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The amphibian type specimens preserved in the Museo Nacional de Ciencias Naturales (CSIC) of Madrid, Spain

(Amphibia)

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The historical focus of the type collection was South America and was primarily based on material collected by Jiménez de la Espada as member of the Comisión Científica al Pacífico (= Pacific Scientific Commission) (1862–1865). 39 amphibian taxa are based on material collected during this expedition, but currently specimens of only 28 taxa are still present in Madrid. During the following century only a few specimens increased the type collection with type material from Spain. During the last third of the 20th century and the beginning of the 21st century new type material from Iberian Peninsula and South American faunas have been added to the amphibians' type collection. We provide a first complete list with the 301 amphibian type specimens preserved in the Museo Nacional de Ciencias Naturales (MNCN) of Madrid. The collection currently houses type specimens of 65 taxa, 46 of them are considered as valid and the others 19 are synonyms. 39 taxa are represented by primary types (25 holotypes, 6 lectotypes, 1 neotype and 7 taxa based on syntype series). Furthermore, 26 taxa are exclusively represented by secondary types (paratypes). Moreover we preserve type specimens of 5 species, which are type species of their corresponding genus. We also present a list of the type specimens formerly preserved in the MNCN and now missing (Appendix 3).

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Introduction

His Majesty King Carlos III founded the Cabinet of Natural History, currently Museo Nacional de Ciencias Naturales, in 1771. It was the first Modern Museum and it was opened to the public in 1776.

It was after the Spanish-French war (1808–1812) when the collection began to grow. In 1835, Ramón de la Sagra came back from Cuba, with herpetological material collected by himself and by Dr. Poei between 1823 and 1835. Unfortunately the specimens collected by De la Sagra were sent to the Museum of Histoire Naturelle of París (MNHN) to be studied by Duméril and Bibron and the specimens never returned to Spain.

Type collection of the MNCN, starts with the types described by Jiménez de la Espada between 1871 and 1875 collected by the Pacific Scientific Commission (1862–1865) in the American continent. Between 1879 and 1882, Eduardo Boscá gave to the collection some type specimens of Iberian amphibians.

At the beginning of 1900 the collection grew with specimens collected in Syria and Persia by the brothers Manuel and Fernando Martínez de la Escalera. From 1905 and until 1910 several deposits were made by the Royal Society of Natural History, from Northwestern Africa. In 1914 the personal collection of Iberian amphibians and reptiles of E. Boscá was donated to the MNCN.

During the Spanish Civil War (1936-1939) the herpetological collections were not affected directly but it opened a break in the activity of the Zoology Department of the MNCN which unfortunately continued along decades. In the 80s, with the return of democracy, the amphibian and reptile collection began to grow again with new Spanish and South American specimens enriching the amphibian type collection.

Nowadays more than six million specimens are preserved in the zoological and geological collections of the MNCN. Of the about sixty thousand amphibians and reptiles from the collection, approaching thirty eight thousand of them are amphibians. It constitutes the largest herpetological collection of Spain and the most representative for Iberian Fauna in the world. Most of it, almost 90 %, is kept entirely in fluid (aqueous solutions of ethanol or formaldehyde) while the rest are disarticulated or stained and transparent skeletons. The collection also includes a small sub-collection of about 150 naturalized specimens, most of them from the XVIII & XIX centuries. For more details about composition, kind of preservation, number of species, see González-Fernández (1997).

Initially (until the decade of 1980) the specimens were numbered as lots and the number assigned to each of these batches was the jar number although in some cases the specimens had also a collection number. Nowadays the Collection is numbered in numerical growing order. Each specimen has an individual collection number, except larvae, which have a unique number for each lot. Unfortunately, we have been unable to find any collection catalogues before 1980 and only parts of the information related to specimens contained in old collection cards, entrance and preparation books, were preserved and there were labels inside or outside the bottles with some associated information until 1936 (the beginning of the last Spanish Civil War). Currently 95 % of the specimens in the collection are entered in a database and about 70 % of them are filled in our computerized catalogue.

How to use this catalogue

The catalogue follows the model proposed by Gassó et al. (2007), it is arranged in alphabetical order using the original species names. Author, year of publication and pagination are presented below. The reference section includes full reference of the publication. If the taxon is a synonymy, next line shows the current status, also followed by author, year of publication and pagination. Below this the information about types series is listed. For each type

specimen we list in this order (1) Type category, (2) Catalogue number of collection, (3) Sex, (4) Developmental stage, (5) Kind of preservation (if it is different from specimen preserved in fluid, see chapter Abbreviations), (6) Type locality, (7) Altitude over sea level, (8) Date of collection: day (two digits), month (two digits), and year (four digits) separated with “-”, (9) Collector. After that we include other relevant information about types such as remarks about locality, authors, etc. The presence of other type specimens in other institutions is cited below epigraph “Other Types”.

The synonymy follows Frost (2009).

The information provided is based on the original publications. Pagination, figures and plates are also given. If the original description was not available or it is completed, filled in with the information derived from museum records and labels, this information is between “[]”.

When a specimen is damaged or in poor conditions, this is also indicated under “Remarks”. Finally, when a specimen has been studied in a paper after its description before writing this catalogue and its catalogue number is expressly mentioned, we include this situation in the remarks field such as: cited and the corresponding references.

The location of other types of a particular series in other institutions is given. We requested all institutions to confirm us this information about the presence of type specimens and when some institution did not confirm this presence, we notify this circumstance with the note “not confirmed”, “missing”, or “without answer” beside the institution catalogue code.

Results

We provide a catalogue of 301 amphibian type specimens preserved in the MNCN.

This catalogue shows that the oldest types were collected in 1862, i.e. *Bufo marinus* var. *fluminensis* Jiménez de la Espada, 1875; *Bufo marinus* var. *platensis* Jiménez de la Espada, 1875, and at the moment they correspond to other accepted names. The oldest amphibian types accepted and preserved in the MNCN were collected in 1863, they are *Leptodactylus labrosus* Jiménez de la Espada, 1875; *Leptodactylus latinasus* Jiménez de la Espada, 1875, and *Rhinella iserni* Jiménez de la Espada, 1875. On the other hand the more recent type specimens were collected in 2003 *Pristimantis koehleri* Padial & De la Riva, 2009; *Pristimantis reichlei* Padial & De la Riva, 2009.

The amphibian type specimens come mainly from Bolivia (87), Ecuador (70) and Spain (59), followed by Brazil (41) and the rest countries with

less than 10 specimens per country. The origin of all type specimens (sorted by countries) is shown in Appendix 2.

All records from San José de Moti are followed by ⁽¹⁾ because this locality is the *terra typica* of 42 type specimens but this town has been object of a large controversy because it could correspond to several localities. The problem was discussed by González-Fernández et al. (2009). They consider that the correct locality is San José de Suno or San José Viejo (both names are the same), Orellana province, Ecuador. We assume this hypothesis in our work.

We provide a list ordered by species in alphabetical order with the number of type specimens currently preserved in the MNCN (Appendix 1).

We also supply a list of the type specimens formerly preserved in the MNCN that we have not been able to find (Appendix 3). Unfortunately we think that these specimens must be considered as missing today.

Finally we provide photographs of the Iberian holotype species; most of the other type specimens cited later on, are photographed in González-Fernández (2006).

Abbreviations

Ad	Adult
Sa	Subadult
Pm	Postmetamorphic
Jv	Juvenile
SSS	Complete preserved specimen as cleared and stained skeleton
SDS	Complete preserved specimen as disarticulated skeleton
Dat.	Date of collect
Loc.	Type locality
A.	Altitude
G.C.	Geographical coordinates
Leg.	Legit or collector
L&D	Legit & donator
CCP	Comisión Científica del Pacífico (=Pacific Scientific Commission)

Museum abbreviations

The following museum abbreviations were drawn from Frost (2009), except DZV, IPE and NMP, drawn directly from the original works.

AMNH	American Museum of Natural History, New York, USA.
CBF	Colección Boliviana de Fauna, La Paz, Bolivia.
CBG	Centro de Biodiversidad y Genética Universidad Mayor de San Simón Cochabamba (Bolivia).
CMNH	Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA.

DZV	Departament de Biología Animal, Fac. Biología, Universitat de Barcelona, Barcelona, Spain.
EBD	Estación Biológica de Doñana, Sevilla, Spain (CSIC).
IBUNAM	Universidad Nacional Autónoma de México, Instituto de Biología, México DF, México.
IPE	Instituto Pirenaico de Ecología (CSIC), Jaca, Zaragoza, Spain.
KU	University of Kansas, Museum of Natural History, Lawrence, Kansas, USA.
MBL	Universidade de Lisboa, Museu Bocage, Lisboa, Portugal.
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA.
MHNC	Museo de Historia Natural Alcide d'Orbigny, Cochabamba, Bolivia.
MNCN	Museo Nacional de Ciencias Naturales, Madrid, Spain (CSIC).
MNHNP	Museum National d'Histoire Naturelle, Paris, France.
MNK	Museo de Historia Natural Noel Kempff Mercado, Santa Cruz de la Sierra, Bolivia.
MVZ	University of California, Museum of Vertebrate Zoology, Berkeley, California, USA.
MZBE	Museu de Zoología de Barcelona, Spain.
NMP	National Museum, Prague, Czech Republic.
NHMW	Naturhistorisches Museum, Zoologische Abteilung, Wien, Austria.
RMNH	Nationaal Natuurhistorisch Museum (formerly Rijksmuseum van Natuurlijke Historie), Leiden, The Netherlands.
USNM	United States National Museum of Natural History, Smithsonian Institution, Washington, USA.
UTA	University of Texas at Arlington, Texas, USA.
ZFMK	Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany.
ZMA	Universiteit van Amsterdam, Zoölogisch Museum, Amsterdam, The Netherlands.
ZSM	Zoologische Staatssammlung München, Munich, Germany.

List of type specimens

Alytes dickhilleni Arntzen & García-París

Arntzen & García-París, 1995: 26

Holotype: MNCN 16662. – ♂? – Ad. – Loc.: Canillas de Aceituno, Sierra Tejeda, Provincia de Málaga, Spain. – Dat.: 16-05-1992. – L&D: M. García-París & J. W. Arntzen (Fig. 1).

Paratypes:

MNCN 16727, 16730-16734. – [5♂+♀]. – 6 Ad. – SSS. – Loc.: La Alcauca, Ventas de Zafarraya, Sierra Tejeda, Provincia de Granada, Spain. – Dat.: 24-03-1990. – L&D: M. García-París, J. Prieto & G. Astudillo. MNCN 16735-16738. – [♂+3♀]. – 4 Ad. – SSS. – Loc.:

Alcaucín, Sierra Tejeda, Provincia de Málaga, Spain.
– A.: [508] m. – Dat.: 26-05-1990. – L&D: M. García-París & C. Martín.

Other Types: Eight paratypes are in the herpetological collection of ZMA (8156, 9227-9229).

Alytes obstetricans almogavarri
Arntzen & García-París

Arntzen & García-París, 1995: 29.

Holotype: MNCN 16663. – ♂? – Ad. – Loc.: Rasos de Peguera, Berga, Provincia de Barcelona, Spain. – Dat.: 06-09-1992. – L&D: M. García-París & J. W. Arntzen.

Paratypes:

MNCN 16675-16680. – 6 Ad. – Loc.: Rasos de Peguera, Berga, Provincia de Barcelona, Spain. – Dat.: 06-09-1992. – L&D: M. García-París & J. W. Arntzen.

MNCN 16743-16748. – [4♀+2♂]. – 6 Ad. – SSS^(*). – Loc.: Rasos de Peguera, Berga, Provincia de Barcelona, Spain. – Dat.: 22-06-1990. – L&D: M. García-París.

MNCN 16743-16748. – [4♀+2♂]. – 6 Ad. – SSS^(*). – Loc.: Rasos de Peguera, Berga, Provincia de Barcelona, Spain. – Dat.: 22-06-1990. – L&D: M. García-París.

Remarks: (*) Tissues have been removed for electrophoretical studies. The rest is cleared and stained for osteological studies.

Other types: Six paratypes are in the herpetological collection of ZMA (9232).

Alytes obstetricans pertinax
García-París & Martínez-Solano

García-París & Martínez-Solano, 2001: 105.

Holotype: MNCN 23918. – ♂. – Ad. – Loc.: La Tola, Municipio de Casas Ibáñez, Provincia de Albacete, [Spain]. – Dat.: 14-06-2000. – L&D: M. García-París & I. Martínez Solano.

Paratypes: MNCN 172-173. – [♂+♀]. – 2 Ad. – Loc.: Valencia, [Spain]. – Dat.: 06-1907. – L&D: E. Boscá. MNCN 750-754. – 5 Ad. – Loc.: Xátiva, Valencia, [Spain]. – Dat.: 15-12-1876. – L&D: E. Boscá.

MNCN 23919-23922. – 4 Ad. – Loc.: Tielmes de Tajuña, Madrid, [Spain]. – Dat.: 05-2000. – L&D: M. García-París.

MNCN 23923. – Ad. – Loc.: Tielmes de Tajuña, Madrid, [Spain]. – Dat.: 31-08-2000. – L&D: M. García-París.

MNCN 24470-24471. – [2♀]. – 2 Ad. – Loc.: Barranco de Santa Águeda, Benicasim, Castellón, [Spain]. – Dat.: 03-03-1990. – L&D: M. García-París.

Atelopus planispina Jiménez de la Espada

Jiménez de la Espada, 1875a: 148.

Syntypes: MNCN 1390 (♀. – Ad.). – Loc.: Pie del Volcán Sumaco (= Base of Sumaco volcano), San José de Moti⁽¹⁾, región oriental del Ecuador.

MNCN 1391-1417. – 11♂, 4♀, 1♀: San José de Moti⁽¹⁾; 10♂ 1♀ (Var.): idem – Loc.: Pie del Volcán Sumaco, San José de Moti⁽¹⁾, región oriental del Ecuador. – Dat.: [05-1865]. – Leg.: M. J. de la Espada (CCP).

Bufo marinus var. *fluminensis*

Jiménez de la Espada.

Jiménez de la Espada, 1875a: 199.

Current name: *Rhinella marina* (Linnaeus, 1758)

Syntypes: MNCN 3062-3063, 3064 (Brasil), 3066-3069, 3072^(*). 8 Ad. – Dat.: [1862/1865]. – MNCN 3071. – Jv. – Loc.: Rio-Janeiro, [Brasil]. – Dat.: [10/11-1862].

MNCN 3073. – ♀? – Jv. – Loc.: Bahía, [Brasil]. – Dat.: [16/30-09-1862].

MNCN 3076. – 5 Pm. – Loc.: Tabatinga, orillas del Amazonas y frontera del Perú y Brasil. – Dat.: [08/09-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: (*) They are syntypes of “*Bufo marinus* var. *fluminensis*” from either Facenda Imperial de Santa Cruz (Brasil), Chonana (Guayas, Ecuador) or Baba-hoyo (Los Ríos, Ecuador). Currently it is impossible to precise the concrete locality because the former labels or cards collection lack precise information.

Bufo marinus var. *napensis* Jiménez de la Espada

Jiménez de la Espada, 1875a: 201.

Current name: *Rhinella marina* (Linnaeus, 1758).

Syntypes: MNCN 3058-3060. – 3♀. – 3 Ad. – Loc.: Archidona de Quijos, provincia oriental (Currently Napo Province) Ecuador. – Dat.: [04/05-1865].

MNCN 3061. – Ad. – Loc.: [Tabatinga, (Brazil and Perú border), Amazonas, Brasil]^(*). – Dat.: [08/09-1865]. MNCN 3074-3075. – 2 Jv. – Loc.: San José de Moti⁽¹⁾. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: (*) The formerly tag said: “*Localidad (locality): Tabatinga, Quito???*”. Probably it is a mistake and the specimen is one of two specimens (male and female) cited by Jiménez de la Espada (1875a:202) from Cotapino near S^a Rosa de Napo (Ecuador).

Bufo marinus var. *platensis* Jiménez de la Espada

Jiménez de la Espada, 1875a: 202.

Current name: *Rhinella arenarum* (Hensel, 1867).

Syntypes: MNCN 3101-3113, 3135-3143, 3145-3150^(*). – [19 Ad, 8 Jv, 4 Pm]. – Loc.: Rio-Grande-do-Sul, Brasil. – Dat.: [11/12-1862].

MNCN 3131-3134^(**). – [3 Ad Jv]. – Dat.: [1862/1865]. – Leg.: M. J. de la Espada.

MNCN 3144. – Ad. – [La Plata, Argentina]^(***). – Dat.: [01-1863].

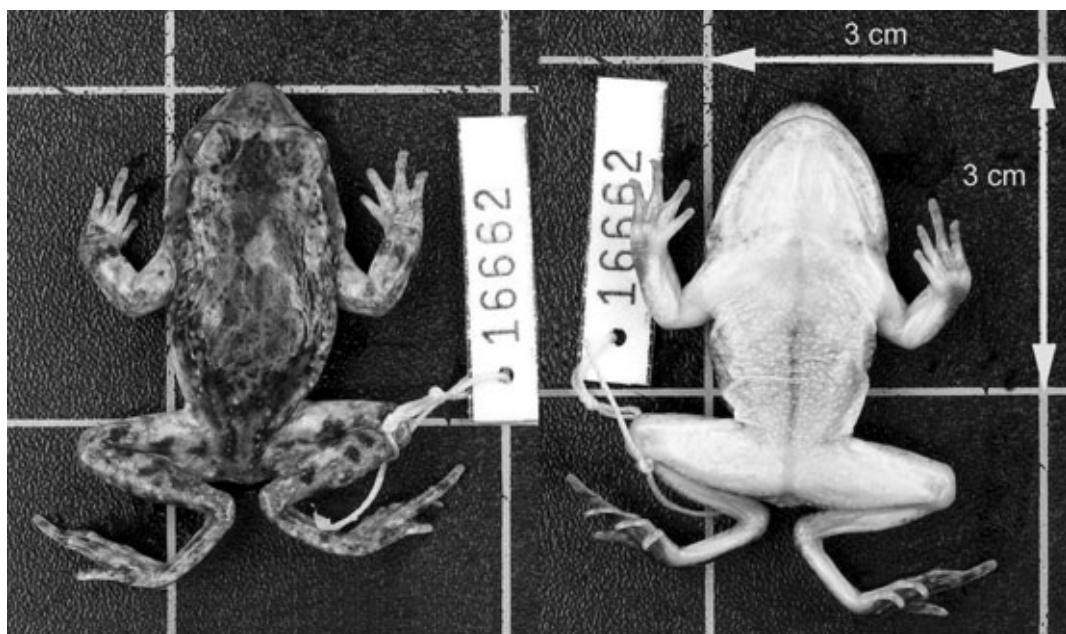


Fig. 1. MNCN 166662 Holotype of *Alytes dickhilleni* Arntzen & García-París, 1995

MNCN 15982 (***) . – ♀. – 2 Jv. – SDS. – [La Plata, Buenos Aires, Argentina]. – Dat.: [01-1863]. – Leg.: [F. Amor (CCP)].

Remarks: (*) Probably these series form a unique group which was broken up into three groups, in unknown date and circumstances for us. (**) Probably these are specimens cited by Jiménez de la Espada (1875a: 202-203) as *Bufo marinus* var. *platensis* from Uruguay and/or Argentina. (***) Jiménez de la Espada (1875a: 202-203) cites as *Bufo marinus* var. *platensis*, two very young specimens from Argentina but these specimens are larger than those quoted by Jiménez de la Espada, due to that it could be from other localities from Argentina or from Uruguay. (****) Two desarticulated specimens are mixed up. They were prepared in 1985 starting from a damaged jar. Probably they are syntypes of *Bufo marinus* var. *platensis* quoted by Jiménez de la Espada (1875a: 203) from Argentina, but see comment about locality below (**).

Centrolene geckoideum Jiménez de la Espada

Jiménez de la Espada, 1872: 88.

This species is the type species of the genus *Centrolene* Jiménez de la Espada.

Centrolene Jiménez de la Espada, 1872: 87.

Holotype: MNCN 1596. – Ad. – Loc.: H[abita] las riberas del río Napo (*) en el Ecuador. – Dat.: [1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: (*) Apparently there is a mistake in the locality because *Centrolene geckoideum* does not live in West of the Andes. See comment in González-Fernández (2006: 129).

Cerathyla braconnieri Jiménez de la Espada

Jiménez de la Espada, 1871: 64.

Current name: *Hemiphractus bubalus* (Jiménez de la Espada, 1871).

Holotype: MNCN 1735. – [♀]. – [Ad]. – Loc.: in Ecuador; in regioni sylvosa pagi Archidona. – Dat.: [04-1865]. – Leg.: M. J. de la Espada (CCP).

Cerathyla bubalus Jiménez de la Espada

Jiménez de la Espada, 1871: 64.

Current name: *Hemiphractus bubalus* (Jiménez de la Espada, 1871).

This species is the type species of the genus *Cerathyla* Jiménez de la Espada.

Cerathyla Jiménez de la Espada, 1871: 63.

Holotype: MNCN 1736. – [♀]. – [Ad]. – Loc.: Ecuador; ad pagum nemorosum prope Archidona. – Dat.: [05-1865]. – Leg.: M. J. de la Espada (CCP).

Cerathyla palmarum Jiménez de la Espada

Jiménez de la Espada, 1871: 64.

Current name: *Hemiphractus bubalus* (Jiménez de la Espada, 1871).

Holotype: MNCN 1738. – [♀]. – [Ad]. – Loc.: in Ecuador; ad lucos prope S. Jose de Moti⁽¹⁾ invenimus mensi Jun. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Cerathyla proboscidea Jiménez de la Espada

Jiménez de la Espada, 1871: 64.

Current name: *Hemiphractus proboscideus* (Jiménez de la Espada, 1871).

Holotype: MNCN 1737. – [Jv]. – Loc.: in Ecuador; ad sylvas prope Sumaco mens. Jun. nobis reperto. – Dat.: [16/17-06-1865]. – Leg.: M. J. de la Espada (CCP).

Chioglossa lusitanica longipes Arntzen,
Groenemberg, Alexandrino, Ferrand & Sequeira

Arntzen, Groenemberg, Alexandrino, Ferrand & Sequeira, 2007: 925–936.

Paratypes: MNCN 43641-43644. – ♂♂+♀♀. – 4 Ad. – Loc.: Mina das Águas Férreas, Serra de Santa Justa, Valongo, [Oporto], Douro Litoral in northwestern Portugal. – G.C.: 41°11'13.8"N, 08°29'18.4"W. – A.: 120 m. – Dat.: 18-05-2006. – L&D.: F. Sequeira & J. W. Arntzen.

Other types: The holotype and thirteen paratypes are housed in the RMNH (R and A 40113; R and A 18796-18805, 40114-40116). Four paratypes are in the MBL (MB-06-450-01 to MB-06-450-04). And fourty paratypes are in the ZMA (7307a-e, 7340a-j, Z 7358a-d, 7387a-d, 7402, 7482, 7588a-c, 7669, 8086a-k).

Chaunus tacana

Padial, Reichle, McDiarmid & De la Riva

Padial, Reichle, McDiarmid & De la Riva, 2006a: 59.

Current name: *Rhinella tacana* (Padial, Reichle, McDiarmid & De la Riva, 2006).

Paratypes: MNCN 42072. – ♀. – Jv. – Loc.: Huairuro, path from San José de Uchupiamonas to Apolo, Serranía Eslabón, Madidi National Park, Province Franz Tamayo, Department La Paz, Bolivia. – G.C.: 14°19'28.2"S, 68°05'36.1"W. – Dat.: 16-12-2003. – Leg.: J. M. Padial.

MNCN 42073. – ♂. – Ad. – Loc.: Arroyo Huacataya, path from San José de Uchupiamonas to Apolo, Serranía Eslabón, Madidi National Park, Province Franz Tamayo, Department La Paz, Bolivia. – G.C.: 14°20'12.1"S, 68°5'57.3"W. – Dat.: 17/18-12-2003. – Leg.: J. M. Padial, P. Comas & P. Macapua.

Other types: The holotype and two paratypes are in the MNK (A7188, A7187, 7194).

Cystignathus hidalgoi Jiménez de la Espada

Jiménez de la Espada, 1875a: 76.

Current name: *Batrachyla taeniata* (Girard, 1855).

Syntypes: MNCN 3528(♀)-3531-3532(♂♀). – 3 Ad. – Loc.: Valdivia, Chile. – Leg.: M. J. de la Espada & R. A. Philippi (CCP).

Discoglossus jeanneae Busack

Busack, 1986: 54.

Paratypes: MNCN 16788-16789 (formerly CM 54581-54582). – ♀+♂. – 2 Ad. – Loc.: Along highway C-440, between 3.7 and 11.4 km WNW, Los Barrios. Cádiz Province, Spain. – Dat.: 19-03-1971. – Leg.: S. D. Busack. (Carnegie Museum of Natural History).

Other types: The holotype (CM 54657) and twenty paratypes (CM 52126, 52128, 52129, 52475, 52476, 53087, 53119, 53324, 53884a-5388d, 54244, 54608-54610, 54704, 55742-55744) are in the CMNH.

Edalorhina perezi Jiménez de la Espada

Jiménez de la Espada, 1871: 58.

This species is the type species of the genus *Edalorhina* Jiménez de la Espada.

Edalorhina Jiménez de la Espada, 1871: 58.

Holotype: MNCN 1673. – ♀? – Ad. – Loc.: in Ecuador; ad ripas flum. Napo mens. [Napo (= Puerto Napo), Napo province]. – Dat.: 04-1885^(*). – Leg.: M. J. de la Espada (CCP).

Remarks: ^(*) Jiménez de la Espada (1871: 58) states: “nobis invento” (= collected by us) but in Jiménez de la Espada (1875a: 114) he says “conseguida en mayo por unos indios” (= collected by several natives in May). We think that the correct date of collect is April.

Eleutherodactylus lehri

Padial, Chaparro & De la Riva

Padial, Chaparro & De la Riva, 2007b: 115.

Current name: *Oreobates lehri* (Padial, Chaparro & De la Riva, 2007).

Paratypes: MNCN 43740-43741. – ♀+♂. – 2 Ad. – Loc.: Esperanza, Kosñipata Valley, Department Cusco, Perú. – G.C.: 13°10'56"S, 71°36'14"W. – A.: 2600-2800 m. – Dat.: 26-01 to 23-02-2003. – Leg.: Juan Carlos Chaparro & Armando Mendoza.

Remarks: Cited in Padial et al. (2008a: 773).

Other types: The holotype (USNM 537848) and eleven paratypes (USNM 537846, 537847, 537849-537857) are held in the USNM. One paratype is in the AMNH (AMNH 11831 in the original publication, currently is AMNH A157013). Thirteen are in the MHNC (4557, 4564-7, 4583-6, 4601-2, 4682-3) without answer.

Eleutherodactylus madidi

Padial, González & De la Riva

Padial, González & De la Riva, 2005a: 319.

Current name: *Oreobates madidi* (Padial, González & De la Riva, 2005).

Paratypes: MNCN 42014-42015. – 2♂. – 2 Ad. – Loc.: Arroyo Huacataya, Serranía de Eslabón, Área Natural de Manejo Integrado Madidi, Province Franz Tamayo^(*), Departamento La Paz, Bolivia. – G.C.: 14°20'12"S 68°05'57"W. – A.: 1500 m. – Dat.: 17-12-2003. – Leg.: J. M. Padial.

Remarks: ^(*) In the original paper the province is given as Franz Tamayo but geographical coordinates show that the Huacataya stream and Serranía de Eslabón are in the vicinity of San José de Uchupiamonas, Abel Iturralde province. Cited in Padial et al. (2007b: 122, 2008a: 773). MNCN 42014: Cited in Padial et al. (2008b: 358).

Other types: The holotype and three paratypes are in the Amphibian Collection of the MNK (MNK-A 7856, MNK-A 4137, 4138, 7197).

Eleutherodactylus pluvicanorus De la Riva & Lynch

De la Riva & Lynch, 1997: 153.

Current name: *Pristimantis pluvicanorus* (De la Riva & Lynch, 1997).

Paratypes: MNCN 43293 (Published as CET A157). – ♀. – Ad. – Loc.: Sehuecas, approximately 25 km N Monte Punco, Provincia Carrasco, Departamento Cochabamba, Bolivia. – G.C.: 17°29'S, 65°16'W. – A.: 2300 m. – Dat.: 04-01-1990. – Leg.: I. De la Riva.

MNCN 43294 (Published as CET A160)-43295 & 43296 (Published as CET A158-A159) . – ♂ – 2♀. – 3 Ad. – Loc.: Sehuecas, approximately 25 km N Monte Punco, Provincia Carrasco, Departamento Cochabamba, Bolivia. – Dat.: [03-01-1990].

MNCN 43297 (Published as CET A161). – ♂. – Ad. – Loc.: approximately 15 km N Mairana, Provincia Florida, Departamento Santa Cruz, Bolivia. – G.C.: 18°06'S, 63°54'W. – A.: 2000 m. – Dat.: 07-04-1990. Leg.: I. De la Riva, C. Tapia, M. J. Ledesma, J. Dorda & J. Trueba.

Remarks: Cited in Padial et al. (2007a: 240).

Other types: The holotype and four paratypes are in the MNK (MNK AM-1100, MNK AM-1101-4). Nine paratypes are in the ZFMK (60186-91, 60195-96, 60203). Twenty-nine paratypes are housed in the UTA (A 45607-10, 45613-26, 45631-37, 45639-41, 45671).

Gephyromantis runewsweeki Vences & De la Riva

Vences & De la Riva 2007: 136.

Paratype: MNCN 42085. – ♂. – Ad. – Loc.: Top of Maharira mountain, Ranomafana National Park, south-eastern Madagascar. – G.C.: 21°20'05.3"S, 47°24.747"E. – A.: 1350 m. – Dat.: 25-01-2004. – Leg.: M. Vences, I. De la Riva & T. Rajearison.

Other types: The holotype is in the ZSM (49/2005).

Hyla antoniochoai De la Riva & Chaparro

De la Riva & Chaparro, 2005: 516.

Paratype: MNCN 42013. – Jv. – Loc.: Esperanza, Cosñipata Valley, Departamento Cusco, Perú. – G.C.: 13°10.991"S, 071°63.487"W. – A.: 2817 m. – Dat.: 29-01-2003. – Leg.: Armando Mendoza.

Other types: The holotype is in the MHNC (0068).

Hyla delarivai Köhler & Lötters

Köhler & Lötters, 2001: 176.

Current name: *Dendropsophus delarivai* (Köhler & Lötters, 2001).

Paratypes: MNCN 23694-23695. – ♂♀. – 2 Ad. – Loc.: 15 km South of Paractito on the road to El Palmar, Provincia Chapare, Departamento Cochabamba, Bolivia. – G.C.: 17°06'06"S, 65°30'36"W. – A.: 700-800 m. – Dat.: 20-12-1998.

MNCN 23696-23697. – ♀♂. – 2 Ad. – Loc.: approximately 24 km South of Paractito on the road [from] El Palmar to Cochabamba, Bolivia. – G.C.: 17°06'28"S, 65°33'52"W. – A.: 900-1000 m. – Dat.: 19-12-1998. – Leg.: J. Köhler & G. Suárez.

Other types: In the CBF, are kept the holotype (CBF 3332) and three paratypes (CBF 3331, 3336, 3337). Six paratypes are housed in the ZFMK (67139-42, 68658, 70317). Three paratypes are in the ZSM (1/1999, 2/1999, 3/1999). One paratype is in the KU (224700).

Hyla perezii Boscá

Boscá, 1880: 181.

Current name: *Hyla meridionalis* (Boettger, 1874).

Syntypes: MNCN 3435-3440, 3639 (SDS). – 7 Ad. – Loc.: Arroyo del Buey, Cabeza del Buey, [Badajoz province, Extremadura region, Spain]. – Dat.: [04-1879]. – L&D.: E. Boscá.

Hyla reticulata Jiménez de la Espada

Jiménez de la Espada, 1871: 61.

Current name: *Dendropsophus triangulum* (Günther, 1869).

Holotype: MNCN 3474. – [Ad]. – Loc.: in Ecuador; ad ripas flum. Napo prope Mazán (Currently Mazán is in Loreto province, Peru). mens. nobis reperta. – Dat.: [08-1865]. – Leg.: M. J. de la Espada (CCP).

Hyla roeschmanni De Grys

De Grys, 1828: 315.

Current name: *Hypsiboas raniceps* Cope, 1862.

Neotype: MNCN 42319 designated by Padial, Köhler & De la Riva (2006b:65). – ♂. – Ad. – Loc.: from Bella Vista, Province Iténez, Departamento de Beni, Bolivia. – G.C.: 13°16' S, 63°42' W. – Dat.: 25-03-2003. – Leg.: J. M. Padial.

Remarks: Synonymy by Padial, Köhler & De la Riva (2006b: 65).

Hyloxalus bocagei Jiménez de la Espada

Jiménez de la Espada, 1871: 59.

Lectotype: MNCN 1583 designated by Coloma (1995: 21). – Loc.: in Ecuador; ad sylvas pagi S. Jose de Moti⁽¹⁾ men. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: The specimen is partially damaged.

Paralectotype: MNCN 1584 designated by Coloma (1995:21). – Loc.: in Ecuador; ad sylvas pagi S. Jose de Moti⁽¹⁾ men. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: The specimen is partially damaged.

Hyloxalus fuliginosus Jiménez de la Espada

Jiménez de la Espada, 1871: 59.

This species is the type species of the genus *Hyloxalus* Jiménez de la Espada, 1871.

Hyloxalus Jiménez de la Espada, 1871: 59.

Lectotype: MNCN 1586 designated by Savage (1968: 758). – ♀. – Ad. – Loc.: in Ecuador; ad nemores pagi S. Jose de Moti⁽¹⁾. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Paralectotype: MNCN 1585 designated by Savage (1968: 758). – ♀. – Ad. – Loc.: Hab. in Ecuador; ad nemores pagi S. Jose de Moti⁽¹⁾. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: The specimens are partially damaged.

Hylodes philippi Jiménez de la Espada

Jiménez de la Espada, 1875a: Pl. 3, fig. 2.

Current name: *Oreobates quixensis* (Jiménez de la Espada, 1872).

Holotype: MNCN 1600. – Loc.: [San José de Moti⁽¹⁾, Orellana, Ecuador]. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: Cited in Lynch & Schwartz (1971) with the number 202 (former jar number).

Hylodes verrucosus Jiménez de la Espada

Jiménez de la Espada, 1875a: Pl. 3, fig. 1.

Current name: *Oreobates quixensis* (Jiménez de la Espada, 1872).

Holotype: MNCN 1599. – Ad. – Loc.: [San José de Moti⁽¹⁾, Orellana, Ecuador]. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: The specimen was not described in Jiménez de la Espada, 1872 as stated by Frost (2009), only its figure was included in Jiménez de la Espada (1875: Pl. 3, fig. 1).

Ichthyophis bernisi Salvador

Salvador, 1975: 367.

Holotype: MNCN 1240. – Ad. – Loc.: Isla de Java, [Indonesia]. – Dat.: <1898.

Ischnocnema sanderi Padial, Reichle & De la Riva

Padial, Reichle & De la Riva, 2005b: 187.

Current name: *Oreobates sanderi* (Padial, Reichle & De la Riva, 2005).

Paratypes: MNCN 42016-42017. – ♂♂. – Ad/Sa. – Loc.: Arroyo Bilunto, Chunirumi Valley, Bilunto Mountains, Area Natural de Manejo Integrado Madidi, near Santa Cruz de Valle Ameno, Province Franz Tamayo, Departament La Paz, Bolivia. – G.C.: 14°38'24"S, 68°31'45"W. – A.: 1800 m. – Dat.: 24-11-1999. – Leg.: I. de la Riva, J. Bosch, S. Reichle, H. Pröller & A. Apaza.

Remarks: Cited in Padial et al. (2007b: 122, 2008a: 741, 773).

Other types: In the CBF are preserved the holotype (CBF 5385) and nine paratypes (CBF 4119, 4218–4223, 5383, 5384). Two paratypes are in the ZFMK (80600, 80601). Three paratypes are in the MNK (NKA 6563, 6695, 6696).

Leptodactylus goliath Jiménez de la Espada

Jiménez de la Espada, 1875a: 57.

Current name: *Leptodactylus pentadactylus* (Laurenti, 1768).

Lectotype: MNCN 1691 designated by Heyer & Peters (1971: 167). – ♀. – Ad. – Loc.: Archidona [de Quijos], [Napo], Ecuador. – Dat.: [04/05-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: The lectotype's locality was erroneously given as "Quijos, Ecuador" by Heyer & Peters (1971: 167). The lectotype is from "Archidona (Eastern Ecuador)" according to museum records. Cited in Heyer & Peters (1971: 167).

Paralectotypes: MNCN 1690 designated by González-Fernández (2006: 139). – ♂. – Ad. – Loc.: Archidona [de Quijos], [Napo], Ecuador. – Dat.: [04/05-1865].

MNCN 1697 designated by González-Fernández (2006: 140). – ♀. – Jv. – Loc.: Sierra de Guacamayos, Chinitambo [between Cosanga and Sarayacu], Napo, Ecuador. – Dat.: [05-04-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: See comments about these members of typical series in González-Fernández (2006: 139–140).

Leptodactylus labrosus Jiménez de la Espada

Jiménez de la Espada, 1875a: 36.

Lectotype: MNCN 3524 designated by Heyer & Peters (1971: 164). – ♀. – Ad. – Loc.: Orillas del río Daule, Pimocha, [Guayas], Ecuador. – Dat.: [<06-1862]. – Leg.: A. Destruge (CCP).

Leptodactylus latinatus Jiménez de la Espada.

Jiménez de la Espada, 1875a: 40.

Holotype: MNCN 1695. – ♀. – Ad. – Loc.: cercanías de Montevideo [Canalones, Uruguay]. – Dat.: [12/01-1863]. – Leg.: M. J. de la Espada (CCP).

Remarks: Cited in Heyer (1969: 1,7). The specimen is in very poor conditions.

Leptodactylus stenodema Jiménez de la Espada

Jiménez de la Espada, 1875a: 64.

Lectotype: MNCN 1687 designated by Heyer & Peters (1971: 167). – ♀. – Ad. – Loc.: San José de Moti⁽¹⁾ (Canton de Quijos)^(*) [Napo, Ecuador]. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: ^(*) The lectotype locality was erroneously given as "Quijos, Ecuador" by Heyer & Peters (1971: 168). The correct province is Orellana. Cited in Heyer (1979: 34-36).

Paralectotype: MNCN 1688. – ♀. – Ad. – Loc.: San José de Moti⁽¹⁾ (Canton de Quijos), [Napo, Ecuador]. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Leptodactylus wuchereri Jiménez de la Espada

Jiménez de la Espada, 1875a: 68.

Current name: *Leptodactylus labyrinthicus* (Spix, 1824: 31).

Holotype: MNCN 1694. – ♀. – Ad. – Loc.: República Argentina. – Dat.: [10/04-1863]. – Leg.: F. Amor (CCP).

Remarks: Cited as *Leptodactylus pentadactylus* (Laurenti, 1768) in Heyer (1969: 6-8); as *Leptodactylus labyrinthicus* (Spix, 1824) in Heyer (1979: 14-15, 2005: 340); as likely *Leptodactylus mystacinus* (Burmeister, 1861: 532) De la Riva (2000: 81). See comment about this controversy in Gonzalez-Fernández (2006: 137-138).

Limnophys napaeus Jiménez de la Espada

Jiménez de la Espada, 1871: 60.

Current name: *Strabomantis cornutus* (Jiménez de la Espada, 1871: 60).

Holotype: MNCN 1604. – Ad. – Loc.: in Ecuador; ad ripas flum. Suno^(*) in mense Jun. – Dat.: [06-1885]. – Leg.: M. Jiménez de la Espada (CCP).

Remarks: ^(*) The correct locality is in Suno river banks, probably San José de Moti⁽¹⁾, Orellana province, Ecuador.

Nototrema testudineum Jiménez de la Espada

Jiménez de la Espada, 1871: 62.

Current name: *Gastrotheca testudinea* (Jiménez de la Espada, 1871: 62).

Holotype: MNCN 3510. – [♀]. – Ad. – Loc.: in Ecuador; prope a monti olim ignivomo Sumaco in mens. – Dat.: [06-1865]. – Leg.: M. J. de la Espada. – Don.: CCP.

Remarks: Given as MNCN 155 (former number of jar) "San José de Moti⁽¹⁾, Provincia Napo, Ecuador" by Duellman (1977: 20). Cited by Duellman (1974: 4).

Oreobates quixensis Jiménez de la Espada

Jiménez de la Espada, 1872: 87.

This species is the type species of the genus *Oreobates* Jiménez de la Espada.

Oreobates Jiménez de la Espada, 1872: 87.

Lectotype: MNCN 1708. – Designated by Padial et al. (2008a: 762). – ♀. – Ad. – Loc.: H[abita] la provincia de Quijos en el Ecuador. S. José de Moti⁽¹⁾. – Dat.: [06-1865]. – Leg.: M. J. de la Espada (CCP).

Paralectotypes: MNCN 1709-1721. – Designated by Padial et al. (2008a: 762). – 4♀+5♂+2?? – 13 Ad^(*). – Loc.: H[abita] la provincia de Quijos en el Ecuador. [Archidona, Napo, Ecuador]. – Dat.: [04/05-1865]. – Leg.: M. J. de la Espada (CCP).

Remarks: ^(*) Jiménez de la Espada (1875: 104) only mentions 11 specimens. González-Fernández (2006: 123) suggested that another two specimens probably could be syntypes of *Hylodes philippi*, *Hylodes verrucosus* or both, but later Padial et al. (2008a: 762) proposed that they are all assignable to *O. quixensis*.

Oxyrhynchus iserni Jiménez de la Espada

Jiménez de la Espada, 1875a: 185.

Current name: *Rhinella iserni* (Jiménez de la Espada, 1875).

Holotype: MNCN 3057. – ♀. – Ad. – Loc.: Andes del Chanchamayo, al N. E. de Tarma, Perú. – Dat.: [09/11-1863]. – Leg.: J. Isern (CCP).

Remarks: Cited in Hoogmoed (1986: 149).

**Pelodytes ibericus Sánchez-Herráiz,
Barbadillo-Escrivá, Machordom & Sanchiz**

Sánchez-Herráiz, Barbadillo-Escrivá, Machordom, & Sanchiz, 2000: 111.

Holotype: MNCN 23662. – ♂. – Ad. – Loc.: [A 300 m del Lucio de Bolín], Doñana Biological Reserve, Province of Huelva, Spain. – G.C.: 36°59' N, 06°27' W. – A.: 10 m. – Dat.: 26-11-1997. – L&D.: C. Díaz-Paniagua & M. Tejedo. (Fig. 2).

Paratypes: MNCN 20115-20119. – ♂♂. – Ad. – SSS. – Loc.: [A 300 m del Lucio de Bolín], Doñana Biological Reserve, Province of Huelva, Spain. – G.C.: 36°59' N, 06°27' W. – A.: 10 m. – Dat.: 18-01-1994.

MNCN 23663-23665. – ♀+♂♂. – Ad. – Loc.: [A 300 m del Lucio de Bolín], Doñana Biological Reserve, Province of Huelva, Spain (Collected at the same time as the holotype). – G.C.: 36°59' N, 06°27' W. – A.: 10 m. – Dat.: 26-11-1997. – L&D.: C. Díaz-Paniagua & M. Tejedo.

Other types: One paratype is held in the EBD (29822). One paratype is preserved in the MBL (Amphibia 391).

**Phrynobius ankohuma Padial & De la Riva
in De la Riva**

De la Riva, 2007: 248.

Current name: *Psychrophrynella ankohuma* (Padial & De la Riva in De la Riva, 2007).

Paratypes: MNCN 43228. – Loc.: Ankho Uma (Ancoma), Provincia Larecaja, Departamento de La Paz, Bolivia. – G.C.: 15°44'33.0"S, 68°29'22.8"W.

MNCN 43229-43230, 43232-43236^(*). – Loc.: Cooco, Provincia Larecaja, Departamento de La Paz, Bolivia (Collected at the same time as the holotype). – G.C.: 15°47'14.4"S, 68°26'55.9"W. – Dat.: 09-03-2004. – Leg.: J. M. Padial & C. Ureña.

Other types: The holotype and ten paratypes are in the MNK (A 7280, A 7277-7279, 7281-7287). Three paratypes are in the CBF (CBF 5982-5984).

Phrynobius condoriri

De la Riva, Aguayo & Padial in De la Riva

De la Riva, 2007: 257.

Current name: *Psychrophrynella condoriri* (De la Riva, Aguayo & Padial in De la Riva, 2007).

Paratypes: MNCN 43237-43238. – ♀♀. – 2 Ad. – Loc.: Amaguaya, Provincia Larecaja, Departamento de La Paz, Bolivia (Collected at the same time as the holotype). – G.C.: 15°57'24.7"S, 68°15'32.0"W. – A.: 3760 m. – Dat.: 28-02-2006. – Leg.: I. De la Riva, J. M. Padial, R. Aguayo & N. Ayllón.

Other types: The holotype (CBF 5988) and two paratypes (CBF 5989, 5990) are in the CBF.

Phrynobius harveyi

Muñoz, Aguayo & De la Riva in De la Riva

De la Riva, 2007: 259.

Current name: *Psychrophrynella harveyi* (Muñoz, Aguayo & De la Riva in De la Riva, 2007).

Paratype: MNCN 42029. – ♀. – Ad. – Loc.: 2.5 km N of Jatum Incacasani, Provincia Ayopaya, Departamento de Cochabamba, Bolivia (Collected at the same time as the holotype). – G.C.: 16°44'11"S, 66°28'39"W. – A.: 3600 m. – Dat.: 15-01-2004. – Leg.: Arturo Muñoz.

Other types: The holotype and two paratypes are housed in the MHNC (A989, A990-91).

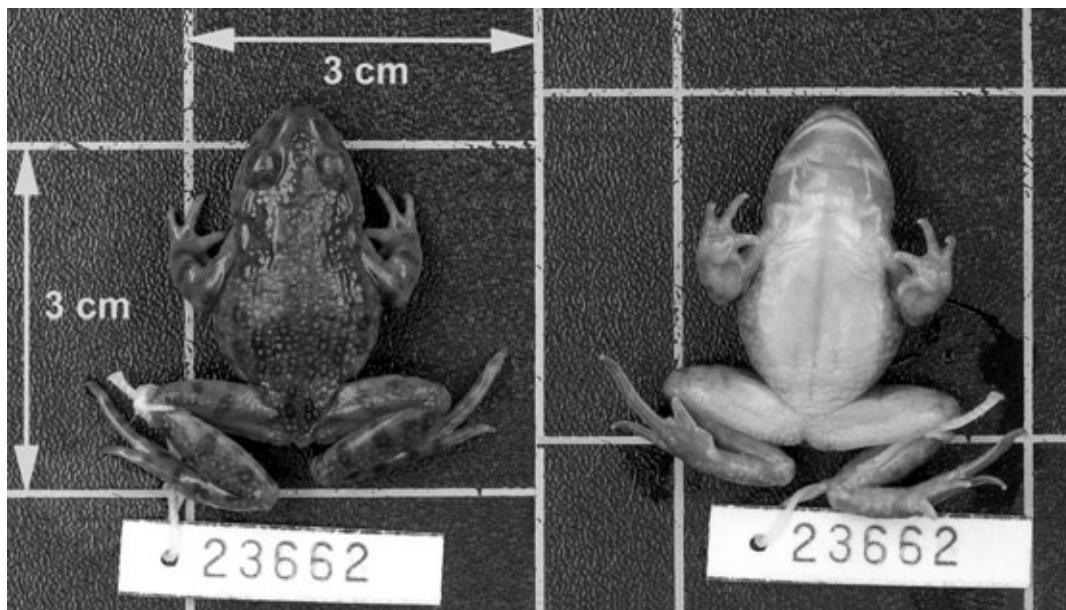


Fig. 2. MNCN 23662 Holotype of *Pelodytes ibericus* Sánchez-Herráiz, Barbadillo-Escrivá, Machordom & Sanchiz, 2000.

Phrynobatrachus illampu

De la Riva, Reichle & Padial in De la Riva

De la Riva, 2007: 263.

Current name: *Psychrophrynella illampu* (De la Riva, Reichle & Padial in De la Riva, 2007).

Paratypes: MNCN 42021-42024. – Loc.: 18.5 km from Sorata on Sorata-Mapiri road, Provincia Larecaja, Departamento de La Paz, Bolivia (Collected with the holotype). – G.C.: 15°44'07"S, 68°38'11"W. – A.: 3840 m. – Dat.: 29-11-1999. – Leg.: I. De la Riva, J. Bosch & Amira Apaza.

MNCN 42025-42026. – Loc.: 18.5 km from Sorata on Sorata-Mapiri road, Provincia Larecaja, Departamento de La Paz, Bolivia. – G.C.: 15°44'07"S, 68°38'11"W. – Dat.: 09-03-2004. – Leg.: I. De la Riva, J. Bosch & A. Apaza.

MNCN 42027-42028. – Loc.: 18.5 km from Sorata on Sorata-Mapiri road, Provincia Larecaja, Departamento de La Paz, Bolivia. – G.C.: 15°44'07"S, 68°38'11"W. – [3787 m]. – Dat.: 01-03-2006. Leg.: I. De la Riva, J. M. Padial, R. Aguayo & N. Ayllón

Other types: The holotype (CBF 5991) and eight paratypes (CBF 5992-5999) are in the CBF. Three paratypes are in the MNK (A72774-76).

Phrynobatrachus illimani

De la Riva & Padial in De la Riva

De la Riva, 2007: 264.

Current name: *Psychrophrynella illimani* (De la Riva & Padial in De la Riva, 2007).

Paratypes: MNCN 42070-42071. – 2♀. – 2 Ad. – Loc.: Río Caballuni, 5 km from Totoral on the road to Cooperativa 15 de Agosto, Provincia Sud Yungas, Departamento de La Paz, Bolivia (Collected at the same time as the holotype). – G.C.: 16°36'48"S, 67°44'50"W. – [3594 m]. – Dat.: 23-11-2002. – Leg.: I. De la Riva, J. M. Padial & P. Coca.

Other types: The holotype (CBF 6000) and one paratype (CBF 6001) are in the CBF.

Phrynobatrachus kallawaya

De la Riva & Martínez-Solano in De la Riva

De la Riva, 2007: 265.

Current name: *Psychrophrynella kallawaya* (De la Riva & Martínez-Solano in De la Riva, 2007).

Paratypes: MNCN 42056-42061. – Loc.: Caalaya, Provincia Saavedra, Departamento de La Paz, Bolivia (Collected at the same time as the holotype). – G.C.: 15°06'31"S, 69°01'47"W. – A.: 3600 m. – Dat.: 18-03-2001. – Leg.: I. De la Riva & I. Martínez-Solano.

Other types: The holotype (CBF 6005) and five paratypes (6002-6004, 6006, 6007) are in the CBF.

Phrynobius katantika

De la Riva & Martínez-Solano in De la Riva.

De la Riva, 2007: 266.

Current name: *Psychrophrynella katantika* (De la Riva & Martínez-Solano in De la Riva, 2007).

Paratypes: MNCN 42062-42069. – Loc.: Pelechuco, Provincia Franz Tamayo, Departamento de La Paz, Bolivia (Collected at the same time as the holotype). – G.C.: 14°49'S, 69°05'W. – A.: 3600 m. – Dat.: 13/15-03-2001. – Leg.: I. De la Riva & I. Martínez-Solano.

Other types: The holotype (CBF 6008) and seven paratypes (CBF 6009-6015) are in the CBF.

Phrynobius quimsacruzis

De la Riva, Reichle & Bosch in De la Riva

De la Riva, 2007: 269.

Current name: *Psychrophrynella quimsacruzis* (De la Riva, Reichle & Bosch in De la Riva, 2007).

Paratypes: MNCN 42034-42036. – Loc.: a point between Choquetanga and Mina Caracoles, Provincia Inquisivi, Departamento de La Paz, Bolivia (Collected at the same time as the holotype). – G.C.: 16°52'39"S, 67°18'23"W. – A.: 3660 m. – Dat.: 07-12-1999. – Leg.: I. De la Riva, S. Reichle & J. Bosch.

Other types: The holotype (CBF 6016) and three paratypes (CBF 6021-6023) are in the CBF.

Phrynobius saltator

De la Riva, Reichle & Bosch in De la Riva

De la Riva, 2007: 271.

Current name: *Psychrophrynella saltator* (De la Riva, Reichle & Bosch in De la Riva, 2007).

Paratypes: MNCN 42044-42049, 43231, 44208 (♂. – Ad.). – Loc.: ca. 15 km (by road) from Charazani on the road to Apolo, Provincia Saavedra, Departamento de La Paz, Bolivia (Collected at the same time as the holotype). – G.C.: 15°10'45"S, 68°53'29"W. – A.: 2550 m. – Dat.: 27-11-1999. – Leg.: I. De la Riva, J. Bosch, S.

Other types: The holotype (CBF 6031) and seven paratypes (CBF 6032-6038) are in the CBF.

***Pleurodema granulosum* Jiménez de la Espada**

Jiménez de la Espada, 1875a: 95.

Current name: *Pleurodema bibroni* Tschudi, 1838: 85.

Syntypes: MNCN 1685-1686. – 2♀. – 2 Ad. – Loc.: Cercanías de Montevideo, [Canelones, Uruguay]. – Dat.: [12/01-1863]. – Leg.: Sr. Gibert (CCP).

***Pristimantis galbi* Jiménez de la Espada**

Jiménez de la Espada, 1871: 61.

This species is the type species of the genus *Pristimantis* Jiménez de la Espada.

Pristimantis Jiménez de la Espada, 1871: 61.

Syntypes: MNCN 1601-1603. – Loc.: in Ecuador; ad sylvas vicinas pagi^(*) S. Jose de Moti⁽¹⁾. – Dat.: [07-1885]. – Leg.: M. J. de la Espada (CCP).

Remarks: ^(*)The correct locality is a forest in the vicinity of Jose de Moti⁽¹⁾, Orellana province, Ecuador. The specimens are partially damaged.

***Pristimantis koehleri* Padial & De la Riva**

Padial & De la Riva, 2009: 107.

Paratypes: MNCN 42990-42991. – 2♂. – 2 Ad. – Loc.: km 6 of Angostura-Samaipata road, Departamento Santa Cruz, Bolivia (Collected at the same time as the holotype). – G.C.: 18°11'S, 63°34'W. – Dat.: 03-01-2003. – L&D.: J. M. Padial.

MNCN 43054^(*). – ♂. – Ad. – Loc.: Espejillos, Departamento Santa Cruz, Bolivia. – G.C.: 17°50'S, 63°25'W. – Dat.: 26-11-2003. – Leg.: J. M. Padial & E. Ávila.

MNCN 42983, 42985-42986, 43013^(**). – 4♀. – 4 Sa. – Loc.: La Chonta, Amboró National Park, Departamento Santa Cruz, Bolivia. – G.C.: 17°39'36"S, 63°42'6.6"W. – Dat.: 21/22-04-2003. – Leg.: J. M. Padial & R. de Sá.

MNCN 43040^(***). – ♂. – Ad. – Loc.: La Chonta, Amboró National Park, Departamento Santa Cruz, Bolivia. – G.C.: 17°39'36"S, 63°42'6.6"W. – Dat.: 05-11-2003. – Leg.: J. M. Padial & E. Ávila.

Remarks: ^(*)Cited “in error” as MNCN 42018. ^(**)cited “in error” as MNCN 42016; both as *Eleutherodactylus cf. peruvianus* (Stegneger, 1904) in Padial & De la Riva (2005: 379). ^(**)Cited “in error” as 43014 in the original paper (Padial & De la Riva, 2009: 107).

Other types: The holotype and four paratypes are held in the MNK (A6626, A-6627, 7170, 7172, 7174). Six paratypes are in the ZFMK (80005-6, 80007, 79991, 79993, 79992).

***Pristimantis reichlei* Padial & De la Riva**

Padial & De la Riva, 2009: 111.

Paratypes: MNCN 43012, 43024, 43028. – 2♀ 1♂. – 3 Ad. – Loc.: Los Guácharos, Carrasco National Park, Provincia Chapare, Departamento Cochabamba, Bolivia (Collected at the same time as the holotype).

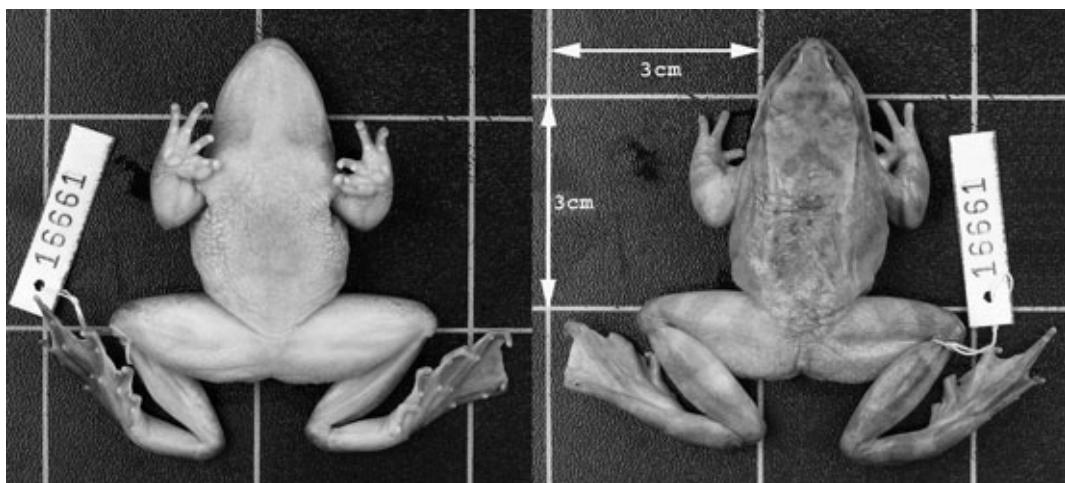


Fig. 3. MNCN 16661 Holotype of *Rana pyrenaica* Serra-Cobo, 1993.

-G.C.: 17°03'51.5"S, 65°28'34.7"W. - A.: 500 m. - Dat.: 10/14-07-2003. - Leg.: J. M. Padial & D. Embert. MNCN 43071-43072. - 2♂. - 2 Ad. - Loc.: Arroyo Pico Plancha, Madidi National Park, Departamento de Cochabamba, Bolivia. - G.C.: 14°16'19.7"S, 68°05'36.1"W. - Dat.: 16-12-2003. - Leg.: D. Embert. MNCN 43151. - ♀. - Sa. - Loc.: Florida, Reserva Nacional de Vida Silvestre Manuripi Departamento Pando, Bolivia. - Dat.: [17/19-07-2001]. - Leg.: M. Guerrero. MNCN 43249. - Jv.- Loc.: 5 km from San Lorenzo on the road to Quince Mil, Departamento Cusco, Perú. - Dat.: 22-02-2006. - Leg.: I. De la Riva, J. C. Chaparro, S. Castroviejo & J. M. Padial.

Other types: The holotype and four paratypes are in the MNK (MNK-A 6620, MNK-A 6621, 7178, 7273, MNK-7193). Twelve paratypes are in the ZFMK (59574, 66973-6, 66988, 72537, 72564-5, 72587-9). Three paratypes are in the CBG (327, 328, 329). Twenty-five paratypes are in the KU (154853-154857, 205107, 205120, 205132-205134, 205137, 205138, 205142, 207708, 207715, 207716-207717, 215481-215488). Ten paratypes are in the NHMW (NMW 28966: 1-10). Two or three paratypes are in the NMP (NMP6V 72578/1-2) without answer. One paratype is in the MCZ (136394). Twenty-one paratypes are in the USNM (298900, 342623-342629, 3426230-3426232, 342854, 342855, 345174-345177-345281).

Pseudoeurycea ruficauda

Parra-Olea, García-París, Hanken & Wake

Parra-Olea, García-París, Hanken & Wake, 2004: 2122.

Paratype: MNCN 41042. - ♂. - Sa. - Loc.: 1 km NW of Puerto Soledad, Sierra Mazateca, Oaxaca, Mexico. - A.: 2290 m. - G.C.: 18°10.450'N, 97°00.197'W. - Dat.: 14-01-2002. - Leg.: M. García-París, J. Hanken, G. Parra-Olea & D. Wake.

Other types: The holotype and five paratypes are in the IBUNAM (IBH 13806, 13801, 13802-13805). One paratype is in the MVZ (236762). One paratype is in the MCZ (A-135811).

Rana aragonensis Palanca-Soler, Rodríguez-Vieites & Martínez-Suárez

Palanca-Soler, Vieites, & Martínez-Suárez, 1995: 236.

Current name: *Rana temporaria* Linnaeus, 1758: 212.

Lectotype: MNCN 23582 designated by Vences et al. (1997: 130). - ♂. - Ad. - Loc.: Alto Aragón [Ibón de (= Pyrenean Lake)] Respomuso, at the base of the Balaitous mountain, Circo de Piedrafita [Sallent de Gállego, Huesca], Aragón region, Spain. - Dat.: 1995. - Leg.: A. Palanca-Soler & D. Rodríguez Vieites.

Other types: Three paralectotypes are in the ZFMK (64548-50). Three paralectotypes are in the MHNHP (MNHNP 1997.2683-2685).

Rana pyrenaica Serra-Cobo

Serra-Cobo, 1993: 2.

Holotype: MNCN 16661. - ♂. - Ad. - Loc.: La Espata, Villanúa, Huesca, [Aragón], España. - Dat.: 12-10-1992. - L&D.: J. Serra Cobo. (Fig. 3).

Other types: Nineteen paratypes are in the MNHNP (MNHNP 1992.5234-5235, 1993.2501, 2507, 2512, 2513, 1993.2502, 2504, 2509-2511, 2514-2515, 1993.2516, 1993.2506, 1992.5236, 1993.2505, 1993.2503, 2508). One paratype is in the DZV (DZV 2766) without answer. One paratype is in the MZBE (MZB 92.0167). One paratype is in the IPE (1992.4040) missing.

Rana ridibunda riodeoroi Salvador & Peris

Salvador & Peris, 1975: 49.

Current name: *Pelophylax saharicus* Boulenger, 1913: 84.

Holotype: MNCN 13742^(*). – ♂. – Ad. – Loc.: Huerta el Hatri, Edchera, [Sahara occidental], [Marruecos]. – Dat.: 07-04-1974. – Leg.: S. Peris.

Remarks: (*) In the original paper this specimen is referred as 9930, it is the collector number, not the collection number.

Paratypes: MNCN 13739-13741^(*). – Loc.: Huerta el Hatri, Edchera, [Sahara occidental], [Marruecos]. – Dat.: 07-04-1974. – Leg.: S. Peris.

Remarks: (*) In the original paper these specimens are referred as 9927-9929, they are collector numbers not collection numbers.

Salamandra algira tingitana

Donaire Barroso & Bogaerts

Donaire Barroso & Bogaerts, 2003: 88.

Holotype: MNCN 41037. – ♀. – 1 Ad. – Loc.: Jabal Musa (= Jeabal Mousa), north Morocco. – A.: 500 m. – Dat.: 07-12-1997. – Leg.: D. Donaire & F. J. Martínez-Medina.

Paratypes: MNCN 41038-41039. – Sa, Jv. – Loc.: Jabal Musa. MNCN 41040. – Sa. – Loc.: 2 km north of Taleta Tagramt (Jabal Bugmil). MNCN 41041. – Jv. – Loc.: Jabal el Fahies. – L&D: David Donaire.

Other types: One paratype is in the ZMA (20011). One paratype is in the ZFMK (77415), published as “ZMFK” 77415.

Schistometopum garzonheydti Taylor & Salvador

Taylor & Salvador, 1978: 60.

Current name: *Geotrypetes seraphini* (Duméril, 1859: 222)

Holotype: MNCN 1239. – Ad. – Loc.: Insel Fernando Poo [=Bioko], Guinea Ecuatorial. – Dat.: <1885. – L&D.: A. Ossorio.

Telmatobius espadai De la Riva

De la Riva, 2005: 73.

Paratypes: MNCN 41942. – ♀. – Ad. – Loc.: Río Apaza, Provincia Chapare, Departamento Cochabamba, Bolivia. – G.C.: 17°50'S, 64°45'W. – A.: 3100 m. – Dat.: 01-01-1990. – Leg.: I. De la Riva, J. Dorda, J. Ledezma, C. Tapia & J. Trueba.

MNCN 41943. – Jv. – Loc.: Río Apaza, Provincia Chapare, Departamento Cochabamba, Bolivia. – G.C.: 17°50'S, 64°45'W. – A.: 3100 m. – Dat.: 27-04-1990. – Leg.: I. De la Riva, J. Ledezma & C. Tapia.

MNCN 41944-41945. – 2 Jv. – Loc.: Río Apaza, Provincia Chapare, Departamento Cochabamba, Bolivia. – G.C.: 17°50'S, 64°45'W. – A.: 3100 m. – Dat.: 10-07-1990. – Leg.: I. De la Riva, C. Martín & S. Casado.

Other types: The holotype (CBF 1924) and one paratype (CBF 4016) are in the CBF.

Telmatobius sibiricus De la Riva & Harvey

De la Riva & Harvey, 2003: 128.

Paratypes: MNCN 17364. – ♀. – Ad. – SSS. – Loc.: Río Chua Khocha, Serranía Siberia, Provincia Carrasco, Departamento Cochabamba, Bolivia. – G.C.: 17°47'S, 64°42'W. – A.: 2050 m. – Dat.: 04-01-1990.

MNCN 23830-23832. – ♀/♂♂. – 3 Ad. – Loc.: Río Chua Khocha, Serranía Siberia, Provincia Carrasco, Departamento Cochabamba, Bolivia. – G.C.: 17°47'S, 64°42'W. – A.: 2050 m. – Dat.: 04-01-1990. – Leg.: I. de la Riva, J. Dorda, J. Ledezma, C. Tapia & J. Trueba.

MNCN 17365. – ♂. – Ad. – SSS. – Loc.: Km 278 on the highway from Santa Cruz to Cochabamba, Serranía Siberia, Provincia Carrasco, Departamento Cochabamba, Bolivia. – A.: 2500 m. – Dat.: 06-02-1989. – Leg.: I. de la Riva & V. Pérez Mellado.

Other types: The holotype and two paratypes are in the MNK (NKA 965, NKA 3573, 3574). Three paratypes are in the Vertebrate Collection of the UTA (A 45575-77). One paratype is in ZFMK (70315).

Telmatobius timens De la Riva, Aparicio & Ríos

De la Riva, Aparicio & Ríos, 2005: 410.

Paratypes: MNCN 42018-42019^(*). – ♀+♂. – [2Ad]. – Loc.: Valle de Tojoloque, Provincia Franz Tamayo, Departamento de La Paz, Bolivia. – A.: 3600 m. – Dat.: 19/23-10-1999. – Leg.: J. Aparicio.

Remarks: (*) Cited “in error” as MNCN 42017 and 42018 in the original paper (De La Riva et al., 2005: 410).

Other types: The holotype (CBF 5679) and six paratypes (CBF 5672-5675, 5677, 5680) are in the CBF. In the KU there are 32 paratypes (KU 139040, 139041, 162958-162987), there was a mistake in the original publication where the authors wrote (KU 162958-162989).

Urotropis platensis Jiménez de la Espada

Jiménez de la Espada, 1875b: 71.

Current name: *Ensatina eschscholtzii* Gray, 1850: 48.

This species is the type species of the genus *Urotropis* Jiménez de la Espada.

Urotropis Jiménez de la Espada, 1875b: 70.

Holotype: MNCN 1256. – ♂? – Ad. – Loc.: Cuenca del río de la Plata, Montevideo?^(*), [Uruguay]. – Dat.: [22/23-10-1863]. – Leg.: F. de P Martínez y Sáez (CCP).

Remarks: ^(*) The correct locality is North Grove, Calaveras Big Trees State Park, Calaveras County, California, USA, (Wake, 1993: 233) where they were collected by F. Martínez y Sáez, member of the Pacific Scientific Comission during his staying in California in 1863. See comments in González-Fernández (2006: 141).

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Appendix 1. Number of current type specimens preserved in the MNCN ordered by species.

Taxon	Nº specimens	Taxon	Nº specimens
<i>Alytes dickhilleni</i>	11	<i>Oreobates madidi</i>	2
<i>Alytes obstetricans almogavarii</i>	13	<i>Oreobates quixensis</i>	14
<i>Alytes obstetricans pertinax</i>	15	<i>Oreobates sanderi</i>	2
<i>Atelopus planispina</i>	28	<i>Pelodytes ibericus</i>	9
<i>Batrachyla taeniatia</i>		<i>Pelophylax saharicus</i>	
<i>Cystignathus hidalgoi</i>	3	<i>Rana ridibunda riodeoroi</i>	4
<i>Centrolene geckoideum</i>	1	<i>Pleurodema bibroni</i>	2
<i>Chioglossa lusitanica longipes</i>	4	<i>Pleurodema granulosum</i>	2
<i>Dendropsophus delarivai</i>	4	<i>Pristimantis galdi</i>	3
<i>Dendropsophus triangulum</i>	1	<i>Pristimantis koehleri</i>	8
<i>Discoglossus jeanneae</i>	2	<i>Pristimantis pluvicanorus</i>	
<i>Edalorhina perezi</i>	1	<i>Eleutherodactylus pluvicanorus</i>	5
<i>Ensatina eschscholtzii platensis</i>		<i>Pristimantis reichlei</i>	7
<i>Urotopis platensis</i>	1	<i>Pseudoeurycea ruficauda</i>	1
<i>Gastrotheca testudinea</i>	1	<i>Psychrophrynella ankohuma</i>	8
<i>Geotrypetes seraphini</i>	1	<i>Psychrophrynella condoriri</i>	2
<i>Gephyromantis runewswieki</i>	1	<i>Psychrophrynella harveyi</i>	1
<i>Hemiphractus bubalus</i>		<i>Psychrophrynella illampu</i>	8
<i>Cerathyla braconnieri</i>	1	<i>Psychrophrynella illimani</i>	2
<i>Cerathyla bubalus</i>	1	<i>Psychrophrynella kallawayae</i>	6
<i>Cerathyla palmarum</i>	1	<i>Psychrophrynella katantika</i>	8
<i>Hemiphractus proboscideus</i>	1	<i>Psychrophrynella quimsacruzis</i>	3
<i>Hyla antoniichoai</i>	1	<i>Psychrophrynella saltator</i>	8
<i>Hyla meridionalis</i>	7	<i>Rana pyrenaica</i>	1
<i>Hylodes philippi</i>	1	<i>Rana temporaria</i>	
<i>Hylodes verrucosus</i>	1	<i>Rana aragonensis</i>	1
<i>Hyloxalus bocagei</i>	2	<i>Rhinella arenarum</i>	
<i>Hyloxalus fuliginosus</i>	2	<i>Bufo marinus var. platensis</i>	38
<i>Hypsiboas raniceps</i>		<i>Rhinella iserni</i>	1
<i>Hyla roeschmanni</i>	1	<i>Rhinella marina</i>	
<i>Ichthyophis bernisi</i>	1	<i>Bufo marinus var. fluminensis</i>	15
<i>Leptodactylus labrosus</i>	1	<i>Bufo marinus var. napensis</i>	6
<i>Leptodactylus labyrinthicus</i>		<i>Rhinella tacana</i>	2
<i>Leptodactylus wuchereri</i>	1	<i>Salamandra algira tingitana</i>	5
<i>Leptodactylus latinasus</i>	1	<i>Strabomantis cornutus</i>	
<i>Leptodactylus pentadactylus</i>		<i>Limnophys napaeus</i>	1
<i>Leptodactylus goliath</i>	3	<i>Telmatobius espadai</i>	4
<i>Leptodactylus stenodema</i>	2	<i>Telmatobius sibiricus</i>	5
<i>Oreobates lehri</i>	2	<i>Telmatobius timens</i>	2
		Total specimens	301

Appendix 2. Number of type specimens preserved in the MNCN ordered by countries.

Country	Nº specimens
Unknown	11
Argentina	4
Bolivia	87
Brazil	41
Chile	3
Ecuador	70
Ecuatorial Guinea	1
Indonesia	1
Madagascar	1
Mexico	1
Morocco	9
Peru	6
Portugal	4
Spain	59
Uruguay	2
U.S.A.	1
Total specimens	301

Appendix 3. List of missing amphibian type specimens formerly preserved in the MNCN. More details about these specimens are shown in González-Fernández (2006: 148–152).

Alytes cisternasii Boscá
Boscá, 1879: 217.

Bufo stentor Jiménez de la Espada
Jiménez de la Espada, 1872: 85.

Current name: *Engystomops pustulosus* (Cope, 1864).
This species is type species of the genus *Peralaimos* Jiménez de la Espada.

Peralaimos Jiménez de la Espada, 1875a: 163.

Cyclocephalus lacrimosus Jiménez de la Espada

Jiménez de la Espada, 1875a: Pl. 3bis, fig. 5, 5^a, 5b.

Current name: *Pristimantis lacrimosus* (Jiménez de la Espada, 1875).

Cystignathus humilis Jiménez de la Espada
Jiménez de la Espada, 1875a: Pl. 1, fig. 2, 2a.

Dendrophryniscus brevipollicatus Jiménez de la Espada
Jiménez de la Espada, 1871: 65.

Engystomops petersi Jiménez de la Espada
Jiménez de la Espada, 1872: 86.

This species is type species of the genus *Engystomops* Jiménez de la Espada.

Engystomops Jiménez de la Espada, 1872: 86.

Hylobates diadematus Jiménez de la Espada

Jiménez de la Espada, 1875a: Pl. 3bis, fig. 3, 3^a, 3b, 3c.
Current name: *Pristimantis diadematus* (Jiménez de la Espada, 1875).

Hylobates rubicundus Jiménez de la Espada

Jiménez de la Espada, 1875a: Pl. 3bis, fig. 4, 4^a, 4b.
Current name: *Pristimantis rubicundus* (Jiménez de la Espada, 1875).

Litopleura maritimum Jiménez de la Espada

Jiménez de la Espada, 1875a: 82.
Current name: *Limnomedusa macroglossa* (Duméril & Bibron, 1841).

This species is type species of the genus *Litopleura* Jiménez de la Espada.

Litopleura Jiménez de la Espada, 1875a: 82.

Limnophys cornutus Jiménez de la Espada

Jiménez de la Espada, 1871: 60.
Current name: *Strabomantis cornutus* (Jiménez de la Espada, 1871).

This species is type species of the genus *Limnophys* Jiménez de la Espada.

Limnophys Jiménez de la Espada, 1871: 59.

Phyllodromus pulchellum Jiménez de la Espada

Jiménez de la Espada, 1875a: Pl. 3, fig. 3, 3^a, 3b, 3c.
Current name: *Hyloxalus pulchellus* (Jiménez de la Espada, 1875).

This species is type species of the genus *Phyllodromus* Jiménez de la Espada.

Phyllodromus Jiménez de la Espada, 1875a: Pl. 3, fig. 3.

Pyxicephalus leyboldi Jiménez de la Espada

Jiménez de la Espada, 1875a: 15.

Current name: *Incertae sedis*.

Buchbesprechungen

15. G. Nardi & V. Vomero (Hrsg.): *Artropodi del Parco Nazionale del Vesuvio – Richerche preliminari. Conservazione Habitat Invertebrati*, 4, 496 pp.; Cierre edizioni, MiPAAf, Verona. 2007. ISBN 978-88-8314-455-4.

Der Vesuv-Nationalpark wurde im Jahre 1991 gegründet und misst fast 8,5 Hektar. Der Nationalpark umfasst den allgemein bekannten und interessanten Vulkanberg Vesuv und seine Umgebung. Das Land ist sowohl durch den Vulkan als auch durch intensive, Jahrhunderte alte landwirtschaftliche Nutzung geprägt. Es ist bemerkenswert, dass dieses Gebiet entomologisch bisher praktisch noch nicht erforscht war.

In dem vorliegenden Band wurden in 26 Kapiteln von verschiedenen Spezialisten Informationen über Insekten und über andere Arthropoden zusammengestellt. Vierzehn Kapitel beschäftigen sich mit Coleopteren, die damit besonders gut vertreten sind. Ein Kapitel behandelt die Lepidopteren mit 342 Artnachweisen. Weitere Kapitel stellen die "kleinen" Insektenordnungen dar (unter anderem Dermaptera und Heteroptera). Von den Hymenopteren werden die Bienen behandelt. Auch eine botanische Übersicht fehlt nicht. Insgesamt haben 60 Spezialisten zu diesem Werk beigetragen, und es sind über 1200 Arten nachgewiesen. Viele Arten sind ausführlich dokumentiert und diskutiert. Der Band ist reich bebildert und der Text größtenteils italienisch, teils aber auch englisch.

Das Werk ist in jeder Hinsicht ein wichtiger und wertvoller Beitrag über die Entomologie dieses Nationalparks und darüber hinaus für die gesamte Region von Bedeutung. Die eindrucksvolle Dokumentation hat auch große Bedeutung für praktische Naturschutzbestrebungen in der Region und es ist zu hoffen, dass die Stimme der Biologen nicht ungehört bleibt und durch politische Interessen übertrumpft wird.

Klaus Schönitzer

16. Gianelle, D., Travaglini, D., Mason, F., Minari, E., Chirici, G. & Chemini, C. (Hrsg.): *Canopy Analysis and Dynamics of a Floodplain Forest*. Rapporti Scientifici, 3, 96 pp.; Cierre grafica Editore, Verona. 2007. ISBN 978-88-8314-471-4.

Die Verknüpfung und Modellierung von Referenzsystemen der Erfassung, Nachführung, Darstellung und Verwaltung raumbezogener Informationen wird "Geomatik" (englisch Geomatics) genannt. Diese Disziplin eröffnet viele neue Untersuchungsweisen gerade bezüglich der Ökologie von Baumkronen. In diesem Band sind acht Untersuchungen über die Ökologie von Baumkronen zusammengestellt, die teils verschiedene Organismen-

gruppen behandeln, teilweise Totholz oder einzelne Bäume untersuchen. Als Untersuchungsgebiet dient dabei das Naturschutzgebiet Bosco della Fontana in der Po-Ebene.

Klaus Schönitzer

17. Rose, K. D.: *The Beginning of the Age of Mammals*. 429 pp., numerous illustrations; The Johns Hopkins University Press, Baltimore. 2006.

The final extinction of non-avian dinosaurs at the end of the Cretaceous was followed by a rapid adaptive radiation of mammals in the first third of the Cenozoic. The significant rise of mammal diversity during the Palaeocene and early Eocene, during which all of the modern orders first appeared, led to the slogan of the "Beginning of the Age of Mammals" for this remarkable period. Kenneth D. Rose, an unchallenged authority of mammalian palaeontology and evolution, summarizes current knowledge of Cenozoic Eutherian mammals with special emphasis on their classification and characteristics, a chronological framework, and adaptations to life. Illustrated with excellent drawings, the cranial characteristics and postcranial features of Cenozoic Eutherian mammals are described explicitly. The chapters that present extinct representatives of the mammalian orders from the Cenozoic form the most comprehensive part of the book. The author demonstrates persuasively that fossil records that have been discovered during recent decades, as well as molecular data, demand a reassessment of several conventional taxonomic arrangements. Some traditional groups, such as "Insectivora", have shown to be taxonomic wastebaskets. The author favours a broader taxonomic concept by reflecting on ordinal-level synapomorphies between ancestors and extant families.

Although the book focuses on Eutherian mammals, a synopsis is given also on Mesozoic mammal evolution. These preliminary chapters provide insight into the evolutionary transition from the mammalian forerunners, the cynodont therapsids, to early marsupials and their relatives.

The book is complemented by an account on geochronology, paleogeography, and phylogenetic relationships of Cenozoic mammals, and a general overview of anatomy and functional adaptations of the mammalian skull, dentition, and postcranial skeleton. It demonstrates convincingly that morphological analyses as well as molecular data have contributed significantly to new insights into mammalian classification on a higher taxonomic level.

R. Kraft

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