

Supplemental Appendix 1

Complete list of the material examined. Institutional abbreviations follow Sabaj (2020). Other abbreviations are CC, diploid by chromosome count; ES, diploid by erythrocyte size; CS, cleared and doubled-stained specimen; RC, recorded specimen, and SQ, sequenced specimen.

Odontophrynus reigi, paratypes: ARGENTINA: MISIONES PROVINCE: CAPITAL DEPARTMENT: Garupá, Barrio Don Santiago (type locality): 1 female, LGE 19812 (CC), 13 males, LGE 19811 (CC, RC), 19813 (CC, RC), 19814, 19815–6 (CC), 19817–20, 19821 (CC), 19822–4, collected with the holotype. Garupá, Barrio Santa Helena (27°28'26''S, 55°52'45''W, 118 m a.s.l.): 2 males, LGE 03400 (CC), 03401, J. M. Boeris and J. M. Ferro, 13 August 2012; 1 female, LGE 03874 (CC), J. M. Ferro and N. Acuña, 9 October 2012. Garupá, Barra Garupá (27°27'00''S, 55°48'36''W, 91 m a.s.l.): 1 juvenile, LGE 19845 (CC), D. Baldo, J. Meriles, and J. Verón, 27 October 1999. Posadas, Avenida Blas Parera and Avenida San Martín (27°22'30''S, 55°55'00''W, 120 m a.s.l.): 5 males, LGE 08705–9, J. M. Boeris, 30 March 2014. Posadas, Barrio Yacyretá (27°22'29.7''S, 55°55'11.1''W, 123 m a.s.l.): 1 female, LGE 06220 (CC), 6 males, LGE 06214–9, D. E. Cardozo, 12 May 2013; 2 males, LGE 09094–5 (CS), D. E. Cardozo, 5 September 2014. Posadas, Camping Municipal El Brete (27°21'02''S, 55°54'05''W, 88 m a.s.l.): 3 females, LGE 19800–1, 19805, 7 males, LGE 19799, 19802–3, 19804 (CC), 19870–2, D. Andino and M. O. Pereyra, 12 Jun 2005. Posadas, paseo Mirador, Avenida Jauretche and Avenida Além (27°21'38.2''S, 55°56'29.9''W, 87 m a.s.l.): 5 males, LGE 21149–52, 21247, P. J. Torres, 29 Jun 2018. Posadas, Ruta Nacional 12 (Bypass), Km 1329 (27°27'05''S, 56°01'26''W, 141 m a.s.l.): 3 males, LGE 06249–51 (CC), D. Baldo, J. M. Boeris, and J. M. Ferro, 15 May 2013. Posadas, Ruta Nacional 12 (Bypass), Km 1341 (27°27'54''S, 55°55'42''W, 114 m a.s.l.): 3 females, LGE 22232, 22251–2, 13 males, LGE 22229–31, 22244–50, 22253–5, D. Baldo, J. M. Boeris, A. Brunetti, N. Schvezov, and M.

Vera, 26 April 2019. Posadas, Ruta Nacional 12, Km 1329 (27°26'37.3''S, 56°01'43''W, 146 m a.s.l.): 2 males, LGE 19848 (CC), 19849, D. Baldo and D. E. Cardozo, 2 April 2005; 1 male and 1 female, LGE 19881–2, Y. Alipe, D. Baldo, J. M. Ferro, L. Cotichelli, and C. G. Tomatis, 18 September 2007. Villa Lanús, Campus Universidad Nacional de Misiones (27°26'13''S, 55°53'39''W, 99 m a.s.l.): 1 female, LGE 02048, J. M. Ferro, 25 October 2011; 3 males, LGE 08881–3, D. Baldo and J. M. Ferro, 23 July 2014; 1 female, LGE 19829 (CC), D. E. Cardozo and M. O. Pereyra, 27 September 2004; 1 male, LGE 19888, E. Castillo and M. O. Pereyra, 10 October 2007; 6 males, LGE 19889 (CC), 19890–1, 19897–9, J. M. Boeris, L. Cotichelli, J. M. Ferro, A. Tabeni, and E. Penizotto, 13 April 2008. CANDELARIA DEPARTMENT: Estancia San Juan (27°25'45''S, 55°37'19''W, 150 m a.s.l.): 2 females, LGE 16055–6, M. Benítez, J. M. Boeris, L. Buschiazzo, F. Da Rosa, and C. Labaroni, 5 October 2016. Ñu Pyahú, Ruta Provincial 3, 3.5 km E Ruta Nacional 12 (27°29'25''S, 55°40'06''W, 146 m a.s.l.): 1 male, LGE 19847 (CC), D. Baldo and E. R. Krauczuk, 2000; 1 male and 1 female, LGE 19878–9, D. Baldo, M. O. Pereyra, and C. G. Tomatis, 16 August 2006. Profundidad, Parque Provincial Profundidad (27°33'39''S, 55°42'39''W, 161 m a.s.l.): 1 male and 1 female, LGE 18958–9, J. M. Boeris and M. Sánchez, 7 March 2017; 1 female, LGE 19052, J. M. Boeris and M. Sánchez, 9 March 2017; 3 males, LGE 19807–8, 19809 (CC), D. Baldo and D. E. Cardozo, 22 April 2004; 1 male, LGE 19844 (CC), D. Baldo and J. Verón, 3 September 1999. BRAZIL: MATO GROSSO DO SUL STATE: BONITO MUNICIPALITY: near to the campus of the Universidade Federal de Mato Grosso do Sul (21°02'44''S, 56°36'31''W, 395 m a.s.l.): 11 males, ZUFMS-AMP 07615 (SQ), 07616–20, 07621 (ES), 07622–3, 07624 (SQ), 09655 (SQ, ES), P. S. Carvalho, D. J. Santana, L. A. Silva, E. O. Pacheco, and I. C. O. da Silva, 14 May 2016.

Odontophrynus reigi, non-type specimens: ARGENTINA: CORRIENTES PROVINCE: Santo Tomé: Estancia Virocay, Ruta Provincial 174: LGE 08750 (CC); Gobernador Ingeniero Valentín Virasoro: LGE 06296 (CC), 19825–8 (CC), 19830–2 (CC), 19833–4, 19835 (CC), 19850–1 (CC), 19852 (CC, SQ), 19853 (CC), 19855–60 (CC), 19862–5 (CC), 19867–8 (CC). MISIONES PROVINCE: Apóstoles: Ruta Provincial 1, 5.6 km NW Azara: LGE 06023–6 (CC), 06027. Cainguás: Aristóbulo del Valle, Balneario del Arroyo Cuña Pirú, Arroyo Cuña Pirú Chico: LGE 16472, 19559, 19561–4. Eldorado: Eldorado: MACN 26133 (ES). Iguazú: Parque Nacional Iguazú: LGE 06972–3 (CC), 19621–2, MACN 33399 (ES); Puerto Iguazú, 600 Hectáreas: LGE 19869 (CC), 19873 (RC), 19874–5 (CC), 19876–7; Reserva San Jorge, APSA: LGE 06909 (CC), 06953. Libertador General San Martín: Garupemí: LGE 19846 (CC, ES), MLP A. 5899–900 (CS). Montecarlo: Puerto Piray: MACN 12319 (ES). Oberá: near Campo Ramón, Ruta Provincial 103, road to Santa Rita: LGE 19883, 19884 (CC), 19885; San Martín: LGE 19886–7; San Martín, 11 de Noviembre: LGE 13289 (CC), 19836–7, 19838–43 (CC), MLP A. 5898 (CS). San Ignacio: Gobernador Roca: LGE 07438, 13427–30; Parque Provincial Teyú Cuaré: MLP A. 5901 (CC, CS); Reserva Privada Osununú: LGE 11820. BRAZIL: SÃO PAULO STATE: Araçoiaba da Serra: CFBH 9358 (ES). Teodoro Sampaio, Parque Estadual Morro do Diabo: CFBH 18375, 18388 (ES). Avaré; Botucatu; Itatinga; Pardinho; Piraju; and São Manuel (CC, Beçak and Beçak, 1974); Paranapanema (CC, Soma et al., 2006); Guapiara; and Pirajuí (CC, Ruiz et al., 1981). PARANÁ STATE: Curitiba: FML 4015 (ES); Carambeí; Cruzeiro do Oeste; and Pato Branco (CC, Ruiz et al., 1984). SANTA CATARINA STATE: Canoinhas: MCP 2101 (ES); Friburgo (= Fraiburgo?, CC, Almeida et al., 1986). RIO GRANDE DO SUL STATE: Iraí: CFBH 20864 (ES); Barracao: MCP 686 (ES); Santa Bárbara do Sul; and Severiano de Almeida (CC, Ruiz et al., 1984). PARAGUAY: AMAMBAY DEPARTMENT: Parque Nacional Cerro Corá, 2 km S Administración: MNHNPa 5273 (ES), 5723. CAAGUAZÚ DEPARTMENT: Estancia Golondrina, 17 km S Km 235 Ruta Nacional 7, 28

km SE J. Eulogio Estigarribia, 18 km S of the farmhouse: MNHNPa 10251 (ES). ITAPÚA DEPARTMENT: 12 km E Pirapó, Centro de Desarrollo Forestal: MNHNPa 5724; Alto Verá, Yata'í: MNHNPa 8685 (ES); Carmen del Paraná: MNHNPa 122, 123 (ES), 124–8; El Tirol, 19.5 km NNE Encarnación: MNHNPa 5725 (ES); Parque Nacional San Rafael: MNHNPa 9204 (ES). MISIONES DEPARTMENT: 5 km NW San Patricio, Colonia Alcaraz Kué: MNHNPa 70 (ES), 72–6, 77 (ES), 78–9. SAN PEDRO DEPARTMENT: Reserva Natural Laguna Blanca: LGE 7439 (CC).

Odontophrynus americanus: ARGENTINA: BUENOS AIRES PROVINCE: 20 km S Magdalena: MLP A. 3980; Bahía Blanca: CENAI 9637; Bella Vista: MACN 11194; Benavídez: CENAI 5700; Cristiano Muerto-Energía, Arroyo Cortaderas: CENAI 10910; Vicente Pereda-Ariel: MACN 21731; Carlos Casares: CENAI 9682; Casey: MACN 16520; Cazón, 10 km NW Saladillo: MACN 11720; City Bell: MLP A. 3714; D'Orbigny, Estancia San Pablo: MACN 21864; Estancia La Esperanza: MACN 29688; El Triunfo, Estancia San Enrique: MACN 23308; Energía, Estancia Los Médanos: MACN 21092; Estación Timote: MACN 25377; Ezpeleta: CENAI 3939 (CS), 3942 (CS); José C. Paz: MACN 20672; Libres del Sur: MACN 23725; Pehuén-Co: CENAI 93; Ruta Provincial 76, near Pourtalé: MACN 30110; Punta Indio: MLP A. 3713; San Clemente del Tuyú: MACN 30250; Santa Inés, Estancia El Guanaco: MACN 25236; Sierra de Curamalal, Cerro Pan de Azúcar: MACN 28271; Sierra de la Ventana, Cerro Tres Picos: MACN 25889; Tandil: MACN 21695. CÓRDOBA PROVINCE: Bell Ville: CENAI 10907; James Craig: CENAI 8043. CORRIENTES PROVINCE: Isla San Martín: MLP A. 3720–1; 15 km NO San Carlos: MACN 29577; Colonia Carlos Pellegrini: MACN 23173; General Alvear (= Alvear): MACN 22941; Felipe Yofré: CENAI 2399; Solari (= Estación Justino Solari): CENAI 4733; Gobernador Ingeniero Valentín Virasoro: LGE 22473. ENTRE RÍOS PROVINCE: 10 km NE Los Conquistadores, Estancia Buena Esperanza:

MACN 23549; Concepción del Uruguay: MACN 25103; Médanos: CENAI 9793–4; Mojones Sur: MACN 38103, MLP A. 3715; old Ruta Nacional 12: MACN 38101; Paranacito: MACN 23604; Parque Nacional El Palmar: MLP A. 560; Pronunciamento: MACN 27902; Tres Bocas: MLP A. 3712, 3891. LA PAMPA PROVINCE: General Pico: MACN 19436–7; Lihuel Calel: MACN 34336; Río Salado and Ruta Nacional 143: CENAI 9778; Santa Rosa: CENAI 6663. SAN LUIS PROVINCE: Alto Pencoso: IBA 2100; Justo Daract: CENAI 6560; Santa Rosa del Conlara: MACN 33915; Volcán, Arroyo El Volcán: CENAI 1661. SANTA FE PROVINCE: 12 km SE Villa Eloisa: MACN 24580; Romag-Alejandra, Arroyo Gusano: MACN 25835; Las Rosas: MACN 24223; Roldán: CENAI 10870; Tostado: MACN 8359–60; Venado Tuerto: MACN 28177. BRAZIL: MINAS GERAIS STATE: Poços de Caldas: MZUFV 8216, 8587; Juiz de Fora: MNRJ 18511. RIO GRANDE DO SUL STATE: Derrubadas: MCP 1576; Santo Augusto: MNRJ 3835; São Borja: MCP 7535; Caxias do Sul: MCP 1614; São Francisco de Paula: MCP 3664; General Câmara: MCP 4065; Viamão: CENAI 7002; Candiota: MCP 4203. SANTA CATARINA STATE: Três Barras: MNRJ 1531. SÃO PAULO STATE: Eugenio Lèfevre: MACN 17191, 17189; Campos do Jordão: MNRJ 26185, 26167. URUGUAY: ARTIGAS DEPARTMENT: Yuquery: ZVCB 991. CANELONES DEPARTMENT: Canelones: CENAI 3928. CERRO LARGO DEPARTMENT: Paso Durazno, 8 km SE Aceguá: MACN 36299; 8 km SE Aceguá, Arroyo de la Mina: ZVCB 2260. COLONIA DEPARTMENT: Arroyo Las Limetas: ZVCB 884. RIVERA DEPARTMENT: Establecimiento Trinidad: ZVCB 5327; Arroyo Curticeiras: LGE 15198. SALTO DEPARTMENT: near Salto, Arroyo Algarrobo: ZVCB 1596; Salto Grande (= Salto): ZVCB 1015. TREINTA Y TRES DEPARTMENT: Santa Clara de Olimar: ZVCB 111. PARAGUAY: CENTRAL DEPARTMENT: Villeta: MNHNPa 235. ITAPÚA DEPARTMENT: Isla Yasyretá, Estancia Melgarejo: MNHNPa 4083, 4103.

Odontophrynus carvalhoi: BRAZIL: BAHIA STATE: Campo Formoso: MZUSP 38808; Nascente do Rio Jiquiriça, Maracás: MNRJ 35184; Maracás: CENAI 2061–2, FML 1650, MNRJ 15358, MZUSP 96324–32, 96548–62, 96575–611, 98159–93, 108955; Lagõa da Rabicha, Caetité: MNRJ 32988; Itapetinga: MZUSP 85686–7. PERNAMBUCO STATE: Poçoão: MNRJ 0313 (holotype).

Odontophrynus cordobae: ARGENTINA: CÓRDOBA PROVINCE: Calamuchita, Villa General Belgrano, Arroyo El Sauce: MLP A. 5902 (holotype) ex ZFMK 73460 (Zoologisches Forschungsmuseum Alexander Koenig, now in MLP); Cruz Grande: MACN 25749; Deán Funes: CENAI 4522 (CS), 4524; Jesús María, Barrio La Florida: LGE 07415, 07420–1, 07437; 1–2 km Estancia Santa Catalina: LGE 15192–4; Ruta Nacional 9, km 771: LGE 00324–5; San José de la Dormida: CENAI 6756; Santa Rosa de Calamuchita: CENAI 0400, 0402; Tanti: MLP A. 3887, 3930. SANTIAGO DEL ESTERO PROVINCE: Villa Ojo de Agua: MACN 26199 (CS), 26200.

Odontophrynus cultripes: BRAZIL: DISTRITO FEDERAL: Lagõa Bonita: MNRJ 17426. GOIÁS STATE: Petrolina de Goiás: MZUSP 126667–70; Pedregal, 40 km S Brasilia: MNRJ 34314, MZUSP 77990–4. MINAS GERAIS STATE: Tamburil and Taboleiro Grande, near Lagõa Santa: NHMW 16522, ZMUC R11130 (syntypes); Ituiutaba: MZUSP 10383; Serra do Cipó: MZUSP 108080–1; Vespasiano: MZUSP 4978, 108957–8; Venda Nova, 5 km N Belo Horizonte: MNRJ 20114, 20115; Belo Horizonte: CENAI 9839, IBA 1015 (four specimens), 1089, MNRJ 0315, MZUSP 76373, 85642–3, 108947, 108979–81; Peti, São Gonçalo do Rio Abaixo: MNRJ 21401, 34498; Ouro Preto: MZUSP 22639; Parque Estadual do Tripuí, Ouro Preto: MNRJ 30599; Vicente Carvalhaes: MZUSP 13469; Monte Santo de Minas: CENAI 2351–2, MZUSP 110717–38, 130212–3; Três Pontes: MZUSP 13468; Antonio Carlos:

MZUSP 22923–4. SÃO PAULO STATE: Faveiro: MZUSP 26292; Santa Silvéria: MZUSP 13467; Nova Louzã: MZUSP 13470.

Odontophrynus juquinha: BRAZIL: BAHIA STATE: Rio de Contas, Pico das Almas: UFMG 4470–1. MINAS GERAIS STATE: Buenópolis, Serra do Cabral: UFMG 13928–9; Rio Pardo de Minas, Serra Nova: UFMG 6833, 6875; Santana de Pirapama, Serra do Cipó: UFMG 11118 (paratype); Santana do Riacho, Serra do Cipó: UFMG 5516 (holotype), UFMG 419–20, 5511–2, 5518, 5596–8, 11172, 13901, 13903–4 (12 paratypes); Serra do Cipó, Alto do Palácio: CFBH 39947, 40116–21; Serra do Cipó, crossroad between MG10 and the road to Morro do Pilar: CFBH 39816, 39822; Serra do Cipó, Km 113 (Serrotes): CFBH 0794; Serra do Cipó, Km 132: CFBH 35055.

Odontophrynus lavillai: ARGENTINA: CHACO PROVINCE: 40 km SE Santa Sylvina: MACN 36796; Juan José Castelli: CENAI 6063; Pampa Grande: MACN 37022–3. CÓRDOBA PROVINCE: Totoralejos: CENAI 2633. FORMOSA PROVINCE: El Colorado: IBA 1472; Florencia (= La Florencia): IBA 1469; Formosa: MACN 15526; Ruta Nacional 81, between Pirané and Palo Santo: MACN 35576. JUJUY PROVINCE: San Salvador de Jujuy, Km 7: CENAI 9783. SALTA PROVINCE: Finca San Javier, 8 km S Joaquín V. González: FML 4911, 4915, 4922; Gaona: FML 11159; Los Colorados: FML 5305. SANTA FE PROVINCE: Margarita: CENAI 6567, 6569; Vera y Pintado, Estancia La Cabaña: CENAI 9771–3. SANTIAGO DEL ESTERO PROVINCE: Arroyo Casa del Tigre, 2 km Villa La Punta: FML 3701 (holotype), FML 3702 (paratype), JMC-DC 1000 (paratype); Choya: CENAI 9752, 9754; Frías: CENAI 5794 (CS), 5811 (CS), 6461 (CS), 6465 (CS); El Caburé: MACN 26933; Monte Quemado: FML 3580; Río Saladillo: CENAI 9760–1; Villa La Punta: CENAI 239. BRAZIL: MATO GROSSO DO SUL STATE: Fazenda Fronteira, Porto Murtinho: CFBH 02496, ZUFMS-AMP 01441, 12496;

Fazenda Patolá: ZUFMS-AMP 01040, 01065, 10553, 12497. PARAGUAY: ALTO PARAGUAY DEPARTMENT: Parque Nacional Defensores del Chaco: MNHNPa 1084; Puerto Casado: MACN 8298. BOQUERÓN DEPARTMENT: Estancia Pozo Azul: MNHNPa 1077. PRESIDENTE HAYES DEPARTMENT: Estancia Juan de Salazar: MNHNPa 3433; Estancia La Victoria, Km 234 Ruta Trans-Chaco: MNHNPa 1089; Km 347 Ruta Trans-Chaco, 24 km NW Río Verde: MNHNPa 1075; Rancho Carandá, 14 km W Km 323 Ruta Trans-Chaco: MNHNPa 10418.

Odontophrynus maisuma: BRAZIL: RIO GRANDE DO SUL STATE: Tavares, Lagoa do Peixe: MZUSP 65312–3; Torres: MZUSP 122183–4, MNRJ 31420; Tramandaí: MZUSP 26825. SANTA CATARINA STATE: Balneário Gaivotas: MNRJ 31356. URUGUAY: CANELONES DEPARTMENT: Ruta Interbalnearia, km 63: ZVCB 1024; Balneario Parque del Plata: MNHN 9910. MONTEVIDEO DEPARTMENT: Carrasco: CENAI 3492. ROCHA DEPARTMENT: Cabo Polonio: ZVCB 3368 (holotype), ZVCB 1517 (paratype, CS), ZVCB 3361–3 (paratypes), 3365–7 (paratypes), 11465 (paratype), MLP A. 4926–7, (paratypes), MLP A. 4928 (ex ZVCB 11466, paratype, CS); La Coronilla: ZVCB 15076, 15078; Barra de Laguna de Rocha: LGE 19656.

Odontophrynus monachus: BRAZIL: MINAS GERAIS STATE: São Roque de Minas, Parque Nacional da Serra da Canastra, headwaters of the São Francisco River: ZUEC 4440 (holotype).

Odontophrynus occidentalis: ARGENTINA: BUENOS AIRES PROVINCE: Balneario Orense: CENAI 1652–5, 1657–9, 1663, MLP A. 1680; Claromecó: MACN 31951; Monte Hermoso: CENAI 1660, MACN 28310. CHUBUT PROVINCE: Telsen: MLP A. 3717; Arroyo Verde and Ruta Nacional 3: MACN 30346–50. CÓRDOBA PROVINCE: 2 km N Dean Funes: MACN

33914; Anisacate: IBA 1184; Capilla del Monte: IBA 483, MACN 20671; Cruz Chica: MACN 18337–42; La Cumbre: MACN 24642–4, 26228–31; Arroyo Las Águilas: MLP A. 734; Mina Clavero: CENAI 3445, 3557, 4046, 5926–7; Observatorio: MACN 34175–6; Río Ceballos: CENAI 7856; Río Cruz Grande: MACN 20601–2, 20604–5; Santa Rosa de Calamuchita: CENAI 0091 (three specimens); Valle Hermoso: CENAI 74 (four specimens). MENDOZA PROVINCE: 5 km from Mendoza: IBA 2204 (15 specimens); Eugenio Bustos: IBA 2104; El Nihuil: IBA 126 (three specimens); MACN 29158; La Primavera, 23 km E Mendoza: IBA 1346 (three specimens); Arroyo Los Toldos, 4km W Los Toldos: IBA 2079 (two specimens); Llanquanelo: MLP A. 596; Malargue: IBA 1571 (four specimens), MLP A. 2142; San Rafael: MLP A. 4382; Villa Atuel: MLP A. 3916. NEUQUÉN PROVINCE: Río Agrio: CENAI 112; Bajada del Agrio: IBA 1314 (seven specimens). RIO NEGRO PROVINCE: El Rincón: MLP A. 4384–5; General Conesa: MLP A. 2144; General Roca: CENAI 360–1; Meseta de Somuncurá: MACN 38689–90; Arroyo Nahuel Niyeu: MACN 28405; Arroyo Valcheta: IBA 2036 (eight specimens); Viedma: MACN 29029; Villa Regina: MACN 31385. SAN LUIS PROVINCE: Cerro Retana: MACN 38685–7; El Trapiche: IBA 1315 (six specimens); La Carolina: MACN 38688, 29866; Papagayo: MACN 29367–8.