Char. 946: C --> A
Char. 1054: C --> A
Char. 1075: C --> A
Char. 1147: A --> C
Char. 1601: C --> T
Char. 1703: C --> T
Char. 1756: C --> T
Char. 1771: T --> C
Char. 1813: T --> C
Char. 1879: AG --> C
Char. 1906: C --> A
Char. 1912: C --> T
Char. 1924: C --> T
Char. 2095: C --> T
Char. 2131: A --> G
Char. 2149: T --> C
Char. 2260: T --> C
Char. 2441: T --> G
Char. 2584: T --> C
Char. 3613: G --> A
Char. 4003: T --> C
Char. 4288: C --> A
Char. 4333: G --> A
Char. 4468: T --> C
Char. 4469: G --> A
Char. 4540: C --> T
Char. 4666: T --> C
Char. 4908: C --> T
Char. 4944: T --> C
Char. 5256: T --> C
Char. 5634: G --> A
Char. 6048: T --> C
Char. 6063: C --> T
Char. 6247: C --> T
Char. 6335: T --> C
Char. 6379: C --> A
Char. 6433: T --> C

Node 1258 :
Char. 6294: G --> A
Char. 6322: C --> A
Char. 6324: C --> T
Char. 6377: T --> C
Char. 6406: G --> A
Char. 6408: A --> G

Node 1259 :
Dorsal_extension_of_antorbital (81):
(0)_leaving_a_broad_space_with_frontal -->
(1)_approximating_frontal_to_a_distance_less_than_antorbital_width
Number_of_teeth_on_inner_premaxillary_row
(183): (0)_six_or_fewer --> (1)_seven_or_more

Contact_between_ectopterygoid_and_anterodorsal_region_of_quadrate (220): (0)_present -->
(1)_absent
Ventral_articulation_of_mesocoracoid (357):
(0)_anteriorly_with_coracoid_and_posteriorly_with_scapula --> (1)_only_with_coracoid
Char. 631: T --> C
Char. 748: T --> A
Char. 946: A --> T
Char. 1106: G --> A
Char. 1138: T --> A
Char. 1411: A --> G
Char. 2226: G --> T
Char. 2278: T --> C
Char. 2607: A --> G

Char. 2671: T --> C
Char. 2698: C --> T
Char. 3523: A --> C
Char. 3569: G --> A
Char. 3659: G --> A
Char. 3748: C --> T
Char. 3808: G --> A
Char. 3835: C --> T
Char. 3904: T --> G
Char. 3961: G --> A
Char. 4060: C --> T
Char. 4167: C --> G
Char. 4228: G --> A
Char. 4449: G --> A
Char. 4450: G --> A
Char. 4579: C --> T
Char. 4681: C --> T
Char. 4758: C --> G
Char. 4890: C --> A
Char. 5229: C --> T
Char. 5394: A --> T
Char. 5415: C --> T
Char. 5466: C --> G
Char. 5538: G --> A
Char. 6147: C --> T
Char. 6254: AT --> C
Char. 6276: T --> A
Char. 6328: A --> G
Char. 6357: A --> G
Char. 6377: C --> T
Char. 6381: A --> T
Char. 6434: G --> A
Char. 6454: A --> T
Char. 6456: C --> T
Char. 6510: C --> A

Node 1260 :
Parietal_branch_of_laterosensory_canal (116):
(0)_present_reaching_parietal_bone_or_not -->
(1)_completely_absent

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent
Char. 706: C --> T
Char. 785: C --> T
Char. 889: C --> A
Char. 901: C --> T
Char. 1072: C --> T
Char. 1088: A --> G
Char. 1090: T --> A
Char. 1094: A --> T
Char. 1096: C --> A
Char. 1270: T --> C
Char. 1312: C --> T
Char. 2221: T --> A
Char. 2287: T --> C
Char. 2365: A --> T
Char. 2671: T --> C
Char. 2737: T --> A
Char. 2890: T --> C
Char. 4285: T --> C
Char. 4408: G --> A
Char. 4417: G --> A
Char. 4426: G --> A
Char. 4534: G --> A
Char. 4998: G --> A
Char. 5169: C --> T
Char. 5181: G --> C
Char. 6326: T --> A
Char. 6498: A --> G
Char. 6508: A --> C
Char. 6511: C --> T
Char. 6515: A --> G
Char. 6566: C --> T

Node 1261 :
Char. 1555: T --> C
Char. 1576: A --> G
Char. 1579: A --> G
Char. 1591: A --> G
Char. 1696: A --> T
Char. 1822: A --> G
Char. 2074: A --> T

Node 1262 :
Char. 538: C --> T
Char. 904: C --> T
Char. 1189: T --> C
Char. 1447: C --> T
Char. 1480: T --> C
Char. 1696: G --> A
Char. 1861: A --> G
Char. 2146: C --> T
Char. 4403: C --> A
Char. 6433: C --> T

Node 1263 :
Char. 586: C --> A
Char. 3813: A --> C
Char. 5170: C --> A
Char. 5911: C --> T
Char. 6073: A --> T

Node 1264 :
Char. 664: C --> T
Char. 674: C --> T
Char. 746: C --> T
Char. 760: A --> G
Char. 835: A --> G
Char. 937: C --> T
Char. 951: C --> T
Char. 964: C --> A
Char. 1000: A --> G
Char. 1078: C --> T
Char. 1096: A --> G
Char. 1132: C --> T
Char. 1150: A --> T
Char. 1159: C --> T
Char. 1246: T --> C
Char. 1288: C --> T
Char. 1291: C --> T
Char. 1304: A --> C
Char. 1402: T --> C
Char. 1432: T --> C
Char. 1435: C --> T
Char. 1453: C --> A
Char. 1466: G --> A
Char. 1603: A --> G
Char. 1783: T --> C
Char. 1795: T --> C
Char. 1909: C --> T
Char. 1918: C --> T
Char. 2047: T --> C
Char. 2050: T --> C
Char. 2194: T --> C
Char. 3643: T --> C
Char. 4247: C --> A
Char. 6374: G --> A
Char. 6413: C --> T

Node 1265 :
Char. 604: C --> T
Char. 697: T --> C
Char. 778: C --> T
Char. 925: C --> T
Char. 1102: C --> T
Char. 1105: A --> T
Char. 1189: C --> T
Char. 1192: C --> T
Char. 1237: C --> A
Char. 1711: A --> T
Char. 1720: T --> C
Char. 1816: A --> G
Char. 1987: C --> T
Char. 4403: A --> C
Char. 4466: G --> T
Char. 6484: C --> T

Node 1266 :
Char. 655: C --> T
Char. 692: C --> T
Char. 787: C --> A
Char. 835: C --> A
Char. 850: A --> C
Char. 886: C --> T
Char. 946: AC --> T
Char. 961: A --> T
Char. 1042: T --> C
Char. 1075: G --> A
Char. 1098: T --> C
Char. 1147: C --> T
Char. 1216: T --> C

Char. 1367: A --> G
 Char. 1396: A --> C
 Char. 1513: C --> T
 Char. 1516: C --> T
 Char. 1600: A --> G
 Char. 1696: A --> G
 Char. 1795: A --> T
 Char. 1891: T --> C
 Char. 2167: T --> C
 Char. 2215: T --> C
 Char. 2312: G --> C
 Char. 2329: G --> T
 Char. 2338: T --> C
 Char. 2435: C --> T
 Char. 2510: T --> C
 Char. 2635: A --> T
 Char. 2740: A --> C
 Char. 2863: A --> G
 Char. 3787: A --> T
 Char. 3976: T --> C
 Char. 4069: G --> T
 Char. 4147: G --> T
 Char. 4192: G --> C
 Char. 4195: A --> G
 Char. 4207: G --> T
 Char. 4325: A --> G
 Char. 4360: C --> G
 Char. 4447: G --> A
 Char. 4476: T --> C
 Char. 4478: G --> T
 Char. 4602: G --> T
 Char. 4603: C --> A
 Char. 4615: C --> T
 Char. 4678: T --> C
 Char. 4708: C --> T
 Char. 5031: C --> T
 Char. 5100: A --> C
 Char. 5351: C --> T
 Char. 5388: G --> T
 Char. 5389: C --> A
 Char. 5745: C --> A
 Char. 6402: G --> A
 Char. 6433: T --> C
 Node 1267 :
 Char. 544: T --> A
 Char. 673: C --> T
 Char. 712: A --> T
 Char. 784: C --> A
 Char. 844: A --> C
 Char. 863: A --> G
 Char. 953: A --> G
 Char. 1078: A --> C
 Char. 1246: C --> T
 Char. 1363: C --> T
 Char. 1478: G --> A
 Char. 1480: C --> T
 Char. 1567: A --> G
 Char. 1645: C --> T
 Char. 1693: C --> T
 Char. 1711: C --> A
 Char. 1825: A --> C
 Char. 1834: C --> T
 Char. 1888: T --> A
 Char. 1892: C --> T
 Char. 1915: T --> C
 Char. 2002: C --> A
 Char. 2050: C --> T
 Char. 2059: A --> C
 Char. 2065: A --> G
 Char. 2170: C --> T
 Char. 2214: G --> C
 Char. 2242: C --> T
 Char. 2290: A --> G
 Char. 2332: T --> C
 Char. 2362: T --> C
 Char. 2386: A --> G
 Char. 2443: A --> T
 Char. 2464: T --> C
 Char. 2594: C --> T
 Char. 2614: T --> C
 Char. 2626: C --> T
 Char. 3472: C --> T
 Char. 3580: C --> T
 Char. 3616: A --> G
 Char. 3643: A --> T
 Char. 3652: T --> A
 Char. 3688: T --> C
 Char. 3811: G --> A
 Char. 3886: G --> C
 Char. 3901: T --> G
 Char. 4003: C --> T
 Char. 4036: G --> A
 Char. 4048: C --> T
 Char. 4153: T --> C
 Char. 4196: C --> T
 Char. 4258: T --> C
 Char. 4267: C --> T
 Char. 4332: T --> A
 Char. 4335: A --> G
 Char. 4495: T --> C
 Char. 4777: C --> T
 Char. 4795: T --> C
 Char. 4802: G --> A
 Char. 4870: C --> A
 Char. 4872: T --> C
 Char. 4887: T --> C
 Char. 4926: G --> A
 Char. 5061: C --> A
 Char. 5121: C --> T
 Char. 5197: T --> C
 Char. 5243: T --> C
 Char. 5331: A --> G
 Char. 5361: T --> C
 Char. 5394: A --> G
 Char. 5436: C --> T
 Char. 5449: A --> G
 Char. 5451: G --> T
 Char. 5454: G --> T
 Char. 5486: A --> G
 Char. 5545: G --> T
 Char. 5550: A --> G
 Char. 5574: A --> G
 Char. 5694: A --> T
 Char. 5708: A --> T
 Char. 5709: A --> T
 Char. 5867: T --> A
 Char. 6014: T --> C
 Char. 6049: G --> A
 Char. 6345: A --> G
 Char. 6381: A --> G
 Char. 6475: T --> C
 Node 1268 :
 Char. 697: C --> T
 Char. 736: A --> C
 Char. 817: C --> T
 Char. 847: C --> A
 Char. 853: T --> C
 Char. 973: A --> T
 Char. 1015: T --> C
 Char. 1027: A --> T
 Char. 1043: T --> C
 Char. 1075: C --> G
 Char. 1291: AT --> C
 Char. 1292: A --> C
 Char. 1304: C --> A
 Char. 1472: A --> C
 Char. 1558: C --> T
 Char. 1564: C --> T
 Char. 1927: C --> T
 Char. 1978: C --> T
 Char. 2005: C --> T
 Char. 2041: T --> C
 Char. 2053: A --> T
 Char. 2086: T --> C
 Char. 2128: A --> T
 Char. 2419: A --> C
 Char. 2575: C --> T
 Char. 2617: T --> C
 Char. 5220: T --> C
 Char. 5373: T --> A
 Char. 5509: T --> C
 Char. 6252: C --> T
 Char. 6456: C --> T
 Node 1269 :
 Char. 748: T --> C
 Char. 784: C --> T
 Char. 889: C --> A
 Char. 941: T --> C
 Char. 967: C --> T
 Char. 1021: T --> C
 Char. 1276: T --> C
 Char. 1368: C --> T
 Char. 3669: C --> G
 Char. 4357: G --> A
 Char. 4651: A --> T
 Char. 5100: G --> A
 Char. 6377: C --> T
 Node 1270 :
 Number_of_teeth_on_inner_premaxillary_row
 (182): (0)_five_or_fewer --> (1)_six_or_more
 Char. 1675: C --> T
 Char. 1708: T --> A
 Char. 1772: T --> C
 Char. 1825: A --> G
 Char. 1882: T --> C
 Char. 1933: T --> C
 Char. 1939: G --> T
 Char. 1945: T --> C
 Char. 2035: T --> A
 Char. 2237: A --> G
 Char. 2315: A --> C
 Char. 2395: C --> A
 Char. 2401: G --> A
 Char. 2404: T --> C
 Char. 2602: C --> A
 Char. 2620: C --> T
 Char. 2704: G --> A
 Char. 2738: A --> T
 Char. 2785: A --> G
 Char. 2815: G --> A
 Char. 5088: G --> C
 Char. 5256: T --> C
 Char. 5328: G --> A
 Char. 6458: C --> A
 Node 1271 :
 Char. 1564: C --> T
 Char. 1585: T --> C
 Char. 1762: T --> C
 Char. 1771: T --> C
 Char. 1855: T --> C
 Char. 1948: T --> C
 Char. 1978: C --> T
 Char. 1984: C --> T
 Char. 2510: T --> C
 Char. 6294: C --> T
 Char. 6321: A --> G
 Node 1272 :
 Contact_between_frontals_anterior_to_frontal_fontanel (27): (0)_absent --> (1)_present
 Second_postcleithrum (362): (0)_present --> (1)_absent
 Anterior_tip_of_pelvic_bone (376):
 (1)_posterior_to_second_rib -->
 (0)_anterior_to_second_rib
 Anal-fin_position (415):
 (0)_posterior_or_almost_posterior_to_vertical_through_last_dorsal-fin_ray -->
 (1)_extended_anteriorly_ventral_to_dorsal_fin
 Caudal-fin_bony_hooks_in_adult_males_of_species_bearing_hooks_on_fins (445): (0)_absent --> (1)_present
 Hypertrophied_ventral-caudal-peduncle_squamation (472): (0)_absent --> (1)_present_restricted_to_scales_below_lateral_line
 Enlarged_pouch_scale (513):
 (0)_absent_or_similar_to_a_regular_lateral-line_scale -->
 (1)_present_and_enlarged_with_numerous_radii
 Char. 661: T --> C
 Char. 736: A --> T
 Char. 971: C --> T
 Char. 1117: C --> A
 Char. 1303: C --> A
 Char. 1336: C --> T
 Char. 1342: A --> C
 Char. 1351: C --> T
 Char. 1396: A --> C

Char. 1723: T --> G
 Char. 1729: A --> C
 Char. 1732: T --> C
 Char. 1804: A --> T
 Char. 1960: T --> A
 Char. 2005: T --> C
 Char. 2014: C --> A
 Char. 2047: C --> T
 Char. 2278: T --> C
 Char. 2464: T --> C
 Char. 2620: G --> C
 Char. 2791: T --> C
 Char. 4285: T --> C
 Char. 4633: C --> A
 Char. 4809: C --> T
 Char. 5868: T --> C
 Char. 6342: G --> A
 Char. 6343: A --> G
 Node 1273 :
 Char. 1549: C --> A
 Char. 1552: A --> C
 Char. 1633: T --> A
 Char. 1651: A --> T
 Char. 1672: A --> G
 Char. 1699: C --> T
 Char. 1738: A --> T
 Char. 1765: C --> T
 Char. 1783: C --> T
 Char. 1787: C --> A
 Char. 1852: T --> A
 Char. 1858: C --> T
 Char. 1873: C --> T
 Char. 1891: C --> T
 Char. 1892: C --> T
 Char. 1915: T --> A
 Char. 1990: A --> T
 Char. 2017: A --> G
 Char. 2048: C --> T
 Char. 2086: T --> A
 Char. 2092: A --> CT
 Char. 2102: C --> T
 Char. 3544: C --> T
 Char. 3589: G --> A
 Char. 3604: A --> G
 Char. 3619: G --> A
 Char. 3620: T --> C
 Char. 3691: C --> T
 Char. 3859: T --> C
 Char. 3922: A --> G
 Char. 4030: A --> G
 Char. 4069: G --> T
 Char. 4078: C --> A
 Char. 4171: C --> T
 Char. 4471: G --> T
 Char. 4564: C --> T
 Char. 4621: C --> T
 Char. 4729: A --> G
 Char. 4758: C --> T
 Char. 4770: T --> C
 Char. 4776: G --> A
 Char. 4779: G --> T
 Char. 4821: C --> T
 Char. 4869: G --> T
 Char. 4950: G --> A
 Char. 4968: T --> G
 Char. 5007: T --> C
 Char. 5022: C --> T
 Char. 5110: G --> C
 Char. 5133: T --> A
 Char. 5136: C --> A
 Char. 5142: T --> A
 Char. 5145: C --> G
 Char. 5268: T --> C
 Char. 5269: C --> T
 Char. 5272: A --> G
 Char. 5299: C --> T
 Char. 5322: C --> A
 Char. 5385: G --> T
 Char. 5439: A --> T
 Char. 5451: G --> A
 Char. 5491: G --> A
 Char. 5535: A --> T
 Char. 5542: G --> A
 Char. 5559: C --> T
 Char. 5664: T --> C
 Char. 5685: C --> T
 Char. 6294: T --> A
 Char. 6298: A --> C
 Char. 6323: C --> T
 Char. 6361: G --> T
 Char. 6443: A --> T
 Char. 6446: C --> A
 Char. 6450: A --> T
 Char. 6477: A --> T
 Char. 6484: C --> T
 Node 1274 :
 Char. 586: A --> G
 Char. 643: C --> T
 Char. 715: T --> C
 Char. 740: G --> A
 Char. 775: G --> C
 Char. 796: A --> G
 Char. 845: G --> A
 Char. 871: A --> C
 Char. 896: G --> A
 Char. 916: C --> A
 Char. 1027: A --> T
 Char. 1098: T --> C
 Char. 1138: A --> C
 Char. 1216: T --> C
 Char. 1228: C --> T
 Char. 1255: A --> C
 Char. 1261: C --> A
 Char. 1303: C --> A
 Char. 1336: A --> C
 Char. 1373: G --> A
 Char. 1382: G --> A
 Char. 1384: A --> C
 Char. 1385: A --> T
 Char. 1434: T --> C
 Char. 1441: C --> A
 Char. 1454: G --> A
 Char. 1468: A --> C
 Char. 1585: C --> T
 Char. 1621: T --> C
 Char. 1630: C --> T
 Char. 1684: T --> C
 Char. 1711: C --> A
 Char. 1729: C --> A
 Char. 1849: C --> T
 Char. 1852: T --> C
 Char. 1855: T --> A
 Char. 1966: T --> C
 Char. 1996: T --> C
 Char. 2006: C --> T
 Char. 2023: T --> A
 Char. 2027: A --> G
 Char. 2074: A --> G
 Char. 2086: T --> C
 Char. 2119: T --> C
 Char. 2185: C --> T
 Char. 2222: G --> T
 Char. 2233: G --> A
 Char. 2314: G --> A
 Char. 2440: A --> G
 Char. 2479: C --> A
 Char. 2488: G --> A
 Char. 2509: G --> A
 Char. 2510: T --> C
 Char. 2602: C --> T
 Char. 2626: C --> A
 Char. 2638: T --> G
 Char. 2664: C --> T
 Char. 3479: G --> A
 Char. 3501: T --> C
 Char. 3547: C --> T
 Char. 3580: C --> T
 Char. 3595: C --> A
 Char. 3649: C --> T
 Char. 3694: C --> T
 Char. 3736: G --> C
 Char. 3760: C --> T
 Char. 3763: C --> T
 Char. 3793: A --> T
 Char. 3802: C --> A
 Char. 3805: C --> T
 Char. 3832: C --> T
 Char. 3838: C --> T
 Char. 3949: G --> A
 Char. 3984: A --> T
 Char. 3985: C --> T
 Char. 4048: C --> G
 Char. 4093: C --> A
 Char. 4157: A --> G
 Char. 4207: A --> G
 Char. 4240: G --> A
 Char. 4325: A --> T
 Char. 4331: C --> T
 Char. 4361: C --> A
 Char. 4396: G --> A
 Char. 4420: G --> C
 Char. 4483: T --> C
 Char. 4490: G --> A
 Char. 4492: T --> C
 Char. 4504: G --> A
 Char. 4517: C --> A
 Char. 4606: T --> G
 Char. 4651: A --> T
 Char. 5151: C --> T
 Char. 5457: T --> C
 Char. 5460: A --> T
 Char. 5525: G --> C
 Char. 5546: C --> T
 Char. 5555: C --> T
 Char. 5556: A --> G
 Char. 5697: T --> C
 Char. 5858: C --> T
 Char. 5869: C --> T
 Char. 5913: T --> A
 Char. 5915: C --> T
 Char. 5927: T --> A
 Char. 6022: C --> T
 Char. 6029: A --> G
 Char. 6038: T --> C
 Char. 6063: C --> T
 Char. 6254: A --> C
 Char. 6258: C --> T
 Char. 6300: G --> A
 Char. 6309: T --> C
 Char. 6310: G --> A
 Char. 6410: A --> C
 Char. 6445: A --> T
 Char. 6508: C --> A
 Char. 6514: A --> T
 Char. 6565: C --> T
 Char. 6567: A --> G
 Char. 6569: G --> A
 Node 1275 :
 Char. 1525: T --> C
 Char. 1582: A --> G
 Char. 1693: T --> C
 Char. 2041: C --> T
 Char. 2062: C --> T
 Node 1276 :
 Length_of_sphenotic_spine (47):
 (0)_not_reaching_to_anterodorsal_angle_of_hyomandibula -->
 (1)_reaching_to_horizontal_through_dorsal_margin_of_hyomandibula
 Posteriorly-oriented_epioccipital_spine (66):
 (1)_absent --> (0)_present
 Foramina_for_glossopharyngeal_and_vagus_nerves (73): (1)_two_well_separated_foramina -->
 (0)_a_single_foramen_or_two_contiguous_foramina
 Fourth_infracorbital (90): (0)_present -->
 (1)_absent
 Branching_of_laterosensory_canals_of_fourth_or_fifth_infracorbitals (97): (0)_absent --> (1)_present
 Mamilliform_teeth_outside_mouth (167):
 (0)_absent --> (1)_present
 Main_axis_of_supraneurals (396):
 (0)_not_bifurcated -->
 (1)_at_least_some_of_them_distally_bifurcated
 Char. 1567: A --> T
 Char. 1600: A --> G
 Char. 1735: A --> G

Char. 1804: A --> G
 Char. 1843: A --> C
 Char. 1912: T --> C
 Char. 1934: T --> C
 Node 1277 :
 Char. 1615: G --> A
 Char. 1621: T --> C
 Char. 1672: A --> G
 Char. 1684: T --> C
 Char. 1732: C --> T
 Char. 1738: C --> T
 Char. 1879: G --> A
 Char. 1960: A --> G
 Char. 2017: A --> G
 Node 1278 :
 Char. 2185: C --> A
 Char. 2623: C --> T
 Char. 4962: A --> C
 Char. 6254: T --> C
 Char. 6493: A --> T
 Node 1279 :
 Char. 2214: G --> C
 Char. 2242: C --> T
 Char. 2248: C --> T
 Char. 2269: C --> T
 Char. 2314: A --> G
 Char. 2344: G --> A
 Char. 2395: T --> C
 Char. 2401: G --> A
 Char. 2476: A --> G
 Char. 2482: T --> C
 Char. 2485: A --> C
 Char. 2524: T --> C
 Char. 2572: T --> C
 Char. 2617: T --> C
 Char. 2626: T --> C
 Char. 2674: C --> T
 Char. 3451: G --> A
 Char. 3499: A --> C
 Char. 3514: C --> A
 Char. 3562: A --> G
 Char. 3605: T --> C
 Char. 3719: G --> A
 Char. 3733: T --> A
 Char. 3787: A --> G
 Char. 3813: A --> C
 Char. 3877: C --> T
 Char. 3896: T --> C
 Char. 4067: T --> C
 Char. 4231: T --> C
 Char. 4252: G --> A
 Char. 4285: T --> C
 Char. 4354: G --> A
 Char. 4363: A --> G
 Char. 4441: C --> T
 Char. 4480: A --> G
 Char. 4521: C --> A
 Char. 4624: A --> G
 Char. 4669: T --> A
 Char. 4747: A --> G
 Char. 4809: C --> T
 Char. 4845: T --> C
 Char. 4847: A --> T
 Char. 4899: T --> A
 Char. 5022: C --> T
 Char. 5058: T --> C
 Char. 5100: A --> G
 Char. 5118: T --> C
 Char. 5127: C --> T
 Char. 5163: A --> T
 Char. 5169: C --> T
 Char. 5259: C --> A
 Char. 5349: T --> C
 Char. 5352: A --> G
 Char. 5364: T --> C
 Char. 5373: T --> C
 Char. 5412: C --> T
 Char. 5445: G --> T
 Char. 5466: C --> T
 Char. 5505: G --> A
 Char. 5553: C --> T
 Char. 5586: C --> A
 Char. 5588: T --> A
 Char. 5619: A --> G
 Char. 5628: C --> T
 Char. 5703: G --> A
 Char. 5716: A --> G
 Char. 5745: C --> T
 Char. 6119: T --> C
 Char. 6292: A --> T
 Char. 6317: A --> G
 Char. 6328: A --> C
 Char. 6352: C --> A
 Char. 6355: A --> T
 Char. 6359: A --> C
 Char. 6363: A --> C
 Char. 6384: T --> C
 Char. 6426: T --> C
 Char. 6450: A --> T
 Char. 6498: A --> T
 Char. 6516: G --> A
 Char. 6565: C --> T
 Node 1280 :
 Anterior_process_of_contralateral_lateral_ethmoids
 (21): (0)_distant_each_other -->
 (1)_almost_articulating_each_other_on_middle_line_of_vomer
 Transitional_vertebrae_with_haemal_canal
 (331): (1)_absent --> (0)_present
 Form_and_length_of_anterior_anal-fin_rays
 (422): (0)_similar_to_posterior_rays -->
 (1)_longer_and_more_compressed_laterally_than_posterior_rays
 Form_of_caudal_peduncle_in_mature_males
 (424): (0)_not_decurved_ventrally -->
 (1)_decurved_ventrally_in_mature_males
 Ventral_procurrent-caudal-fin_rays_of_adult_males (432): (0)_slender -->
 (1)_laminar
 Number_of_ventral_procurrent-caudal-fin_rays
 (433): (0)_11_or_fewer --> (1)_12_or_more
 Ventral_procurrent-caudal-fin_rays_of_adult_males (434):
 (0)_not_projecting_through_musculature_and_skin_of_peduncle -->
 (1)_projecting_ventrally_through_peduncle_musculature_and_skin
 Position_of_anal-fin_bony_hooks_of_adult_males (451):
 (0)_paired_and_ordered_laterally_or_posterolaterally -->
 (1)_medially_positioned_and_oriented_posteriorly
 Char. 982: A --> G
 Char. 1261: C --> A
 Char. 1564: T --> C
 Char. 1687: A --> G
 Char. 1954: T --> C
 Char. 2131: A --> G
 Char. 2290: G --> A
 Char. 3901: T --> A
 Char. 4039: G --> A
 Char. 4117: C --> T
 Char. 4165: G --> A
 Char. 4627: G --> A
 Node 1281 :
 Canal_of_lateral_line_on_caudal-fin_membrane (125): (1)_present --> (0)_absent
 Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33
 Anterior_tip_of_pelvic_bone (376):
 (1)_posterior_to_second_rib -->
 (0)_anterior_to_second_rib
 Bony_hooks_on_base_of_pelvic-fin_rays_of_adult_males (446):
 (0)_absent_or_in_small_number_compared_to_on_segmented_portion -->
 (1)_as_numerous_as_on_segmented_portion_of_rays
 Char. 673: T --> C
 Char. 694: T --> C
 Char. 847: C --> T
 Char. 850: C --> T
 Char. 997: A --> T
 Char. 1345: T --> C
 Char. 1490: C --> T
 Char. 3535: T --> C
 Char. 4168: C --> G
 Char. 4249: G --> A
 Char. 4809: T --> C
 Char. 5421: C --> T
 Node 1282 :
 Char. 1684: T --> C
 Char. 1768: A --> G
 Char. 1924: C --> A
 Char. 1957: A --> G
 Char. 1981: A --> C
 Char. 2029: C --> T
 Char. 2119: T --> C
 Char. 2869: C --> T
 Char. 2890: A --> T
 Char. 3754: G --> T
 Char. 3763: C --> T
 Char. 3813: A --> T
 Char. 4090: A --> T
 Char. 4411: G --> A
 Char. 4510: C --> T
 Char. 4564: C --> G
 Char. 5706: C --> T
 Char. 6442: C --> T
 Node 1283 :
 Char. 1585: C --> T
 Char. 1882: C --> T
 Char. 1888: T --> A
 Char. 1933: T --> C
 Char. 1963: T --> C
 Char. 1966: T --> C
 Char. 2035: C --> T
 Char. 2062: G --> T
 Char. 6254: A --> T
 Char. 6309: A --> G
 Char. 6319: A --> G
 Char. 6343: A --> G
 Char. 6345: G --> A
 Char. 6347: C --> T
 Node 1284 :
 Char. 6301: C --> T
 Char. 6374: G --> A
 Char. 6423: A --> G
 Node 1285 :
 Char. 541: A --> C
 Char. 613: C --> T
 Char. 676: A --> C
 Char. 694: C --> A
 Char. 814: A --> T
 Char. 973: C --> T
 Char. 1090: C --> T
 Char. 1207: C --> T
 Char. 1303: C --> A
 Char. 1493: G --> A
 Char. 2626: C --> T
 Char. 3574: C --> T
 Char. 3592: C --> T
 Char. 3751: A --> T
 Char. 4210: A --> G
 Char. 4219: C --> T
 Char. 4640: C --> T
 Char. 5911: C --> T
 Char. 6048: T --> C
 Char. 6182: G --> A
 Char. 6309: T --> A
 Node 1286 :
 Char. 1702: A --> G
 Char. 1816: G --> A
 Char. 1870: A --> G
 Char. 2083: A --> G
 Char. 2125: C --> G
 Char. 6363: T --> C
 Char. 6475: T --> C
 Node 1287 :
 Char. 541: C --> T
 Char. 814: T --> C
 Char. 946: C --> T
 Char. 1136: T --> C
 Char. 1708: C --> T
 Char. 1741: C --> T
 Char. 3898: G --> A
 Char. 5278: C --> G
 Char. 5807: G --> A

Char. 5864: T --> C
Char. 6002: C --> T
Char. 6003: A --> T
Char. 6043: G --> A
Node 1288 :
Posterior_portion_of_mesethmoid_spine (5):
(0)_relatively_slender -->
(1)_as_broad_as_lateral_wings_of_mesethmoid
Trigemino-facialis_foramen (54):
(0)_broad_largely_limited_by_sphenotic_dorsally -->
(1)_narrow_as_a_cleft_with_sphenotic_almost_excluded_from_margin
Quadrato-metapterygoid_fenestra (232):
(0)_present --> (1)_completely_absent
Paired_ventral_projections_of_basihyal (259):
(0)_absent --> (1)_present
Position_of_ventral_end_of_posttemporal (336):
(0)_anterior_or_lateral_to_lateral_margin_of_epioccipital -->
(1)_posterior_to_lateral_margin_of_epioccipital
Number_of_ventral_procurrent-caudal-fin_rays (433): (0)_11_or_fewer --> (1)_12_or_more
Adipose_fin (512): (0)_present --> (1)_absent
Char. 587: G --> A
Char. 588: C --> T
Char. 667: C --> T
Char. 685: C --> T
Char. 691: C --> G
Char. 697: C --> T
Char. 710: C --> T
Char. 712: C --> A
Char. 721: A --> G
Char. 745: T --> C
Char. 754: A --> G
Char. 766: C --> T
Char. 781: C --> T
Char. 784: C --> G
Char. 820: A --> T
Char. 829: A --> C
Char. 892: C --> T
Char. 907: A --> T
Char. 910: C --> T
Char. 941: C --> T
Char. 950: G --> A
Char. 952: A --> T
Char. 970: C --> G
Char. 971: C --> T
Char. 982: C --> G
Char. 991: C --> T
Char. 1013: G --> A
Char. 1030: C --> T
Char. 1033: A --> C
Char. 1069: A --> G
Char. 1078: A --> G
Char. 1081: A --> C
Char. 1090: T --> C
Char. 1091: C --> T
Char. 1094: C --> A
Char. 1105: C --> T
Char. 1118: C --> T
Char. 1123: T --> C
Char. 1135: C --> A
Char. 1141: A --> G
Char. 1147: A --> C
Char. 1153: C --> T
Char. 1174: T --> C
Char. 1204: A --> G
Char. 1231: A --> C
Char. 1234: A --> G
Char. 1237: T --> A
Char. 1250: C --> T
Char. 1297: A --> G
Char. 1303: C --> T
Char. 1304: C --> T
Char. 1345: C --> A
Char. 1348: C --> T
Char. 1370: C --> T
Char. 1384: A --> G
Char. 1408: A --> C
Char. 1411: A --> G
Char. 1414: A --> T

Char. 1438: T --> C
Char. 1453: C --> T
Char. 1478: A --> G
Char. 1485: A --> C
Char. 1490: C --> T
Char. 1495: C --> T
Char. 1497: G --> C
Char. 1501: A --> T
Char. 2237: G --> T
Char. 2312: G --> C
Char. 2329: C --> G
Char. 2338: T --> C
Char. 2341: A --> G
Char. 2370: G --> C
Char. 2413: A --> G
Char. 2419: C --> A
Char. 2422: T --> C
Char. 2443: A --> T
Char. 2458: C --> T
Char. 2563: T --> C
Char. 2569: A --> C
Char. 2572: T --> C
Char. 2584: C --> T
Char. 2595: T --> A
Char. 2671: G --> C
Char. 2686: G --> A
Char. 2758: T --> C
Char. 2764: C --> T
Char. 3511: G --> T
Char. 3539: C --> A
Char. 3721: T --> C
Char. 3752: G --> C
Char. 3871: T --> C
Char. 4081: A --> C
Char. 4150: A --> G
Char. 4333: G --> A
Char. 4555: T --> C
Char. 4591: T --> C
Char. 4637: C --> A
Char. 4715: A --> G
Char. 4721: G --> T
Char. 4758: C --> G
Char. 4764: A --> T
Char. 4866: G --> A
Char. 5068: G --> C
Char. 5079: C --> T
Char. 5209: G --> A
Char. 5214: C --> T
Char. 5325: G --> A
Char. 5343: G --> A
Char. 5442: C --> T
Char. 5457: T --> C
Char. 5469: T --> G
Char. 5486: A --> G
Char. 5494: C --> T
Char. 5504: C --> T
Char. 5645: A --> T
Char. 6122: G --> A
Char. 6127: T --> C
Char. 6253: A --> C
Char. 6298: A --> G
Char. 6321: A --> G
Char. 6346: T --> A
Char. 6379: A --> C
Char. 6444: A --> T
Char. 6456: C --> T
Char. 6497: A --> T
Node 1289 :
Fourth_infraorbital (90): (0)_present -->
(1)_absent
Fourth_infraorbital (91):
(0)_reaching_posterior_margin_of_third_and_fifth_infraorbitals -->
(1)_absent_or_excluded_from_posterior_margin_of_infraorbital_series
Anguloarticular_laterosensory_canal (105):
(0)_present --> (1)_absent
Epiphyseal_branch_of_supraorbital_canal (111): (0)_present --> (1)_absent
Parietal_branch_of_laterosensory_canal (116):
(0)_present_reaching_parietal_bone_or_not -->
(1)_completely_absent

Extension_of_parietal_branch_of_laterosensory_canal (117): (0)_reaching_parietal -->
(1)_not_reaching_parietal_or_absent
Lateral_line (123): (0)_complete -->
(1)_interrupted
Interdigitations_between_dentaries (150):
(1)_present --> (0)_absent
Large_foramen_just_ventromedial_to_dentary_laterosensory_canal (154): (0)_absent --> (1)_present
Fossa_for_inner_row_of_replacement_premaxillary_teeth (187): (0)_absent --> (1)_present
Relative_length_of_palatine (209):
(0)_approximately_one_half_length_of_ectopterygoid_or_less -->
(1)_distinctly_longer_than_one_half_length_of_ectopterygoid
Passage_of_metapterygoid_for_pseudobranch_artery (226): (1)_present --> (0)_absent
Dorsal_lamella_of_symplectic (239):
(0)_absent_or_reduced -->
(1)_developed_overlapping_laterally_quadrato_and_metapterygoid
Cartilage_from_second_epibranchial_to_third_pharyngobranchial (279):
(0)_attached_to_middle_region_of_third_pharyngobranchial -->
(1)_attached_to_anterior_margin_of_third_pharyngobranchial
Teeth_on_third_pharyngobranchial (282):
(0)_present --> (1)_absent
Rows_of_gill_rakers_on_second_ceratobranchial (292): (0)_one --> (1)_two
Ventral_expansion_of_lateral_lamella_of_cleithrum (345):
(0)_covering_part_of_scapular_foramen_from_lateral_view -->
(1)_following_dorsal_margin_of_scapular_foramen_from_lateral_view
Interosseous_space (351): (0)_present -->
(1)_completely_absent
Mesocoracoid (354): (0)_present --> (1)_absent
Third_postcleithrum (363): (0)_present -->
(1)_absent
Number_of_branched_anal-fin_rays (419):
(1)_18_or_more --> (0)_17_or_fewer
Node 1290 :
Char. 1091: C --> T
Char. 1189: T --> C
Char. 2818: C --> T
Char. 2827: G --> A
Char. 5736: T --> C
Char. 6328: T --> C
Char. 6333: C --> T
Node 1291 :
Char. 1780: A --> T
Char. 1852: T --> C
Char. 1882: T --> A
Char. 1891: C --> T
Char. 1924: T --> A
Char. 1987: C --> A
Char. 2059: A --> CT
Char. 2086: T --> A
Char. 2107: C --> T
Char. 2152: T --> C
Node 1292 :
Char. 1672: A --> G
Char. 1796: C --> T
Char. 1846: C --> T
Char. 1927: T --> C
Char. 1934: T --> C
Char. 1996: C --> T
Char. 2048: C --> T
Char. 2125: C --> T
Node 1293 :
Char. 1549: C --> T
Char. 1579: A --> G

Char. 1706: A --> G
Char. 1712: C --> T
Char. 1741: T --> C
Char. 1873: T --> C
Char. 1918: C --> T
Char. 5475: A --> G
Char. 6325: C --> T
Char. 6443: A --> T
Node 1294 :
Number_of_teeth_on_inner_premaxillary_row
(182): (1)_six_or_more --> (0)_five_or_fewer
Number_of_cusps_of_anterior_dentary_teeth
(201): (0)_three_or_fewer --> (1)_five_or_more
Number_of_supraneurals (391):
(1)_four_or_more --> (0)_three
Char. 1013: G --> A
Char. 1043: T --> C
Char. 1082: T --> G
Char. 1085: G --> C
Char. 1091: A --> C
Char. 1094: C --> T
Char. 1107: C --> T
Char. 1243: A --> T
Char. 1273: A --> C
Char. 1286: G --> A
Char. 1384: A --> CT
Char. 1469: G --> C
Char. 1502: C --> T
Char. 1504: A --> C
Char. 1600: A --> G
Char. 1630: T --> C
Char. 1738: CT --> A
Char. 1834: T --> C
Char. 2006: T --> C
Char. 2071: C --> A
Char. 2362: T --> C
Char. 2422: T --> A
Char. 2539: T --> G
Char. 2557: A --> G
Char. 2644: G --> A
Char. 3601: G --> A
Char. 3733: C --> A
Char. 3736: A --> G
Char. 3813: A --> C
Char. 3940: C --> T
Char. 4058: A --> G
Char. 4201: G --> A
Char. 4213: A --> G
Char. 4252: G --> A
Char. 4381: T --> C
Char. 4465: G --> A
Char. 4521: G --> C
Char. 4968: G --> A
Char. 5160: A --> G
Char. 5177: G --> A
Char. 5281: G --> A
Char. 5346: C --> T
Char. 5547: A --> T
Char. 5622: A --> G
Char. 5743: A --> G
Char. 6342: G --> A
Char. 6346: C --> A
Char. 6484: C --> T
Char. 6512: T --> A
Char. 6513: T --> C
Char. 6528: A --> G
Char. 6641: C --> A
Char. 6645: A --> T
Node 1295 :
Number_of_vertebrae (325): (1)_34_or_more --
> (0)_up_to_33
Char. 1255: A --> C
Char. 1318: T --> C
Char. 1471: A --> T
Char. 1873: C --> T
Char. 1885: T --> C
Char. 2047: T --> C
Char. 2056: A --> C
Char. 6513: C --> T
Node 1296 :
Number_of_supraneurals (392):
(1)_five_or_more --> (0)_four_or_fewer

Number_of_branched_anal-fin_rays (419):
(1)_18_or_more --> (0)_17_or_fewer
Char. 4721: G --> A
Char. 4722: G --> A
Char. 4728: G --> A
Char. 4779: G --> A
Char. 4802: G --> A
Char. 4806: C --> G
Char. 4890: C --> T
Char. 5103: G --> C
Char. 5358: C --> T
Char. 5438: G --> C
Char. 5505: G --> A
Char. 5523: C --> G
Char. 5558: C --> T
Char. 5625: G --> A
Char. 5679: C --> T
Char. 5688: T --> C
Char. 5697: C --> T
Char. 6176: T --> C
Char. 6183: A --> G
Char. 6210: T --> C
Char. 6314: T --> A
Char. 6321: A --> T
Char. 6324: C --> T
Char. 6325: C --> T
Char. 6329: T --> A
Char. 6331: A --> C
Char. 6362: C --> T
Char. 6378: A --> T
Char. 6413: C --> A
Char. 6438: A --> G
Char. 6446: T --> C
Char. 6522: T --> C
Char. 6575: A --> C
Char. 6582: A --> C
Node 1297 :
Number_of_maxillary_teeth (189):
(1)_two_or_more --> (0)_only_one,_or_absent
Char. 2236: C --> T
Char. 2584: C --> T
Char. 3560: C --> T
Char. 4540: T --> C
Char. 4915: A --> C
Char. 5010: G --> A
Char. 5116: T --> A
Char. 5172: G --> A
Char. 5421: C --> T
Char. 5456: C --> G
Char. 6222: T --> C
Char. 6330: T --> A
Char. 6402: A --> G
Char. 6424: C --> T
Char. 6442: A --> C
Node 1298 :
Char. 571: A --> G
Char. 739: A --> G
Char. 763: A --> G
Char. 784: T --> C
Char. 829: G --> A
Char. 853: T --> C
Char. 877: A --> G
Char. 940: C --> G
Char. 968: T --> C
Char. 1240: C --> T
Char. 1363: T --> C
Char. 1491: T --> C
Char. 4183: G --> A
Node 1299 :
Char. 1294: A --> G
Char. 1375: T --> C
Char. 1441: C --> T
Char. 1501: A --> G
Char. 4522: A --> G
Char. 4854: G --> A
Node 1300 :
Char. 553: T --> C
Char. 583: C --> T
Char. 676: C --> T
Char. 700: T --> C
Char. 712: A --> T
Char. 1060: T --> C
Char. 1447: A --> G

Char. 3889: G --> A
Char. 4839: A --> G
Char. 6444: T --> C
Char. 6541: T --> C
Node 1301 :
Char. 679: C --> T
Char. 706: C --> T
Char. 730: T --> C
Char. 736: T --> C
Char. 784: C --> T
Char. 829: A --> G
Char. 886: G --> A
Char. 901: C --> T
Char. 970: A --> G
Char. 982: C --> T
Char. 1000: A --> G
Char. 1019: T --> C
Char. 1136: T --> C
Char. 1307: C --> T
Char. 1348: C --> T
Char. 2567: C --> G
Char. 5565: A --> G
Char. 6211: A --> G
Char. 6253: A --> C
Char. 6347: C --> T
Node 1302 :
Char. 628: A --> T
Char. 712: G --> A
Char. 925: T --> C
Char. 1057: C --> T
Char. 1085: G --> A
Char. 1094: C --> A
Char. 1168: C --> T
Char. 1326: G --> A
Char. 1328: A --> G
Char. 1333: T --> C
Char. 1469: C --> A
Char. 1490: C --> A
Char. 1585: C --> T
Char. 1681: A --> G
Char. 1703: C --> T
Char. 1768: A --> G
Char. 1780: C --> T
Char. 1789: T --> C
Char. 1798: A --> G
Char. 2044: A --> G
Char. 2074: T --> G
Char. 2134: A --> G
Char. 3659: G --> A
Char. 4207: G --> A
Char. 4461: A --> T
Char. 6205: C --> T
Char. 6231: C --> T
Char. 6415: A --> G
Char. 6484: C --> T
Node 1303 :
Char. 553: C --> T
Char. 577: T --> C
Char. 595: C --> T
Char. 598: T --> C
Char. 613: T --> C
Char. 658: C --> T
Char. 766: C --> T
Char. 838: C --> T
Char. 865: A --> G
Char. 949: T --> C
Char. 951: C --> T
Char. 968: C --> T
Char. 1036: C --> T
Char. 1091: C --> T
Char. 1216: C --> T
Char. 1486: C --> T
Char. 2602: T --> C
Char. 2818: C --> A
Char. 3460: T --> C
Char. 3475: C --> T
Char. 3481: T --> C
Char. 3523: C --> T
Char. 6336: A --> G
Char. 6477: A --> T
Char. 6636: C --> T
Node 1304 :
Char. 583: A --> C

Char. 712: C --> G
 Char. 889: C --> A
 Char. 1019: C --> T
 Char. 1042: C --> T
 Char. 1045: C --> A
 Char. 1075: T --> C
 Char. 1198: C --> T
 Char. 1295: C --> T
 Char. 1300: C --> T
 Char. 1355: T --> C
 Char. 1368: C --> T
 Char. 1432: C --> T
 Char. 1446: T --> C
 Char. 1483: T --> A
 Char. 3608: A --> C
 Char. 3865: C --> T
 Char. 3889: C --> G
 Char. 3919: T --> C
 Char. 4150: C --> T
 Char. 4192: G --> T
 Char. 4441: C --> T
 Char. 4461: G --> A
 Char. 4472: G --> A
 Char. 4504: G --> A
 Char. 4669: T --> A
 Char. 6323: C --> T
 Char. 6335: A --> G
 Char. 6382: C --> A
 Char. 6449: T --> C
 Node 1305 :
 Char. 568: A --> T
 Char. 589: C --> A
 Char. 616: C --> A
 Char. 740: G --> A
 Char. 772: T --> C
 Char. 901: T --> C
 Char. 968: G --> C
 Char. 1118: C --> T
 Char. 1339: C --> T
 Char. 1465: T --> C
 Char. 3502: C --> T
 Char. 3523: A --> C
 Char. 3533: T --> G
 Char. 3556: T --> C
 Char. 3565: A --> C
 Char. 3694: C --> T
 Char. 4096: T --> C
 Char. 4123: T --> A
 Char. 4330: C --> T
 Char. 4377: C --> T
 Char. 4381: T --> G
 Char. 6140: C --> T
 Char. 6168: T --> C
 Char. 6244: G --> A
 Char. 6245: A --> G
 Char. 6308: G --> A
 Char. 6322: C --> A
 Char. 6326: A --> T
 Char. 6345: A --> C
 Char. 6450: A --> C
 Char. 6507: C --> T
 Char. 6511: A --> T
 Node 1306 :
 Char. 646: A --> G
 Char. 691: C --> T
 Char. 694: C --> T
 Char. 754: A --> G
 Char. 871: A --> T
 Char. 910: C --> T
 Char. 952: A --> G
 Char. 994: A --> G
 Char. 1012: A --> C
 Char. 1024: C --> T
 Char. 1054: C --> A
 Char. 1118: T --> C
 Char. 1126: C --> T
 Char. 1159: C --> T
 Char. 1172: C --> T
 Char. 1195: A --> G
 Char. 1240: C --> T
 Char. 1298: G --> A
 Char. 1300: T --> C
 Char. 1324: A --> G
 Char. 1354: A --> G
 Char. 1357: C --> T
 Char. 1438: C --> T
 Char. 1455: C --> T
 Char. 3562: A --> G
 Char. 4183: G --> A
 Char. 6181: A --> G
 Char. 6244: A --> G
 Char. 6321: A --> G
 Char. 6323: T --> C
 Char. 6525: A --> G
 Node 1307 :
 Lateral_line (123): (1)_interrupted -->
 (0)_complete
 Third_postcleithrum (363): (0)_present -->
 (1)_absent
 Char. 2245: G --> A
 Char. 2848: C --> T
 Char. 5697: T --> C
 Char. 6118: T --> C
 Char. 6294: T --> C
 Char. 6299: G --> A
 Char. 6328: A --> C
 Char. 6334: A --> T
 Char. 6414: A --> C
 Char. 6417: G --> A
 Char. 6458: C --> T
 Char. 6462: G --> A
 Node 1308 :
 Premaxillary_maxillary_and_dentary_teeth
 (166): (1)_pedunculate_and_uniformly_shaped -->
 (0)_not_pedunculate_or_pedunculate_only_in_som
 e_of_these_bones
 Maximum_number_of_cusps_of_anterior_dentary_
 teeth (202): (1)_six_or_more --> (0)_five_or_fewer
 Char. 568: C --> T
 Char. 574: A --> C
 Char. 667: C --> T
 Char. 862: T --> C
 Char. 880: C --> T
 Char. 1015: C --> A
 Char. 1018: A --> G
 Char. 1177: T --> C
 Char. 1231: A --> C
 Char. 1303: C --> T
 Char. 1318: T --> C
 Char. 1651: A --> G
 Char. 1705: G --> A
 Char. 1717: A --> G
 Char. 1720: T --> C
 Char. 2011: T --> C
 Char. 2584: C --> T
 Char. 6493: A --> G
 Node 1309 :
 Caudal-
 fin_bony_hooks_in_adult_males_of_species_bearin
 g_hooks_on_fins (445): (0)_absent --> (1)_present
 Char. 853: C --> T
 Char. 901: T --> C
 Char. 1024: C --> T
 Char. 1078: T --> C
 Char. 1246: C --> T
 Char. 1264: A --> G
 Char. 1282: T --> C
 Char. 3457: C --> T
 Char. 3493: C --> A
 Char. 3868: G --> A
 Char. 3919: T --> C
 Char. 3949: G --> C
 Char. 4447: T --> G
 Char. 6485: T --> A
 Node 1310 :
 Char. 559: C --> T
 Char. 595: C --> T
 Char. 604: T --> C
 Char. 607: A --> C
 Char. 631: C --> T
 Char. 655: C --> T
 Char. 673: T --> C
 Char. 685: T --> A
 Char. 709: C --> T
 Char. 721: A --> G
 Char. 748: T --> C
 Char. 763: A --> G
 Char. 784: C --> T
 Char. 832: C --> T
 Char. 838: C --> A
 Char. 863: G --> A
 Char. 864: C --> T
 Char. 925: T --> C
 Char. 940: A --> C
 Char. 941: T --> C
 Char. 964: A --> C
 Char. 980: C --> T
 Char. 988: A --> C
 Char. 997: A --> G
 Char. 1019: A --> C
 Char. 1094: C --> A
 Char. 1111: C --> A
 Char. 1141: A --> G
 Char. 1144: C --> T
 Char. 1159: C --> T
 Char. 1162: C --> T
 Char. 1171: A --> G
 Char. 1198: T --> C
 Char. 1228: C --> T
 Char. 1252: A --> T
 Char. 1261: C --> T
 Char. 1273: A --> C
 Char. 1291: T --> C
 Char. 1330: C --> T
 Char. 1333: C --> T
 Char. 1342: A --> G
 Char. 1366: A --> G
 Char. 1370: T --> C
 Char. 1405: A --> C
 Char. 1414: C --> T
 Char. 1426: C --> A
 Char. 1429: C --> T
 Char. 1435: T --> C
 Char. 1438: T --> C
 Char. 1468: A --> C
 Char. 1469: G --> C
 Char. 1480: C --> T
 Char. 1481: T --> C
 Char. 1501: A --> G
 Char. 2389: T --> C
 Char. 2491: A --> G
 Char. 2539: T --> C
 Char. 2557: A --> G
 Char. 2595: T --> A
 Char. 3562: A --> G
 Char. 3605: C --> T
 Char. 3659: G --> A
 Char. 3721: C --> T
 Char. 3766: C --> T
 Char. 3841: A --> G
 Char. 3967: T --> C
 Char. 3985: C --> T
 Char. 4033: G --> A
 Char. 4108: G --> T
 Char. 4135: G --> A
 Char. 4186: T --> G
 Char. 4270: T --> C
 Char. 4700: C --> T
 Char. 5076: A --> T
 Char. 5238: G --> A
 Char. 5550: C --> T
 Char. 5674: G --> A
 Char. 5706: C --> T
 Char. 6209: C --> T
 Char. 6306: C --> T
 Char. 6344: A --> T
 Char. 6345: A --> G
 Char. 6347: C --> T
 Char. 6363: T --> C
 Char. 6413: C --> T
 Char. 6462: A --> G
 Char. 6463: G --> A
 Char. 6471: T --> C
 Char. 6513: T --> A
 Node 1311 :
 Char. 2395: T --> C
 Char. 2902: T --> C
 Char. 4818: C --> T

Char. 4833: C --> T
Char. 4866: G --> A
Char. 5050: T --> A
Char. 5097: G --> T
Char. 5277: C --> A
Char. 5316: C --> T
Char. 5343: T --> A
Char. 5412: C --> T
Char. 5451: G --> A
Char. 5466: C --> T
Char. 5571: C --> T
Node 1312 :
Number_of_vertebrae (325): (1)_34_or_more --> (0)_up_to_33
Char. 4721: G --> T
Char. 5151: C --> T
Char. 5176: A --> C
Char. 6209: C --> T
Char. 6306: C --> T
Char. 6364: A --> T
Char. 6475: T --> C
Char. 6476: C --> A
Char. 6512: T --> C
Node 1313 :
Ventral_margin_of_horizontal_process_of_angular_ricular (162):
(0)_posteroventrally_angled_relative_to_dentary_laterosensory_canal -->
(1)_perpendicular_to_laterosensory_canal_of_dentary
Posterior_extent_of_ventral_process_of_quadrate (234):
(1)_falling_short_of_posterior_margin_of_symplectic -->
(0)_reaching_vertical_through_posterior_margin_of_symplectic
Node 1314 :
Foramen_on_articular_condyle_of_quadrate (230): (0)_absent --> (1)_present
Number_of_anal-fin_hooks_of_adult_males (452):
(0)_three_or_more_on_each_ray_with_hooks -->
(1)_only_one_or_two_hooks_on_each_ray
Node 1315 :
Bony_lamellae_between_second_and_third_basibranchials (274): (1)_present --> (0)_absent
Bony_hooks_on_fin_rays (440):
(1)_present_in_adult_males --> (0)_absent
Node 1316 :
Distance_between_posterodorsal_margin_of_ethmoid_cartilage_and_lateral_ethmoids (40):
(0)_contacting_or_almost_contacting_lateral_ethmoids --> (1)_distant_from_lateral_ethmoids
Posterior_margin_of_subtemporal_fossa (72):
(1)_limited_by_a_well_developed_transverse_pterotic_ridge --> (0)_not_well_delimited_by_pterotic
Length_of_ascending_process_of_premaxilla (129): (0)_reaching_at_least_one_third_of_length_of_nasal -->
(1)_reaching_just_anterior_end_of_nasal
Number_of_cusps_of_anterior_maxillary_teeth (193): (0)_up_to_three --> (1)_five_or_more_cusps
Cartilage-filled_space_anterior_to_scapular_foramen (360):
(0)_present_wider_than_anterior_process_of_scapula -->
(1)_much_reduced_by_expansions_of_coracoid_and_cleithrum
Dorsal-fin_rays_articulating_with_first_dorsal_ptyerygiophore (404): (1)_three_or_four --> (0)_two
Node 1317 :
Lateral_line (123): (1)_interrupted -->
(0)_complete
Char. 613: C --> T
Char. 664: C --> T
Char. 667: T --> C
Char. 766: C --> T
Char. 775: A --> G
Char. 845: G --> A
Char. 863: G --> A
Char. 883: A --> G
Char. 904: T --> C
Char. 1018: T --> C
Char. 1054: C --> A
Char. 1183: A --> C
Char. 1201: A --> G
Char. 1204: A --> G
Char. 1276: T --> C
Char. 1285: T --> C
Char. 1357: C --> T
Char. 1369: C --> T
Char. 1468: C --> T
Char. 2596: A --> T
Char. 4444: C --> T
Char. 4469: A --> G
Char. 6362: C --> T
Char. 6368: C --> T
Node 1318 :
Char. 607: A --> T
Char. 655: C --> T
Char. 667: C --> T
Char. 670: T --> C
Char. 1258: A --> G
Char. 1264: A --> G
Char. 1283: C --> T
Char. 1306: A --> G
Char. 1387: A --> G
Char. 1393: T --> C
Char. 1432: T --> C
Char. 1462: C --> T
Char. 1468: A --> G
Char. 1598: C --> T
Char. 1672: A --> G
Char. 1693: T --> C
Char. 1777: C --> T
Char. 1795: C --> T
Char. 1873: T --> C
Char. 1906: C --> T
Char. 1942: A --> C
Char. 1954: T --> C
Char. 1978: C --> T
Char. 2023: A --> T
Char. 2027: A --> G
Char. 2029: T --> A
Char. 2041: T --> C
Char. 2065: A --> G
Char. 3766: C --> T
Char. 3808: G --> A
Char. 3817: A --> G
Char. 3829: G --> A
Char. 4432: C --> T
Char. 4615: C --> T
Char. 6471: T --> C
Node 1319 :
Char. 796: A --> G
Char. 853: T --> C
Char. 1162: C --> T
Char. 1999: A --> G
Char. 3845: C --> A
Char. 4744: C --> T
Char. 5719: G --> A
Node 1320 :
Char. 1598: C --> T
Char. 1696: A --> T
Char. 1708: T --> G
Char. 1777: C --> T
Char. 1840: T --> A
Char. 1843: T --> C
Char. 1849: C --> T
Char. 1900: T --> C
Char. 1906: A --> T
Char. 1924: AT --> C
Char. 2006: T --> C
Char. 2011: T --> C
Char. 2017: A --> G
Char. 2050: T --> C
Char. 2062: T --> G
Char. 2074: A --> C
Char. 2080: A --> T
Char. 2083: G --> A
Node 1321 :
Char. 3502: C --> G
Char. 3826: G --> C
Char. 5499: T --> A
Node 1322 :
Char. 1621: T --> C
Char. 1783: T --> A
Char. 1918: C --> T
Char. 1927: T --> C
Char. 1939: G --> A
Char. 2065: A --> G
Node 1323 :
Char. 1772: T --> C
Char. 1777: A --> C
Char. 1786: C --> T
Char. 1849: C --> T
Char. 1864: T --> C
Node 1324 :
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Char. 1580: T --> C
Char. 1756: C --> T
Char. 1813: T --> C
Char. 1819: C --> T
Char. 1864: C --> T
Char. 1903: T --> C
Char. 1990: A --> G
Char. 2038: T --> C
Char. 2989: T --> C
Char. 3331: C --> T
Char. 5124: T --> C
Char. 6516: G --> A
Node 1325 :
Char. 5292: C --> T
Char. 6231: C --> T
Node 1326 :
Ventral_extent_of_third_infraorbital (88):
(0)_reaching_horizontal_arm_of_preopercle -->
(1)_not_reaching_horizontal_arm_of_preopercle_at_least_anteriorly
Number_of_cusps_of_anterior_dentary_teeth (201): (1)_five_or_more --> (0)_three_or_fewer
Maximum_number_of_cusps_of_anterior_dentary_teeth (202): (1)_six_or_more --> (0)_five_or_fewer
Number_of_branched_rays_on_dorsal_fin (409): (1)_nine_or_more --> (0)_eight_or_fewer
Bony_hooks_on_last_pelvic-fin_ray_of_adult_males (447):
(1)_as_numerous_as_in_other_rays -->
(0)_absent_or_reduced_in_number
Bony_hooks_on_first_pelvic-fin_ray_of_adult_males (448): (0)_absent -->
(1)_present
Node 1327 :
Char. 886: C --> G
Char. 916: C --> T
Char. 988: A --> G
Char. 1015: C --> T
Char. 1021: C --> T
Char. 1105: A --> G
Char. 1141: T --> C
Char. 5616: A --> T
Node 1328 :
Char. 580: T --> C
Char. 700: T --> C
Char. 832: C --> T
Char. 860: G --> A
Char. 973: A --> G
Char. 1228: C --> T
Char. 1309: C --> T
Char. 1435: T --> C
Char. 2278: T --> C
Char. 2314: A --> G
Char. 2338: T --> C
Char. 2395: T --> C
Char. 2614: T --> C
Char. 2725: T --> A
Char. 2773: T --> A
Char. 2902: T --> C
Char. 3826: T --> G
Char. 4249: G --> A
Char. 4495: T --> C
Char. 4508: C --> A

Char. 4555: C --> T
 Char. 5175: C --> T
 Char. 5242: C --> T
 Char. 5322: C --> T
 Char. 5345: A --> T
 Char. 5432: T --> A
 Char. 5568: C --> T
 Char. 6333: C --> T
 Node 1329 :
 Insemination (514): (0)_absent --> (1)_present
 Char. 655: C --> T
 Char. 673: T --> C
 Char. 706: C --> A
 Char. 790: C --> A
 Char. 808: C --> T
 Char. 826: T --> C
 Char. 838: C --> T
 Char. 853: C --> T
 Char. 859: A --> C
 Char. 922: C --> T
 Char. 953: A --> G
 Char. 982: C --> T
 Char. 1000: C --> T
 Char. 1019: A --> C
 Char. 1027: A --> G
 Char. 1075: T --> A
 Char. 1078: T --> C
 Char. 1123: T --> C
 Char. 1135: C --> T
 Char. 1172: C --> T
 Char. 1177: T --> C
 Char. 1198: T --> C
 Char. 1210: C --> T
 Char. 1229: C --> T
 Char. 1262: C --> T
 Char. 1270: T --> G
 Char. 1273: A --> T
 Char. 1285: A --> G
 Char. 1333: A --> G
 Char. 1355: C --> T
 Char. 1372: A --> T
 Char. 3502: G --> A
 Char. 3613: T --> C
 Char. 3751: G --> T
 Char. 3790: A --> C
 Char. 3859: T --> C
 Char. 3865: C --> T
 Char. 3949: G --> C
 Char. 3989: C --> A
 Char. 4003: C --> T
 Char. 4045: G --> A
 Char. 4087: T --> C
 Char. 4180: C --> T
 Char. 4198: G --> A
 Char. 4345: C --> T
 Char. 4405: G --> A
 Char. 4432: C --> T
 Char. 4537: G --> A
 Char. 4624: A --> G
 Char. 4639: C --> T
 Char. 5062: C --> A
 Char. 5151: C --> T
 Char. 5622: A --> G
 Char. 5667: T --> C
 Char. 6311: T --> C
 Char. 6345: A --> G
 Char. 6363: C --> T
 Char. 6444: T --> A
 Char. 6475: T --> C
 Char. 6513: T --> A
 Char. 6528: G --> A
 Node 1330 :
 Char. 1570: C --> T
 Char. 1630: C --> T
 Char. 1765: C --> T
 Char. 1777: C --> A
 Char. 1891: C --> T
 Char. 1987: T --> C
 Char. 2083: G --> A
 Char. 2338: T --> C
 Char. 2347: T --> C
 Char. 2362: T --> C
 Char. 2521: T --> C
 Char. 2533: T --> C
 Char. 2830: T --> C
 Char. 2950: A --> T
 Char. 2965: T --> C
 Char. 2989: T --> G
 Char. 3079: T --> C
 Char. 3736: A --> G
 Char. 4054: A --> T
 Char. 4204: T --> C
 Char. 4764: A --> T
 Char. 4777: T --> C
 Char. 4953: C --> T
 Char. 5367: C --> A
 Char. 5394: A --> C
 Char. 5634: G --> C
 Char. 5739: T --> C
 Char. 6027: C --> T
 Char. 6040: A --> G
 Char. 6041: G --> A
 Node 1331 :
 Char. 1597: A --> G
 Char. 1600: A --> T
 Char. 1618: C --> T
 Char. 1651: G --> T
 Char. 1687: A --> G
 Char. 1753: T --> C
 Char. 1762: T --> C
 Char. 1849: A --> C
 Char. 1867: C --> T
 Char. 1894: A --> G
 Char. 1900: T --> C
 Char. 1918: C --> T
 Char. 1939: G --> A
 Char. 1990: A --> G
 Char. 2041: T --> C
 Char. 2074: A --> T
 Char. 3142: G --> A
 Char. 3406: C --> A
 Char. 3781: T --> C
 Char. 3820: C --> A
 Char. 4189: G --> T
 Char. 4225: T --> C
 Char. 4267: C --> T
 Char. 4339: C --> T
 Char. 4354: G --> A
 Char. 4441: C --> T
 Char. 4444: C --> T
 Char. 4504: G --> A
 Char. 4512: A --> C
 Char. 4517: C --> T
 Char. 4645: C --> T
 Char. 4651: G --> A
 Char. 4654: C --> T
 Char. 5158: C --> A
 Char. 5211: A --> C
 Char. 5253: A --> C
 Char. 5289: G --> A
 Char. 5298: C --> T
 Char. 5358: C --> T
 Char. 5491: G --> T
 Char. 5871: C --> A
 Char. 5935: A --> T
 Char. 5945: A --> G
 Char. 5970: C --> T
 Char. 5986: G --> A
 Char. 6002: T --> C
 Char. 6016: T --> A
 Char. 6042: T --> A
 Char. 6098: C --> A
 Char. 6099: C --> T
 Char. 6168: T --> C
 Char. 6209: C --> T
 Char. 6230: C --> T
 Char. 6314: C --> T
 Char. 6322: T --> C
 Char. 6334: G --> A
 Node 1332 :
 Teeth_on_third_pharyngobranchial (282):
 (1)_absent --> (0)_present
 Char. 1687: A --> G
 Char. 1712: C --> T
 Char. 1732: C --> T
 Char. 1912: C --> T
 Char. 2068: G --> A
 Char. 2077: C --> T
 Char. 2656: C --> T
 Char. 3712: A --> G
 Char. 6063: T --> C
 Node 1333 :
 Teeth_on_third_pharyngobranchial (282):
 (1)_absent --> (0)_present
 Char. 5837: T --> C
 Char. 5970: C --> T
 Char. 6024: G --> C
 Char. 6168: T --> C
 Char. 6301: T --> C
 Char. 6381: A --> G
 Char. 6442: A --> T
 Char. 6443: T --> A
 Node 1334 :
 Temporal_fossa (51):
 (1)_absent_or_much_reduced -->
 (0)_well_developed
 Char. 2287: T --> C
 Char. 6344: A --> G
 Node 1335 :
 Char. 1705: T --> C
 Char. 1711: T --> C
 Char. 1717: A --> G
 Char. 1735: A --> G
 Char. 1741: T --> C
 Char. 1933: T --> C
 Char. 2068: A --> G
 Char. 6294: C --> A
 Char. 6445: A --> G
 Node 1336 :
 Char. 2569: G --> A
 Char. 2809: T --> C
 Node 1337 :
 Char. 3238: A --> G
 Char. 5361: C --> T
 Char. 6254: A --> G
 Char. 6433: T --> C
 Node 1338 :
 Char. 3223: G --> A
 Char. 3259: G --> T
 Char. 3391: C --> T
 Char. 3499: A --> G
 Char. 4235: A --> T
 Char. 4262: T --> C
 Char. 4459: C --> A
 Char. 5364: T --> G
 Char. 6002: T --> C
 Char. 6024: G --> A
 Node 1339 :
 Char. 2569: A --> G
 Char. 2758: T --> C
 Char. 3007: C --> G
 Char. 3229: A --> G
 Char. 3250: G --> A
 Char. 3487: C --> T
 Char. 3775: G --> A
 Char. 4021: A --> G
 Char. 4081: A --> G
 Char. 4085: G --> T
 Char. 4333: G --> A
 Char. 4337: G --> T
 Char. 4338: T --> C
 Char. 4486: G --> C
 Char. 4519: G --> A
 Char. 4521: G --> A
 Char. 5544: T --> G
 Char. 5968: T --> C
 Char. 6025: C --> T
 Node 1340 :
 Dorsal_development_of_cleithrum (344):
 (0)_much_extended_dorsally_to_mesocoracoid -->
 (1)_ending_in_a_position_just_dorsal_of_tip_of_m
 esocoracoid
 Number_of_branched_anal-fin_rays (421):
 (0)_34_or_fewer --> (1)_35_or_more
 Char. 533: C --> T
 Char. 556: C --> A
 Char. 640: C --> T
 Char. 643: C --> T
 Char. 697: C --> T

Char. 754: A --> T
 Char. 757: A --> T
 Char. 778: C --> T
 Char. 796: A --> C
 Char. 968: G --> C
 Char. 991: C --> T
 Char. 1015: C --> A
 Char. 1019: C --> T
 Char. 1025: T --> C
 Char. 1075: C --> A
 Char. 1109: T --> G
 Char. 1115: G --> T
 Char. 1198: T --> C
 Char. 1210: C --> T
 Char. 1225: C --> A
 Char. 1268: C --> T
 Char. 1274: T --> G
 Char. 1275: T --> C
 Char. 1318: C --> T
 Char. 1322: C --> T
 Char. 1375: G --> A
 Char. 1388: A --> G
 Char. 1428: T --> A
 Char. 1435: C --> T
 Char. 1469: C --> A
 Char. 1495: C --> A
 Char. 2251: C --> T
 Char. 2584: T --> C
 Char. 6252: A --> C
 Char. 6328: A --> C
 Node 1341 :
 Number_of_branched_anal-fin_rays (420):
 (1)_25_or_more --> (0)_24_or_fewer
 Char. 667: C --> T
 Char. 703: C --> A
 Char. 784: T --> A
 Char. 835: C --> T
 Char. 895: T --> C
 Char. 940: C --> T
 Char. 1057: C --> T
 Char. 1123: T --> C
 Char. 1192: T --> C
 Char. 1225: C --> T
 Char. 1303: C --> A
 Char. 1331: C --> T
 Char. 1432: T --> C
 Char. 1687: A --> G
 Char. 1819: T --> C
 Char. 1879: G --> A
 Char. 1903: T --> C
 Char. 1945: T --> C
 Char. 1993: A --> G
 Char. 2011: T --> C
 Char. 2020: T --> C
 Char. 2083: G --> A
 Char. 3370: G --> A
 Char. 3908: G --> T
 Char. 6343: A --> G
 Node 1342 :
 Char. 1621: T --> C
 Char. 4992: T --> C
 Char. 6374: A --> G
 Node 1343 :
 Char. 1580: T --> C
 Char. 1732: T --> C
 Char. 1789: T --> G
 Char. 1843: T --> C
 Char. 1912: C --> T
 Char. 2063: C --> T
 Char. 6333: T --> C
 Char. 6361: T --> C
 Char. 6379: A --> C
 Node 1344 :
 Pectoral-
 fin_bony_hooks_in_adult_males_of_species_bearin
 g_hooks_on_fins (443): (0)_absent --> (1)_present
 Dorsal-
 fin_bony_hooks_in_adult_males_of_species_bearin
 g_hooks_on_fins (444): (0)_absent --> (1)_present
 Char. 4964: C --> T
 Char. 5175: C --> T
 Char. 5240: G --> A
 Node 1345 :
 Char. 3025: C --> T
 Char. 5346: C --> T
 Char. 6005: C --> T
 Node 1346 :
 Char. 1591: T --> C
 Char. 1720: C --> T
 Char. 1741: T --> C
 Char. 1765: C --> T
 Char. 1852: A --> G
 Char. 2035: T --> C
 Char. 2074: A --> G
 Char. 2635: A --> C
 Char. 5490: A --> G
 Char. 5943: A --> T
 Char. 6024: G --> A
 Char. 6205: T --> C
 Char. 6345: A --> G
 Char. 6445: A --> G
 Node 1347 :
 Number_of_cusps_of_anterior_dentary_teeth
 (201): (1)_five_or_more --> (0)_three_or_fewer
 Bony_hooks_on_fin_rays (440):
 (1)_present_in_adult_males --> (0)_absent
 Char. 4346: G --> A
 Node 1348 :
 Char. 5025: A --> T
 Char. 5046: T --> C
 Char. 5049: T --> C
 Char. 6253: A --> G
 Char. 6321: A --> G
 Node 1349 :
 Char. 1564: CT --> A
 Char. 1834: A --> G
 Char. 1867: A --> G
 Node 1350 :
 Char. 1567: T --> A
 Char. 1585: T --> C
 Char. 1705: T --> A
 Char. 1726: C --> T
 Char. 1762: T --> C
 Char. 1796: C --> T
 Char. 1804: A --> C
 Char. 1924: A --> G
 Char. 1934: C --> T
 Node 1351 :
 Number_of_teeth_on_inner_premaxillary_row
 (181): (1)_five_or_more --> (0)_four_or_fewer
 Number_of_vertebrae (325): (1)_34_or_more --
 > (0)_up_to_33
 Char. 598: C --> T
 Char. 664: T --> C
 Char. 676: C --> T
 Char. 730: T --> C
 Char. 748: T --> C
 Char. 835: C --> T
 Char. 866: C --> T
 Char. 971: C --> T
 Char. 1450: C --> T
 Char. 1486: C --> T
 Char. 2312: G --> T
 Char. 4132: C --> T
 Char. 4609: C --> T
 Char. 6345: A --> G
 Char. 6514: T --> C
 Node 1352 :
 Char. 1591: T --> C
 Node 1353 :
 Anal-fin_position (415):
 (0)_posterior_or_almost_posterior_to_vertical_thro
 ugh_last_dorsal-fin_ray -->
 (1)_extended_anteriorly_ventral_to_dorsal_fin
 Char. 1517: C --> T
 Char. 1558: T --> A
 Char. 1576: A --> G
 Char. 1657: T --> C
 Char. 1708: T --> A
 Char. 1711: C --> T
 Char. 1712: C --> T
 Char. 1762: T --> C
 Char. 1772: T --> C
 Char. 1804: A --> C
 Char. 1834: T --> A
 Char. 1837: A --> G
 Char. 1846: T --> C
 Char. 1915: T --> C
 Char. 2050: A --> C
 Char. 2056: C --> A
 Char. 2062: A --> C
 Char. 2065: A --> G
 Char. 2101: C --> T
 Char. 2159: C --> T
 Char. 2275: T --> C
 Char. 2314: A --> G
 Char. 2644: G --> A
 Char. 3572: T --> G
 Char. 3853: C --> T
 Char. 3919: T --> C
 Char. 4042: T --> C
 Char. 4118: A --> G
 Char. 4231: G --> A
 Char. 4364: C --> T
 Char. 4441: C --> T
 Char. 4474: G --> A
 Char. 4615: C --> T
 Char. 4621: G --> T
 Char. 4648: T --> A
 Char. 6299: G --> A
 Char. 6361: T --> A
 Char. 6442: A --> T
 Char. 6492: C --> T
 Node 1354 :
 Char. 6168: T --> C
 Char. 6209: C --> T
 Char. 6292: A --> C
 Char. 6377: T --> C
 Char. 6426: T --> C
 Char. 6434: G --> A
 Char. 6487: C --> T
 Node 1355 :
 Char. 646: A --> G
 Char. 667: T --> C
 Char. 724: A --> C
 Char. 847: C --> A
 Char. 862: T --> C
 Char. 1084: T --> C
 Char. 1099: AC --> T
 Char. 1162: C --> T
 Char. 1177: T --> C
 Char. 1474: C --> T
 Char. 1480: C --> T
 Char. 1489: A --> C
 Char. 1495: C --> T
 Char. 2620: A --> G
 Char. 3586: G --> A
 Char. 3703: C --> T
 Char. 4058: A --> G
 Char. 4205: C --> A
 Char. 4444: C --> T
 Char. 4501: G --> A
 Char. 4854: A --> G
 Char. 5079: C --> T
 Node 1356 :
 Char. 1531: C --> A
 Char. 1603: G --> T
 Char. 1621: T --> C
 Char. 1660: T --> C
 Char. 1714: A --> T
 Char. 1765: C --> T
 Char. 1786: T --> C
 Char. 1810: G --> T
 Char. 1846: C --> T
 Char. 1960: T --> A
 Char. 1990: A --> G
 Char. 2011: T --> C
 Char. 2026: A --> G
 Char. 2095: C --> T
 Char. 2221: T --> C
 Char. 2428: C --> T
 Char. 3694: C --> T
 Char. 3736: G --> A
 Char. 3754: G --> T
 Char. 3775: G --> A
 Char. 3958: T --> C
 Char. 3989: C --> A
 Char. 4051: C --> A
 Char. 4129: C --> T

Char. 4288: A --> C
 Char. 4300: G --> A
 Char. 4381: T --> C
 Char. 4486: G --> A
 Char. 4725: T --> C
 Char. 4777: C --> T
 Char. 4920: G --> A
 Char. 5055: G --> A
 Char. 5088: G --> C
 Char. 5184: T --> C
 Char. 5238: G --> A
 Char. 5533: C --> A
 Char. 5694: T --> C
 Char. 6162: A --> G
 Char. 6304: A --> T
 Char. 6308: A --> G
 Char. 6413: T --> A
 Char. 6454: A --> T
 Node 1357 :
 Char. 6162: A --> G
 Char. 6286: T --> A
 Char. 6319: A --> G
 Char. 6484: T --> C
 Node 1358 :
 Char. 1738: C --> T
 Char. 1783: T --> C
 Char. 2098: A --> T
 Char. 4926: C --> T
 Char. 4992: T --> C
 Char. 4994: G --> C
 Char. 5001: G --> A
 Char. 5082: T --> C
 Char. 5130: G --> A
 Char. 5457: T --> C
 Char. 5469: T --> G
 Char. 5866: C --> T
 Char. 6302: C --> T
 Char. 6321: A --> C
 Node 1359 :
 Char. 1600: G --> A
 Char. 1712: C --> T
 Char. 1774: A --> G
 Char. 1837: A --> G
 Char. 1864: C --> T
 Char. 2044: T --> C
 Char. 2053: A --> T
 Char. 2068: A --> G
 Node 1360 :
 Char. 1006: C --> T
 Char. 1009: C --> T
 Char. 1057: C --> T
 Char. 1102: A --> C
 Char. 1123: T --> C
 Char. 1153: C --> T
 Char. 1156: C --> T
 Char. 1195: A --> G
 Char. 1304: C --> T
 Char. 1306: A --> T
 Char. 1330: C --> A
 Char. 1385: A --> T
 Char. 1447: C --> T
 Char. 1468: A --> T
 Char. 1480: C --> T
 Char. 1489: C --> A
 Char. 1492: A --> C
 Char. 2473: A --> C
 Char. 2595: T --> A
 Char. 2774: C --> T
 Char. 3865: C --> T
 Char. 3964: C --> G
 Char. 4279: C --> T
 Char. 4409: C --> T
 Char. 4447: A --> G
 Char. 5301: T --> C
 Char. 5373: T --> C
 Char. 5442: C --> T
 Char. 5637: T --> A
 Char. 6328: T --> C
 Char. 6407: G --> A
 Char. 6419: C --> T
 Node 1361 :
 Number_of_maxillary_teeth (190):
 (0)_up_to_three --> (1)_four_or_more
 Number_of_cusps_of_anterior_dentary_teeth
 (201): (1)_five_or_more --> (0)_three_or_fewer
 Number_of_branched_anal-fin_rays (419):
 (1)_18_or_more --> (0)_17_or_fewer
 Hypertrophied_ventral-caudal-
 peduncle_squamation (472): (0)_absent -->
 (1)_present_restricted_to_scales_below_lateral_lin
 e
 Adipose_fin (512): (0)_present --> (1)_absent
 Enlarged_pouch_scale (513):
 (0)_absent_or_similar_to_a_regular_lateral-
 line_scale -->
 (1)_present_and_enlarged,_with_numerous_radii
 Char. 1600: A --> G
 Char. 1843: T --> C
 Char. 1957: T --> C
 Char. 2050: T --> C
 Char. 2056: A --> T
 Char. 2065: A --> G
 Char. 2302: T --> C
 Char. 2389: G --> A
 Char. 2503: T --> C
 Char. 2527: C --> A
 Char. 2593: G --> A
 Char. 2671: T --> G
 Char. 2683: T --> C
 Char. 2818: G --> C
 Char. 2827: G --> A
 Char. 3019: T --> C
 Char. 3424: C --> T
 Char. 5055: A --> G
 Char. 5163: A --> T
 Char. 5313: G --> A
 Char. 5352: G --> A
 Char. 6321: A --> G
 Char. 6334: G --> A
 Char. 6413: C --> T
 Node 1362 :
 Number_of_branched_rays_on_dorsal_fin
 (408): (1)_eight_or_more --> (0)_seven_or_fewer
 Char. 1606: C --> T
 Char. 1672: A --> G
 Char. 1675: C --> T
 Char. 1690: C --> A
 Char. 1723: T --> A
 Char. 1753: T --> C
 Char. 2044: A --> G
 Char. 2329: C --> A
 Char. 2632: A --> T
 Char. 3457: C --> T
 Char. 3595: C --> A
 Char. 3640: C --> T
 Char. 3649: C --> T
 Char. 3694: C --> T
 Char. 3802: C --> T
 Char. 3826: G --> T
 Char. 3832: G --> T
 Char. 4090: A --> G
 Char. 4135: G --> T
 Char. 4231: G --> A
 Char. 4234: C --> T
 Char. 4309: G --> A
 Char. 4401: A --> C
 Char. 4453: G --> A
 Char. 4519: G --> A
 Char. 4585: C --> T
 Char. 4630: C --> T
 Char. 4687: C --> T
 Char. 5550: A --> T
 Char. 5551: G --> A
 Char. 6074: C --> G
 Char. 6325: C --> T
 Node 1363 :
 Char. 2326: C --> T
 Char. 4960: C --> T
 Char. 5682: C --> T
 Char. 5721: T --> A
 Char. 6251: A --> G
 Node 1364 :
 Char. 5010: A --> G
 Char. 5055: G --> A
 Char. 5313: A --> G
 Char. 5343: C --> A
 Node 1365 :
 Char. 1852: A --> G
 Char. 1867: A --> G
 Char. 2063: C --> T
 Node 1366 :
 Char. 1565: C --> T
 Char. 1573: G --> A
 Char. 1585: C --> T
 Char. 1603: G --> C
 Char. 1630: T --> C
 Char. 1705: T --> C
 Char. 1723: C --> T
 Char. 1759: A --> G
 Char. 1774: C --> T
 Char. 1792: T --> C
 Char. 1852: T --> C
 Char. 1879: G --> A
 Char. 1882: C --> A
 Char. 1892: C --> T
 Char. 1909: T --> A
 Char. 1912: C --> T
 Char. 1948: T --> C
 Char. 1957: A --> T
 Char. 1960: C --> T
 Char. 1993: A --> G
 Char. 2017: A --> G
 Char. 2041: T --> A
 Char. 2065: A --> G
 Char. 2068: T --> C
 Char. 2083: G --> A
 Char. 2095: T --> C
 Char. 2101: C --> T
 Char. 2116: C --> T
 Node 1367 :
 Char. 559: A --> G
 Char. 577: C --> T
 Char. 679: C --> T
 Char. 757: A --> G
 Char. 2173: C --> A
 Node 1368 :
 Char. 565: T --> C
 Char. 1849: C --> T
 Char. 1861: A --> G
 Char. 1924: C --> T
 Char. 1966: T --> C
 Char. 2005: T --> C
 Char. 2026: A --> G
 Char. 2035: T --> C
 Char. 2087: C --> T
 Char. 5461: C --> T
 Char. 6300: G --> A
 Char. 6353: A --> C
 Char. 6528: A --> G
 Node 1369 :
 Char. 625: C --> T
 Char. 640: C --> T
 Char. 673: C --> T
 Char. 745: C --> T
 Char. 979: C --> T
 Char. 982: A --> T
 Char. 1036: C --> T
 Char. 1075: T --> C
 Char. 1105: A --> A
 Char. 1189: C --> T
 Char. 1210: C --> T
 Char. 1333: C --> T
 Char. 1405: A --> A
 Char. 1723: G --> A
 Char. 1957: A --> T
 Char. 2041: T --> C
 Char. 2092: A --> G
 Char. 2107: C --> T
 Char. 2113: C --> T
 Char. 2122: C --> T
 Char. 2215: T --> A
 Char. 2222: G --> A
 Char. 2489: C --> T
 Char. 2518: G --> T
 Char. 2536: C --> T
 Char. 5227: A --> G
 Char. 5328: G --> A
 Char. 5442: C --> T
 Char. 5470: A --> G

Char. 5545: G --> A
Char. 6498: A --> T
Node 1370 :
Char. 553: C --> T
Char. 710: C --> T
Char. 751: T --> A
Char. 790: C --> T
Char. 866: C --> T
Char. 886: G --> A
Char. 904: C --> T
Char. 907: C --> A
Char. 955: C --> T
Char. 988: C --> T
Char. 991: C --> T
Char. 1111: C --> T
Char. 1261: C --> T
Char. 1300: C --> T
Char. 1315: C --> T
Char. 1369: C --> T
Char. 1393: C --> T
Char. 1459: C --> T
Char. 1494: T --> C
Char. 1573: G --> A
Char. 1639: A --> G
Char. 1642: T --> C
Char. 1672: A --> G
Char. 1703: C --> T
Char. 1786: C --> T
Char. 1789: T --> C
Char. 2047: T --> C
Char. 2080: T --> A
Char. 2152: C --> T
Char. 2740: A --> C
Char. 2755: A --> G
Node 1371 :
Char. 556: C --> T
Char. 577: C --> T
Char. 622: T --> C
Char. 649: C --> T
Char. 664: C --> T
Char. 694: C --> T
Char. 766: C --> T
Char. 892: C --> T
Char. 946: C --> T
Char. 1030: C --> T
Char. 1072: C --> T
Char. 1273: T --> C
Char. 1326: A --> G
Char. 1411: A --> G
Char. 1474: C --> T
Char. 1478: A --> G
Char. 1480: C --> T
Char. 1490: C --> T
Char. 1600: C --> A
Char. 1636: T --> C
Char. 2140: C --> T
Char. 2214: G --> C
Char. 2512: G --> C
Char. 2587: G --> A
Char. 2596: A --> C
Node 1372 :
Char. 634: T --> C
Char. 739: A --> C
Char. 748: C --> T
Char. 886: G --> C
Char. 889: C --> T
Char. 895: C --> T
Char. 950: G --> A
Char. 1054: C --> T
Char. 1262: C --> T
Char. 1481: C --> T
Char. 1621: T --> C
Char. 1648: C --> T
Char. 1810: G --> A
Char. 1867: T --> C
Char. 1873: C --> T
Char. 1951: T --> C
Char. 1964: A --> G
Char. 1966: T --> A
Char. 2027: A --> G
Char. 2029: T --> C
Char. 2053: C --> A
Char. 2063: C --> T

Char. 2101: C --> T
Char. 2116: C --> T
Char. 2125: T --> C
Char. 2134: A --> C
Char. 2149: T --> C
Char. 2158: C --> T
Char. 2173: C --> A
Char. 2239: A --> G
Char. 2257: G --> A
Char. 2567: G --> C
Char. 2645: A --> C
Char. 2674: C --> T
Char. 2851: A --> G
Node 1373 :
Char. 1573: G --> A
Char. 1597: C --> T
Char. 1630: T --> C
Char. 1657: T --> C
Char. 1672: A --> G
Char. 1699: C --> T
Char. 1729: C --> T
Char. 1741: C --> T
Char. 1780: A --> G
Char. 1793: C --> T
Char. 1888: A --> G
Char. 2024: C --> T
Char. 2053: C --> T
Char. 2089: A --> G
Char. 2092: A --> G
Char. 2095: C --> T
Char. 2107: T --> C
Char. 2110: G --> A
Node 1374 :
Char. 748: C --> T
Char. 1441: C --> A
Char. 1585: T --> C
Char. 1601: C --> T
Char. 1609: T --> C
Char. 1678: C --> T
Char. 1796: T --> C
Char. 1960: T --> C
Char. 2068: C --> T
Char. 2087: C --> T
Char. 2630: T --> A
Node 1375 :
Char. 559: A --> T
Char. 856: T --> C
Char. 922: C --> T
Char. 1105: A --> T
Char. 1108: A --> C
Char. 1138: C --> T
Char. 1294: A --> G
Char. 1417: T --> C
Char. 1525: T --> C
Char. 1540: A --> G
Char. 1561: T --> C
Char. 1570: T --> C
Char. 1681: A --> G
Char. 1705: C --> T
Char. 1717: A --> G
Char. 1720: T --> C
Char. 1762: C --> T
Char. 1888: T --> A
Char. 1927: T --> A
Char. 1939: C --> T
Char. 2102: T --> C
Char. 2158: C --> T
Char. 2241: A --> G
Char. 2839: C --> G
Node 1376 :
Char. 565: T --> C
Char. 766: C --> T
Char. 784: C --> A
Char. 817: C --> A
Char. 820: C --> A
Char. 925: C --> T
Char. 937: C --> T
Char. 1006: C --> T
Char. 1054: C --> T
Char. 1198: C --> T
Char. 1262: C --> T
Char. 1303: A --> C
Char. 1453: C --> T

Char. 1480: C --> T
Char. 1483: T --> C
Char. 1485: A --> G
Char. 1693: T --> C
Char. 1795: T --> A
Char. 2044: G --> A
Char. 2077: T --> C
Char. 2110: C --> G
Char. 2524: T --> C
Char. 5055: G --> A
Char. 5095: C --> A
Char. 5688: C --> T
Node 1377 :
Char. 1228: C --> T
Char. 1375: T --> C
Char. 1459: C --> G
Char. 1603: A --> G
Char. 1609: C --> T
Char. 1783: C --> T
Char. 1789: T --> C
Char. 1828: A --> G
Char. 2041: T --> C
Char. 2792: C --> T
Char. 5323: C --> G
Char. 5691: A --> G
Char. 6254: A --> C
Char. 6325: C --> T
Char. 6342: G --> A
Char. 6353: A --> G
Char. 6511: C --> T
Node 1378 :
Char. 808: T --> C
Char. 982: A --> C
Char. 997: A --> C
Char. 1081: C --> AG
Char. 1165: C --> A
Char. 1234: C --> A
Char. 1282: T --> C
Char. 1478: C --> T
Char. 1489: C --> A
Char. 1561: C --> T
Char. 1594: A --> G
Char. 1666: A --> G
Char. 1840: T --> A
Char. 1846: C --> T
Char. 2068: T --> C
Char. 2128: T --> C
Char. 2146: T --> C
Char. 2167: G --> T
Char. 2200: T --> C
Char. 2239: A --> C
Char. 2464: T --> C
Node 1379 :
Char. 1534: A --> G
Char. 1564: T --> C
Char. 1600: C --> T
Char. 1675: A --> CT
Char. 1678: T --> C
Char. 1861: A --> C
Char. 1924: C --> T
Char. 2063: C --> T
Char. 2185: T --> C
Char. 2449: G --> A
Char. 2518: G --> C
Char. 2650: A --> T
Char. 2686: T --> A
Char. 2809: T --> C
Node 1380 :
Char. 1585: C --> T
Char. 1696: A --> G
Char. 1807: C --> T
Char. 2044: A --> G
Char. 2131: A --> G
Char. 2227: C --> A
Char. 2569: A --> G
Char. 2607: A --> G
Char. 2890: A --> C
Char. 4901: G --> A
Char. 5055: A --> G
Char. 5362: G --> A
Char. 5837: T --> C
Char. 6003: C --> A
Char. 6206: T --> C

Char. 6208: T --> C
 Char. 6448: C --> T
 Char. 6463: G --> A
 Char. 6465: C --> T
 Char. 6527: G --> A
 Node 1381 :
 Char. 1580: C --> T
 Char. 1606: G --> A
 Char. 1651: A --> G
 Char. 1693: C --> T
 Char. 1696: G --> A
 Char. 1756: C --> T
 Char. 1795: A --> G
 Char. 1798: A --> G
 Char. 1810: G --> A
 Char. 1846: T --> C
 Char. 1921: G --> C
 Char. 1954: C --> T
 Char. 1963: T --> C
 Char. 1984: C --> A
 Char. 1993: A --> G
 Char. 2002: C --> T
 Char. 2014: T --> C
 Char. 2023: T --> C
 Char. 2029: T --> C
 Char. 2125: T --> C
 Node 1382 :
 Char. 1558: A --> G
 Char. 1606: G --> A
 Char. 1675: T --> C
 Char. 1774: C --> T
 Char. 1795: A --> G
 Char. 2155: A --> G
 Node 1383 :
 Char. 1534: G --> A
 Char. 1537: C --> T
 Char. 1564: C --> A
 Char. 1594: G --> A
 Char. 1633: T --> C
 Char. 1714: A --> G
 Char. 1843: T --> C
 Char. 1864: T --> C
 Char. 1882: T --> C
 Char. 1906: A --> G
 Char. 1924: T --> C
 Char. 1933: T --> C
 Char. 1936: T --> G
 Char. 2098: A --> C
 Char. 2149: T --> G
 Char. 2569: G --> A
 Node 1384 :
 Char. 1528: T --> C
 Char. 1615: A --> G
 Char. 1672: A --> G
 Char. 1693: T --> C
 Char. 1759: A --> G
 Char. 1765: T --> C
 Char. 1771: T --> C
 Char. 1783: C --> T
 Char. 1798: A --> G
 Char. 1813: T --> A
 Char. 1906: T --> C
 Char. 1909: T --> C
 Char. 1934: C --> T
 Char. 2006: T --> C
 Char. 2045: C --> T
 Char. 2050: A --> C
 Char. 2062: T --> C
 Char. 2089: C --> T
 Char. 2116: C --> T
 Char. 2125: A --> G
 Node 1385 :
 Char. 538: C --> T
 Char. 544: T --> C
 Char. 670: T --> C
 Char. 715: T --> C
 Char. 829: A --> T
 Char. 1019: C --> T
 Char. 1759: A --> G
 Char. 1762: C --> T
 Char. 1921: G --> A
 Char. 1981: A --> T
 Char. 2029: T --> A
 Char. 5349: C --> T
 Char. 6294: C --> T
 Char. 6329: T --> C
 Char. 6446: C --> T
 Node 1386 :
 Char. 1564: G --> T
 Char. 1579: G --> A
 Char. 1582: A --> G
 Char. 1603: A --> G
 Char. 1630: C --> T
 Char. 1772: C --> T
 Char. 1846: C --> T
 Char. 1903: C --> T
 Char. 1948: T --> C
 Char. 1993: A --> G
 Char. 2014: G --> A
 Char. 2054: C --> T
 Char. 2071: C --> T
 Char. 2125: T --> A
 Node 1387 :
 Char. 1517: T --> C
 Char. 1576: A --> T
 Char. 1600: T --> C
 Char. 1780: A --> T
 Char. 1855: T --> C
 Char. 1879: T --> A
 Char. 1891: C --> T
 Char. 1918: C --> T
 Char. 1936: T --> A
 Char. 1984: C --> T
 Char. 1987: C --> T
 Char. 2026: A --> T
 Char. 2041: T --> A
 Char. 2053: A --> T
 Char. 2086: T --> G
 Char. 2102: C --> T
 Node 1388 :
 Char. 538: C --> T
 Char. 577: C --> T
 Char. 601: T --> C
 Char. 766: C --> T
 Char. 991: C --> T
 Char. 1135: C --> T
 Char. 1279: A --> T
 Char. 1481: C --> T
 Char. 1498: C --> G
 Char. 1537: C --> T
 Char. 1564: C --> G
 Char. 1573: A --> G
 Char. 1582: T --> A
 Char. 1588: A --> G
 Char. 1717: G --> A
 Char. 1756: C --> T
 Char. 1834: C --> T
 Char. 1930: C --> T
 Char. 2104: T --> A
 Char. 2224: T --> C
 Char. 3460: T --> C
 Char. 3718: C --> T
 Char. 4325: A --> T
 Char. 4343: C --> G
 Char. 4361: C --> A
 Char. 4731: C --> T
 Char. 5073: C --> G
 Char. 5388: G --> A
 Char. 5442: C --> T
 Char. 5464: A --> C
 Char. 5487: T --> C
 Node 1389 :
 Char. 568: C --> T
 Char. 583: C --> T
 Char. 941: C --> T
 Char. 1094: C --> T
 Char. 1331: C --> T
 Char. 1360: A --> T
 Char. 1414: C --> T
 Char. 1417: A --> T
 Char. 1435: T --> C
 Char. 2312: G --> C
 Char. 5196: C --> T
 Char. 5372: G --> A
 Char. 5412: C --> T
 Char. 5664: T --> C
 Char. 6252: A --> C
 Node 1390 :
 Char. 2209: T --> C
 Char. 2242: C --> T
 Char. 2263: A --> G
 Char. 2275: A --> C
 Char. 2629: C --> T
 Char. 2701: G --> A
 Char. 2764: C --> T
 Char. 2857: G --> A
 Node 1391 :
 Char. 775: G --> T
 Char. 805: A --> T
 Char. 863: A --> G
 Char. 1027: A --> C
 Char. 1087: A --> T
 Char. 1098: T --> C
 Char. 1195: A --> G
 Char. 1264: A --> C
 Char. 1459: C --> T
 Char. 1540: A --> G
 Char. 1678: T --> C
 Char. 1690: C --> T
 Char. 1693: T --> C
 Char. 1747: A --> C
 Char. 1783: C --> T
 Char. 1792: T --> C
 Char. 1888: T --> A
 Char. 2011: T --> C
 Char. 2146: T --> C
 Char. 2602: C --> T
 Char. 2607: A --> G
 Char. 2716: G --> A
 Char. 4795: A --> G
 Char. 4854: A --> G
 Char. 5142: T --> C
 Char. 5277: C --> T
 Char. 5441: G --> A
 Char. 5508: T --> C
 Char. 6210: T --> C
 Char. 6230: C --> T
 Char. 6456: C --> T
 Char. 6573: C --> T
 Node 1392 :
 Char. 539: T --> C
 Char. 712: C --> T
 Char. 781: C --> T
 Char. 829: C --> T
 Char. 859: A --> G
 Char. 886: G --> C
 Char. 907: C --> T
 Char. 928: C --> T
 Char. 988: C --> T
 Char. 1234: A --> G
 Char. 1402: T --> C
 Char. 1432: T --> C
 Char. 1471: A --> T
 Char. 1588: G --> A
 Char. 1601: C --> T
 Char. 1717: A --> G
 Char. 1780: A --> G
 Char. 2023: T --> C
 Char. 2044: G --> A
 Node 1393 :
 Char. 538: C --> T
 Char. 566: T --> A
 Char. 592: C --> T
 Char. 604: T --> C
 Char. 676: C --> T
 Char. 730: C --> T
 Char. 752: C --> T
 Char. 766: C --> A
 Char. 826: T --> C
 Char. 904: C --> T
 Char. 973: A --> T
 Char. 1060: C --> T
 Char. 1063: C --> A
 Char. 1114: A --> G
 Char. 1135: T --> C
 Char. 1172: C --> T
 Char. 1307: C --> T
 Char. 1387: T --> A
 Char. 1411: A --> G

Char. 1450: C --> T
Char. 1477: T --> C
Char. 1540: A --> G
Char. 1753: T --> C
Char. 1858: C --> T
Char. 1930: C --> T
Char. 1990: A --> G
Char. 2008: A --> G
Char. 2062: C --> A
Char. 2125: T --> C
Char. 2137: A --> G
Char. 2149: T --> C
Char. 2293: C --> T
Char. 2596: A --> T
Char. 2665: T --> C
Char. 2830: C --> T

Node 1394 :

Char. 565: T --> C
Char. 577: C --> T
Char. 607: A --> G
Char. 631: T --> C
Char. 673: C --> T
Char. 727: A --> G
Char. 754: A --> G
Char. 757: A --> C
Char. 853: C --> T
Char. 862: C --> T
Char. 955: C --> T
Char. 997: C --> T
Char. 1066: C --> T
Char. 1144: C --> T
Char. 1147: A --> G
Char. 1165: A --> T
Char. 1177: T --> C
Char. 1180: C --> T
Char. 1211: C --> T
Char. 1252: G --> A
Char. 1258: A --> G
Char. 1264: A --> G
Char. 1298: G --> A
Char. 1306: C --> T
Char. 1351: C --> T
Char. 1355: C --> T
Char. 1447: C --> T
Char. 1456: C --> T
Char. 1457: C --> T
Char. 1459: C --> A
Char. 2377: G --> A
Char. 2738: A --> T

Node 1395 :

Char. 523: C --> T
Char. 539: C --> T
Char. 541: A --> G
Char. 571: C --> T
Char. 574: C --> T
Char. 595: C --> T
Char. 646: A --> G
Char. 674: C --> T
Char. 676: G --> A
Char. 682: C --> T
Char. 691: C --> T
Char. 724: C --> T
Char. 736: A --> G
Char. 743: C --> T
Char. 749: C --> T
Char. 757: A --> G
Char. 766: T --> C
Char. 784: C --> T
Char. 823: A --> G
Char. 847: C --> T
Char. 865: C --> T
Char. 866: C --> T
Char. 916: C --> T
Char. 919: A --> C
Char. 925: T --> C
Char. 934: C --> T
Char. 937: C --> T
Char. 941: C --> T
Char. 956: G --> A
Char. 964: A --> T
Char. 970: C --> T
Char. 985: C --> T
Char. 1006: C --> T

Char. 1015: C --> T
Char. 1018: A --> C
Char. 1024: C --> T
Char. 1054: C --> A
Char. 1057: C --> T
Char. 1073: C --> T
Char. 1094: C --> T
Char. 1102: C --> T
Char. 1105: C --> T
Char. 1111: C --> T
Char. 1112: C --> T
Char. 1117: C --> T
Char. 1124: G --> A
Char. 1133: C --> T
Char. 1156: C --> T
Char. 1162: C --> A
Char. 1172: C --> T
Char. 1207: C --> T
Char. 1219: C --> T
Char. 1228: C --> T
Char. 1237: A --> G
Char. 1264: A --> G
Char. 1267: A --> T
Char. 1276: C --> T
Char. 1282: C --> T
Char. 1283: C --> T
Char. 1291: C --> T
Char. 1297: A --> T
Char. 1309: A --> T
Char. 1330: A --> C
Char. 1351: C --> T
Char. 1375: A --> T
Char. 1385: T --> C
Char. 1426: C --> T
Char. 1467: C --> T
Char. 1468: A --> T
Char. 1478: C --> T
Char. 1480: C --> T
Char. 2374: C --> T
Char. 2470: G --> A

Node 1396 :

Char. 604: C --> T
Char. 613: C --> T
Char. 748: A --> C
Char. 862: A --> G
Char. 928: C --> T
Char. 946: A --> C
Char. 951: C --> T
Char. 958: A --> C
Char. 961: T --> C
Char. 969: C --> T
Char. 973: A --> T
Char. 1031: G --> T
Char. 1093: A --> C
Char. 1174: T --> A
Char. 1210: C --> T
Char. 1270: A --> T
Char. 1271: C --> T
Char. 1294: A --> G
Char. 1355: C --> A
Char. 1357: C --> T
Char. 1390: C --> T
Char. 1494: T --> C
Char. 1502: T --> C
Char. 1503: G --> T
Char. 1636: T --> C
Char. 1774: A --> C
Char. 1780: A --> T
Char. 1861: A --> C
Char. 1921: G --> T
Char. 1936: A --> G
Char. 2005: A --> T
Char. 2056: A --> T
Char. 2128: A --> C
Char. 2353: C --> T
Char. 2434: G --> A
Char. 2452: C --> T
Char. 2461: C --> A
Char. 2653: C --> T

Node 1397 :

Char. 592: C --> T
Char. 658: C --> T
Char. 676: C --> G

Char. 1136: C --> T
Char. 1201: A --> G
Char. 1229: C --> T
Char. 1291: A --> C
Char. 1391: C --> T
Char. 1480: A --> C
Char. 1693: T --> C
Char. 1712: C --> T
Char. 1804: C --> T
Char. 1855: T --> C
Char. 2023: C --> T
Char. 2042: C --> T

Node 1398 :

Char. 550: C --> T
Char. 692: C --> T
Char. 785: C --> T
Char. 817: C --> T
Char. 833: C --> T
Char. 892: C --> T
Char. 895: C --> T
Char. 967: C --> T
Char. 971: C --> T
Char. 980: C --> T
Char. 1183: C --> T
Char. 1219: C --> A
Char. 1222: C --> T
Char. 1357: C --> T
Char. 1358: C --> A
Char. 1370: C --> T
Char. 1381: C --> T
Char. 1444: A --> G
Char. 1483: T --> C
Char. 1570: T --> C
Char. 1639: A --> G
Char. 1865: C --> T

Node 1399 :

Char. 634: A --> C
Char. 708: A --> T
Char. 746: C --> T
Char. 757: A --> T
Char. 796: A --> C
Char. 844: A --> T
Char. 860: G --> A
Char. 861: A --> C
Char. 901: C --> A
Char. 902: A --> T
Char. 905: G --> C
Char. 922: C --> T
Char. 925: T --> C
Char. 1089: T --> C
Char. 1102: A --> C
Char. 1110: C --> T
Char. 1237: C --> T
Char. 1304: C --> T
Char. 1306: A --> T
Char. 1330: C --> A
Char. 1345: C --> A
Char. 2200: T --> C
Char. 2226: G --> C
Char. 2332: T --> C
Char. 2437: A --> G
Char. 2484: C --> T
Char. 2566: T --> C
Char. 2710: G --> A
Char. 6300: G --> A
Char. 6306: C --> T
Char. 6326: A --> T
Char. 6343: A --> G
Char. 6347: T --> C
Char. 6376: C --> T
Char. 6402: G --> A
Char. 6493: A --> T
Char. 6523: C --> T

Node 1400 :

Char. 574: T --> C
Char. 739: A --> C
Char. 850: C --> T
Char. 940: C --> T
Char. 1015: C --> T
Char. 1060: T --> C
Char. 1141: C --> T
Char. 1174: A --> G
Char. 1177: T --> C

Char. 4663: C --> T
Char. 5128: C --> T
Char. 5151: C --> T
Char. 6327: C --> A

Node 1401 :

Char. 565: T --> C
Char. 632: C --> T
Char. 679: T --> C
Char. 692: C --> T
Char. 706: C --> A
Char. 754: A --> G
Char. 808: T --> C
Char. 892: T --> C
Char. 1087: A --> G
Char. 1144: C --> T
Char. 1175: A --> G
Char. 1228: C --> T
Char. 1267: C --> T
Char. 1438: T --> C
Char. 1469: C --> T
Char. 1477: C --> T
Char. 3460: T --> C
Char. 3520: A --> G
Char. 3984: A --> T
Char. 4111: G --> T
Char. 4351: A --> T
Char. 5412: C --> T
Char. 5622: A --> G
Char. 5623: C --> T
Char. 6515: C --> T
Char. 6524: A --> G

Node 1402 :

Char. 673: C --> T
Char. 785: C --> T
Char. 799: A --> G
Char. 1408: C --> T
Char. 1630: C --> T
Char. 1672: G --> A
Char. 1723: A --> G
Char. 1840: T --> C
Char. 1966: C --> T
Char. 2134: A --> G
Char. 2852: G --> A
Char. 3514: C --> A
Char. 6321: A --> G

Node 1403 :

Char. 538: C --> T
Char. 539: C --> T
Char. 781: C --> T
Char. 836: C --> T
Char. 1100: A --> G
Char. 1107: G --> C
Char. 1207: C --> T
Char. 1285: C --> A
Char. 1300: C --> A
Char. 1303: A --> C
Char. 1367: C --> T
Char. 1386: T --> C
Char. 1558: T --> C
Char. 1567: A --> C
Char. 1588: A --> G
Char. 1597: C --> T
Char. 1615: G --> A
Char. 1645: G --> A
Char. 1849: C --> A
Char. 1996: C --> T
Char. 2023: C --> T
Char. 2062: A --> T
Char. 2086: T --> C
Char. 2113: C --> T
Char. 2664: C --> T
Char. 4469: G --> A
Char. 6463: G --> A

Node 1404 :

Char. 553: C --> T
Char. 568: C --> T
Char. 577: T --> C
Char. 694: T --> C
Char. 805: C --> T
Char. 1120: A --> C
Char. 1123: T --> C
Char. 1165: C --> T
Char. 1229: C --> T

Char. 1391: C --> T
Char. 2660: T --> C
Char. 6211: A --> G
Char. 6433: T --> C

Node 1405 :

Char. 583: C --> T
Char. 589: C --> T
Char. 610: C --> T
Char. 715: C --> T
Char. 745: T --> C
Char. 772: T --> C
Char. 808: T --> C
Char. 832: C --> T
Char. 886: G --> A
Char. 901: A --> G
Char. 955: T --> C
Char. 988: G --> A
Char. 1019: C --> T
Char. 1042: C --> T
Char. 1076: C --> A
Char. 1105: A --> T
Char. 1147: C --> T
Char. 1186: A --> G
Char. 1219: C --> T
Char. 1222: C --> T
Char. 1261: C --> T
Char. 1370: C --> T
Char. 1402: T --> C
Char. 1480: C --> T
Char. 1489: C --> A
Char. 3667: G --> A
Char. 3724: T --> C
Char. 3964: C --> T
Char. 4048: T --> C
Char. 4486: G --> A

Node 1406 :

Char. 604: T --> C
Char. 694: C --> T
Char. 733: T --> C
Char. 748: A --> T
Char. 757: T --> A
Char. 778: C --> A
Char. 847: C --> T
Char. 868: A --> C
Char. 925: C --> T
Char. 1006: C --> T
Char. 1012: C --> A
Char. 1042: T --> C
Char. 1088: A --> G
Char. 1094: C --> T
Char. 1132: C --> T
Char. 1186: A --> C
Char. 1246: C --> T
Char. 1283: C --> T
Char. 1384: A --> C
Char. 1576: A --> G
Char. 1696: A --> G
Char. 1723: G --> A
Char. 1756: C --> T
Char. 1762: C --> T
Char. 1879: A --> G
Char. 1891: T --> C
Char. 1907: C --> T
Char. 1915: T --> C
Char. 1930: T --> C
Char. 2050: A --> G
Char. 3767: G --> A
Char. 3850: C --> T
Char. 4176: T --> A
Char. 4180: T --> C
Char. 4207: G --> A
Char. 4403: A --> T
Char. 4552: G --> A
Char. 6402: A --> G

Node 1407 :

Char. 611: T --> C
Char. 673: C --> T
Char. 781: C --> T
Char. 1303: C --> A
Char. 1348: C --> A
Char. 1429: C --> T
Char. 1657: C --> T
Char. 1786: T --> C

Char. 1846: T --> C
Char. 1933: T --> C
Char. 1939: G --> T
Char. 1987: C --> T
Char. 2053: A --> T
Char. 2095: C --> T
Char. 4186: T --> G
Char. 4264: G --> A
Char. 4331: AC --> T
Char. 4375: A --> G
Char. 6321: A --> C
Char. 6343: A --> G
Char. 6510: A --> C

Node 1408 :

Char. 628: A --> C
Char. 643: C --> T
Char. 682: T --> C
Char. 694: A --> C
Char. 772: C --> T
Char. 838: C --> A
Char. 951: C --> T
Char. 971: C --> A
Char. 997: A --> C
Char. 1015: T --> A
Char. 1081: C --> A
Char. 1147: C --> T
Char. 1499: T --> C
Char. 1693: C --> T
Char. 1978: C --> A
Char. 2422: T --> A
Char. 2674: C --> T
Char. 3535: T --> A
Char. 4099: G --> A
Char. 4468: T --> C
Char. 4521: G --> A
Char. 6433: T --> C
Char. 6456: C --> T

Node 1409 :

Char. 535: A --> C
Char. 724: A --> C
Char. 860: G --> A
Char. 957: T --> C
Char. 982: C --> A
Char. 1025: T --> C
Char. 1028: G --> A
Char. 1075: C --> A
Char. 1096: A --> CT
Char. 1117: C --> A
Char. 1150: A --> C
Char. 1237: C --> T
Char. 1497: G --> C
Char. 1513: C --> T
Char. 1516: C --> T
Char. 1630: C --> T
Char. 1675: A --> C
Char. 1819: C --> A
Char. 1864: C --> T
Char. 1885: CT --> A
Char. 1909: C --> A
Char. 1988: T --> A
Char. 2014: G --> A
Char. 2024: C --> T
Char. 2050: C --> A
Char. 2134: A --> CT
Char. 2146: C --> T
Char. 2159: C --> T
Char. 2236: C --> T
Char. 2237: T --> G
Char. 2287: C --> T
Char. 2329: G --> A
Char. 2380: G --> T
Char. 2392: C --> T
Char. 2401: A --> G
Char. 2482: C --> T
Char. 2566: T --> G
Char. 2607: A --> G
Char. 2662: G --> A
Char. 2665: T --> A
Char. 2713: T --> C
Char. 2725: A --> T
Char. 2782: T --> G
Char. 2857: G --> T
Char. 3479: G --> A

Char. 3487: C --> G
 Char. 3628: C --> T
 Char. 3688: T --> C
 Char. 3733: G --> A
 Char. 3838: C --> T
 Char. 4157: A --> C
 Char. 4174: T --> A
 Char. 4201: G --> T
 Char. 4342: T --> C
 Char. 4361: C --> A
 Char. 4426: G --> A
 Char. 4444: C --> T
 Char. 4614: T --> A
 Char. 4625: C --> T
 Char. 6363: A --> C
 Char. 6402: G --> A
 Char. 6427: G --> A
 Char. 6439: C --> T
 Char. 6492: C --> T
 Char. 6510: T --> A
 Char. 6513: C --> A
 Char. 6589: A --> G
 Node 1410 :
 Char. 5864: T --> C
 Char. 5868: T --> C
 Char. 5909: G --> A
 Node 1411 :
 Char. 574: C --> T
 Char. 587: G --> A
 Char. 595: T --> C
 Char. 658: C --> T
 Char. 775: A --> G
 Char. 784: C --> A
 Char. 865: A --> C
 Char. 991: T --> C
 Char. 1018: C --> T
 Char. 1103: C --> T
 Char. 1213: A --> G
 Char. 1271: C --> T
 Char. 1285: T --> C
 Char. 1330: A --> C
 Char. 1348: C --> T
 Char. 1469: C --> G
 Char. 1474: C --> T
 Char. 1499: T --> C
 Char. 1549: CT --> A
 Char. 1558: T --> A
 Char. 1570: T --> C
 Char. 1924: C --> T
 Char. 1960: T --> C
 Char. 2038: C --> A
 Char. 2077: T --> C
 Char. 2080: A --> C
 Char. 2084: C --> T
 Char. 2143: A --> T
 Node 1412 :
 Char. 588: C --> A
 Char. 610: C --> T
 Char. 880: C --> T
 Char. 886: C --> T
 Char. 1153: C --> T
 Char. 1300: C --> T
 Char. 1375: T --> C
 Char. 1459: T --> C
 Char. 1494: T --> C
 Char. 2023: T --> C
 Node 1413 :
 Char. 562: C --> T
 Char. 1234: A --> G
 Char. 1336: T --> C
 Char. 1858: C --> T
 Char. 2083: G --> A
 Node 1414 :
 Char. 730: C --> T
 Char. 1561: T --> C
 Char. 1565: C --> T
 Char. 1573: A --> G
 Char. 1612: C --> T
 Char. 1645: C --> T
 Char. 1660: C --> T
 Char. 1666: A --> G
 Char. 1690: C --> T
 Char. 1786: T --> C
 Char. 1789: T --> C
 Char. 1796: C --> T
 Char. 1804: C --> T
 Char. 1816: A --> G
 Char. 1840: T --> C
 Char. 1894: T --> C
 Char. 1987: T --> C
 Char. 2041: T --> A
 Char. 2053: C --> T
 Char. 2095: T --> C
 Node 1415 :
 Char. 580: C --> T
 Char. 916: C --> T
 Char. 1003: T --> C
 Char. 1177: G --> A
 Char. 1240: C --> T
 Char. 1306: C --> T
 Char. 1454: G --> A
 Char. 1459: C --> T
 Char. 1915: A --> G
 Node 1416 :
 Char. 613: C --> T
 Char. 643: C --> T
 Char. 646: A --> G
 Char. 736: C --> T
 Char. 856: T --> C
 Char. 911: C --> T
 Char. 988: C --> T
 Char. 1009: C --> T
 Char. 1219: C --> T
 Char. 1318: C --> T
 Char. 1402: T --> C
 Char. 1481: T --> C
 Char. 1498: C --> T
 Char. 1534: A --> G
 Char. 1703: T --> C
 Char. 1712: C --> T
 Char. 1810: G --> A
 Char. 2039: C --> T
 Char. 2059: C --> T
 Node 1417 :
 Char. 778: C --> T
 Char. 883: A --> G
 Char. 1099: A --> G
 Char. 1118: C --> T
 Char. 1456: C --> T
 Node 1418 :
 Char. 661: T --> C
 Char. 1216: T --> C
 Node 1419 :
 Char. 631: C --> T
 Char. 640: C --> T
 Char. 652: C --> T
 Char. 673: C --> T
 Char. 730: C --> T
 Char. 787: C --> A
 Char. 838: C --> T
 Char. 847: C --> T
 Char. 886: G --> A
 Char. 892: C --> T
 Char. 925: C --> T
 Char. 956: G --> T
 Char. 982: A --> T
 Char. 988: A --> G
 Char. 1000: A --> G
 Char. 1043: T --> A
 Char. 1048: C --> T
 Char. 1063: C --> T
 Char. 1072: C --> T
 Char. 1086: T --> C
 Char. 1100: G --> A
 Char. 1136: C --> T
 Char. 1150: C --> T
 Char. 1159: C --> A
 Char. 1192: C --> T
 Char. 1204: A --> G
 Char. 1246: C --> T
 Char. 1252: A --> G
 Char. 1286: G --> A
 Char. 1303: C --> T
 Char. 1323: A --> G
 Char. 1331: C --> T
 Char. 1396: A --> C
 Char. 1445: A --> G
 Char. 1450: C --> T
 Char. 1467: C --> T
 Char. 1510: C --> T
 Char. 1517: C --> T
 Char. 1525: T --> C
 Char. 1621: T --> C
 Char. 1660: C --> T
 Char. 1672: A --> G
 Char. 1699: C --> T
 Char. 1717: G --> A
 Char. 1729: C --> T
 Char. 1762: C --> T
 Char. 1810: A --> G
 Char. 1840: T --> A
 Char. 1924: T --> C
 Char. 1951: T --> C
 Char. 1960: C --> A
 Char. 2039: C --> T
 Char. 2041: T --> A
 Char. 2110: C --> T
 Char. 2311: A --> T
 Char. 2335: C --> G
 Char. 2425: G --> A
 Char. 2839: C --> T
 Char. 3532: C --> T
 Char. 3544: C --> T
 Char. 3796: C --> T
 Char. 3813: A --> C
 Char. 3862: G --> T
 Char. 3943: C --> T
 Char. 4048: C --> T
 Char. 4117: C --> T
 Char. 4264: G --> A
 Char. 4366: C --> A
 Char. 6252: C --> T
 Char. 6310: G --> A
 Node 1420 :
 Char. 568: C --> A
 Char. 608: A --> G
 Char. 679: C --> T
 Char. 703: C --> A
 Char. 752: C --> T
 Char. 796: A --> C
 Char. 829: A --> T
 Char. 880: C --> T
 Char. 938: C --> A
 Char. 940: A --> T
 Char. 979: C --> A
 Char. 1013: G --> A
 Char. 1019: C --> T
 Char. 1088: A --> C
 Char. 1135: C --> A
 Char. 1153: C --> T
 Char. 1300: C --> A
 Char. 1304: C --> A
 Char. 1306: A --> C
 Char. 1342: C --> A
 Char. 1346: A --> T
 Char. 1376: G --> A
 Char. 1377: C --> T
 Char. 1428: T --> A
 Char. 1430: A --> G
 Char. 1481: C --> A
 Char. 1493: G --> A
 Char. 1520: G --> A
 Char. 1522: A --> C
 Char. 1558: C --> T
 Char. 1585: C --> T
 Char. 1612: C --> T
 Char. 1648: C --> T
 Char. 1705: A --> C
 Char. 1744: C --> T
 Char. 1756: C --> T
 Char. 1795: A --> T
 Char. 1822: A --> G
 Char. 1831: A --> C
 Char. 1855: T --> C
 Char. 1867: A --> T
 Char. 1892: C --> T
 Char. 1942: A --> C
 Char. 1948: T --> C
 Char. 2005: C --> T

Char. 2006: C --> T
Char. 2044: T --> C
Char. 2048: C --> T
Char. 2071: C --> A
Char. 2087: T --> C
Char. 2107: C --> T
Char. 2131: A --> T
Char. 2241: A --> G
Char. 2312: G --> C
Char. 2498: C --> T
Char. 2572: T --> C
Char. 2584: C --> T
Char. 2596: A --> G
Char. 2635: A --> T
Char. 2650: A --> C
Char. 2776: G --> C
Char. 2800: A --> C
Char. 3676: C --> T
Char. 3715: A --> T
Char. 3751: G --> T
Char. 3835: C --> T
Char. 3844: C --> A
Char. 3853: G --> A
Char. 3919: T --> C
Char. 3937: T --> C
Char. 3964: T --> C
Char. 4045: A --> G
Char. 4057: C --> T
Char. 4063: C --> T
Char. 4086: C --> T
Char. 4093: C --> T
Char. 4118: A --> G
Char. 4177: C --> T
Char. 4246: G --> A
Char. 4285: T --> A
Char. 4351: A --> G
Char. 4364: C --> G
Char. 4411: G --> C
Char. 4462: T --> C
Char. 4526: C --> T
Char. 4567: C --> A
Char. 4579: C --> A
Char. 4642: G --> A
Char. 6168: T --> C
Char. 6181: G --> A
Char. 6211: A --> G
Char. 6253: A --> T
Char. 6345: A --> G
Char. 6346: C --> T
Char. 6365: A --> T
Char. 6368: C --> T
Char. 6379: A --> C
Char. 6406: G --> A
Char. 6408: G --> T
Char. 6417: G --> A
Char. 6420: C --> T
Char. 6443: A --> T
Char. 6450: A --> C
Char. 6575: A --> C
Node 1421 :
Char. 1675: C --> T
Char. 1780: C --> T
Node 1422 :
Char. 6515: A --> G
Node 1423 :
Char. 533: C --> T
Char. 535: A --> C
Char. 566: T --> A
Char. 620: A --> C
Char. 632: A --> C
Char. 652: A --> T
Char. 736: A --> T
Char. 743: C --> T
Char. 754: A --> C
Char. 757: A --> T
Char. 796: A --> C
Char. 928: C --> A
Char. 943: C --> T
Char. 997: A --> C
Char. 1013: A --> C
Char. 1018: C --> A
Char. 1081: C --> A
Char. 1099: A --> C

Char. 1105: A --> T
Char. 1109: T --> A
Char. 1110: C --> T
Char. 1111: C --> A
Char. 1120: A --> C
Char. 1135: ACT --> G
Char. 1177: T --> C
Char. 1186: A --> C
Char. 1231: A --> T
Char. 1258: A --> C
Char. 1261: C --> A
Char. 1297: A --> C
Char. 1330: A --> C
Char. 1338: T --> A
Char. 1393: A --> T
Char. 1430: A --> G
Char. 1456: C --> T
Char. 1493: G --> A
Char. 1516: T --> C
Char. 1540: A --> G
Char. 1564: CT --> A
Char. 1582: T --> C
Char. 1627: A --> C
Char. 1672: A --> G
Char. 1690: C --> A
Char. 1780: A --> T
Char. 1804: C --> T
Char. 1861: A --> C
Char. 1876: A --> G
Char. 1921: G --> A
Char. 1960: A --> C
Char. 1972: A --> G
Char. 2074: A --> C
Char. 2080: A --> CT
Char. 2092: A --> C
Char. 2170: C --> T
Char. 2224: T --> A
Char. 2299: C --> T
Char. 2344: G --> A
Char. 2392: C --> T
Char. 2398: A --> G
Char. 2405: C --> T
Char. 2441: T --> G
Char. 2518: A --> C
Char. 2611: C --> T
Char. 2638: T --> A
Char. 2713: T --> C
Char. 2734: T --> C
Char. 2791: CT --> A
Char. 2803: C --> G
Char. 2806: T --> C
Char. 2857: G --> A
Char. 2905: G --> A
Char. 5762: A --> G
Char. 5858: C --> T
Char. 5915: C --> T
Char. 5930: G --> T
Char. 6004: A --> T
Char. 6015: T --> C
Char. 6040: A --> T
Char. 6077: A --> G
Char. 6098: C --> G
Char. 6181: G --> A
Char. 6182: G --> A
Char. 6183: A --> G
Char. 6294: T --> C
Char. 6298: A --> G
Char. 6304: A --> C
Char. 6309: T --> C
Char. 6323: C --> T
Char. 6326: T --> G
Char. 6328: A --> C
Char. 6334: A --> C
Char. 6345: A --> T
Char. 6357: A --> G
Char. 6424: T --> C
Char. 6471: T --> C
Char. 6476: C --> A
Char. 6511: A --> C
Char. 6528: A --> G
Char. 6562: C --> T
Char. 6565: C --> T
Node 1424 :

Char. 1849: C --> T
Char. 6002: T --> C
Char. 6446: C --> T
Char. 6457: A --> G
Char. 6508: C --> T
Node 1425 :
Char. 2434: G --> A
Char. 2503: T --> C
Char. 2575: C --> T
Char. 2584: T --> C
Char. 2605: C --> T
Char. 2738: A --> T
Char. 2848: C --> T
Char. 2866: G --> C
Char. 3464: G --> A
Char. 3533: T --> A
Char. 3535: T --> C
Char. 3604: A --> T
Char. 3697: G --> A
Char. 3792: C --> T
Char. 3793: A --> G
Char. 3808: G --> A
Char. 3884: C --> T
Char. 3893: A --> G
Char. 3910: G --> A
Char. 3911: G --> A
Char. 3985: C --> T
Char. 4018: G --> C
Char. 4045: A --> T
Char. 4192: G --> T
Char. 4216: G --> A
Char. 4249: C --> A
Char. 4331: C --> A
Char. 4363: A --> G
Char. 4486: G --> A
Char. 4537: G --> A
Char. 4540: C --> T
Char. 4577: G --> T
Char. 4639: C --> A
Char. 4663: C --> T
Char. 4672: C --> T
Char. 4752: T --> G
Char. 4797: G --> A
Char. 4835: C --> T
Char. 4852: A --> C
Char. 4860: G --> A
Char. 5008: C --> A
Char. 5013: C --> T
Char. 5060: C --> T
Char. 5128: C --> A
Char. 5136: C --> A
Char. 5145: C --> T
Char. 5178: G --> A
Char. 5205: T --> G
Char. 5217: C --> A
Char. 5328: G --> A
Char. 5329: C --> A
Char. 5330: G --> A
Char. 5343: C --> T
Char. 5351: C --> T
Char. 5370: A --> T
Char. 5389: C --> T
Char. 5498: C --> A
Char. 5554: C --> T
Char. 5574: A --> G
Char. 5622: G --> A
Char. 5634: G --> A
Char. 6140: C --> T
Char. 6181: G --> A
Char. 6194: A --> T
Char. 6288: G --> A
Char. 6302: C --> T
Char. 6309: T --> A
Char. 6317: A --> G
Char. 6357: A --> T
Char. 6385: C --> T
Char. 6402: G --> A
Char. 6426: T --> C
Char. 6463: G --> C
Char. 6484: C --> A
Char. 6572: T --> G
Char. 6575: A --> C
Node 1426 :

Char. 1579: G --> A
 Char. 1693: C --> T
 Char. 1825: A --> T
 Char. 1873: C --> T
 Char. 1891: T --> C
 Char. 2002: C --> A
 Char. 2053: A --> C
 Char. 2095: C --> T
 Char. 2107: C --> T
 Node 1427 :
 Char. 559: A --> C
 Char. 682: T --> C
 Char. 694: A --> CT
 Char. 787: C --> T
 Char. 982: C --> T
 Char. 1084: T --> C
 Char. 1085: A --> CT
 Char. 1276: C --> T
 Char. 1396: A --> C
 Char. 1582: T --> C
 Char. 1583: A --> T
 Char. 1648: C --> T
 Char. 1696: A --> G
 Char. 1705: A --> T
 Char. 1798: A --> T
 Char. 1828: A --> C
 Char. 1900: T --> C
 Char. 1924: T --> A
 Char. 2044: T --> C
 Char. 2161: A --> T
 Char. 2620: G --> A
 Char. 4708: C --> T
 Char. 4743: C --> T
 Char. 4896: C --> T
 Char. 5067: T --> A
 Char. 5082: C --> T
 Char. 5103: G --> A
 Char. 5148: C --> A
 Char. 5178: G --> A
 Char. 5349: C --> T
 Char. 5421: C --> T
 Char. 5460: A --> G
 Char. 5481: G --> A
 Char. 5523: A --> G
 Char. 5613: C --> T
 Char. 5745: C --> T
 Node 1428 :
 Char. 628: A --> T
 Char. 649: C --> T
 Char. 673: C --> T
 Char. 752: C --> T
 Char. 985: C --> T
 Char. 1231: A --> C
 Char. 1295: C --> T
 Char. 1300: C --> T
 Char. 1478: G --> A
 Char. 6252: C --> A
 Char. 6424: T --> C
 Char. 6562: C --> T
 Node 1429 :
 Char. 571: C --> T
 Char. 601: T --> A
 Char. 604: T --> C
 Char. 649: C --> T
 Char. 766: C --> A
 Char. 820: C --> T
 Char. 838: C --> T
 Char. 973: A --> T
 Char. 1105: AC --> G
 Char. 1123: C --> T
 Char. 1162: C --> A
 Char. 1283: C --> T
 Char. 1288: C --> T
 Char. 1306: A --> C
 Char. 1318: T --> A
 Char. 1333: A --> G
 Char. 1375: T --> C
 Char. 1456: C --> T
 Char. 1636: T --> C
 Char. 1678: T --> C
 Char. 1723: G --> A
 Char. 1834: C --> T
 Char. 1861: C --> T
 Char. 1897: C --> T
 Char. 2041: T --> A
 Char. 2047: T --> C
 Char. 2086: A --> G
 Char. 2101: T --> C
 Char. 4764: A --> C
 Char. 4941: C --> T
 Char. 5301: T --> C
 Char. 5442: C --> T
 Node 1430 :
 Char. 733: T --> C
 Char. 889: C --> G
 Char. 1003: C --> A
 Char. 1014: T --> C
 Char. 1054: C --> A
 Char. 1342: C --> G
 Char. 1367: A --> G
 Char. 1771: T --> A
 Char. 1798: A --> G
 Char. 1813: T --> C
 Char. 1819: C --> A
 Char. 1921: G --> A
 Char. 1930: C --> T
 Char. 1936: T --> A
 Char. 1981: A --> T
 Char. 2024: C --> T
 Char. 2047: T --> A
 Char. 2080: C --> A
 Char. 2272: G --> A
 Char. 2441: T --> G
 Char. 3502: C --> T
 Char. 4258: T --> C
 Char. 4468: T --> C
 Char. 4737: G --> A
 Char. 4791: C --> T
 Char. 4814: G --> A
 Char. 4835: C --> T
 Char. 4837: C --> T
 Char. 4901: G --> A
 Char. 4929: C --> A
 Char. 4966: G --> T
 Char. 5022: C --> T
 Char. 5025: C --> T
 Char. 5382: T --> A
 Char. 5664: C --> T
 Char. 5835: A --> G
 Char. 6229: G --> A
 Char. 6247: C --> T
 Char. 6475: T --> C
 Char. 6495: A --> T
 Node 1431 :
 Char. 538: C --> T
 Char. 625: T --> C
 Char. 745: T --> A
 Char. 781: C --> T
 Char. 787: C --> T
 Char. 1078: T --> C
 Char. 1153: T --> C
 Char. 1165: C --> T
 Char. 1429: T --> C
 Char. 1432: C --> T
 Char. 1549: A --> G
 Char. 1678: T --> C
 Char. 2140: C --> T
 Node 1432 :
 Char. 565: T --> C
 Char. 5628: C --> T
 Char. 5933: C --> T
 Char. 6253: A --> T
 Node 1433 :
 Char. 533: C --> T
 Char. 928: C --> T
 Char. 1084: T --> C
 Char. 1210: C --> T
 Char. 2287: T --> G
 Node 1434 :
 Char. 1087: T --> C
 Char. 1093: A --> G
 Char. 1819: A --> G
 Char. 1870: C --> T
 Char. 1969: T --> C
 Node 1435 :
 Char. 529: C --> A
 Char. 539: C --> T
 Char. 586: A --> C
 Char. 595: C --> T
 Char. 604: T --> C
 Char. 655: C --> T
 Char. 715: C --> T
 Char. 746: T --> C
 Char. 778: C --> T
 Char. 832: C --> T
 Char. 850: C --> T
 Char. 854: C --> T
 Char. 865: C --> T
 Char. 880: C --> T
 Char. 1000: A --> G
 Char. 1009: C --> T
 Char. 1066: C --> T
 Char. 1111: C --> T
 Char. 1114: A --> G
 Char. 1123: T --> C
 Char. 1153: T --> C
 Char. 1228: C --> T
 Char. 1261: A --> T
 Char. 1288: C --> A
 Char. 1467: C --> T
 Char. 1579: A --> G
 Char. 1651: G --> T
 Char. 1726: C --> T
 Char. 1792: C --> T
 Char. 1793: C --> T
 Char. 1834: C --> A
 Char. 1885: C --> T
 Char. 1918: A --> T
 Char. 1972: A --> G
 Char. 2029: A --> T
 Char. 2125: C --> A
 Node 1436 :
 Char. 1531: C --> T
 Char. 1840: T --> C
 Char. 1945: T --> C
 Char. 1951: T --> C
 Char. 2023: C --> T
 Node 1437 :
 Char. 1651: A --> G
 Char. 1804: C --> T
 Char. 1855: T --> C
 Char. 2035: C --> T
 Char. 2059: A --> C
 Char. 2140: C --> T
 Node 1438 :
 Char. 1000: G --> A
 Char. 2441: A --> G
 Node 1439 :
 Char. 523: C --> T
 Char. 664: C --> T
 Char. 1051: C --> T
 Char. 1486: C --> T
 Char. 2878: T --> C
 Node 1440 :
 Char. 544: T --> C
 Char. 577: T --> C
 Char. 592: C --> T
 Char. 751: A --> G
 Char. 854: C --> T
 Char. 871: C --> T
 Char. 928: T --> C
 Char. 982: A --> G
 Char. 1000: A --> G
 Char. 1243: A --> G
 Char. 1294: A --> G
 Char. 1295: C --> T
 Char. 1300: C --> T
 Char. 1351: C --> T
 Char. 1441: A --> C
 Char. 1630: T --> C
 Char. 1703: C --> T
 Char. 1726: C --> T
 Char. 1909: T --> C
 Char. 2054: C --> T
 Char. 2074: A --> G
 Char. 2092: A --> G
 Char. 2474: T --> C
 Char. 2734: C --> T
 Char. 2857: G --> A

Node 1441 :
Char. 563: A --> G
Char. 616: A --> G
Char. 628: A --> G
Char. 712: C --> T
Char. 715: C --> T
Char. 747: T --> A
Char. 748: A --> C
Char. 749: T --> C
Char. 958: A --> G
Char. 1027: C --> T
Char. 1031: G --> A
Char. 1090: A --> G
Char. 1262: C --> A
Char. 1496: G --> A
Char. 1564: T --> C
Char. 1565: T --> C
Char. 1681: G --> A
Char. 1717: A --> G
Char. 1816: A --> G
Char. 1915: G --> A
Char. 5941: C --> T
Char. 6230: C --> T
Char. 6322: C --> T
Char. 6449: T --> C
Char. 6471: T --> C
Node 1442 :
Char. 1741: C --> T
Char. 1849: C --> T
Char. 1870: T --> C
Char. 1951: C --> T
Char. 1969: C --> T
Char. 2024: T --> C
Char. 2035: T --> C
Char. 2071: A --> T
Char. 2101: T --> C
Char. 2149: C --> T
Node 1443 :
Char. 865: T --> C
Char. 1093: G --> A
Char. 1106: A --> G
Char. 1294: A --> G
Char. 2006: T --> C
Node 1444 :
Char. 1531: C --> T
Char. 1552: A --> C
Char. 1565: C --> T
Char. 1573: A --> G
Char. 1678: T --> C
Char. 1706: G --> A
Char. 1720: T --> C
Char. 1784: T --> C
Char. 1790: C --> T
Char. 1796: C --> T
Char. 1804: C --> A
Char. 1933: T --> C
Char. 1969: C --> T
Char. 2017: A --> G
Char. 2022: T --> C
Char. 2041: T --> A
Char. 2044: T --> C
Char. 2074: A --> C
Char. 2080: A --> T
Char. 2095: C --> T
Char. 3508: A --> G
Char. 3595: C --> T
Char. 3769: T --> C
Char. 4255: A --> G
Char. 4445: C --> A
Char. 4459: C --> T
Char. 4466: G --> A
Char. 4509: G --> A
Char. 4510: C --> A
Char. 4521: A --> C
Char. 4585: C --> T
Char. 4637: C --> A
Char. 4639: C --> T
Char. 6207: T --> C
Char. 6229: G --> A
Char. 6230: C --> T
Char. 6247: C --> T
Char. 6251: A --> T
Char. 6323: C --> T
Char. 6325: C --> T
Char. 6326: T --> A
Char. 6376: T --> C
Char. 6567: A --> G
Node 1445 :
Char. 1546: T --> C
Char. 1609: C --> T
Char. 1756: C --> T
Char. 1777: A --> G
Node 1446 :
Char. 1681: G --> A
Char. 1819: A --> G
Char. 1918: A --> G
Char. 1939: T --> C
Char. 1981: C --> T
Char. 2044: A --> G
Node 1447 :
Char. 1594: A --> G
Char. 1600: A --> C
Char. 1618: T --> C
Char. 1771: T --> C
Char. 1780: T --> C
Char. 1783: T --> C
Char. 1804: T --> C
Char. 1837: A --> G
Char. 1951: T --> C
Char. 2023: T --> C
Char. 2042: T --> C
Char. 2056: T --> C
Char. 2119: T --> C
Node 1448 :
Char. 715: T --> C
Char. 751: A --> G
Char. 1177: T --> C
Char. 1447: T --> C
Char. 1453: A --> C
Char. 1565: T --> C
Char. 1627: A --> G
Char. 1645: T --> C
Char. 1648: T --> C
Char. 1852: T --> C
Char. 1900: T --> C
Char. 1912: C --> T
Char. 1966: T --> C
Char. 1990: T --> C
Char. 1999: A --> G
Char. 2029: A --> G
Char. 2107: T --> C
Char. 2125: C --> T
Char. 2152: T --> C
Char. 5867: T --> C
Char. 6038: T --> C
Char. 6211: A --> G
Char. 6294: T --> C
Char. 6444: T --> C
Char. 6467: T --> C
Node 1449 :
Char. 571: C --> T
Char. 649: C --> T
Char. 772: C --> T
Char. 886: A --> G
Char. 895: C --> T
Char. 943: T --> C
Char. 973: A --> T
Char. 997: A --> C
Char. 1040: A --> G
Char. 1087: C --> T
Char. 1105: C --> T
Char. 1243: A --> G
Char. 1246: C --> T
Char. 1258: T --> C
Char. 1282: T --> C
Char. 1375: A --> G
Char. 1432: C --> T
Char. 1466: A --> G
Char. 1467: C --> T
Char. 6323: C --> T
Char. 6342: C --> T
Char. 6344: G --> A
Char. 6346: T --> C
Char. 6511: A --> T
Node 1450 :
Char. 529: C --> T
Char. 539: C --> T
Char. 547: A --> G
Char. 598: C --> T
Char. 835: C --> A
Char. 844: C --> T
Char. 910: C --> T
Char. 911: C --> T
Char. 937: C --> T
Char. 1081: C --> T
Char. 1091: T --> C
Char. 1093: A --> T
Char. 1094: C --> T
Char. 1112: C --> T
Char. 1150: A --> G
Char. 1171: A --> C
Char. 1183: T --> G
Char. 1225: C --> A
Char. 1288: C --> T
Char. 1319: A --> G
Char. 1465: C --> T
Char. 2220: G --> A
Char. 2401: A --> C
Node 1451 :
Char. 532: A --> G
Char. 601: A --> T
Char. 607: C --> A
Char. 640: C --> T
Char. 733: C --> T
Char. 749: C --> T
Char. 766: T --> C
Char. 823: A --> T
Char. 1027: T --> C
Char. 1060: C --> T
Char. 1066: C --> T
Char. 1117: T --> A
Char. 1123: C --> T
Char. 1133: C --> T
Char. 1258: A --> T
Char. 1320: A --> T
Char. 1357: C --> T
Char. 1358: C --> T
Char. 1402: C --> T
Char. 2527: C --> A
Char. 2566: A --> G
Char. 2908: G --> A
Node 1452 :
Char. 637: C --> T
Char. 928: C --> A
Char. 960: C --> G
Char. 1391: C --> T
Char. 1408: C --> A
Char. 1454: A --> G
Char. 1546: T --> AG
Char. 1648: T --> C
Char. 1690: A --> C
Char. 1723: CT --> G
Char. 1789: T --> C
Char. 1840: T --> A
Char. 1909: T --> C
Char. 2035: C --> T
Char. 2905: G --> A
Char. 5869: C --> T
Char. 6002: T --> C
Char. 6003: A --> C
Char. 6005: T --> C
Char. 6040: A --> G
Char. 6456: C --> T
Char. 6462: A --> G
Char. 6467: T --> C
Node 1453 :
Char. 787: C --> T
Char. 1003: T --> C
Char. 1186: A --> C
Char. 1282: C --> T
Char. 1496: G --> A
Node 1454 :
Char. 523: C --> T
Char. 538: T --> C
Char. 913: C --> A
Char. 1015: C --> T
Char. 1091: C --> T
Char. 1117: C --> T
Char. 1177: T --> C

Char. 1447: T --> C
Char. 2782: C --> T
Node 1455 :
Char. 553: C --> T
Char. 577: T --> C
Char. 587: G --> A
Char. 591: A --> T
Char. 631: C --> T
Char. 685: C --> T
Char. 781: C --> T
Char. 916: C --> T
Char. 950: G --> A
Char. 951: C --> T
Char. 952: C --> T
Char. 976: C --> T
Char. 1014: T --> C
Char. 1018: A --> C
Char. 1088: C --> T
Char. 1102: C --> A
Char. 1153: C --> T
Char. 1174: T --> A
Char. 1177: C --> T
Char. 1258: A --> T
Char. 1348: C --> A
Char. 1466: A --> G
Char. 1519: T --> C
Char. 1564: T --> C
Char. 1573: A --> G
Char. 1582: T --> A
Char. 1598: T --> C
Char. 1624: T --> C
Char. 1690: A --> G
Char. 1712: C --> T
Char. 1720: T --> C
Char. 1729: A --> C
Char. 1756: C --> T
Char. 1777: A --> C
Char. 1789: T --> A
Char. 1934: T --> C
Char. 1969: C --> T
Char. 1990: T --> C
Char. 2020: C --> T
Char. 2048: C --> T
Char. 2084: C --> T
Char. 2149: C --> T
Char. 2290: G --> A
Char. 2299: C --> A
Char. 2545: C --> T
Char. 2587: G --> A
Char. 2602: T --> G
Char. 2794: G --> A
Char. 2803: C --> T
Char. 5915: C --> T
Char. 5941: C --> T
Char. 5978: G --> A
Char. 6211: A --> G
Char. 6253: A --> C
Char. 6254: A --> T
Node 1456 :
Char. 823: A --> C
Char. 835: C --> T
Char. 838: C --> A
Char. 1261: A --> CT
Char. 1306: C --> A
Char. 1342: T --> C
Char. 1483: C --> T
Char. 1498: C --> T
Char. 1597: C --> T
Char. 1636: T --> C
Char. 1780: A --> C
Char. 1861: A --> C
Char. 1921: G --> A
Char. 1981: C --> T
Char. 1987: T --> C
Char. 2038: A --> T
Char. 2086: T --> A
Char. 2374: C --> T
Char. 6020: A --> G
Char. 6049: A --> T
Char. 6182: G --> A
Char. 6342: C --> A
Char. 6446: C --> A
Node 1457 :

Char. 1565: C --> T
Char. 1579: A --> G
Char. 1601: C --> T
Char. 1666: G --> A
Char. 1711: C --> T
Char. 1723: C --> T
Char. 1765: C --> T
Char. 1870: C --> T
Char. 1882: C --> T
Char. 1948: T --> C
Char. 1990: T --> C
Char. 1993: A --> G
Char. 2032: T --> C
Char. 2095: T --> C
Char. 2665: T --> A
Char. 2746: A --> C
Node 1458 :
Char. 1561: C --> T
Char. 1562: C --> T
Char. 1564: T --> A
Char. 1576: A --> C
Char. 1696: A --> T
Char. 1738: A --> C
Char. 1843: A --> T
Char. 1933: T --> C
Char. 2017: A --> G
Node 1459 :
Char. 1537: C --> T
Char. 1663: T --> C
Char. 1735: G --> A
Char. 1741: C --> T
Char. 1753: T --> C
Char. 1892: C --> T
Char. 1924: C --> T
Char. 1945: T --> C
Node 1460 :
Char. 532: A --> G
Char. 658: C --> T
Char. 1042: C --> T
Char. 1129: C --> T
Char. 1162: A --> C
Char. 1339: C --> T
Char. 1387: T --> C
Char. 2225: A --> G
Char. 2422: A --> T
Char. 2443: A --> T
Node 1461 :
Char. 556: C --> T
Char. 661: T --> C
Char. 961: C --> T
Char. 967: C --> A
Char. 1003: T --> A
Char. 1330: C --> A
Char. 1363: T --> C
Char. 2226: G --> T
Char. 2491: T --> G
Char. 2632: A --> C
Char. 2845: A --> G
Node 1462 :
Char. 524: T --> C
Char. 649: C --> T
Char. 752: T --> C
Char. 766: T --> C
Char. 911: C --> T
Char. 913: C --> A
Char. 919: A --> C
Char. 988: A --> T
Char. 1072: C --> T
Char. 1106: A --> G
Char. 1114: A --> T
Char. 1180: C --> A
Char. 1303: C --> A
Char. 1309: A --> C
Char. 1318: A --> C
Char. 1495: A --> G
Char. 2237: G --> A
Char. 2266: C --> T
Char. 2347: C --> T
Char. 2441: T --> G
Char. 2557: G --> A
Char. 2581: T --> C
Char. 2593: G --> A
Char. 2713: T --> C

Char. 2728: G --> A
Char. 2746: T --> C
Char. 2776: G --> A
Char. 2803: C --> T
Char. 2878: T --> C
Char. 5869: C --> T
Char. 6299: G --> A
Char. 6406: C --> A
Char. 6420: C --> T
Char. 6424: T --> C
Node 1463 :
Char. 539: C --> T
Char. 556: A --> C
Char. 620: A --> G
Char. 775: A --> T
Char. 850: C --> T
Char. 895: C --> T
Char. 955: T --> C
Char. 961: A --> C
Char. 971: C --> T
Char. 1073: C --> T
Char. 1141: A --> T
Char. 1201: A --> G
Char. 1262: C --> T
Char. 1268: C --> T
Char. 1297: A --> C
Char. 1468: A --> C
Char. 2179: G --> A
Char. 2225: G --> A
Char. 2607: A --> G
Char. 2641: A --> G
Char. 2664: C --> T
Char. 6377: C --> T
Char. 6382: A --> T
Char. 6457: A --> T
Node 1464 :
Char. 631: C --> T
Char. 772: C --> T
Char. 960: C --> G
Char. 967: A --> C
Char. 1162: C --> A
Char. 1288: C --> T
Char. 1330: A --> C
Char. 1363: C --> T
Char. 1411: C --> T
Char. 1496: G --> A
Char. 1546: T --> C
Char. 1627: A --> G
Char. 1741: C --> T
Char. 1765: C --> T
Char. 1864: T --> C
Char. 1921: G --> T
Char. 1987: T --> C
Char. 2005: A --> T
Char. 2116: C --> T
Char. 2125: C --> T
Char. 2134: A --> G
Char. 2147: C --> T
Char. 2507: C --> T
Char. 2638: T --> C
Char. 2785: T --> C
Char. 5028: T --> A
Char. 5164: C --> T
Char. 5242: C --> T
Char. 5510: A --> T
Char. 5553: T --> C
Char. 5561: A --> T
Char. 6205: C --> T
Char. 6322: C --> T
Node 1465 :
Char. 2173: C --> A
Char. 2174: A --> C
Char. 2853: G --> C
Node 1466 :
Char. 1543: A --> G
Char. 1573: G --> A
Char. 1591: C --> G
Char. 1723: C --> T
Char. 1771: T --> C
Char. 1837: A --> G
Node 1467 :
Char. 799: A --> G
Char. 1075: A --> C

Char. 1081: T --> C
Char. 1096: T --> C
Char. 1141: A --> G
Char. 1150: A --> G
Node 1468 :
Char. 592: C --> T
Char. 667: T --> C
Char. 691: C --> A
Char. 703: C --> A
Char. 730: C --> T
Char. 740: A --> G
Char. 790: C --> T
Char. 820: C --> A
Char. 823: C --> T
Char. 911: C --> T
Char. 955: C --> T
Char. 980: C --> T
Char. 991: C --> T
Char. 1102: C --> A
Char. 1111: C --> A
Char. 1186: C --> A
Char. 1189: C --> T
Char. 1216: T --> C
Char. 1300: C --> T
Char. 1303: C --> T
Char. 1309: A --> C
Char. 1381: C --> T
Char. 1390: C --> T
Node 1469 :
Char. 523: C --> T
Char. 577: C --> T
Char. 661: C --> T
Char. 673: C --> T
Char. 733: T --> C
Char. 787: A --> G
Char. 886: G --> C
Char. 940: C --> A
Char. 985: T --> C
Char. 1054: C --> A
Char. 1075: T --> A
Char. 1090: T --> C
Char. 1114: A --> G
Char. 1126: A --> C
Char. 1255: A --> C
Char. 1262: C --> T
Char. 1297: A --> C
Char. 1304: C --> A
Char. 1329: G --> C
Char. 1369: C --> A
Char. 1445: A --> G
Char. 1469: C --> T
Char. 1540: A --> CT
Char. 1546: T --> G
Char. 1579: A --> G
Char. 1693: T --> C
Char. 1705: T --> G
Char. 1744: A --> GC
Char. 1879: G --> C
Char. 1900: T --> C
Char. 1903: T --> C
Char. 1930: C --> A
Char. 2014: T --> G
Char. 2080: T --> A
Char. 2215: T --> G
Char. 2293: C --> T
Char. 2455: C --> T
Char. 4777: C --> T
Char. 4791: C --> G
Char. 4895: C --> G
Char. 5187: G --> A
Char. 5271: T --> A
Char. 5347: G --> A
Char. 5356: G --> A
Char. 5622: G --> A
Char. 6310: G --> T
Char. 6355: A --> C
Char. 6412: A --> G
Node 1470 :
Char. 1540: A --> C
Char. 1573: A --> G
Char. 1615: G --> A
Char. 1714: A --> G
Char. 1796: C --> T

Char. 1993: A --> G
Char. 2035: C --> A
Char. 2065: A --> G
Char. 3564: T --> C
Char. 3569: G --> A
Char. 3700: G --> A
Char. 3745: T --> C
Char. 3763: T --> A
Char. 3829: G --> A
Char. 3947: C --> T
Char. 4000: C --> A
Char. 4048: G --> A
Char. 4192: G --> C
Char. 4228: G --> A
Char. 4252: G --> A
Char. 4288: C --> T
Char. 4348: T --> C
Char. 4349: C --> A
Char. 4519: G --> A
Char. 4572: G --> A
Char. 4612: C --> T
Char. 4699: G --> A
Char. 5752: A --> C
Char. 5773: T --> C
Char. 5774: A --> G
Char. 5913: A --> C
Node 1471 :
Char. 1609: T --> C
Char. 1630: C --> T
Char. 1672: A --> G
Char. 1708: A --> G
Char. 1732: C --> T
Char. 1918: C --> T
Char. 1930: C --> T
Char. 1948: T --> C
Char. 2038: A --> G
Node 1472 :
Char. 1648: C --> T
Char. 1951: T --> C
Char. 2017: A --> G
Char. 2068: T --> C
Node 1473 :
Char. 523: C --> T
Char. 524: T --> G
Char. 556: C --> T
Char. 592: C --> T
Char. 640: C --> T
Char. 667: C --> T
Char. 673: C --> T
Char. 712: A --> C
Char. 742: T --> C
Char. 784: A --> C
Char. 910: C --> T
Char. 922: C --> T
Char. 964: C --> T
Char. 1015: T --> C
Char. 1076: C --> T
Char. 1136: C --> T
Char. 1261: A --> C
Char. 1454: G --> A
Char. 1459: C --> T
Char. 1477: C --> A
Char. 3517: A --> T
Char. 3559: G --> A
Char. 3820: C --> T
Char. 3922: A --> G
Char. 4063: C --> T
Char. 4432: C --> T
Char. 4513: G --> A
Char. 4535: C --> T
Char. 4660: C --> T
Node 1474 :
Char. 553: C --> T
Char. 557: T --> G
Char. 595: T --> C
Char. 676: C --> T
Char. 748: C --> T
Char. 751: A --> C
Char. 941: C --> T
Char. 951: C --> T
Char. 1003: C --> T
Char. 1043: T --> C
Char. 1048: C --> T

Char. 1112: C --> T
Char. 1118: C --> T
Char. 1189: C --> T
Char. 1216: T --> C
Char. 1268: C --> T
Char. 1279: A --> C
Char. 1315: C --> A
Char. 1358: C --> T
Char. 1367: A --> G
Char. 1375: C --> T
Char. 1456: C --> T
Char. 1466: G --> A
Char. 1474: C --> T
Char. 1478: G --> A
Char. 1594: G --> A
Char. 1729: C --> T
Char. 1735: G --> A
Char. 1789: T --> C
Char. 1810: A --> G
Char. 1861: A --> G
Char. 1885: C --> T
Char. 1906: C --> T
Char. 1996: T --> C
Char. 2044: T --> C
Char. 2059: A --> C
Char. 2062: C --> T
Char. 2125: T --> C
Char. 2638: T --> C
Char. 3997: A --> G
Char. 4258: T --> C
Char. 4469: G --> A
Char. 4483: T --> C
Char. 4678: T --> C
Node 1475 :
Char. 733: T --> C
Char. 760: A --> G
Char. 865: A --> G
Char. 943: C --> T
Char. 950: G --> A
Char. 1165: C --> T
Char. 1213: A --> G
Char. 1225: C --> T
Char. 1271: C --> T
Char. 1303: C --> T
Char. 1426: C --> T
Char. 1435: T --> C
Char. 3724: G --> A
Char. 3745: T --> G
Char. 5244: G --> A
Node 1476 :
Char. 2335: T --> C
Char. 2782: T --> C
Node 1477 :
Char. 1513: T --> C
Char. 1516: T --> C
Char. 1517: A --> C
Char. 1556: T --> C
Char. 1633: T --> C
Char. 1774: A --> T
Char. 1894: A --> G
Char. 1966: T --> C
Char. 2014: T --> C
Char. 2107: T --> C
Char. 2119: T --> C
Char. 2146: T --> C
Char. 2191: T --> C
Char. 2236: C --> G
Char. 2313: C --> T
Char. 2341: A --> C
Char. 2461: C --> A
Char. 2497: G --> A
Char. 2758: A --> T
Char. 2830: C --> T
Node 1478 :
Char. 4767: C --> T
Char. 4773: T --> C
Char. 4806: C --> T
Char. 4815: T --> C
Char. 4821: C --> T
Char. 5001: G --> A
Char. 5022: C --> T
Char. 5034: G --> A
Char. 5133: T --> A

Char. 5164: G --> T
 Char. 5244: G --> A
 Char. 5332: A --> G
 Char. 5358: T --> C
 Char. 5461: T --> C
 Char. 5517: C --> T
 Char. 5586: C --> T
 Char. 5610: G --> A
 Char. 5634: G --> C
 Char. 5718: C --> G
 Node 1479 :
 Char. 553: C --> T
 Char. 592: C --> T
 Char. 625: C --> T
 Char. 643: C --> T
 Char. 658: T --> C
 Char. 670: T --> C
 Char. 679: C --> T
 Char. 733: T --> C
 Char. 749: C --> T
 Char. 772: C --> T
 Char. 1042: C --> T
 Char. 1118: C --> T
 Char. 1429: C --> T
 Char. 1471: C --> T
 Char. 1630: C --> T
 Char. 1663: T --> C
 Char. 1708: A --> T
 Char. 1882: C --> T
 Char. 1900: T --> C
 Char. 1906: C --> T
 Char. 2404: T --> C
 Char. 2510: T --> C
 Char. 2530: C --> T
 Char. 4171: T --> C
 Char. 4309: G --> A
 Char. 4441: C --> T
 Char. 4480: G --> A
 Char. 4521: G --> A
 Char. 4636: A --> C
 Char. 4699: G --> A
 Char. 4860: G --> A
 Char. 5166: T --> G
 Char. 5169: C --> T
 Char. 5394: A --> G
 Char. 5682: C --> G
 Char. 5718: G --> A
 Node 1480 :
 Char. 568: C --> T
 Char. 607: A --> C
 Char. 628: T --> C
 Char. 703: C --> T
 Char. 706: C --> T
 Char. 715: T --> C
 Char. 742: T --> C
 Char. 784: A --> C
 Char. 799: A --> G
 Char. 838: C --> A
 Char. 940: A --> T
 Char. 950: G --> A
 Char. 973: A --> G
 Char. 1027: A --> G
 Char. 1030: C --> T
 Char. 1076: C --> T
 Char. 1135: C --> T
 Char. 1177: A --> T
 Char. 1540: A --> G
 Char. 1672: A --> G
 Char. 1720: T --> C
 Char. 1771: A --> C
 Char. 1865: T --> C
 Char. 1879: T --> A
 Char. 1972: A --> G
 Char. 1987: C --> T
 Char. 2005: C --> T
 Char. 2065: A --> G
 Char. 2086: T --> C
 Char. 2113: A --> G
 Char. 2626: C --> T
 Char. 4033: G --> C
 Char. 4338: C --> A
 Char. 4696: A --> G
 Char. 4870: C --> G
 Char. 5217: C --> A
 Char. 5283: T --> A
 Char. 5319: C --> T
 Char. 5424: T --> C
 Char. 5607: C --> A
 Node 1481 :
 Char. 550: C --> T
 Char. 562: C --> T
 Char. 565: C --> G
 Char. 847: C --> A
 Char. 886: C --> T
 Char. 1043: T --> C
 Char. 1136: C --> T
 Char. 1216: T --> C
 Char. 1237: A --> T
 Char. 1282: T --> C
 Char. 1432: T --> C
 Char. 1582: T --> C
 Char. 1669: A --> T
 Char. 1927: C --> A
 Char. 3493: C --> T
 Char. 3559: G --> A
 Char. 3664: G --> A
 Char. 4066: G --> A
 Char. 4216: G --> A
 Char. 4468: C --> G
 Char. 4837: C --> T
 Char. 4871: C --> T
 Char. 4905: A --> G
 Char. 5300: T --> C
 Char. 5337: G --> A
 Node 1482 :
 Char. 1930: C --> T
 Char. 1939: G --> A
 Char. 1993: A --> G
 Node 1483 :
 Char. 937: C --> T
 Char. 1098: C --> T
 Char. 1315: C --> A
 Char. 1358: C --> T
 Char. 1672: A --> G
 Char. 1675: A --> G
 Char. 1726: A --> G
 Char. 1759: A --> G
 Char. 1786: T --> C
 Char. 1852: A --> C
 Char. 1867: A --> G
 Char. 1870: C --> T
 Char. 1891: C --> T
 Char. 2008: A --> G
 Char. 2017: A --> G
 Char. 2047: C --> T
 Char. 2083: A --> G
 Node 1484 :
 Char. 538: T --> C
 Char. 556: T --> C
 Char. 676: T --> C
 Char. 697: C --> T
 Char. 775: A --> G
 Char. 835: C --> T
 Char. 1019: C --> T
 Char. 1081: A --> G
 Char. 1295: C --> T
 Char. 1450: C --> T
 Char. 1471: T --> C
 Char. 1936: T --> A
 Char. 1978: T --> A
 Char. 2050: C --> T
 Char. 2152: C --> T
 Char. 3760: C --> T
 Char. 3830: C --> T
 Char. 4469: A --> G
 Char. 4576: A --> T
 Char. 5355: G --> A
 Char. 5364: A --> G
 Char. 5372: A --> G
 Char. 5476: G --> A
 Char. 5598: G --> T
 Char. 5616: A --> G
 Node 1485 :
 Char. 631: T --> C
 Char. 950: G --> A
 Char. 1189: T --> C
 Char. 1228: C --> T
 Char. 1282: T --> C
 Char. 1306: A --> T
 Char. 1370: T --> C
 Char. 1393: T --> C
 Char. 1879: T --> G
 Char. 1903: T --> C
 Char. 2012: G --> A
 Char. 2119: T --> C
 Char. 2884: A --> T
 Char. 3733: G --> A
 Node 1486 :
 Char. 904: C --> T
 Char. 1129: C --> A
 Char. 1219: C --> T
 Char. 1271: C --> T
 Char. 1408: A --> C
 Char. 1441: C --> T
 Char. 1481: C --> T
 Char. 1486: C --> T
 Char. 1672: G --> A
 Char. 1792: C --> T
 Char. 1825: C --> T
 Char. 1834: T --> C
 Char. 1865: T --> C
 Char. 2107: T --> C
 Char. 2137: A --> G
 Char. 3913: A --> T
 Node 1487 :
 Char. 538: C --> T
 Char. 845: G --> A
 Char. 1288: A --> C
 Char. 1411: A --> G
 Char. 1706: G --> A
 Char. 1741: T --> C
 Char. 1846: C --> T
 Char. 1960: T --> G
 Char. 1978: C --> T
 Char. 2071: C --> T
 Char. 2245: A --> G
 Char. 3466: T --> C
 Char. 4082: C --> A
 Char. 4375: A --> G
 Char. 4417: A --> G
 Char. 4469: G --> A
 Char. 5058: T --> C
 Char. 5712: T --> A
 Char. 6573: T --> C
 Node 1488 :
 Char. 524: T --> C
 Char. 592: C --> T
 Char. 733: T --> C
 Char. 1291: T --> C
 Char. 1370: C --> T
 Char. 1478: G --> A
 Char. 1663: T --> C
 Char. 1708: A --> T
 Char. 1828: G --> A
 Char. 1897: T --> C
 Char. 2080: C --> T
 Char. 2110: T --> C
 Char. 2152: T --> C
 Char. 6321: A --> G
 Node 1489 :
 Char. 565: C --> A
 Char. 1123: C --> T
 Char. 1393: A --> T
 Char. 1703: T --> C
 Char. 1816: A --> G
 Char. 1849: A --> C
 Char. 6211: A --> G
 Char. 6345: A --> G
 Node 1490 :
 Char. 864: C --> T
 Char. 971: C --> T
 Char. 1015: T --> C
 Char. 1138: A --> G
 Char. 1426: C --> T
 Char. 1447: C --> T
 Char. 1495: A --> C
 Char. 1561: C --> T
 Char. 1594: G --> A
 Char. 1712: C --> T

Char. 2026: A --> T
Char. 2038: A --> G
Char. 2086: T --> C
Char. 6319: A --> G
Char. 6346: C --> T
Char. 6359: A --> G
Char. 6513: C --> A
Node 1491 :
Char. 853: T --> C
Char. 1243: C --> T
Char. 4795: T --> G
Char. 4809: C --> T
Char. 4935: T --> C
Char. 5019: G --> A
Char. 5151: C --> T
Char. 5256: C --> T
Char. 5328: A --> G
Char. 5709: A --> G
Node 1492 :
Char. 539: C --> T
Char. 577: C --> T
Char. 580: T --> C
Char. 676: T --> C
Char. 967: A --> G
Char. 1153: C --> T
Char. 1162: A --> C
Char. 1279: A --> T
Char. 1333: C --> A
Char. 1360: A --> G
Char. 1459: C --> A
Char. 1483: A --> T
Char. 1565: C --> T
Char. 1570: T --> C
Char. 1606: T --> C
Char. 1676: A --> G
Char. 1720: T --> C
Char. 1756: C --> T
Char. 1772: C --> T
Char. 1780: A --> G
Char. 1879: T --> C
Char. 1885: C --> T
Char. 1909: C --> T
Char. 1942: T --> A
Char. 2014: C --> A
Char. 2059: C --> G
Char. 2125: T --> C
Char. 2149: C --> T
Char. 2182: A --> G
Char. 2257: G --> A
Char. 2557: G --> A
Char. 2614: C --> T
Char. 3464: G --> A
Char. 3515: G --> A
Char. 3523: G --> A
Char. 3724: G --> A
Char. 4321: C --> T
Char. 4564: C --> T
Char. 4633: C --> T
Char. 4836: A --> G
Char. 5257: G --> A
Char. 5361: T --> C
Char. 5362: A --> G
Char. 5394: G --> A
Char. 5616: A --> G
Node 1493 :
Char. 1669: A --> G
Node 1494 :
Char. 1678: T --> C
Char. 1711: A --> G
Char. 1732: C --> T
Char. 1786: T --> C
Char. 1795: A --> T
Char. 1867: A --> G
Char. 1879: T --> C
Char. 1888: T --> C
Char. 1939: G --> A
Char. 1942: T --> C
Node 1495 :
Char. 562: C --> T
Char. 565: A --> G
Char. 601: T --> A
Char. 640: C --> T
Char. 865: A --> G
Char. 925: T --> C
Char. 937: C --> T
Char. 1019: C --> T
Char. 1036: C --> T
Char. 1060: C --> T
Char. 1135: C --> T
Char. 1201: A --> G
Char. 1225: C --> T
Char. 1243: T --> C
Char. 1414: A --> T
Char. 1492: A --> G
Char. 1609: T --> C
Char. 1657: T --> C
Char. 1789: T --> C
Char. 1849: C --> G
Char. 1903: T --> C
Char. 1960: T --> A
Char. 1969: T --> C
Char. 2062: C --> T
Char. 2125: T --> G
Char. 2441: G --> T
Char. 2509: G --> A
Char. 2591: T --> C
Char. 4058: A --> G
Char. 4124: C --> A
Char. 4576: A --> T
Char. 4582: A --> G
Node 1496 :
Char. 952: A --> G
Char. 3523: G --> C
Char. 4375: A --> G
Char. 4648: C --> T
Char. 4818: A --> T
Char. 5289: G --> T
Char. 5709: A --> G
Node 1497 :
Char. 652: C --> T
Char. 1027: A --> G
Char. 1105: A --> T
Char. 1582: T --> A
Char. 1978: C --> T
Char. 2041: T --> C
Char. 2044: T --> C
Char. 2119: T --> C
Char. 2176: G --> A
Char. 2320: T --> C
Char. 2620: G --> C
Char. 4393: G --> C
Char. 4624: A --> G
Char. 5337: G --> A
Node 1498 :
Char. 1076: C --> T
Char. 1288: A --> G
Char. 1606: T --> G
Char. 1666: A --> G
Char. 1735: G --> A
Char. 1987: C --> T
Char. 6345: G --> A
Char. 6467: T --> C
Node 1499 :
Char. 802: A --> G
Char. 1033: A --> G
Char. 1213: A --> G
Char. 1294: A --> G
Char. 1435: T --> C
Char. 2143: A --> G
Node 1500 :
Char. 742: T --> C
Char. 958: T --> A
Char. 1105: A --> T
Char. 1123: C --> T
Char. 1216: C --> T
Char. 1288: C --> G
Char. 1315: C --> T
Char. 1466: G --> A
Char. 1471: C --> A
Char. 1483: T --> C
Char. 1585: T --> C
Char. 1708: A --> C
Char. 1771: A --> C
Char. 1774: A --> C
Char. 1793: C --> T
Char. 1795: A --> G
Char. 1810: A --> C
Char. 1828: A --> G
Char. 1861: A --> G
Char. 1909: C --> T
Char. 1915: C --> T
Char. 2008: A --> G
Char. 2044: T --> C
Char. 2530: C --> T
Char. 2596: A --> C
Char. 2890: T --> A
Char. 4346: A --> C
Char. 4393: G --> A
Char. 4651: A --> T
Char. 4711: G --> C
Char. 4740: T --> C
Char. 4773: T --> C
Char. 4932: T --> C
Char. 5100: A --> C
Char. 5372: G --> A
Char. 5646: C --> T
Char. 5661: C --> T
Node 1501 :
Char. 595: T --> C
Char. 616: C --> T
Char. 772: C --> T
Char. 871: A --> G
Char. 1019: C --> T
Char. 1243: T --> C
Char. 1291: T --> C
Char. 1481: T --> C
Char. 1597: C --> T
Char. 1603: A --> G
Char. 1892: C --> T
Char. 2029: T --> C
Char. 3659: G --> A
Char. 4234: C --> T
Char. 5299: A --> T
Char. 5583: A --> G
Char. 6294: A --> C
Char. 6361: G --> A
Char. 6497: A --> C
Char. 6530: C --> A
Node 1502 :
Char. 559: A --> C
Char. 592: C --> T
Char. 646: A --> C
Char. 845: G --> A
Char. 847: C --> T
Char. 1054: A --> C
Char. 1141: A --> C
Char. 1207: C --> T
Char. 1474: C --> T
Char. 1483: A --> T
Char. 1531: C --> A
Char. 1564: C --> T
Char. 1717: G --> A
Char. 1849: A --> C
Char. 2038: A --> CT
Char. 2053: A --> C
Char. 2086: T --> C
Char. 2467: C --> T
Char. 3487: C --> G
Char. 4132: T --> C
Char. 4180: T --> C
Char. 4303: A --> C
Char. 4363: A --> G
Char. 4992: T --> C
Node 1503 :
Char. 1765: C --> T
Char. 1984: C --> T
Char. 1987: C --> T
Char. 2110: C --> T
Char. 2422: T --> C
Char. 4669: T --> C
Char. 5013: C --> T
Char. 5286: C --> T
Node 1504 :
Char. 1703: C --> T
Char. 1706: G --> A
Char. 1726: A --> G
Char. 4324: A --> G
Node 1505 :
Char. 742: T --> C

Char. 1445: A --> G
Char. 2893: G --> A
Char. 3820: C --> T
Char. 4234: C --> T
Char. 5055: C --> G
Char. 5394: G --> A
Char. 5457: C --> T
Char. 5680: A --> G
Node 1506 :
Char. 692: C --> T
Char. 982: C --> A
Char. 2629: C --> T
Char. 2632: T --> C
Char. 3745: T --> G
Char. 3766: G --> A
Char. 4980: A --> G
Char. 5646: C --> T
Node 1507 :
Char. 529: A --> G
Char. 583: C --> A
Char. 859: A --> C
Char. 1036: C --> T
Char. 1133: C --> T
Char. 1219: C --> T
Char. 1501: A --> G
Char. 1558: T --> A
Char. 1703: T --> C
Char. 1708: A --> T
Char. 1870: A --> G
Char. 1978: A --> G
Char. 2006: C --> T
Char. 2101: C --> T
Char. 2113: A --> T
Char. 5073: C --> T
Char. 6295: T --> C
Node 1508 :
Char. 524: T --> C
Char. 538: T --> C
Char. 547: A --> G
Char. 706: T --> C
Char. 889: C --> T
Char. 946: A --> C
Char. 955: T --> C
Char. 994: A --> G
Char. 1096: T --> C
Char. 1315: C --> T
Char. 1333: C --> T
Char. 1426: C --> A
Char. 1447: C --> T
Char. 1469: C --> A
Char. 1477: T --> C
Char. 1498: G --> C
Char. 1702: G --> A
Char. 1723: C --> T
Char. 1774: A --> G
Char. 1804: T --> C
Char. 1981: A --> G
Char. 2044: T --> C
Char. 2087: C --> T
Char. 2104: T --> C
Char. 2695: G --> A
Char. 4346: A --> C
Char. 4711: G --> C
Char. 5246: C --> G
Char. 5292: T --> C
Char. 6323: C --> A
Char. 6528: A --> G
Char. 6562: T --> C
Node 1509 :
Char. 670: T --> C
Char. 1502: C --> T
Char. 1846: C --> T
Char. 4424: A --> C
Char. 4711: G --> C
Char. 4818: A --> C
Char. 4887: C --> T
Char. 5152: G --> A
Node 1510 :
Char. 742: T --> C
Char. 808: C --> T
Node 1511 :
Char. 523: C --> T
Char. 529: C --> A
Char. 538: T --> C
Char. 562: C --> T
Char. 589: T --> C
Char. 664: C --> T
Char. 697: C --> T
Char. 841: C --> T
Char. 859: A --> C
Char. 892: C --> T
Char. 931: C --> T
Char. 1009: C --> T
Char. 1036: C --> T
Char. 1060: C --> T
Char. 1063: A --> T
Char. 1129: C --> T
Char. 1195: A --> G
Char. 1231: C --> T
Char. 1264: T --> C
Char. 1288: G --> A
Char. 1375: T --> C
Char. 1489: A --> T
Char. 1588: A --> G
Char. 2005: T --> C
Char. 2312: T --> C
Node 1512 :
Char. 533: T --> C
Char. 577: C --> T
Char. 592: C --> T
Char. 598: C --> T
Char. 643: C --> T
Char. 736: C --> G
Char. 814: C --> T
Char. 835: A --> G
Char. 850: A --> C
Char. 865: C --> A
Char. 866: C --> T
Char. 889: C --> T
Char. 916: C --> T
Char. 940: T --> C
Char. 949: C --> T
Char. 973: T --> A
Char. 1012: C --> A
Char. 1018: A --> G
Char. 1045: A --> C
Char. 1057: C --> T
Char. 1081: T --> C
Char. 1085: T --> C
Char. 1102: C --> T
Char. 1171: C --> T
Char. 1189: C --> T
Char. 1240: T --> C
Char. 1261: C --> G
Char. 1318: A --> G
Char. 1333: C --> A
Char. 1351: C --> T
Char. 1372: A --> G
Char. 1414: A --> G
Char. 1585: C --> T
Char. 1639: A --> G
Char. 1711: T --> C
Char. 1924: A --> G
Char. 1930: C --> T
Char. 1990: T --> C
Char. 2155: A --> G
Node 1513 :
Char. 1045: A --> C
Char. 1262: C --> T
Char. 1411: C --> T
Char. 1435: C --> T
Char. 1454: A --> C
Char. 6040: A --> G
Char. 6445: A --> C
Char. 6462: A --> G
Node 1514 :
Char. 1669: A --> T
Char. 1732: C --> T
Char. 1777: C --> T
Char. 1798: G --> A
Char. 1816: A --> G
Char. 1870: G --> A
Char. 1892: C --> T
Char. 1921: G --> A
Char. 2006: C --> T
Char. 2054: C --> T
Char. 2134: G --> A
Char. 5379: A --> G
Char. 5688: C --> T
Char. 6413: C --> T
Char. 6434: G --> A
Node 1515 :
Char. 1565: T --> C
Char. 1648: C --> T
Char. 1744: A --> G
Char. 1828: G --> A
Char. 1855: T --> C
Char. 1897: T --> C
Char. 2005: C --> A
Char. 2059: A --> C
Char. 2095: C --> T
Node 1516 :
Char. 1588: A --> G
Char. 1699: C --> T
Char. 1834: T --> C
Char. 1885: T --> C
Char. 1966: T --> C
Char. 2047: T --> C
Char. 2065: A --> G
Char. 5978: A --> G
Char. 6423: A --> G
Char. 6441: T --> C
Node 1517 :
Char. 1621: T --> C
Char. 1693: C --> T
Char. 1798: A --> G
Char. 1870: A --> G
Char. 1936: T --> A
Char. 1960: C --> T
Char. 5868: T --> C
Char. 5933: C --> T
Char. 6252: C --> A
Char. 6254: A --> T
Char. 6323: C --> T
Char. 6342: T --> C
Char. 6362: C --> T
Node 1518 :
Char. 580: C --> T
Char. 646: A --> G
Char. 649: C --> T
Char. 676: A --> G
Char. 679: C --> T
Char. 694: C --> T
Char. 739: A --> T
Char. 745: A --> C
Char. 748: C --> T
Char. 754: C --> G
Char. 778: A --> G
Char. 781: C --> T
Char. 835: C --> T
Char. 862: T --> C
Char. 874: A --> G
Char. 883: A --> G
Char. 898: A --> T
Char. 946: C --> A
Char. 988: C --> A
Char. 1036: C --> T
Char. 1048: C --> T
Char. 1069: A --> G
Char. 1093: C --> T
Char. 1096: T --> C
Char. 1138: A --> C
Char. 1177: C --> T
Char. 1211: C --> T
Char. 1216: T --> C
Char. 1225: C --> T
Char. 1246: C --> T
Char. 1300: C --> T
Char. 2225: G --> A
Char. 2365: A --> G
Char. 2728: G --> A
Char. 2767: A --> C
Char. 2776: G --> A
Char. 4963: C --> T
Char. 5380: C --> T
Char. 5532: G --> T
Char. 5709: A --> G
Char. 5718: C --> T
Char. 5730: C --> T

Node 1519 :
Char. 1517: C --> T
Char. 1561: C --> T
Char. 1648: C --> T
Char. 1663: T --> C
Char. 1678: T --> C
Char. 1741: C --> T
Char. 1765: C --> T
Char. 1783: C --> T
Char. 1930: C --> A
Char. 1957: A --> T
Char. 1996: T --> C
Char. 2047: T --> C
Char. 2086: T --> A
Char. 6254: A --> C

Node 1520 :
Char. 5802: G --> C
Char. 5840: C --> T
Char. 6182: G --> A
Char. 6353: C --> T
Char. 6511: A --> T

Node 1521 :
Char. 5827: G --> A
Char. 6322: T --> C

Node 1522 :
Char. 535: A --> C
Char. 674: C --> T
Char. 784: C --> A
Char. 823: C --> T
Char. 991: C --> T
Char. 1133: C --> T
Char. 1177: C --> A
Char. 1262: C --> T
Char. 1342: C --> A
Char. 1408: C --> A

Node 1523 :
Char. 529: C --> A
Char. 559: A --> C
Char. 583: T --> C
Char. 742: C --> T
Char. 886: A --> C
Char. 898: A --> C
Char. 943: T --> C
Char. 1015: T --> C
Char. 1024: C --> T
Char. 1060: C --> T
Char. 1467: C --> T
Char. 2237: G --> A

Node 1524 :
Char. 580: T --> C
Char. 586: A --> T
Char. 724: C --> A
Char. 748: A --> C
Char. 763: A --> G
Char. 787: T --> G
Char. 820: A --> C
Char. 922: C --> T
Char. 955: T --> C
Char. 967: A --> T
Char. 1003: C --> A
Char. 1054: A --> C
Char. 1091: T --> C
Char. 1093: A --> C
Char. 1094: C --> A
Char. 1096: A --> T
Char. 1195: A --> G
Char. 1246: C --> T
Char. 1298: G --> A
Char. 1414: A --> C
Char. 1485: A --> G
Char. 2191: T --> C

Node 1525 :
Char. 577: T --> C
Char. 625: C --> T
Char. 700: C --> T
Char. 817: A --> C
Char. 895: C --> A
Char. 910: C --> T
Char. 961: T --> C
Char. 994: A --> G
Char. 1120: A --> G
Char. 1289: C --> T
Char. 1342: C --> G

Char. 1372: A --> G
Char. 1454: A --> G
Char. 1490: C --> T

Node 1526 :
Char. 2242: C --> T
Char. 2290: G --> A
Char. 2299: C --> A
Char. 2545: C --> T
Char. 2587: G --> C
Char. 2602: T --> G
Char. 2794: G --> A
Char. 2803: C --> T
Char. 2824: A --> C
Char. 2905: G --> A

Node 1527 :
Char. 532: A --> G
Char. 553: C --> T
Char. 574: C --> T
Char. 583: C --> T
Char. 625: C --> T
Char. 679: C --> T
Char. 703: C --> T
Char. 724: C --> T
Char. 835: T --> A
Char. 862: A --> G
Char. 880: C --> T
Char. 886: C --> T
Char. 928: C --> T
Char. 1003: C --> T
Char. 1015: C --> T
Char. 1021: A --> T
Char. 1024: T --> C
Char. 1057: C --> T
Char. 1060: T --> C
Char. 1090: A --> C
Char. 1094: C --> T
Char. 1096: A --> G
Char. 1123: C --> T
Char. 1198: A --> C
Char. 1246: C --> T
Char. 1258: A --> G
Char. 1283: C --> T
Char. 1289: C --> T
Char. 1304: C --> T
Char. 1307: C --> T
Char. 1312: C --> T
Char. 1332: T --> C
Char. 1336: C --> A
Char. 1405: A --> G
Char. 1411: C --> T
Char. 1496: A --> G

Node 1528 :
Char. 565: T --> C
Char. 622: T --> C
Char. 649: C --> T
Char. 745: C --> T
Char. 746: C --> T
Char. 778: C --> T
Char. 907: C --> T
Char. 950: G --> A
Char. 976: C --> T
Char. 1210: C --> T
Char. 1432: C --> T
Char. 1549: A --> G
Char. 1993: G --> A
Char. 2014: T --> C
Char. 2074: A --> G
Char. 2077: T --> C

Node 1529 :
Char. 1513: C --> T
Char. 1552: T --> C
Char. 1564: C --> A
Char. 1603: A --> C
Char. 1672: A --> G
Char. 1702: A --> G
Char. 1762: C --> T
Char. 1810: G --> C
Char. 1822: G --> C
Char. 1831: A --> G
Char. 1834: T --> C
Char. 1900: T --> C
Char. 1939: C --> T
Char. 2029: T --> C

Char. 2035: T --> C
Char. 2041: T --> C
Char. 2044: G --> T
Char. 2053: C --> A
Char. 2071: A --> G
Char. 2098: A --> G
Char. 2113: C --> A
Char. 2595: T --> C
Char. 2664: C --> T
Char. 2668: T --> C
Char. 2686: A --> G
Char. 2735: G --> A

Node 1530 :
Char. 562: C --> T
Char. 652: A --> C
Char. 682: C --> T
Char. 742: C --> T
Char. 784: C --> A
Char. 841: A --> T
Char. 910: C --> A
Char. 913: C --> T
Char. 946: A --> T
Char. 985: C --> T
Char. 1108: A --> C
Char. 1174: T --> A
Char. 1342: C --> A
Char. 1381: C --> T
Char. 1393: A --> T
Char. 1462: C --> T
Char. 1465: C --> T
Char. 1492: A --> C
Char. 1493: G --> A
Char. 4743: C --> T
Char. 4806: C --> T
Char. 4809: C --> G
Char. 4857: G --> T
Char. 4890: C --> T
Char. 4908: C --> G
Char. 4929: C --> T
Char. 5016: C --> T
Char. 5151: C --> T
Char. 5154: C --> T
Char. 5179: C --> T
Char. 5190: G --> A
Char. 5196: C --> T
Char. 5247: C --> T
Char. 5265: A --> C
Char. 5267: C --> G
Char. 5275: G --> A
Char. 5322: C --> A
Char. 5330: G --> A
Char. 5403: C --> T
Char. 5426: C --> T
Char. 5427: C --> T
Char. 5499: C --> G
Char. 5539: G --> A
Char. 5682: C --> T
Char. 5716: A --> G
Char. 5730: C --> T
Char. 6323: C --> T
Char. 6381: C --> A
Char. 6514: C --> A
Char. 6575: C --> A

Node 1531 :
Char. 526: A --> G
Char. 550: C --> T
Char. 664: C --> T
Char. 733: C --> T
Char. 743: C --> T
Char. 748: C --> T
Char. 772: C --> T
Char. 784: C --> T
Char. 799: A --> G
Char. 919: A --> T
Char. 1054: C --> T
Char. 1112: C --> T
Char. 1276: C --> T
Char. 1307: C --> T
Char. 1363: C --> T

Node 1532 :
Char. 1584: G --> A
Char. 1648: C --> T
Char. 1756: C --> T

Char. 1774: C --> G
 Char. 1924: T --> C
 Char. 1927: T --> C
 Char. 1960: T --> C
 Char. 2222: G --> A
 Char. 4814: G --> A
 Char. 4878: G --> A
 Char. 4958: G --> T
 Char. 4962: G --> A
 Char. 5043: C --> A
 Char. 5060: C --> T
 Char. 5264: C --> T
 Char. 5266: A --> G
 Char. 5331: A --> G
 Char. 5418: A --> G
 Char. 5533: C --> A
 Char. 5554: C --> G
 Char. 5664: C --> T
 Char. 6231: C --> T
 Char. 6244: G --> A
 Char. 6252: A --> T
 Char. 6301: T --> C
 Char. 6308: G --> A
 Char. 6314: T --> C
 Char. 6327: A --> C
 Char. 6358: C --> T
 Char. 6361: T --> C
 Char. 6454: A --> T
 Char. 6457: A --> G
 Char. 6499: A --> T
 Char. 6512: A --> C
 Char. 6523: C --> T
 Node 1533 :
 Char. 1270: C --> T
 Char. 1330: A --> G
 Char. 1351: C --> T
 Char. 1441: C --> T
 Char. 1771: A --> G
 Char. 1822: A --> G
 Char. 2725: A --> C
 Char. 4770: T --> C
 Char. 5079: T --> C
 Char. 5151: C --> T
 Char. 5197: C --> T
 Char. 5331: G --> A
 Char. 5655: G --> A
 Node 1534 :
 Char. 1036: C --> T
 Char. 1495: C --> T
 Char. 3826: T --> C
 Char. 4153: C --> T
 Node 1535 :
 Char. 634: G --> A
 Char. 1603: G --> A
 Node 1536 :
 Char. 1855: T --> C
 Char. 2329: T --> G
 Char. 4081: A --> C
 Char. 4489: G --> T
 Char. 4702: G --> A
 Char. 5646: T --> C
 Node 1537 :
 Char. 670: T --> C
 Char. 676: A --> G
 Char. 682: T --> C
 Char. 709: C --> T
 Char. 745: A --> C
 Char. 751: A --> G
 Char. 844: C --> T
 Char. 847: A --> G
 Char. 866: C --> T
 Char. 892: C --> T
 Char. 943: A --> G
 Char. 961: T --> C
 Char. 1087: A --> G
 Char. 1144: C --> T
 Char. 1183: C --> T
 Char. 1282: C --> T
 Char. 1306: A --> G
 Char. 1307: C --> T
 Char. 1358: C --> T
 Char. 1445: A --> G
 Char. 1447: C --> T
 Char. 1684: T --> C
 Char. 1723: G --> A
 Char. 1744: C --> T
 Char. 1798: A --> G
 Char. 1801: C --> T
 Char. 1813: T --> C
 Char. 1819: C --> T
 Char. 2053: T --> C
 Char. 2122: C --> T
 Char. 3451: G --> T
 Char. 4489: G --> T
 Char. 4636: A --> T
 Char. 5169: C --> T
 Char. 5243: C --> T
 Char. 5502: T --> C
 Node 1538 :
 Char. 5466: C --> T
 Char. 6299: G --> A
 Node 1539 :
 Char. 796: A --> G
 Node 1540 :
 Char. 1540: T --> A
 Char. 1558: C --> T
 Char. 1601: C --> T
 Char. 1648: C --> T
 Char. 1696: A --> G
 Char. 1699: C --> T
 Char. 1729: C --> T
 Char. 1756: C --> T
 Char. 1780: C --> T
 Char. 1816: A --> G
 Char. 1825: A --> G
 Char. 1858: T --> C
 Char. 1900: T --> C
 Char. 1921: G --> A
 Char. 1924: T --> C
 Char. 1930: A --> T
 Char. 1945: T --> C
 Char. 1960: C --> T
 Char. 1999: A --> G
 Char. 2008: A --> G
 Char. 2035: T --> C
 Char. 2056: C --> A
 Char. 2062: C --> T
 Char. 2063: C --> T
 Char. 6211: C --> T
 Char. 6294: A --> CT
 Char. 6299: A --> G
 Char. 6484: C --> T
 Char. 6492: C --> T
 Char. 6560: C --> T
 Char. 6562: C --> T
 Char. 6591: G --> A
 Node 1541 :
 Char. 523: C --> T
 Char. 553: C --> T
 Char. 559: A --> G
 Char. 583: C --> T
 Char. 595: T --> C
 Char. 631: T --> C
 Char. 703: C --> A
 Char. 706: C --> A
 Char. 752: C --> T
 Char. 763: A --> G
 Char. 769: A --> T
 Char. 775: A --> G
 Char. 796: A --> G
 Char. 832: C --> T
 Char. 895: A --> C
 Char. 910: C --> T
 Char. 911: C --> T
 Char. 931: C --> T
 Char. 982: C --> T
 Char. 985: C --> T
 Char. 1072: C --> T
 Char. 1075: T --> C
 Char. 1087: T --> C
 Char. 1120: A --> C
 Char. 1159: C --> T
 Char. 1162: A --> T
 Char. 1249: A --> G
 Char. 1252: A --> T
 Char. 1255: A --> G
 Char. 1345: C --> A
 Char. 1363: C --> T
 Char. 1390: T --> C
 Char. 1408: A --> T
 Char. 1426: C --> A
 Char. 1438: T --> C
 Char. 1441: C --> G
 Char. 1469: C --> T
 Char. 1471: C --> A
 Char. 1477: T --> C
 Char. 1549: T --> C
 Char. 1561: C --> T
 Char. 1564: C --> T
 Char. 1567: A --> G
 Char. 1630: C --> T
 Char. 1666: A --> G
 Char. 1675: A --> C
 Char. 1693: C --> T
 Char. 1705: A --> G
 Char. 1729: C --> T
 Char. 1738: A --> C
 Char. 1795: A --> C
 Char. 1804: T --> C
 Char. 1831: A --> C
 Char. 1849: A --> C
 Char. 1855: T --> C
 Char. 1858: T --> C
 Char. 1873: C --> T
 Char. 1882: C --> T
 Char. 1885: C --> T
 Char. 1903: C --> T
 Char. 1930: C --> T
 Char. 1966: T --> C
 Char. 1985: A --> G
 Char. 1986: T --> C
 Char. 2026: A --> G
 Char. 2038: A --> C
 Char. 2050: C --> T
 Char. 2062: C --> T
 Char. 2071: C --> T
 Char. 2083: G --> A
 Char. 2089: A --> G
 Char. 2107: T --> C
 Char. 2128: A --> G
 Char. 2161: A --> G
 Char. 2299: C --> T
 Char. 2467: C --> T
 Char. 2695: G --> A
 Char. 2818: C --> T
 Char. 3522: C --> T
 Char. 3595: C --> T
 Char. 3835: C --> T
 Char. 3874: T --> C
 Char. 3895: C --> A
 Char. 3958: G --> A
 Char. 3989: C --> A
 Char. 4069: G --> C
 Char. 4093: C --> T
 Char. 4332: T --> A
 Char. 4450: G --> T
 Char. 4453: G --> A
 Char. 4476: T --> C
 Char. 4525: G --> A
 Char. 4579: C --> T
 Char. 4654: C --> T
 Char. 4789: C --> T
 Char. 5172: G --> A
 Char. 5247: T --> C
 Char. 5347: G --> A
 Char. 5458: G --> A
 Node 1542 :
 Char. 571: C --> T
 Char. 620: T --> C
 Char. 694: A --> T
 Char. 971: C --> T
 Char. 1012: C --> A
 Char. 1081: A --> C
 Char. 1123: C --> T
 Char. 1126: C --> T
 Char. 1129: C --> A
 Char. 1165: C --> T
 Char. 1288: A --> C
 Char. 1357: C --> T

Char. 1391: C --> T
Char. 1453: C --> A
Char. 1594: G --> A
Char. 1595: T --> G
Char. 1825: C --> T
Char. 1864: C --> T
Char. 1891: C --> T
Char. 1996: T --> C
Char. 2054: C --> T
Char. 2059: A --> T
Char. 2063: C --> T
Char. 2614: C --> T
Char. 2878: T --> C
Char. 3659: G --> A
Char. 4576: A --> G
Node 1543 :
Char. 637: T --> C
Char. 1045: G --> A
Char. 1333: T --> C
Char. 1558: C --> A
Char. 1891: T --> C
Char. 4651: A --> C
Char. 4962: A --> T
Char. 5264: C --> T
Char. 5367: C --> A
Node 1544 :
Char. 583: C --> T
Char. 620: C --> T
Char. 844: T --> C
Char. 982: C --> T
Char. 1000: A --> G
Char. 1291: T --> C
Char. 1363: C --> T
Char. 1367: A --> G
Char. 1498: C --> T
Char. 1531: C --> T
Char. 1678: T --> C
Char. 1771: A --> G
Char. 1849: A --> G
Char. 1909: C --> T
Char. 2567: G --> T
Char. 3703: T --> C
Char. 3826: A --> G
Char. 4887: C --> T
Char. 5256: C --> T
Node 1545 :
Char. 550: T --> C
Char. 676: C --> T
Char. 700: T --> C
Char. 886: T --> C
Char. 928: C --> T
Char. 949: C --> T
Char. 951: C --> T
Char. 1099: A --> G
Char. 1150: A --> C
Char. 1189: C --> T
Char. 1201: A --> G
Char. 1243: T --> C
Char. 1282: C --> T
Char. 1283: C --> T
Char. 1342: T --> C
Char. 1370: C --> T
Char. 1387: A --> T
Char. 1428: T --> A
Char. 1441: C --> T
Char. 1466: G --> A
Char. 1471: C --> T
Char. 1765: C --> T
Char. 1780: A --> T
Char. 1807: C --> T
Char. 1942: T --> C
Char. 1954: T --> C
Char. 2017: A --> G
Char. 2087: C --> T
Char. 2374: T --> A
Char. 2431: T --> C
Char. 2860: T --> C
Char. 5058: T --> C
Char. 5250: C --> T
Char. 5409: G --> C
Char. 5718: G --> A
Node 1546 :
Char. 565: G --> A
Char. 577: C --> T
Char. 649: C --> T
Char. 679: C --> T
Char. 740: G --> A
Char. 749: C --> T
Char. 844: A --> T
Char. 871: A --> G
Char. 1015: T --> C
Char. 1045: A --> G
Char. 1084: T --> C
Char. 1112: C --> T
Char. 1213: A --> G
Char. 1250: C --> T
Char. 1351: C --> T
Char. 1502: C --> T
Char. 1612: C --> T
Char. 1699: C --> T
Char. 1810: A --> T
Char. 1861: A --> G
Char. 2041: T --> C
Char. 2095: C --> T
Char. 2140: C --> T
Char. 2152: T --> C
Char. 3466: T --> C
Char. 3748: T --> C
Char. 3984: A --> T
Char. 4096: T --> G
Char. 4459: C --> G
Char. 4468: G --> A
Char. 4521: G --> A
Char. 4899: T --> A
Char. 4980: A --> C
Node 1547 :
Char. 1540: A --> G
Char. 1822: C --> T
Char. 1924: C --> A
Char. 1993: A --> G
Char. 2122: C --> T
Node 1548 :
Char. 1669: T --> A
Char. 1810: T --> C
Char. 1873: C --> T
Char. 1972: A --> G
Char. 1987: C --> T
Node 1549 :
Char. 1708: A --> G
Char. 1712: C --> T
Char. 1783: T --> C
Char. 1793: C --> T
Char. 1825: T --> A
Char. 1879: T --> C
Char. 1897: T --> C
Char. 1900: T --> C
Char. 2038: A --> G
Node 1550 :
Char. 532: A --> G
Char. 544: A --> C
Char. 583: C --> T
Char. 601: T --> C
Char. 625: C --> T
Char. 634: G --> A
Char. 700: C --> T
Char. 703: C --> T
Char. 712: T --> C
Char. 745: A --> C
Char. 911: C --> T
Char. 1030: C --> T
Char. 1093: A --> G
Char. 1162: A --> C
Char. 1282: C --> T
Char. 1336: A --> G
Char. 1358: C --> T
Char. 1391: C --> T
Char. 1402: T --> C
Char. 1423: C --> T
Char. 1454: G --> A
Char. 1501: A --> G
Char. 1684: T --> C
Char. 1712: C --> T
Char. 1771: A --> G
Char. 1796: C --> T
Char. 1798: A --> G
Char. 1810: A --> G
Char. 1837: A --> G
Char. 1858: C --> T
Char. 1888: A --> G
Char. 1951: T --> C
Char. 1954: T --> C
Char. 1975: A --> G
Char. 2594: T --> A
Char. 2596: A --> G
Char. 3484: G --> A
Char. 3646: T --> G
Char. 4141: C --> T
Char. 4858: C --> A
Char. 5184: T --> C
Char. 5718: C --> A
Node 1551 :
Char. 607: A --> C
Char. 637: C --> T
Char. 664: C --> T
Char. 682: T --> C
Char. 805: A --> T
Char. 1183: C --> A
Char. 1270: C --> T
Char. 1285: A --> C
Char. 1429: C --> T
Char. 1576: A --> G
Char. 1582: T --> C
Char. 1603: A --> G
Char. 1729: C --> A
Char. 1741: C --> T
Char. 1762: C --> T
Char. 1843: T --> C
Char. 1846: T --> C
Char. 1924: T --> A
Char. 2017: A --> G
Char. 2128: T --> C
Char. 2182: A --> G
Char. 2225: T --> C
Char. 2226: G --> T
Char. 2383: T --> C
Char. 2611: C --> T
Char. 2734: T --> C
Char. 2860: T --> C
Char. 3571: T --> C
Char. 3841: G --> A
Char. 4171: C --> T
Char. 5376: G --> A
Char. 5520: G --> T
Char. 5703: G --> A
Char. 6286: A --> T
Node 1552 :
Char. 568: C --> T
Char. 640: C --> T
Char. 643: C --> T
Char. 820: C --> T
Char. 826: T --> C
Char. 829: A --> G
Char. 832: C --> T
Char. 871: A --> G
Char. 880: C --> T
Char. 910: C --> A
Char. 951: C --> T
Char. 958: C --> T
Char. 1000: A --> G
Char. 1019: C --> T
Char. 1024: C --> T
Char. 1075: G --> A
Char. 1098: T --> C
Char. 1108: A --> C
Char. 1136: C --> T
Char. 1150: A --> C
Char. 1165: C --> T
Char. 1168: C --> T
Char. 1177: T --> C
Char. 1216: T --> C
Char. 1225: C --> T
Char. 1228: C --> T
Char. 1243: C --> T
Char. 1291: C --> A
Char. 1304: A --> C
Char. 1324: A --> G
Char. 1351: C --> T
Char. 1354: A --> G
Char. 1367: A --> G

Char. 1369: A --> G
 Char. 1384: A --> G
 Char. 1390: C --> T
 Char. 1393: A --> G
 Char. 1453: C --> T
 Char. 1504: A --> G
 Char. 5490: T --> A
 Char. 6209: C --> T
 Char. 6252: T --> C
 Node 1553 :
 Char. 586: C --> T
 Char. 592: C --> T
 Char. 631: C --> T
 Char. 892: C --> T
 Char. 970: C --> T
 Char. 1057: C --> T
 Char. 1105: A --> T
 Char. 1262: C --> T
 Char. 1435: C --> T
 Char. 1486: C --> T
 Char. 1517: T --> C
 Char. 1648: C --> T
 Char. 1870: C --> T
 Char. 1984: C --> T
 Char. 1987: C --> T
 Char. 1993: A --> G
 Char. 2047: T --> C
 Char. 2056: A --> G
 Node 1554 :
 Char. 595: C --> T
 Char. 772: C --> T
 Char. 1015: C --> T
 Char. 1078: C --> T
 Char. 1111: A --> G
 Char. 1432: T --> C
 Char. 1525: T --> C
 Char. 2038: A --> G
 Char. 3631: C --> T
 Char. 4072: T --> C
 Char. 4477: G --> A
 Char. 4633: C --> A
 Node 1555 :
 Char. 2284: G --> A
 Char. 2767: T --> C
 Node 1556 :
 Char. 4243: C --> T
 Char. 4376: A --> G
 Char. 4568: A --> T
 Char. 4615: C --> T
 Char. 4624: A --> G
 Node 1557 :
 Char. 740: A --> G
 Char. 1087: A --> G
 Char. 1174: A --> G
 Char. 1282: C --> T
 Char. 1339: T --> C
 Char. 4081: A --> T
 Char. 4312: T --> C
 Char. 4791: C --> T
 Char. 4953: G --> A
 Char. 6308: A --> G
 Char. 6436: G --> A
 Char. 6446: T --> A
 Char. 6447: C --> A
 Node 1558 :
 Char. 679: T --> C
 Char. 847: C --> T
 Char. 859: A --> G
 Char. 865: G --> A
 Char. 1250: C --> T
 Char. 1279: A --> G
 Char. 4776: G --> A
 Char. 4777: C --> T
 Node 1559 :
 Char. 559: A --> C
 Char. 571: C --> T
 Char. 586: A --> T
 Char. 587: G --> A
 Char. 620: A --> T
 Char. 622: T --> A
 Char. 649: C --> A
 Char. 661: T --> C
 Char. 775: A --> C
 Char. 808: C --> T
 Char. 820: A --> T
 Char. 847: C --> A
 Char. 868: A --> CT
 Char. 1033: A --> C
 Char. 1099: A --> T
 Char. 1192: T --> C
 Char. 1237: A --> C
 Char. 1252: A --> C
 Char. 1288: C --> A
 Char. 1295: C --> A
 Char. 1297: A --> T
 Char. 1300: C --> A
 Char. 1355: C --> A
 Char. 1368: C --> T
 Char. 1369: C --> G
 Char. 1372: A --> C
 Char. 1438: C --> T
 Char. 1477: A --> C
 Char. 1492: A --> T
 Node 1560 :
 Char. 6211: A --> G
 Char. 6368: C --> T
 Char. 6445: A --> T
 Char. 6528: A --> G
 Node 1561 :
 Char. 5935: A --> G
 Char. 5968: C --> T
 Char. 6324: C --> T
 Char. 6362: T --> C
 Node 1562 :
 Char. 1822: G --> A
 Char. 1924: C --> T
 Char. 1933: C --> T
 Char. 1951: C --> T
 Char. 2017: G --> A
 Char. 2026: G --> A
 Char. 2050: C --> A
 Node 1563 :
 Char. 1648: T --> C
 Char. 1651: A --> T
 Char. 1657: C --> T
 Char. 1684: T --> C
 Char. 1888: G --> A
 Char. 1903: C --> T
 Char. 2014: C --> T
 Char. 2038: C --> T
 Char. 2041: C --> T
 Char. 2104: T --> C
 Node 1564 :
 Char. 6342: G --> A
 Char. 6362: C --> T
 Char. 6408: G --> A
 Char. 6463: C --> A
 Char. 6508: A --> G
 Char. 6523: C --> T
 Node 1565 :
 Char. 1543: A --> G
 Char. 1556: T --> C
 Char. 1579: G --> A
 Char. 1678: A --> G
 Char. 1696: A --> G
 Char. 1708: C --> T
 Char. 1822: A --> G
 Char. 1831: A --> C
 Char. 1915: A --> T
 Char. 1924: C --> T
 Char. 1934: T --> C
 Char. 1936: A --> G
 Char. 1972: A --> G
 Char. 1978: C --> T
 Char. 1984: T --> C
 Char. 2002: A --> T
 Char. 2029: AG --> T
 Char. 2062: C --> T
 Char. 2092: A --> G
 Char. 2098: C --> G
 Char. 2140: T --> C
 Node 1566 :
 No synapomorphies
 Node 1567 :
 Char. 1513: T --> C
 Char. 1696: A --> G
 Char. 1703: C --> T
 Char. 1711: A --> G
 Char. 1774: T --> C
 Char. 1825: A --> G
 Char. 1933: T --> C
 Char. 1936: A --> G
 Char. 2008: A --> G
 Char. 2038: T --> C
 Char. 2056: C --> T
 Char. 2146: T --> C
 Node 1568 :
 Char. 1594: A --> T
 Char. 1606: C --> T
 Char. 1687: A --> G
 Char. 1705: T --> A
 Char. 1723: T --> C
 Char. 1822: A --> G
 Char. 1858: T --> C
 Char. 1873: C --> T
 Char. 2005: T --> C
 Char. 2062: C --> T
 Char. 2071: T --> A
 Node 1569 :
 Char. 1813: A --> G
 Char. 2089: T --> C
 Node 1570 :
 Char. 1565: C --> T
 Char. 1666: A --> G
 Char. 1714: A --> T
 Char. 1720: T --> C
 Char. 1723: G --> A
 Char. 1846: C --> T
 Char. 1999: A --> G
 Char. 2014: T --> C
 Char. 2467: C --> T
 Node 1571 :
 Char. 1549: T --> A
 Char. 1558: C --> A
 Char. 1723: G --> A
 Char. 1729: C --> T
 Char. 1735: A --> G
 Char. 1741: T --> C
 Char. 1771: A --> G
 Char. 1774: A --> G
 Char. 1798: A --> G
 Char. 1855: C --> A
 Char. 1861: C --> T
 Char. 1867: C --> T
 Char. 1879: C --> T
 Char. 1892: C --> T
 Char. 1933: T --> C
 Char. 2023: T --> C
 Char. 2050: C --> A
 Char. 2053: C --> T
 Char. 2086: A --> G
 Char. 2092: A --> C
 Char. 2161: A --> G
 Node 1572 :
 Char. 1762: T --> C
 Node 1573 :
 Char. 1579: A --> G
 Char. 1628: C --> T
 Char. 1657: C --> T
 Char. 1678: T --> C
 Char. 1687: A --> G
 Char. 1693: T --> C
 Char. 1762: C --> T
 Char. 1798: A --> G
 Char. 1816: A --> G
 Char. 1993: G --> A
 Char. 2020: C --> T
 Char. 2038: A --> G
 Char. 2048: C --> T
 Node 1574 :
 Char. 1540: A --> G
 Char. 1603: G --> A
 Char. 1606: G --> T
 Char. 1609: T --> C
 Char. 1684: T --> C
 Char. 1693: T --> C
 Char. 1696: G --> A
 Char. 1712: C --> T
 Char. 1720: T --> C

Char. 1747: A --> G
Char. 1801: C --> T
Char. 1813: T --> C
Char. 1819: G --> C
Char. 1828: G --> A
Char. 1867: T --> C
Char. 1888: T --> C
Char. 1892: C --> T
Char. 1906: A --> G
Char. 1993: A --> G
Char. 2014: T --> A
Char. 2017: A --> G
Char. 2026: A --> T
Char. 2044: G --> A
Char. 2053: C --> T
Char. 2068: C --> T
Char. 2077: T --> C
Char. 2221: T --> C
Char. 2392: C --> T
Char. 2410: G --> T
Char. 2602: C --> T
Char. 2617: C --> T
Node 1575 :
Char. 3501: C --> T
Char. 3605: T --> C
Char. 3760: C --> A
Char. 3931: G --> A
Char. 4066: C --> A
Char. 4096: G --> A
Char. 4252: G --> A
Char. 4508: C --> T
Char. 4645: C --> T
Char. 6321: A --> C
Char. 6322: T --> C
Char. 6334: A --> G
Char. 6342: G --> A
Char. 6346: T --> C
Char. 6402: A --> G
Char. 6440: A --> G
Char. 6492: C --> T
Node 1576 :
Char. 6379: C --> T
Char. 6442: C --> T
Node 1577 :
Char. 1702: A --> G
Char. 1882: T --> C
Char. 2119: T --> C
Char. 6378: A --> C
Node 1578 :
Char. 1627: T --> C
Char. 1723: G --> A
Char. 1735: A --> G
Char. 1741: T --> C
Char. 1771: A --> G
Char. 1804: T --> C
Char. 1855: C --> A
Char. 1861: C --> T
Char. 1879: C --> A
Char. 1892: C --> T
Char. 1933: T --> C
Char. 2050: C --> A
Char. 2053: C --> T
Char. 2083: A --> G
Char. 2086: A --> G
Node 1579 :
Char. 6254: T --> C
Char. 6323: C --> T
Char. 6326: T --> C
Char. 6343: G --> A
Node 1580 :
Char. 6434: G --> A
Char. 6442: C --> T
Char. 6443: A --> T
Char. 6512: C --> T
Char. 6513: C --> A