Catalogue of the Lumbricidae (Annelida, Clitellata, Lumbricoidea) from South America, with remarks on the systematics of the Lumbricina

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ABSTRACT
A catalogue of terrestrial Lumbricidae produced 28 nominal taxa (species and subspecies) reported to date from South America. Full synonyms and detailed South American occurrences are provided for each entity. This is the first detailed assessment of the distribution of South American Lumbricidae. *Bimastos sophiae*, known only from Argentina, and *Eiseniella tetraedra cerni*, known only from Chile, are presently the only taxa restricted to South America. The remaining species are widely distributed in temperate regions of the globe. Lumbricinae are of Holarctic origin and are mainly restricted to subtropical latitudes in South America, except for the mountain ranges of the Andes, extending northward into the tropical region up to Colombia and then the mountain ranges extending eastward along the Guayana shield along Venezuela and the Guyanas; in Brazil, lumbricids are restricted to the southern and southeastern states, primarily in the colder subtropical climate region and mountain ranges. The Lumbricina are megadrile earthworms characterized by a multilayered clitellum, eggs small relative to microdriles, gastrulation by emboly, intestinal specializations such as the typhlosole, a complex circulatory apparatus, two pairs of testicles and sperm sacs, and the male pores located at least two segments behind the posterior testes. The Lumbricoidea, which retain relatively small eggs, form the sister group of the Gondwanan Glossoscolecoidea plus Megascolecoidea, a clade characterized by having large ovaries with several egg-strings.

KEY WORDS
Annelida,
Lumbricidae,
anthropogenic soil fauna,
biodiversity,
cold-adapted species,
invasive and exotic species,
earthworms,
Neotropical region.

RÉSUMÉ
Catalogue des Lumbricidae (Annelida, Clitellata, Lumbricoidea) d'Amérique du Sud, et remarques sur la systématique des Lumbricina.
Un catalogue des Lumbricidae terrestres a permis de mettre en évidence 28 taxa nominaux (espèces et sous-espèces) ayant été observés à ce jour en Amérique du Sud. Les synonymes et les occurrences en Amérique du Sud sont fournis en détail pour chaque entité. Ce travail représente la première évaluation détaillée de la distribution des Lumbricidae d'Amérique du Sud. *Bimastos sophiae,* connu uniquement en Argentine, et *Eiseniella tetraedra cerni*, connu seulement au Chili, sont actuellement les seuls taxa présents uniquement en Amérique du Sud. Les autres espèces sont largement distribuées dans les régions tempérées du globe. Les Lumbricinae ont une origine holarctique et sont principalement cantonnés aux latitudes subtropicales d'Amérique du Sud, exception faite des régions montagneuses des Andes, ils s'étendent dans la région tropicale vers le nord jusqu'en Colombie et dans les zones de montagnes s'étirant vers l'est, le long du plateau guyanais qui borde le Vénézuela et les Guyanes ; au Brésil, les Lumbricidae ne sont présents que dans les états du sud et du sud-est, principalement dans la région climatique subtropicale plus froide et dans les zones montagneuses. Les Lumbricina sont des vers de terre mégadriles caractérisés par un clitellum à plusieurs couches cellulaires, des œufs relativement petits par rapport à ceux des microdriles, une gastrulation par embolie, des spécialisations intestinales telles que le typhlosole, un appareil circulatoire complexe, deux paires de testicules et de sacs spermatiques, et les pores mâles sont situés au moins deux segments derrière les testicules postérieurs. Les Lumbricoidea, qui conservent des œufs relativement petits, forment le groupe frère rassemblant les Glossoscolecoidea du Gondwana et les Megascolecoidea, un clade caractérisé par de grands ovaires contenant plusieurs rangs d'œufs.

MOTS CLÉS
Annelida,
Lumbricidae,
faune anthropogénique,
biodiversité,
espèces adaptées au froid,
espèces invasives et exotiques,
vers de terre,
région néotropicale.

INTRODUCTION

Lumbricina Blainville, 1830 have a multilayered clitellum (the clitellum is single-layered in the microdriles), small eggs less than 110 µm (they are larger than 300 µm in microdriles), and gastrulation by emboly (by epiboly in microdriles). Furthermore, there are intestinal specializations such as the typhlosole, and the circulatory apparatus is complex (Brinkhurst 1982: 1044; Omodeo 1998: 53). Yamaguchi (1953) also created the taxon Diplotesticulata Yamaguchi, 1953 for the megadrile earthworms, distinguishing them from the Monotesticulata Yamaguchi, 1953, which included the microdrile worms (Jamieson 1981: 7). Another diagnostic character is the location of the male pores, at least two segments behind the posterior testes (Sims 1980: 107). Linnaeus (1758) listed only one species of earthworm, *Lumbricus terrestris* Linnaeus, 1758. Not until the 1820s did Savigny recognize other species of earthworms from France for the first time (Gates 1978: 83). No detailed monograph exists for the Lumbricina (Ljungström 1970: 265).

Gates (1976a: 1) recognized that there are two types of ovaries in earthworms: Lumbricidae Rafinesque-Schmalz, 1815 have small ovaries, ending in a single, distal egg string. Megascolecoidea Rosa, 1891 have fan- to rosette-shaped ovaries, with several egg-strings, and eggs large relative to Lumbricoidea. The ovarian condition in Glossoscolecidae was then unknown to this author, but Sims (1980) indicated that the ovaries of the Glossoscolecidae are of the second type. I here follow Sims (1980) in consider-

ing three superfamilies: Lumbricoidea Rafinesque-Schamlz, 1815, Glossoscolecoidea Michaelsen, 1900, and Megascolecoidea Rosa, 1891.

When the present day distribution of earthworms is examined, it may tentatively be concluded that the superfamilies had emerged at about the time of the Triassic breakup of Pangea. The Glossoscolecoidea and Megascolecoidea are distributed in Gondwana, and the Lumbricoidea in the Euramerican parts of Laurasia (Sims 1982; Bouché 1983).

In the late 19th and early 20th centuries, South American earthworms were studied largely by Luigi Cognetti de Martius and Wilhem Michaelsen, but also by others such as Frank Beddard, Daniele Rosa and Leon Černosvitov (Ljungström 1970: 266). More recently, major efforts were realized by Gilberto Righi, András Zicsi, and Csaba Csuzdi. In this paper, I deal with the only lumbricoids found in South America, the Lumbricidae.

Since the arrival of European colonists in South America, European lumbricids have been introduced to new environments, arriving primarily in soil with potted plants, but also ship ballasts and other means (Gates 1982). Nevertheless, no lumbricids are known to have colonized tropical lowlands anywhere (Gates 1958). Lumbricids are adapted to cool temperate-zone and subarctic climates and they are able to maintain themselves in the tropics only at elevations well above the plains (Gates 1974a: 2). This group is mainly of central European origin, but has been widely dispersed by humans during the last five centuries, and lumbricids are now found on all continents except Australia (Lee 1985; Römbke & Hanagarth 1994: 12). Lumbricidae have been proposed to be the youngest of the megadriles (Gates 1975a: 1).

Ljungström (1972: 12) characterized lumbricid classification as "a taxonomic chaos unequalled among the Oligochaeta" (Gates 1980: 183). Cekanovskaya (1962) and Gates (1974a) documented that reproductive structures are not reliable for phylogenetic reconstruction (Omodeo 1998: 51). Gates (1978: 112) established three different lines of evolutionary development of the calciferous section of the gut. This certainly seems to provide at least one step toward a solution of the lumbricid chaos. Lumbricid excretory systems were also shown to provide specifically invariant characters and bladder shape has been subgenerically definitive for *Octolasion* Örley, 1885 (Gates 1978: 112).

Blakemore (2005a: 61) considered *Glossoscolecidarus corduvensis* (Weyenbergh, 1879), described originally as *Lumbricus corduvensis* from Córdoba, Argentina (Weyenbergh 1879: 63), as a *nomen dubium*, a misidentification of a glossoscolecid.

Fragoso & Brown (2007) listed 32 species of Lumbricidae from Latin America, of which six are restricted to Mexico (Fragoso 2001). In this paper, I expand this list, providing full synonyms and detailed South American localities for all species known from the continent.

Bimastos sophiae Mercadal de Barrio & Barrio, 1988, from Argentina, and *Eiseniella tetraedra cerni* Blakemore, 2004, from Chile, are the only taxa known exclusively from South America. The Lumbricidae are restricted mainly to the subtropical latitudes of South America. Only some species extend into tropical latitudes, along the Andean ranges of Peru, Ecuador, and Colombia, and then eastwards, following the mountain ranges of the Guayana shield, along Venezuela and the Guyanas. In Brazil, they are present only in the mountains of the Atlantic forest biome in the southeast and southern regions, and in the cooler subtropical areas, generally associated with human disturbance (Brown *et al.* 2006). The anthropochorous species of lumbricids are similar to aquatic oligochaetes of Holarctic origin: "Most of the species need hibernation in cold for successful sexual reproduction and therefore cannot colonize the torrid zone" (Timm 1980: 55).

MATERIAL AND METHODS

The present material is based on a compilation of references in the literature, including *Zoological Records*, *Biological Abstracts*, and further available online information or obtained from cross references in previously published works.

Synonyms are given in order to assure that the correct current name available for a taxon is obtained. The present list includes all valid taxa up to the latest taxonomic revision or authoritative taxo-

nomic opinion found in the literature. Of course, this does not eliminate the possibility that further revisions of previously identified material will uncover additional incorrect identifications.

The catalogue consists of a list of all currently available names of Lumbricidae cited to date from South America, with complete synonyms and indications of detailed localities in South America.

I have used three-letter abbreviations for South American countries and two-letter abbreviations for sampled states in Brazil.

ABBREVIATIONS

South American countries

ARG	Argentina;
BOL	Bolivia;
BRA	Brazil;
CHI	Chile;
COL	Colombia;
ECU	Ecuador;
FRG	French Guyana;
PAR	Paraguay;
PER	Peru;
URU	Uruguay;
VEN	Venezuela.

Brazilian states

DF	Distrito Federal;
MG	Minas Gerais;
PB	Paraíba;
PE	Pernambuco;
PR	Paraná;
RJ	Rio de Janeiro;
RS	Rio Grande do Sul;
SP	São Paulo.

SYSTEMATICS

The taxa marked with an asterisk (*) are reported only from South America.

Suborder LUMBRICINA De Blainville, 1830

Terricolae Örsted, 1843: 2.

Megadrili Benham, 1890: 201.

Diplotesticulata Yamaguchi, 1953: 277.

Crassiclitellata Jamieson, 1988: 367.

Superfamily LUMBRICOIDEA Rafinesque-Schmalz, 1815
Family LUMBRICIDAE Rafinesque-Schmalz, 1815

Genus *Allolobophora* Eisen, 1873

Allolobophora Eisen, 1873: 46. — Michaelsen 1910: 1. — Bouché 1972: 417. — Gates 1975a: 3. — Reynolds 1977: 35. — Blakemore 2002: 256. — Csuzdi & Zicsi 2003: 48.

Allobophora Lütken, 1876: 49. — Reynolds & Cook 1976: 47.

Helodrilus (*Allolobophora*) (part.) – Michaelsen 1900a: 479.

Allolobophora (part.) – Stephenson 1930: 905. — Pop 1941: 518. — Omodeo 1956: 180. — Gates 1972a: 68. — Easton 1983: 475.

TYPE SPECIES. — *Lumbricus riparius* Hoffmeister, 1843 (valid as *Allolobophora chlorotica chlorotica* (Savigny, 1826)).

1. ***Allolobophora chlorotica chlorotica*** (Savigny, 1826)

Enterion chloroticum Savigny, 1826: 183.

Enterion virescens Savigny, 1826: 183.

Lumbricus anatomicus Dugès, 1828: 289.

Lumbricus chlorotica – Dugès 1837: 17.

Lumbricus riparius Hoffmeister, 1843: 189.

Lumbricus communis luteus Hoffmeister, 1845: 29.

Lumbricus viridis Johnston, 1865: 60.

Lumbricus riparius pallescens Eisen, 1871: 966.

Lumbricus riparius rufescens Eisen, 1871: 966.

Allolobophora riparia – Eisen 1873: 46.

Allolobophora neglecta Rosa, 1882: 170.

Allolobophora chlorotica – Vejdovský 1884: 60. — Omodeo 1956: 180. — Gates 1972a: 69; 1980: 180. — Reynolds 1977: 36, fig. 4. — Sims & Gerard 1985: 50, fig. 12. — Zicsi 1993: 638. — Blakemore 2002: 259, fig. 4.1.

Aporrectodea chlorotica – Örley 1885: 22.

Allolobophora cambrica Friend, 1892a: 31.

Allolobophora chlorotica curiosa Ribaucourt, 1896: 46.

Allolobophora morgensis Ribaucourt, 1896: 47.

Allolobophora waldensis Ribaucourt, 1896: 47.

Allolobophora cambria (incorrect spelling for *Allolobophora cambrica* Friend, 1892) – Ribaucourt 1896: 94.

Helodrilus (*Allolobophora*) *chloroticus* – Michaelsen 1900a: 486.

Octolasion hortensis – Bretscher 1901: 221 (non *Allolobophora subrubicunda* f. *hortensis* Michaelsen, 1889: 15, valid as *Dendrobaena hortensis* (Michaelsen, 1889)).

Allolobophora chlorotica kosovensis Sapkarev, 1975: 39 (non *Allolobophora kosowensis* Karaman, 1968).

Allolobophora chlorotica chlorotica – Easton 1983: 475. — Blakemore 2002: 260; 2006: 1.

DISTRIBUTION. — CHI (Zicsi 1993: 638): Santiago and Talcahuano. URU (Beddard 1896: 62; Michaelsen 1900a: 486): Montevideo; Melilla; Joanicó (Grosso *et al.* 2006: 297; Grosso & Brown 2007: 283). PER: Cochabamba Prov.: Cochabamba: lake Titicaca (Cernosvitov 1939: 114). Bermuda, North America, Greenland, Europe, East Atlantic islands (Cernosvitov 1939: 114), Australia (Tisdall 1985: 291), New Zealand, and Saint Helena island (Blakemore 2002: 257).

Genus *Aporrectodea* Örley, 1885

Aporrectodea Örley, 1885: 22. — Gates 1975b: 4. — Reynolds 1977: 40. — Easton 1983: 476. — Csuzdi & Zicsi 2003: 73. — Blakemore 2002: 267.

Allolobophora (part.) – Michaelsen 1900a: 480. — Stephenson 1930: 905. — Pop 1941: 518. — Omodeo 1956: 180. — Gates 1972b: 68.

Eiseniona Omodeo, 1956: 188 (type species: *Allolobophora handlirschi* Rosa, 1897).

Allolobophora – Gates 1972b: 2.

Nicodrilus (*Nicodrilus*) Bouché, 1972: 315 (type species: *Enterion terrestre* Savigny, 1826).

Nicodrilus (*Rhodonicus*) Bouché, 1972: 316 (type species: *Allolobophora arvena* Bouché, 1969).

Koinodrilus Qiu & Bouché, 2000a: 181 (type species: *Allolobophora georgii* Michaelsen, 1890).

TYPE SPECIES. — *Lumbricus trapezoides* Dugès, 1828.

2. *Aporrectodea caliginosa caliginosa* (Savigny, 1826)

Enterion caliginosum Savigny, 1826: 180.

Enterion carneum Savigny, 1826: 17.

Lumbricus gordioides Templeton, 1836: 235.

Lumbricus lividus Templeton, 1836: 235.

Lumbricus purus Dugès, 1837: 17.

Lumbricus communis anatomicus Hoffmeister, 1845 (part.): 28 (non *Lumbricus anatomicus* Dugès, 1828, valid as *Allolobophora chlorotica chlorotica* (Savigny, 1826)).

Lumbricus communis cyaneus (part.) – Hoffmeister 1845: 28 (non *Enterion cyaneum* Savigny, 1826: 17, synonym of *Octolasion cyaneum* (Savigny, 1826)).

Lumbricus communis carneus Hoffmeister, 1845: 28.

?*Lumbricus helenae* Kinberg, 1867: 98.

?*Lumbricus hortensiae* Kinberg, 1867: 98.

Lumbricus novaehollandiae Kinberg, 1867 (part.?): 99 (part., valid as *Aporrectodea trapezoides* (Dugès, 1828)).

Lumbricus communis olivaceus Eisen, 1871: 964.

Lumbricus communis pellucidus Eisen, 1871: 964 (non *Lumbricus pellucidus* Templeton, 1834: 131, synonym of *Clitellio minutus* Templeton, 1834).

Allolobophora turgida f. *tuberculata* Eisen, 1874: 43.

Allolobophora turgida Eisen, 1874: 46. — Ljungström *et al.* 1973: 240.

Lumbricus cyaneus – Vejdovský 1883: 228.

Lumbricus laevis (incorrect spelling, part.) – Vejdovský 1883: 228.

Lumbricus levis (part.) – Vejdovský 1883: 228 (non *Lumbricus levis* Hutton, 1877).

Lumbricus australiensis Fletscher, 1886: 539.

Allolobophora beddardi Michaelsen, 1894: 182. — Ribaucourt 1896: 40.

Allolobophora caliginosa – Beddard 1896: 62. — Michaelsen 1899a: 27. — Righi 1979: 146; 1984a: 119. — Zicsi 1993: 638.

Allolobophora inflata Michaelsen, 1899b: 124.

Helodrilus (*Allolobophora*) *caliginosa* – Michaelsen 1899c: 27; 1904: 288.

Helodrilus (*Allolobophora*) *caliginosus* (part.) – Michaelsen 1900a: 482.

Helodrilus (*Allolobophora*) *caliginosa typicus* – Michaelsen 1900a: 482.

Helodrilus borellii Cognetti, 1904a: 2.

Allolobophora similis Friend, 1910a: 99.

Allolobophora remyi Cernosvitov, 1929: 149.

Allolobophora caliginosa f. *typica* – Cordero 1931: 353.

Non *Allolobophora caliginosa* (part.) – Eaton 1942: 246. — Støp-Bowitz 1969: 191 (valid as *Aporrectodea trapezoides* (Dugès, 1828)).

Allolobophora caliginosa var. *hellenica* Tzelepé, 1943: 1.

Allolobophora nocturna Evans, 1946: 98.

Allolobophora arnoldi Gates, 1952: 1.

Allolobophora molita Gates, 1952: 3.

Aporrectodea caliginosa (part.) – Gerard 1964: 27. — Sims & Gerard 1985: 54.

Allolobophora tuberculata – Gates 1972a: 79.

Allolobophora turgida (part.) – Gates 1972a: 84.

Nicodrilus caliginosus caliginosus – Bouché 1972: 32.

Nicodrilus caliginosus caliginosus var. *paratypicus* Bouché, 1972: 33 (invalid infrasubspecific name).

Nicodrilus (*Nicodrilus*) *caliginosus alternisetosus* Bouché, 1972: 33.

Helodrilus (*Allolobophora*) *caliginosus* – Santelices *et al.* 1973: 67.

Allolobophora australiensis – Reynolds & Cook 1976: 74.

Helodrilus caliginosum – Reynolds & Cook 1976: 84.

Allolobophora purus – Reynolds & Cook 1976: 160.

Aporrectodea turgida – Reynolds 1977: 56. — Gates 1977: 56. — Mischis 1999: 24. — Zicsi & Csuzdi 2001: 139.

Aporectodea caliginosa caliginosa – Easton 1983: 476. — Blakemore 2006: 2.

Aporrectodea caliginosa trapezoides – Zicsi & Csuzdi 1988: 217; 2001: 139. — Zicsi 1993: 638.

Aporrectodea caliginosa – Blakemore 2002: 273, fig. 4.4-4.6.

Nicodrilus monticola Pérez-Onteniente & Rodríguez Babio, 2002: 517.

Nicodrilus carochensis Pérez-Onteniente & Rodríguez Babio, 2002: 520.

Nicodrilus tetramammalis Pérez-Onteniente & Rodríguez Babio, 2002: 521.

DISTRIBUTION. — CHI: Chiloé Island: Chonchi; Rayen-Buti (Zicsi & Csuzdi 2001: 139); Valdivia, Lita, Talcahuano, Corral, Juan Fernández, Titicaca, and Santiago (Beddard 1896: 62); Coquimbo Prov.: Norte Chico region (Santelices *et al.* 1973: 67). ARG: Santa Cruz Prov.: El Calafate way; Koluel Kaike; Piedra Buena; Caleta Olivia (Mischis *et al.* 2006: 179); Río Negro Prov. (Mischis 2007); Bariloche, on the way to Leao Llao; Chasicó; Las Grutas; El Bolson; Santa Cruz; Tucumán (Mischis & Herrera 2006: 292); Puerto Madryn; Gastre; La Pampa Prov.: La Pampa (Momo *et al.* 1993: 7; Giménez *et al.* 2005); Victoria (Mischis *et al.* 2006: 177); 9 de Julio (Mischis *et al.* 2006: 177); Buenos Aires Prov. (Beddard 1896: 62): Buenos Aires (Burela & Cazzaniga 2001: 49); Balcarte; General Pueyrredon (Righi 1984a: 119); San Luis Prov.: San Felipe dam; Suyuque Nuevo river; El Chorrilli; Cruz de Piedra; Pampa del Tamborero; Paso del Rey; San Francisco del Monte de Oro; Potrero de los Funes lake; Las Aguilas river; Virorco river; Quebrada de los Cóndores; El Trapiche; Estancia Grande (Mischis & Brigada 1985: 134); Córdoba Prov.: Cordoba; Carina; Piguillio; Tercero river; Primero river (Righi 1984a: 119); Sierras Chicas (Mischis 1999: 24); Santa Fé Prov. (Ljungström *et al.* 1973: 240). URU (Grosso *et al.* 2006: 297): San José; Melilla; Joanicó; Colonia Treita y Tres (Grosso & Brown 2007: 283); Montevideo (Beddard 1896: 62; Cordero 1931: 353); Colón (Rosa 1898: 277). PAR: Bañado, in the vicinity of Asunción (Righi 1984a: 119). BOL: Larecaja Prov.: Sorata; Manco Capac Prov.: La Paz Dep (Michaelsen 1902: 1): Obrajes; Unduavi; near La Paz; Sorata; Tarija Dep: near Tarija (Römbke & Zicsi 2007: 229); lake Titicaca: Kusijata: near Copacabana; Aroma Prov.: Huaraco (Römbke & Hanagarth 1994: 11); Oruro Dep.: Pazña river: tributary of Poopo lake: Murillo Prov. (Zicsi 1993: 638). PER: Bamba river (Cernosvitov 1934a: 59). ECU: Pichincha Prov. (Zicsi & Csuzdi 1988: 217). COL: Bogotá (Fajardo & Prince 1976; Feijoo 2007). VEN: Páramo Gavidia (Fragoso & Brown 2007: 70). BRA (Moreira 1903: 125; Römbke & Hanagarth 1994: 11): RS: São Lourenço do Sul, Estrela, Canela, Estrela, Guaíba, Nova Petrópolis, Porto Alegre, Rolante, Herval, São Leopoldo, Mariluz, Sapucaia do

Sul, Santa Cruz do Sul, São Francisco de Paula, Canguçu, Piratini, Pinheiro Machado, Sobradinho, Novo Hamburgo, Charqueadas, Ilha G. Medeiros, Viamão, Pelotas (Righi 1967: 342; Knäpper & Hauser 1969: 411; Knäpper 1976: 39; Knäpper & Porto 1979: 137). Central America (Fragoso & Brown 2007: 70), North America, East Atlantic islands, Europe, Africa, Asia, Australia (Righi 1979: 144), New Zealand and Saint Helena island (Blakemore 2002: 273).

3. ***Aporrectodea georgii georgii*** (Michaelsen, 1890)

Allolobophora (*Allolobophora*) *georgii* Michaelsen, 1890a: 53.

Helodrilus (*Allolobophora*) *georgii* – Michaelsen 1900a: 482.

Allolobophora georgii var. *transylvanica* Pop, 1938: 141.

Allolobophora transvaalensis Reynolds & Cook, 1976: 182 (incorrect spelling of *Allolobophora transylvanica* Pop, 1938).

Aporrectodea georgii – Easton 1983: 477. — Blakemore 2002: 280.

Allolobophora georgii – Mischis 1999: 24.

Aporrectodea georgii georgii – Fragoso & Brown 2007: 70.

DISTRIBUTION. — South America (Ljungström *et al.* 1975: 1). ARG (Mischis 2004: 261): Tierra del Fuego (Mischis & Moreno 2003: 49); Córdoba Prov.: Córdoba (Mischis 1996: 6); Sierras Chicas (Mischis 1999: 24). Europe and Middle East (Michaelsen 1900a: 482).

4. ***Aporrectodea rosea rosea*** (Savigny, 1826)

Enterion roseum Savigny, 1826: 182.

Lumbricus roseus – Dugès 1837: 17.

Lumbricus communis anatomicus (part.) – Hoffmeister 1845: 28 (non *Lumbricus anatomicus* Dugès, 1828, valid as *Allolobophora chlorotica chlorotica* (Savigny, 1826)).

Allolobophora mucosa Eisen, 1873: 47.

Lumbricus aquatilis Vejdovský, 1875: 199.

Lumbricus muscosus – Tauber 1879: 68.

Allolobophora mediterranea Örley, 1881a: 286.

Lumbricus carneus – Vejdovský 1882: 51 (non *Enterion carneus* Savigny, 1826, synonym of *Aporrectodea caliginosa caliginosa* (Savigny, 1826)).

Allolobophora aquatilis – Örley 1885: 24.

Allolobophora aguatilis – Örley 1885: 28 (incorrect spelling).

Allolobophora (*Notogama*) *rosea* – Rosa 1893: 424.

Allolobophora rosea macedonica Rosa, 1893: 428. — Gerard 1964: 33 (non *Allolobophora macedonica* Sapkarev, 1971: 150, valid as *Helodrilus balcanicus* Cernosvitov, 1931).

Allolobophora rosea – Beddard 1896: 62. — Pop 1948: 69. — Gerard 1964: 23. — Zajonc 1970: 23. — Bouché 1972: 418. — Edwards & Lofty 1972: 217. — Righi 1979: 146; 1984a: 119. — Zicsi 1982: 437.

Allolobophora danieli rosai Ribaucourt, 1896: 39.

Allolobophora alpestris Bretscher, 1899: 420.

Eisenia rosea – Michaelsen 1900a: 478. — Lee 1959: 361. — Gates 1972b: 104; 1974b: 9. — Ljungström *et al.* 1973: 240. — Reynolds 1977: 78, fig. 24. — Easton 1980: 45. — Blakemore 1999: 183.

Eisenia rosea f. *bimastoides* – Cognetti 1901a: 17.

Eisenia nobilli Cognetti, 1903a: 2.

Helodrilus (*Bimastus*) *bimastoides* – Michaelsen 1903: 13.

Dendrobaena diomedaeus Cognetti, 1906: 1.

?*Helodrilus* (*Bimastus*) *indicus* Michaelsen, 1907: 188.

Allolobophora rosea budensis Stütz, 1909: 120.

Eisenia rosea var. *glandulosa* Friend, 1910b: 329.

Helodrilus (*Eisenia*) *rosea* – Michaelsen 1914: 251.

Helodrilus (*Eisenia*) *roseus* – F. Smith 1917: 165.

Helodrilus (*Allolobophora*) *prashadi* Stephenson, 1922: 440.

Allolobophorus (*Bimastus*) *indica* – Stephenson 1922: 441.

Allolobophora (*Eisenia*) *rosea* – Michaelsen 1923: 4.

Eisenia rosea var. *storkani* Cernosvitov, 1934a: 47.

Eisenia rosea f. *typica* – Kobayashi 1940: 285.

Eisenia rosea f. *macedonica* Kobayashi, 1940: 288.

Allolobophora hattaii Kobayashi, 1940: 290 (non *Drawida hatai* Oishi, 1932: 18).

Allolobophora harbinensis Kobayashi, 1940: 291.

Allolobophora dairenensis Kobayashi, 1940: 292.

Drawida jeholensis Kobayashi, 1941: 261.

Allolobophora rosa var. *paucipartita* Tzelepé, 1943: 1.

Eophila kulagini Malevic, 1949: 400.

Allolobophora rosea dendrobaenoides Omodeo, 1950: 1.

Eisenia jenensis Füller, 1953: 52.

Eisenia moderata Cekanovskaya, 1959: 350.

Allolobophora rosea f. *interposita* Plisko, 1965: 415.

Allolobophora rosea f. *alpina* Vedovini, 1967: 793.

Allolobophora rosea rosea – Bouché 1972: 418.

Allolobophora rosea vedovinii Bouché, 1972: 423.

Helodrilus diomedranus – Reynolds & Cook 1976: 94.

Bimastos indicus – Reynolds & Cook 1976: 117.

Aporrectodea rosea – Gates 1976b: 4. — Sims & Gerard 1985: 65, fig. 19. — Blakemore 2002: 287, fig. 4.7.

Aporrectodea rosea rosea – Easton 1983: 477. — Blakemore 2006: 2.

Aporrectodea bowcrowensis Reynolds & Clapperton, 1996: 77.

Distribution. — CHI: Chiloé island: Chonchi (Zicsi & Csuzdi 2001: 139); Valparaíso and Quillota (Beddard 1896: 62). ARG: Tierra del Fuego (Mischis & Moreno 2003: 49); Santa Cruz Prov.: El Calafate way; Tellier (Mischis *et al.* 2006: 179); Chubut (Mischis & Herrera 2006: 292); La Pampa Prov.: General Acha (Mischis *et al.* 2006: 178); La Pampa (Momo *et al.* 1993: 7); Buenos Aires Prov.: Buenos Aires (Burela & Cazzaniga 2001: 49); Bartolomé; Mitre; General Pueyrredon (Righi 1984a: 119); San Luis Prov. (Mischis & Brigada 1985: 134); Córdoba Prov.: Córdoba: Sierras Chicas (Mischis 1999: 19); Cosquin (Cognetti 1901b: 2); Tercero river; Manfredi; Piguiellio (Righi 1984a: 119); Santa Fé Prov.: Santo Tomé; Paraná: La Capital (Righi 1978: 168); La Rioja Prov.: Velasco and Famatina mountain ranges (Mischis & Gleiser 1999: 61); Tucumán Prov. (Mischis 2007); Salta Prov.; Jujuy Prov. (Righi 1979: 147; Teisaire *et al.* 2003: 213). URU (Grosso *et al.* 2006: 297); Melilla; Joanicó (Grosso & Brown 2007: 283): Montevideo (Beddard 1896: 62); Canelones: Solis Grande brook (Cordero 1931: 353). BOL: Junin Prov. (Michaelsen 1923: 1); Munco-Capae Prov; Murillo Prov.: Nor Yungas Prov.: La Paz Dep.: Unduavi (Zicsi 1995: 606); La Paz Prov.: Valley of Zongo river: near Cambaya; Viscachani lagune (Righi & Römbke 1987: 524); Manco-Capac Prov.: Titicaca lake: Kusijata, near Copacabana; Ingavi Prov: Huacullani; Aroma Prov.: Oruro Dep: Huaraco (Römbke & Hanagarth 1994: 11; Zicsi 1995: 606). PER (Cordero 1931: 353). ECU: Pichincha Prov. (Zicsi & Csuzdi 1988: 217). COL (Michaelsen 1914: 205): Valle Dep.: El Cerrito (Feijoo 1993, 2007). BRA (Michaelsen 1892: 209; Moreira 1903: 125): RS: Porto Alegre (Michaelsen 1927: 370). Central America (Blakemore 2002: 287), North America, Europe, Africa, Middle East, Asia, Australia, New Zealand, and Hawaii (Righi 1979: 147).

5. ***Aporrectodea trapezoides*** (Dugès, 1828)

Lumbricus trapezoides Dugès, 1828: 289.

Lumbricus novae hollandiae Kinberg, 1867 (part.): 99.

Lumbricus capensis Kinberg, 1867: 100.

Lumbricus matutinus Weyenbergh, 1879: 213.

Allolobophora caliginosa beddardi – Ribaucourt 1896: 53 (non *Allolobophora beddardi* Michaelsen, 1894, valid as *Allolobophora parva* Eisen, 1874).

Allolobophora inflata Michaelsen, 1899b: 124.

Helodrilus (*Allolobophora*) *caliginosus trapezoides* – Michaelsen 1900a: 483.

Helodrilus (*Helodrilus*) *mariensis* Stephenson, 1917: 414.

Helodrilus (*Allolobophora*) *caliginosus* – Lahille 1922: 18 (non *Enterion caliginosum* Savigny, 1826, synonym of *Aporrectodea caliginosa caliginosa* (Savigny, 1826)).

Allolobophora (*Eophila*) *mariensis* – Stephenson 1923: 504.

Allolobophora caliginosa trapezoides – Chen 1931: 168.

Helodrilus caliginosus trapezoides – Cordero 1931: 353.

Eophila augilensis Sciacchitano, 1932: 302.

Dendrobaena samarigera graeca Cernosvitov, 1938: 285.

Allolobophora caliginosa f. *trapezoides* – Gates 1941: 452. — Plisko 1973: 108.

Allolobophora caliginosa (part.) – Eaton 1942: 246. — Støp-Bowitz 1969: 191.

Allolobophora iowana Evans, 1948: 515.

Allolobophora (*Microephila*) *mariensis* – Omodeo 1956: 184.

Allolobophora longa (part.) – Reinecke & Ryke 1969: 515.

Nicodrilus (*Nicodrilus*) *caliginosus meridionalis* Bouché, 1972: 334.

Allolobophora trapezoides – Gates 1972a: 76.

Aporrectodea caliginosa trapezoides – Plisko 1973: 108. — Easton 1983: 477.

Aporrectodea trapezoides – Reynolds 1975: 3; 1977: 46, fig. 10. — Easton 1980: 41. — Blakemore 2002: 291, fig. 4.8a, b. — Fragoso & Brown 2007: 70.

DISTRIBUTION. — CHI: Juan Fernandez (Cernosvitov 1939: 114). ARG (Momo *et al.* 1993: 7; Mischis 2004: 261; Giménez *et al.* 2005); Tierra del Fuego (Mischis & Moreno 2003: 49); Chubut; Río Negro (Mischis & Herrera 2006: 292): Santa Cruz (Mischis & Herrera 2006: 292); Los Pampa Prov. (Mischis 2007); Buenos Aires Prov.: Buenos Aires (Burela & Cazzaniga 2001: 49); Isla Ella (Stephenson 1933: 938); San Luis Prov. (Mischis & Brigada 1985: 134); Córdoba Prov.: Córdoba (Righi 1979: 146; Mischis 1997: 62): Sierras Chicas (Mischis 1999: 24); Pampa de Achala (Mischis 1985: 130); Santa Fé Prov. (Ljungström *et al.* 1973: 240): La Capital and Paraná (Righi 1978: 169); Entre Ríos Prov.: Victoria (Cognetti 1901b: 2); La Rioja Prov.: Velasco and Famatina mountain ranges (Mischis & Gleiser 1999: 61); Catamarca Prov.: Las Pirquitas (Mischis & Righi 1999: 64); Tucumán Prov. (Mischis & Moreno 2003: 49); Salta Prov. (Mischis & Moreno 2003: 49); Jujuy Prov. (Mischis & Moreno 2003: 49). URU: Montevideo. PAR (Cordero 1931: 353). BOL: North Yungas Prov.: La Paz Dep.: Unduavi; Tarija Dep.: highway from Tarija do Entre-Ríos, km 15 (Zicsi 1995: 606). PER: Titicaca lake: Capachica (Cernosvitov 1939: 114); Cerro Atocongo; Huanuco Prov.: Chogosh (Michaelsen 1923: 1; 1935: 1; Römbke 2007: 203). FRG (Righi 1979: 146). BRA: RS: Porto Alegre (Michaelsen 1892: 209; 1927: 370); Guaíba estuary (Knäpper 1976: 39). North America, Europe, Africa, Middle East, Australia, New Zealand, Hawaii, and Saint Helena island (Righi 1979: 146).

REMARKS

Römbke (2007) includes this species in the synonymy of *A. caliginosa caliginosa*, but Fragoso & Brown (2007) continue to list it as a distinct species.

Genus *Bimastos* Moore, 1893

Bimastos Moore, 1893: 333; 1895: 473. — Gates 1969: 306; 1972b: 86; 1975b: 4. — Reynolds 1977: 61.

Helodrilus (*Bimastus*) – Michaelsen 1900a: 501 (invalid emendation).

?*Glossoscolecidarus* Michaelsen, 1900b: 53 (type species: *Lumbricus corduvensis* Weyenbergh, 1879).

Bimastus – Stephenson 1930: 913.

TYPE SPECIES. — *Bimastos palustris* Moore, 1895 (= *Bimastos* sp. – Moore 1893).

6. ***Bimastos parvus*** (Eisen, 1874)

Allolobophora parva Eisen, 1874: 46 – Easton 1983: 475. — Blakemore 2002: 264, fig. 4.3.

Lumbricus (*Allolobophora*) *parvus* – Vaillant 1889: 142.

Dendrobaena constricta (part.) – Friend 1893a: 19 (non *Allolobophora constricta* Rosa, 1884: 38, valid as *Dendrodrilus rubidus rubidus* (Savigny, 1826)).

Allolobophora beddardi Michaelsen, 1894: 182.

Allolobophora parvus – Ribaucourt 1896: 80.

Allolobophora parva udei Ribaucourt, 1896: 80.

Allolobophora constricta var. *geminata* (part.) – Friend 1897: 459.

Helodrilus (*Bimastus*) *beddardi* – Michaelsen 1900a: 502.

Helodrilus (*Bimastus*) *parvus* – Michaelsen 1900a: 502.

Allolobophora (*Bimastus*) *parvus* – Michaelsen 1900c: 10.

?*Bimastos longicinctus* F. Smith & Gittins, 1915: 548.

Bimastos beddardi – Pop 1948: 123.

Eisenia parvus – Pop 1948: 123. — Zicsi 1982: 436.

Eisenia parva (part.?) – Zicsi 1959: 170. — Zajonc 1970: 23. — Bouché 1972: 386.

Bimastos parvus (part. ?) – Edwards & Lofty 1972: 215. — Plisko 1973: 99. — Reynolds 1977: 61, fig. 16. — Sims & Gerard 1985: 48.

Bimastus parvus – Gates 1972a: 87. — Reynolds 1972: 1; 1974: 17. — Righi 1979: 141; 1984a: 119. — Schwert 1990: 353.

Helodrilus longicinctus – Reynolds & Cook 1976: 129.

Helodrilus parva – Reynolds & Cook 1976: 152.

Bimastos beddardi beddardi – Mercadal de Barrio & Barrio 1988: 1.

DISTRIBUTION. — ARG (Mischis 2004: 261): Córdoba Prov.: Córdoba (Mischis 1996: 6); Primero river (Righi 1984a: 118); Santa Fé Prov. (Ljungström *et al.* 1973: 240): Santo Tomé (Righi 1978: 169); Entre Ríos Prov.: Victoria (Cognetti 1901a: 2); Tucumán Prov.: Tucumán (Mischis & Herrera 2006: 292); Salta Prov.: Santa Victoria De Los Toldos (Teisaire *et al.* 2003: 213); Jujuy Prov. (Righi 1979: 141). VEN: Aragua State: Henri Pittier National Park: Rancho Grande (Righi 1984b: 244; Paoletti 1989: 435). BRA (Righi 1968a: 545): RS: Teutônia (Brown *et al.* 2006: 355; Camaquã Mun: Camaquã (Lima & Rodríguez 2007: 15); SP: Buri (Brown & James 2006: 147; James & Brown 2006: 56): Anhembi (Righi 1968b: 379). Central America, North America, Europe, Africa, Middle East, Asia, Australia, Tahiti, Hawaii, Saint Paul island (Righi 1979: 141), and Saint Helena island (Gates 1972b: 1).

REMARKS

Fragoso & Brown (2007) consider that this species is probably a synonym of *Bimastus parvus*.

7*. ***Bimastos sophiae***
Mercadal de Barrio & Barrio, 1988, *species inquirenda*

Bimastos beddardi sophiae Mercadal de Barrio & Barrio, 1988: 1.

Bimastos sophiae – Blakemore 2005a: 20 (sp. inq.)

DISTRIBUTION. — ARG: Buenos Aires Prov. (Mercadal de Barrio & Barrio 1988: 1).

REMARKS

Bimastos sophiae Mercadal de Barrio & Barrio, 1988, described originally as *Bimastos beddardi sophiae*, from Buenos Aires, Argentina (Mercadal de Barrio & Barrio 1988: 1), was listed as a *species inquirenda*, unlikely to be native, and possibly representing a synonym of *Bimastos parvus* (Blakemore 2005a: 20).

Genus *Dendrobaena* Eisen, 1873

Helodrilus (*Dendrobaena*) Eisen, 1873: 53. — Gates 1975a: 3. — Reynolds 1977: 64. — Easton 1983: 478. — Blakemore 2002: 296.

Helodrilus (*Dendrobaena*) (part.) – Michaelsen 1900a: 488.

Dendrobaena (part.) – Stephenson 1930: 912. — Gates 1972a: 88. — Bouché 1972: 388.

Omodeoia Kvavadze, 1993: 132 (type species: *Allolobophora byblica* Rosa, 1893).

TYPE SPECIES. — *Enterion octaedrum* Savigny, 1826.

8. ***Dendrobaena cognetti*** (Michaelsen, 1903)

Helodrilus ribaucourti Cognetti, 1901a: 21 (non *Allolobophora ribaucourti* Bretscher, 1901, valid as *Lumbricus rubellus rubellus* Hoffmeister, 1843).

Helodrilus (*Eophila*) *cognettii* Michaelsen, 1903: 130 (nom. nov. pro *Helodrilus ribaucourti* Cognetti, 1901, non Bretscher, 1901, valid as *Lumbricus rubellus* Hoffmeister, 1843).

Dendrobaena cognetti gallurensis Rota, 1992: 1383. — Zicsi 1993: 639.

Dendrobaena cognetti. — Zicsi 1993: 639. — Fragoso & Brown 2007: 70.

DISTRIBUTION. — CHI (Zicsi 1993: 639). Europe (Sims & Gerard 1985: 73).

REMARKS

Zicsi & Csuzdi (2007) continue to accept this species, which was considered a synonym of *D. pygmaea* by Blakemore (2002).

9. ***Dendrobaena hortensis*** (Michaelsen, 1890b)

Allolobophora veneta forma *hortensis* Rosa, 1886: 674. — Beddard 1896: 96. — Michaelsen 1900a: 477.

Allolobophora subrubicunda var. *hortensis* Michaelsen, 1889: 15.

Allolobophora hibernica Friend, 1892c: 102.

Allolobophora veneta f. *hortensis* Michaelsen, 1899a: 27.

Eisenia veneta hibernica – Michaelsen 1900a: 477.

Eisenia veneta hortensis – Michaelsen, 1900a: 477.

Allolobophora veneta tepidaria Friend, 1904: 161.

Allolobophora (*Eisenia*) *veneta dendroidea* Friend, 1909: 243.

Allolobophora (*Eisenia*) *veneta robusta* Friend, 1909: 246.

Eisenia veneta tepidaria – Cernosvitov 1942: 239.

Eisenia veneta robusta – Cernosvitov 1942: 239.

Eisenia birsteini Malevic, 1947: 19.

Dendrobaena veneta hibernica – Gerard 1964: 38.

Dendrobaena veneta hibernica dendroidea Gerard, 1964: 39.

Dendrobaena veneta hortensis – Gerard 1964: 39.

Dendrobaena nicaensis Vedovini, 1971: 45.

Eisenia hortensis – Gates 1972a: 103. — Sims & Gerard 1985: 84, fig. 27. — Blakemore 1999: 183.

Dendrobaena pseudohortensis Sapkarev, 1977: 27.

Dendrobaena hortensis – Easton 1983: 478. — Zicsi 1993: 639. — Blakemore 2002: 299, fig. 4.9. — Fragoso & Brown 2007: 70.

DISTRIBUTION. — CHI: Santiago (Beddard 1896: 62). ARG (Michaelsen 1900a: 477; Mischis 2004: 261). North America, Iceland, Azores, Europe, Africa and Australia (Blakemore 2002: 298).

10. ***Dendrobaena octaedra octaedra*** (Savigny, 1826)

Enterion octaedrum Savigny, 1826: 183.

Lumbricus octaedrus – Dugès 1837: 17.

Lumbricus vetaedrus (erroneous spelling) – Dugès 1837: 24.

Lumbricus riparius (part.) – Hoffmeister 1845: 30.

Lumbricus flaviventris Leuckart, 1849: 159.

Lumbricus puter Eisen, 1871 (part.): 959.

Dendrobaena boeckii Eisen, 1873: 53.

Lumbricus boeckii – Tauber 1879: 69.

Dendrobaena camerani Rosa, 1882: 172.

Octolasion boeckii – Örley 1885: 20.

Allolobophora octaedra – Rosa 1887: 2.

Dendrobaena octaedra – Vejdovský 1888: 41. — Tétry 1937: 144. — Gerard 1964: 37. — Bouché 1972: 388. — Gates 1974a: 16. — Reynolds 1977: 65, fig. 18. — Easton 1983: 479. — Sims & Gerard 1985: 70, figs 21, 22. — Zicsi 1993: 639. — Zicsi & Csuzdi 2001: 140. — Blakemore 2002: 301.

Lumbricus (*Dendrobaena*) *camerani* – Vaillant 1889: 113.

Lumbricus (*Dendrobaena*) *boeckii* – Vaillant 1889: 118.

Lumbricus (*Dendrobaena*) *octaedrus* – Vaillant 1889: 119.

Allolobophora (*Dendrobaena*) *octaedra* – Rosa 1893: 424.

Allolobophora octaedra alpinula Ribaucourt, 1896: 32.

Allolobophora octaedra liliputiana Ribaucourt, 1896: 32.

Helodrilus (*Dendrobaena*) *octaedrus* – Michaelsen 1900a: 494.

Dendrobaena octaedrus casterinensis Chinaglia, 1911: 1.

Dendrobaena octaedra var. *quadriversiculata* Pop, 1938: 139; 1948: 106.

Dendrobaena octaedra f. *typica* Pop, 1948: 104.

Dendrobaena octahedra (incorrect spelling) – Langmaid 1964: 34.

Dendrobaena (*Dendrobaena*) *octaedra* – Bouché 1972: 388.

Dendrobaena octaedra octaedra. — Blakemore 2006: 4.

DISTRIBUTION. — CHI: Puerto Varas (Zicsi & Csuzdi 2001: 140). ARG (Fragoso & Brown 2007: 70). BOL:

North Yungas Prov.: La Paz Dep.: Unduavi (Zicsi 1995: 606); Murillo Prov.: Valle de Zongo: Cambaya; Viscachani lagune (Römbke & Hanagarth 1994: 11). ECU: Pichincha Prov.: Quito (Zicsi & Csuzdi 1988: 217). COL: Andes, about 120 km from Cali: Cabuyal river (Feijoo *et al.* 1999: 515); Bogotá (Michaelsen 1900a: 234); Valle Dep.: El Cerrito (Feijoo 1993, 2007). VEN: Páramos Escorial and Mucubaji (Feijoo *et al.* 2006: 305; Fragoso & Brown 2007: 70). North America, Iceland, Greenland, Madeira, Europe, Middle East, and Asia (Blakemore 2002: 300).

11. ***Dendrobaena pygmaea*** (Savigny, 1826)

Enterion pygmaeum Savigny, 1826: 183.

Allolobophora minima Rosa, 1884: 39 (non *Allolobophora minima* Muldal, 1952: 463, valid as *Murchieona minuscula* (Rosa, 1906)).

Helodrilus (*Dendrobaena*) *pygmaeus* – Michaelsen 1900a: 495.

Dendrobaena pygmaea – Gerard 1964: 37. — Easton 1983: 479. — Sims & Gerard 1985: 73. — Blakemore 2002: 303; 2005a: 28.

DISTRIBUTION. — CHI (Zicsi 1993: 639). Europe (Sims & Gerard 1985: 73).

12. ***Dendrobaena veneta veneta*** (Rosa, 1886)

Allolobophora veneta Rosa, 1886: 674.

Dendrobaena bogdanovi Kulagin, 1889: 14.

Dendrobaena caucasica Kulagin, 1889: 13.

Eisenia veneta – Michaelsen 1900a: 477. — Stephenson 1933: 934.

Eisenia veneta zebra Michaelsen, 1902: 39.

Dendrobaena veneta succinta Rosa, 1905: 104.

Eisenia veneta var. *concolor* Michaelsen, 1909: 35.

Allolobophora veneta robusta Friend, 1909: 243.

Eisenia veneta var. *picta* Michaelsen, 1910: 1.

Eisenia veneta var. *tumida* Friend, 1927: 281 (nom. nud.).

Eisenia austriaca Michaelsen, 1936: 35.

Eisenia veneta var. *balcanica* Cernosvitov, 1937a: 81.

Eisenia veneta var. *crassa* Malevic, 1947: 17.

Eisenia veneta var. *minuta* Malevic, 1947: 18.

Eisenia svetlovia – Blakemore 2005b: 4; 2005c: 5.

Dendrobaena veneta typica – Gerard 1964: 38.

Dendrobaena veneta zebra – Gerard 1964: 39.

Dendrobaena (*Dendrobaena*) *veneta veneta* – Bouché 1972: 398.

Lumbricus caucasica – Reynolds & Cook 1976: 86.

Allolobophora caucasica – Reynolds & Cook 1976: 86.

Dendrobaena veneta veneta – Easton 1983: 479. — Blakemore 2005a: 30.

Eisenia veneta – Sims & Gerard 1985: 88, fig. 28. — Blakemore 1999: 183.

Dendrobaena veneta – Blakemore 2002: 305, fig. 4.10, 4.11.

DISTRIBUTION. — CHI (Muñoz-Pedreros *et al.* 2001: 27): Santiago: Quinta Normal (Blakemore 2002: 304). BRA: RS: Porto Alegre (Knäpper & Porto 1979: 137). North America, Europe, and Australia (Blakemore 2002: 304).

Genus *Dendrodrilus* Omodeo, 1956

Enterion Savigny, 1826 (part.): 179.

Dendrobaena – Örley 1881b: 585.

Octolasion (part.) – Örley 1885: 13.

Allolobophora (part.) – Örley 1885: 23.

Helodrilus (*Dendrobaena*) (part.) – Michaelsen 1900a: 488.

Helodrilus (*Bimastos*) (part.) – Michaelsen 1900a: 501.

Dendrobaena (part.) – Pop 1941: 518. — Støp-Bowitz 1969: 214. — Gates 1972b: 88. — Bouché 1972: 388. — Perel 1976: 635; 1977: 59; 1979: 200. — Mrsic 1991: 260. — Qiu & Bouché 2000b: 205.

Dendrobaena (*Dendrodrilus*) Omodeo, 1956: 175.

Dendrodrilus – Plisko 1973: 78. — Gates 1975a: 4. — Reynolds 1977: 69. — Easton 1983: 479. — Blakemore 2002: 307.

TYPE SPECIES. — *Enterion rubidum* Savigny, 1826.

13. ***Dendrodrilus rubidus rubidus*** (Savigny, 1826)

Enterion rubidum Savigny, 1826: 182.

Lumbricus xanthurus Templeton, 1836: 235.

Lumbricus rubidus – Dugès 1837: 17.

Lumbricus puter Hoffmeister, 1845: 33.

Lumbricus pieter Udekem, 1865: 41.

Hypogeon havaicus Kinberg, 1867: 101.

Lumbricus victoris Perrier, 1872: 48.

Allolobophora norvegica Eisen, 1873: 48.

Allolobophora arborea Eisen, 1873: 49.

Allolobophora tenuis Eisen, 1874: 44.

Allolobophora fraissei Örley, 1881a: 285.

Dendrobaena puter (part.) – Örley 1881b: 586.

Allolobophora constricta Rosa, 1884: 38.

Octolasion constrictum – Örley 1885: 20.

Allolobophora putra (part.) – Vejdovský 1888: 41.

Lumbricus (*Allolobophora*) *constricutus* – Vaillant 1889: 113.

Allolobophora nordenskioldii (incorrect spelling) – Michaelsen, 1891a: 3.

Allolobophora rubicunda (incorrect spelling) – Beddard 1891: 273.

Allolobophora putris arborea (part.?) – Rosa 1893: 433.

Dendrobaena constricta (part.) – Friend 1893a: 19.

Allolobophora putris subrubicunda helvetica Ribaucourt, 1896: 18.

Allolobophora darwini Ribaucourt, 1896: 82.

Allolobophora rubida typica – Michaelsen 1900a: 234.

Helodrilus (*Dendrobaena*) *rubidus* – Michaelsen 1900a: 490.

Helodrilus (*Bimastos*) *constrictus* – Michaelsen 1900a: 503.

Allolobophora (*Bimastus*) *constricta* – Michaelsen 1900c: 10.

Helodrilus (*Bimastus*) *constrictus* (part.) – Stütz 1909: 139.

Bimastos constrictus – Michaelsen 1914: 202. — Ljungström *et al.* 1975: 29. — Feijoo *et al.* 2004: 220.

Helodrilus (*Bimastus*) *tenuis* – F. Smith 1917: 157.

Bimastus tenuis – Cernosvitov 1934: 256. — Edwards & Lofty 1972: 215.

Dendrobaena magnesa Tzelepé, 1943: 38.

Dendrobaena rubida var. *tenuis* – Pop 1943: 21.

Dendrobaena subrubicunda var. *papillosa* (part.) – Pop 1943: 21.

Dendrobaena (*Dendrodrilus*) *rubida* – Omodeo 1956: 175.

Dendrobaena (*Dendrodrilus*) *rubida* f. *tenuis* – Omodeo 1956: 175.

Dendrobaena rubida (part.) – Zicsi 1959: 165; 1968a: 135.

Dendrobaena rubida – Støp-Bowitz 1969: 220. — Edwards & Lofty 1972: 216.

Dendrobaena tenuis – Støp-Bowitz 1969: 227.

Dendrobaena rubida var. *typica* – Zajonc 1970: 22.

Dendrobaena (*Dendrodrilus*) *rubida rubida* – Bouché 1972: 410.

Dendrobaena (*Dendrodrilus*) *rubida tenuis* – Bouché 1972: 411.

Dendrobaena (*Dendrodrilus*) *rubida* – Plisko 1973: 79.

Dendrobaena (*Dendrodrilus*) *rubida* f. *tenuis* – Plisko 1973: 87.

Dendrobaena (*Dendrodrilus*) *rubida* f. *typica* – Plisko 1973: 84.

Dendrodrilus rubidus – Reynolds 1975: 3; 1977: 69, fig. 20. — Sims & Gerard 1985: 76, fig. 24. — Blakemore 2002: 308, fig. 4.12.

Dendrobaena pieter – Reynolds & Cook 1976: 156.

Allolobophora rubidum – Reynolds & Cook 1976: 165.

Dendrobaena valdiviensis – Reynolds & Cook 1976: 186.

Dendrodrilus rubidus tenuis – Perel 1977: 60. — Easton 1983: 480. — Zicsi 1991: 175. — Mrsic 1991: 270.

Dendrodrilus rubidus f. *tenuis* (part.) – Perel 1979: 200.

Dendrobaena rubida rubida – Zicsi 1982: 443.

Dendrobaena rubida tenuis– Zicsi 1982: 443.

Dendrodrilus rubidus rubidus – Easton 1983: 479. — Zicsi 1991: 174. — Mrsic 1991: 263. — Zicsi & Csuzdi 2007: 241.

Dendrodrilus rubidus – Qiu & Bouché 2000a: 195.

Dendrodrilus tenuis – Qiu & Bouché 2000a: 195.

DISTRIBUTION. — CHI (Zicsi 1993: 639; Muñoz-Pedreros *et al.* 2001: 27): Cape Horn: Orange Bay (Cernosvitov 1934: 256); Juan Fernandes islands (Gates 1972b: 21); Tierra del Fuego, Chiloé island: Cucao, Santiago, Coronel, Punta Arenas, Titicaca, Valparaiso, Talcahuano, Valdivia, Navarino island (Zicsi & Csuzdi 2001: 139); Valdivia, Coyinhué (Beddard 1896: 62). ARG (Mischis 2004: 271): Tierra del Fuego (Mischis & Moreno 2003: 49); Malvina islands: Port Stanley; Santa Cruz Prov.: El Calafate (Mischis *et al.* 2006: 179); Santa Cruz (Mischis & Herrera 2006: 292); Chubut Prov.: Comodoro Rivadavia (Mischis *et al.* 2006: 179); Puerto Madryn (Righi 1978: 168); Rio Negro Prov. (Ljungström *et al.* 1975: 29); Buenos Aires Prov. (Michaelsen 1899a: 27; Mercadal de Barrio & Barrio 1988: 1); Córdoba Prov.: Córdoba (Mischis & Herrera 1995: 70); Bariloche: Nahuel Huapí National Park; La Rioja Prov.: Iliar (Cordero 1942: 290); Velasco and Famatina mountain range (Mischis & Gleiser 1999: 61); Tucumán Prov.: Tucumán (Teisaire & Roldán 1996: 1); Salta Prov.: Santa Victoria Dep: Los Toldos (Teisaire *et al.* 2003: 213). URU: Montevideo (Fragoso & Brown 2007: 70). BOL: Murillo Prov.: La Paz Dep.: Cambaya; Valle de Zongo; Unduavi; lake Titicaca; Tarija Dep.: Tarija-Entre Ríos (Römbke & Hanagarth 1994: 12). PER (Michaelsen 1900a: 234). ECU: Bamba river and Loja (Gates 1972b: 21). COL: Bogotá (Michaelsen 1914: 202); Valle Dep.: El Cerrito (Feijoo 1993; 2007); Antioquia: Venice (Orozoco *et al.* 1996: 162). VEN: Colonia Tovar: Cruz Verde (Righi 1989: 1067). FRG: Camopi (Cernosvitov 1934a: 59). BRA: RJ: Rio de Janeiro and Petrópolis (Michaelsen 1927: 370); Itatiaia national park: abrigo Massenas (Righi 1980: 12). Central and North America, Europe, Africa, Asia, Australia, New Zealand, Hawaii and other oceanic islands, including sub-Antarctic islands (Blakemore 2002: 307).

14. ***Dendrodrilus rubidus subrubicundus*** (Eisen, 1873)

Allolobophora subrubicunda Eisen, 1873: 51. — Rosa 1889: 146.

Allolobophora fraissei Örley, 1881a: 285.

Allolobophora puter Örley, 1881b (part.): 581.

Lumbricus subrubicunda (part.) – Levinsen 1884: 242.

Octolasion subrubicunda – Örley 1885: 21.

Allolobophora puter – Beddard 1896: 12.

Allolobophora putris – Beddard 1896: 62 (non Hoffmeister, 1842).

Allolobophora putris subrubicunda var. *helvetica* Ribaucourt, 1896: 18.

Allolobophora puter f. *subrubicunda* – Michaelsen 1899c: 27.

Allolobophora rubida subrubicunda – Michaelsen 1900a: 234.

Helodrilus (*Dendrobaena*) *rubidus* var. *subrubicundus* – Michaelsen 1900a: 490; 1904: 289.

Dendrobaena putris dieppi Ribaucourt, 1901: 226.

Helodrilus (*Bimastus*) *constrictus* (part.) – Stütz 1909: 139.

Dendrobaena arborea pygmaea Friend, 1923: 23 (non *Enterion pygmaeum* Savigny, 1826, now *Dendrobaena pygmaea* (Savigny, 1826)).

Dendrobaena subrubicunda var. *papillosa* Pop, 1938: 139; 1949: 434 (non *Lumbricus papillosus* Friend, 1893).

Dendrobaena rubida var. *subrubicunda* – Pop 1943: 21.

Dendrobaena (*Dendrodrilus*) *rubida* f. *subrubicunda* – Omodeo 1956: 175.

Dendrobaena rivulicola Chandebois, 1958: 159.

Dendrobaena rubida (part.) – Zicsi 1968a: 135.

Dendrobaena subrubicunda – Støp-Bowitz 1969: 224. — Edwards & Lofty 1972: 215.

Dendrobaena (*Dendrodrilus*) *subrubicunda* – Bouché 1972: 414.

Dendrobaena (*Dendrodrilus*) *rubida* f. *subrubicunda* – Plisko 1973: 85.

Helodrilus subrubicunda – Reynolds & Cook 1976: 176.

Dendrodrilus rubidus subrubicundus – Perel 1977: 60. — Easton 1983: 479. — Zicsi 1991: 175. — Mrsic 1991: 267. — Zicsi & Csuzdi 2007: 241.

Dendrodrilus rubidus subrubicunda – Gates 1979: 154.

Dendrodrilus rubidus f. *subrubicunda* – Perel 1979: 201.

Dendrobaena rubida subrubicunda – Zicsi 1982: 443.

Dendrodrilus subrubicundus – Zicsi 1993: 639. — Qiu & Bouché 2000a: 195.

DISTRIBUTION. — CHI (Michaelsen 1900a: 491). ARG: Caleta Olivia (Mischis *et al.* 2006: 179). URU: Montevideo (Beddard 1896: 62; Michaelsen 1899a: 27; Cordero 1931: 354). ECU (Fragoso & Brown 2007: 70). COL (Michaelsen 1900a: 234). Subantarctic islands (Blakemore 2002: 307).

REMARKS

Michaelsen (1900a: 491) suggests that *Lumbricus valdiviensis* Blanchard, 1849 may be a synonym of *Dendrodrilus rubidus subrubicundus* (Eisen, 1873). However, following this possibility requires changing a well established species name due to the priority of the former name.

Genus *Eisenia* Malm, 1877

Eisenia Malm, 1877: 45. — Gates 1969: 305. — Reynolds 1977: 74. — Blakemore 2002: 312.

Allolobophora (*Notogamia*) Rosa, 1893: 399 (type species: *Enterium fetidum* Savigny, 1826, now *Eisenia fetida* (Savigny, 1826)).

Eisenia (part.) – Michaelsen 1900a: 474.

TYPE SPECIES. — *Enterion fetidum* Savigny, 1826.

15. ***Eisenia andrei*** Bouché, 1972

Eisenia fetida andrei Bouché, 1972: 381 (nom nov. pro *Eisenia foetida* var. *unicolor* André, 1963). — Jaenike 1982: 6. — Casabe *et al.*, 2007: 232.

Eisenia unicolor – Øien & Stenersen 1984: 277.

Eisenia andrei – Sims & Gerard 1985: 79. — Fragoso & Brown 2007: 70.

DISTRIBUTION. — CHI (Muñoz-Pedreros *et al.* 2001: 27). ARG: Buenos Aires (Mischis & Herrera 2006: 292); Córdoba (Mischis 2007). BOL: La Paz city (Römbke & Zicsi 2007: 229). BRA: PR (Brown *et al.* 2004: 33; James & Brown 2006: 56); SP (Brown & James 2006: 147; James & Brown 2006: 56); RJ (Brown *et al.* 2006: 339); MG: Juiz de Fora (Pérez-Losada *et al.* 2005: 318); DF: Brasília; PE; PB (Brown *et al.* 2006: 339). Europe (Bouché 1972: 381).

REMARKS

Blakemore (2002: 312) recently synonymyzed this species with *E. fetida*. However, Pérez-Losada *et al.* (2005: 317) were able to distinguish the two species on the basis of DNA sequences, and Dominguez *et al.* (2005) separated them on the basis of biological traits.

16. ***Eisenia fetida*** (Savigny, 1826)

Enterion fetidum Savigny, 1826: 182.

Lumbricus semifasciatus Burmeister, 1835: 3.

Lumbricus annularis Templeton, 1836: 234.

Lumbricus foetidus – Dugès 1837: 17 (invalid emendation).

Lumbricus olidus Hoffmeister, 1842: 25.

Lumbricus luteus Blanchard, 1849: 42.

Allolobophora foetida – Eisen 1873: 50.

Lumbricus rubro-fasciatus Baird, 1873: 96.

Eisenia foetida – Malm 1877: 45. — Michaelsen 1900a: 475. — Lee 1959: 361. — Gerard 1964: 26. — Gates 1972b: 97. — Ljungström *et al.* 1973: 240. — Reynolds 1977: 74, fig. 22. — Righi 1979: 137; 1984a: 118. — Mischis 1999: 24.

Lumbricus annulatus Hutton, 1877: 352 (nec *Lumbricus annulatus* Perel, 1975: 995).

?*Allolobophora nordenskioldii* Eisen, 1879: 6.

Eisenia foetida var. *fimetoria* Örley, 1881b: 563 (non *Enterion fimetorum* Fitzinger, 1833: 552).

Endrilus annulatus – W. W. Smith 1887: 136 (incorrect spelling of *Eudrilus*).

Lumbricus (*Allolobophora*) *annulatus* – Vaillant 1889: 147.

Lumbricus (*Allolobophora*) *foetidus* – Vaillant 1889: 149.

"*Lumbricus ruber*" – Blakemore 2005a: 33.

"*Lumbricus costatus*" Grube, 1892 (nom. nud. ?). — Blakemore 2005a: 33.

Allolobophora (*Notogama*) *foetida* – Rosa 1893: 424.

Eisenia nordenskioeldi caucasica Michaelsen, 1902: 1.

Helodrilus (*Eisenia*) *foetidus* – Michaelsen 1913: 551.

Eisenia fetida attica Tzelepé, 1943: 1.

Eisenia fasciata Backlund, 1948: 1.

Eisenia fetida fetida – Bouché 1972: 380.

Helodrilus fetidum – Reynolds & Cook 1976: 101.

Eisenia fetida – Easton 1983: 480. — Sims & Gerard 1985: 80, figs 25, 26. — Romero Pinto & Chamorro Bello 1986: 42, fig. 1. — Blakemore 2002: 313, fig. 4.13, 4.14.

DISTRIBUTION. — CHI (Blanchard 1849: 42): Temuco (Muñoz-Pedreros *et al.* 1997: 101); Santiago, Valparaíso, Concepción, Valdivia, Lota, Corral, Talcahuano. ARG (Di Masso 1999: 212; Mischis 2004: 261): Chubut Prov.: Chubut; Comodoro Rivadavia (Mischis *et al.* 2006: 179); Río Negro Prov.: Bariloche (Mischis *et al.* 2006: 178); Río Negro (Mischis & Herrera 2006: 292); Buenos Aires Prov.: Tornquist (Mischis *et al.* 2006: 177); Buenos Aires (Burela & Cazzaniga 2001: 49); Córdoba Prov. (Mischis 1982: 145; 1996: 6): Sierras Chicas (Mischis 1999: 24); Carlos Pas (Righi 1984a: 118); Pampa de Achala (Mischis 1985: 130); Santa Fé Prov.; Entre Ríos Prov. (Beddard 1896: 62; Ljungström *et al.* 1973: 240); Tucumán Prov.: Tucumán (Teisaire & Roldán 1996: 1). URU (Grosso *et al.* 2006: 297): Montevideo (Beddard 1896: 62; Cordero 1931: 353); Colonia; Tacuarembó; La Teja (Grosso & Brown 2007: 284). PER (Michaelsen 1900c: 1; Righi 1979: 139). PAR (Fragoso & Brown 2007). ECU: Pichincha Prov. (Zicsi & Csuzdi 1988: 217). COL (Michaelsen 1914: 205): Basurero "El Cortijo" (Romero Pinto & Chamorro Bello 1986: 41); Cundinamarca: Alban (Rodriguez *et al.* 1994: 91); Valle Dep.: Cali (Feijoo *et al.* 2004: 197); Palmira (Feijoo 1993, 2007). VEN (Hernandez *et al.* 1999: 139). FRG (Righi 1979: 139). BRA (Moreira 1903: 125): RS (Knäpper 1972a: 11; 1972b: 23; Knäpper & Porto 1979: 137): São Leopoldo (Righi 1967: 342); Porto Alegre (Michaelsen 1927: 370); Guaíba; Ivotí; Lajeado; Gramado; Belém Velho; Belém Novo; Movo Hamburgo; Mariluz; Sapucaia do Sul; Piratini; Tramandeí; Viamão; Barra do Ribeiro; Sapucaio; Tramandaí (Knäpper 1972b: 23, 1976: 39); SC: Tubarão; perhaps PR; RJ; MG (Brown *et al.* 2006: 355). South Atlantic, Central and North America, Europe, Africa, Middle East, Asia, Australia, and New Zealand (Righi 1979: 139).

REMARKS

Many citations of this species may actually refer to *E. andrei* (Brown *et al.* 2006: 358).

17. ***Eisenia lucens*** (Waga, 1857)

Lumbricus lucens Waga, 1857: 161.

Lumbricus submontanus Vejdovský, 1875: 199.

Allolobophora foetida hungarica Örley, 1881b: 563.

Allolobophora tigrina Rosa, 1896: 1.

Allolobophora latens Cognetti, 1903b: 7.

Allolobophora rosea croatica Stütz, 1909: 120.

Allolobophora gavrilovi Cernosvitov, 1942: 246.

Eisenia tigrina – Reynolds & Cook 1976: 180.

Helodrilus latens – Reynolds & Cook 1976: 126.

Eisenia lucens – Fragoso & Brown 2007: 71.

DISTRIBUTION. — BRA: RS (Knäpper & Porto 1979: 137): São Francisco de Paula (Knäpper 1977: 194); Porto Alegre: Guaíba estuary; Fontoura Xavier; Santo Ângelo (Knäpper 1976: 39). Holarctic (Michaelsen 1900c: 1).

Genus *Eiseniella* Michaelsen, 1900

Allurus Eisen, 1873: 43 (type species: *Enterion tetraedrum* Savigny, 1826).

Tetragonurus Eisen, 1873: 47 (type species: *Tetragonurus pupus* Eisen, 1874) (non Risso, 1810, Pisces).

Eisenia Vaillant, 1889 (nom. nov. pro *Tetragonurus* Eisen, 1873, non *Eisenia* Malm, 1877).

Eiseniella Michaelsen, 1900a: 471 (nom. nov. pro *Allurus* Eisen, 1873). — Blakemore 2002: 320.

TYPE SPECIES. — *Enterion tetraedrum* Savigny, 1826.

18*. ***Eiseniella tetraedra cerni*** Blakemore, 2004

Eiseniella tetraedra mut. *intermedia* Cernosvitov, 1934c: 17 (non *Eiseniella intermedius* Jackson, 1931: 123, valid as *Eiseniella tetraedra tetraedra* (Savigny, 1826)) – Zicsi 1993: 639.

Eisenia tetraedra cerni Blakemore, 2004: 99 (nom nov. pro *Eiseniella tetraedra* var. *intermedia* Cernosvitov, 1934c, non *Eiseniella intermedius* Jackson, 1931: 123, valid as *Eiseniella tetraedra tetraedra* (Savigny, 1826)). — Zicsi & Csuzdi 2007: 241.

DISTRIBUTION. — CHI: Santiago Prov.: La Plata; Maipu; Quebrada; Fundo: La Rinconada (Zicsi 1993: 639).

19. ***Eiseniella tetraedra pupa*** (Eisen, 1874)

Tetragonurus pupus Eisen, 1874: 47.

Lumbricus (*Eisenia*) *pupa* – Vaillant 1889: 154.

Allurus hercynius Michaelsen, 1890b: 7.

Eisenia pupa – Benham 1890: 266.

Eiseniella tetraedra mut. *quadripora* Cernosvitov, 1942: 240.

Eiseniella hercynius – Reynolds & Cook 1976: 112.

Allurus pupa – Reynolds & Cook 1976: 160.

Helodrilus pupa – Reynolds & Cook 1976: 160.

Eiseniella pupa – Reynolds & Cook 1976: 160.

Eiseniella tetraedra pupa – Fragoso & Brown 2007: 71.

DISTRIBUTION. — BRA: RS: Porto Alegre: Guaíba estuary (Knäpper 1976: 39). North America (Michaelsen 1900a: 474).

20. ***Eiseniella tetraedra tetraedra*** (Savigny, 1826)

Enterion tetraedrum Savigny, 1826: 184.

?*Lumbricus quadrangularis* Risso, 1826: 426.

?*Lumbricus amphisbaena* Dugès, 1828: 289.

Lumbricus tetraedrus – Dugès 1837: 17. — Eisen 1871: 966.

Lumbricus agilis Hoffmeister, 1843: 191.

Lumbricus tetraedrus luteus Eisen, 1871: 967.

Lumbricus tetraedrus obscurus Eisen, 1871: 968.

Allurus tetraedrus – Eisen 1873: 54. — Friend 1892b: 402. — Ribaucourt 1896: 69.

Allurus neapolitanus Örley, 1885: 12.

Allurus ninii Rosa, 1886: 680. — Michaelsen 1889: 10.

Allurus hercynius – Michaelsen 1889: 7.

Allurus dubius Michaelsen, 1889: 10.

Lumbricus (*Allolobophora*) *neapolitanus* – Vaillant 1889: 113.

Lumbricus (*Allurus*) *tetraedrus* – Vaillant 1889: 151.

Allurus tetragonurus Friend, 1892b: 402; 1892d: 194.

Allurus amphisbaena – Friend 1892b: 402.

Allurus flavus Friend, 1892b: 402.

Allurus macrurus Friend, 1893b: 461.

Allurus tetraedrus berniensis Ribaucourt, 1896: 69.

Allurus tetraedrus novis Ribaucourt, 1896: 69.

Allurus tetraedrus infinitesimalis Ribaucourt, 1896: 74

Eiseniella tetraedra – Michaelsen 1900a: 471. — Gerard 1964: 42. — Gates 1972a: 108. — Reynolds 1977: 84, fig. 26. — Sims & Gerard 1985: 90, figs 29, 30. — Blakemore 1999: 183; 2000: 33, fig. 22; 2002: 320, fig. 4.16.

Eiseniella tetraedra hammoniensis Michaelsen, 1909: 1.

Allurus mollis Friend, 1912: 63.

Eiseniella intermedius Jackson, 1931: 123 (non Cernosvitov, 1934.

Eiseniella tetraedra mut. *tetragonura* – Michaelsen 1932: 154 (pro *Allurus tetragonurus* Friend, 1892b).

Eisenia tetraedra f. *typica* – Cernosvitov 1937b: 107.

Eiseniella tetraedra var. *popi* Zicsi, 1960: 435.

Eisenia tetraedra – Vail 1974: 2.

Eiseniella macrurus – Reynolds & Cook 1976: 131.

Eiseniella mollis – Reynolds & Cook 1976: 139.

Eiseniella tetraedra tetraedra – Easton 1983: 481. — Zicsi & Csuzdi 2007: 241.

Eiseniella tetraedra proporandra Qiu & Bouché, 2000a: 181.

DISTRIBUTION. — CHI: Juncal (Cognetti 1901b: 2); Valparaiso (Michaelsen 1889: 12); Juan Fernandez and Navarino island (Anderson & Hendrix 2002: 143). ARG

(Mischis 2004: 261): Río Negro Prov. (Ljungström *et al.* 1975: 29); San Luis Prov. (Mischis & Brigada 1985: 134); Córdoba Prov.: Córdoba (Mischis & Herrera 2006: 293); Santa Fé Prov.: Yacarecito brook (Di Persia *et al.* 1982: 13); Entre Ríos Prov.: Ciudad de Paraná, middle Paraná river (Marchese 1984: 161; 1986: 246); La Plata river: Martin García island (Armendariz & César 2001: 212); Paraná river (Di Persia 1980: 77; Bertoldi de Pomar *et al.* 1986: 79; Montalto & Marchese 2005: 490); middle Paraná river (Marchese & Ezcurra de Drago 1983: 100; Ezcurra de Drago *et al.* 2007: 255); Lower Paraná river (Blettler & Marchese 2005: 62). BOL: La Paz Dep.: Murillo Prov.: Viscachani lagune (Römbke & Hanagarth 1994: 12); Manco Capac Prov.: lake Titicaca (Cernosvitov 1939: 114). PER (Römbke & Hanagarth 1994: 12): Cucho Prov.: lake Langui; Puno Prov.: lake Titicaca; Saracocha; Juan Prov.: Huacapistana; Pachacayo; Cochabamba Prov.: Cochabamba (Michaelsen 1923: 1; Cernosvitov 1939: 81; Zicsi 2007: 192; Fragoso & Zicsi 2007: 71). ECU: Pichincha Prov. (Zicsi & Csuzdi 1988: 217). COL: Valle Dep.: El Cerrito (Feijoo 1993; 2007). VEN: Chama river (Giani 1978: 270). BRA: RS/SC: Itá-Machadinho hydroelectric station (Pacheco *et al.* 1992: 23). North America, eastern Atlantic islands, Europe, Africa, India, Australia, New Zealand, and South Atlantic islands (Blakemore 2002: 319).

Genus *Lumbricus* Linnaeus, 1758

Lumbricus Linnaeus, 1758 (part.): 647. — Müller 1774: 24. — Fabricius 1780: 277. — Templeton 1836: 235. — Hoffmeister 1845: 4. — Claus 1876: 416; 1880: 278. — Örley 1881b: 580.

Enterion Savigny, 1820 (part.) (type species: *Lumbricus terrestris* Linnaeus, 1758).

Omilurus Templeton, 1836: 235 (type species: *Omilurus omilurus* Templeton, 1836, valid as *Lumbricus festivus* (Savigny, 1826)).

Lumbricus – Eisen 1873: 45. — Michaelsen 1900a: 508. — Stephenson 1930: 914. — Gates 1975a: 3. — Reynolds 1977: 88. — Blakemore 2002: 325.

Enterion – Örley 1881b: 587.

Allolobophora (part.) – W. W. Smith 1894: 117.

Type species. — *Lumbricus terrestris* Linnaeus, 1758.

21. ***Lumbricus friendi friendi*** Cognetti, 1904

Lumbricus papillosus Friend, 1893b: 453, figs 1-5. — Michaelsen 1900a: 512.

Lumbricus friendi Cognetti, 1904b: 10 (nom nov. pro *L. papillosus* Friend, 1893b; non Müller, 1776, valid as *Arenicola marina (*Linnaeus, 1758), a polychaete. — Gerard 1964: 47. — Easton 1983: 482. — Sims & Gerard 1985: 102, fig. 35. — Blakemore 2002: 331.

Lumbricus friendi friendi – Blakemore 2005a: 44.

Distribution. — URU: Rocha: Castillos; Montevideo (Cordero 1931: 353). Europe (Sims & Gerard 1985: 102).

22. ***Lumbricus rubellus rubellus*** Hoffmeister, 1843

Lumbricus rubellus Hoffmeister, 1843: 187. — Michaelsen 1900a: 509. — Stephenson 1923: 508. — Reynolds 1977: 94, fig. 32. — Blakemore 2002: 332, fig. 4.17.

Lumbricus campestris Hutton, 1877: 351.

Enterion rubellum var. *parvum* Örley, 1881b: 588.

Enterion rubellum var. *magnum* Örley, 1881b: 589.

Digaster campestris (part.) – Hutton 1883: 586.

Endrilus campestris (part.) – W. W. Smith 1887: 137.

Lumbricus rubellus var. *curticaudatus* Friend, 1892e: 292.

Allolobophora rubellus – W. W. Smith 1894: 157.

Lumbricus rubellus tatrensis Nusbaum, 1895: 54.

Allolobophora herculeana Bretscher, 1899: 419.

Allolobophora ribaucourti Bretscher, 1901: 220 (non *Helodrilus ribaucourti* Cognetti, 1901b, valid as *Dendrobaena pygmaea* (Savigny, 1826)).

Allolobophora relictus Southern, 1909: 169.

Lumbricus rubellus tristani Pickford, 1932: 289.

Lumbricus rubellus rubellus – Bouché 1972: 368. — Easton 1983: 482.

Lumbricus rubellus castaneoides Bouché, 1972: 371.

Lumbricus rubellus friendioides Bouché, 1972: 372.

Helodrilus relictus – Reynolds & Cook 1976: 163.

Lumbricus relictus – Reynolds & Cook 1976: 163.

Lumbricus rubellus rubellus – Blakemore 2006: 6.

DISTRIBUTION. — CHI (Zicsi 1993: 639; Muñoz-Pedreros *et al.* 2001: 27): Chiloé island: Chonchi, near Cucao, and near Huillinco; Ensenada (Zicsi & Csuzdi 2001: 139); Temuco (Muñoz-Pedreros *et al.* 1997: 101). ARG: Tierra del Fuego Prov. (Mischis & Moreno 2003: 49): Santa Cruz Prov.: Rio Gallegos; Los Antiguos (Mischis *et al.* 2006: 179); Santa Cruz (Mischis & Herrera 2006: 293). BOL: Murillo Prov:. La Paz Dep.: Viscachani lagune (Römbke & Hanagarth 1994: 12). COL: Bogotá (Fajardo & Prince 1976; Feijoo 1993, 2007). North America, east Atlantic islands, Tristan da Cunha island, Europe, Africa, Middle East, Australia, New Zealand and oceanic islands belonging to latter country (Blakemore 2002: 331).

23. ***Lumbricus terrestris*** Linnaeus, 1758

Lumbricus terrestris Linnaeus, 1758 (part.): 647. — Müller 1774: 24. — Fabricius 1780: 277.

Lumbricus norvegicus (part.) – Fabricius 1780: 277.

Lumbricus terrester (part.) – Blumenbach 1825: 365.

Enterion herculeum Savigny, 1826: 180.

Lumbricus herculeus – Dugès 1837: 17. — Rosa 1884: 22. — Tétry 1937: 151. — Bouché 1969: 89; 1970: 541; 1972: 352. — Bouché & Beugnot 1972: 697.

Lumbricus agricola Hoffmeister, 1842: 42.

Lumbricus infelix Kinberg, 1867: 98.

Lumbricus americanus Perrier, 1872: 44.

Lumbricus studeri Ribaucourt, 1896: 5.

Lumbricus terrestris – Michaelsen 1900a: 511. — Graff 1953: 324. — Gates 1958: 8; 1972b: 118. — Gerard 1964: 48. — Sims 1973: 27. — Reynolds 1977: 99, fig. 34. — Easton 1983: 475. — Sims & Gerard 1985: 106, figs 1, 4, 6. 9j, 37, 38. — Blakemore 2002: 335, fig. 4.18; 2006: 6.

DISTRIBUTION. — ARG: Malvina islands (Zicsi 1993: 639). URU (Grosso *et al.* 2006: 297): Montevideo (Cordero 1931: 355); Melilla (Grosso & Brown 2007: 284). North America, Greenland, Iceland, east Atlantic islands, Europe, Africa, India, and Tasmania (Blakemore 2002: 334).

Genus *Octodrilus* Omodeo, 1956

Octodrilus Omodeo, 1956: 129.

Octolasion (*Purpureum*) Omodeo, 1952: 1 (type species: *Allolobophora lissaensis* Michaelsen, 1891).

TYPE SPECIES. — *Lumbricus complanatus* Dugès, 1828.

24. ***Octodrilus complanatus*** (Dugès, 1828)

Lumbricus complanatus Dugès, 1828: 289.

Octodrilus complanatus – Reynolds & Cook 1976: 89. — Fragoso & Brown 2007: 71.

Allolobophora complanatus – Reynolds & Cook 1976: 89.

Dendrobaena complanatus – Reynolds & Cook 1976: 89.

Octolasion complanatum – Reynolds & Cook 1976: 89. — Mercadal de Barrio 1978: 198.

DISTRIBUTION. — ARG (Mercadal de Barrio 1978: 198; Mischis 2004: 261; Giménez *et al.* 2005): Rio Negro Prov.: El Bolson; Las Grutas (Mischis *et al.* 2006: 178); Río Negro (Mischis & Herrera 2006: 293); Buenos Aires Prov.: Delta of Paraná river (Mischis *et al.* 2006: 177). East Atlantic islands and Africa (Michaelsen 1900a: 508).

25. ***Octodrilus transpadanus*** (Rosa, 1884)

Enterion opium Savigny, 1826 (part.): 183.

Allolobophora transpadana Rosa, 1884: 45.

Allolobophora transpadana var. *cinerea* Rosa, 1886: 679.

Allolobophora cynerea recta Ribaucourt, 1896: 67.

Allolobophora sulfurica Ribaucourt, 1896: 86.

Allolobophora nivalis Bretscher, 1899: 420.

Octolasion transpadanum alpinum Bretscher, 1905: 663.

Octolasion transpadanus – Pop 1947: 18. — Omodeo 1964: 73. — Zicsi 1968b: 233. — Plisko 1973: 1. — Reynolds & Cook 1976: 182.

Lumbricus opium – Reynolds & Cook 1976: 148.

Octolasium recta – Reynolds & Cook 1976: 162.

Lumbricus transpadana – Reynolds & Cook 1976: 182.

Octodrilus transpadanus – Mischis & Brigada 1988: 139. — Fragoso & Brown 2007: 71.

DISTRIBUTION. — ARG (Mischis 2004: 261): Río Negro Prov.: Bariloche (Mischis *et al.* 2006: 178); Río Negro (Mischis & Brigada 1988: 139); San Luis Prov. (Mishis & Brigada 1988: 139); Córdoba (Mischis & Herrera 2006: 293). Europe (Michaelsen 1900a: 507; Mischis & Brigada 1988: 140).

Genus *Octolasion* Örley, 1885

Alyattes Kinberg, 1867: 99 (type species: *Lumbricus alyattes* Kinberg, 1867, valid as *Octolasion cyaneum* (Savigny, 1826)).

Octolasion Örley, 1885 (part.): 13. — Michaelsen, 1900a: 504. — Stephenson 1930: 914.

Titanus? (part.) – Vaillant 1889: 93.

Lumbricus (*Octolasion*) (part.) – Vaillant 1889: 113.

Dendrobaena (part.) – Vaillant 1889: 116.

Lumbricus (*Lumbricus*) (part.) – Vaillant 1889: 121.

Lumbricus (*Allolobophora*) (part.) – Vaillant 1889: 130.

Octolasion – Ribaucourt 1896: 95. — Gates 1975b: 4. — Reynolds 1977: 104. — Blakemore 2002: 341.

Octolasion (*Incolore*) Omodeo, 1952: 1 (type species: *Lumbricus terrestris lacteus* Örley, 1881, valid as *Octolasion lacteum lacteum* (Örley, 1881)).

Octodrilus Omodeo, 1956: 129 (type species: *Lumbricus complanatus* Dugès, 1828).

Octolasium – Bouché 1972: 253.

TYPE SPECIES. — *Lumbricus terrestris lacteus* Örley, 1881.

26. ***Octolasion cyaneum*** (Savigny, 1826)

Lumbricus terrestres (part.) – Müller 1774: 24.

Enterion cyaneum (part.) Savigny, 1826: 181.

Lumbricus cyaneus – Dugès 1837: 17. — Vaillant 1889: 124.

Lumbricus stagnalis Hoffmeister, 1845(part.?): 35 (part valid as *Octolasion lacteum lacteum* (Örley, 1881).

non *Lumbricus communis cyaneus* – Hoffmeister 1845: 35 (valid as *Aporrectodea caliginosa caliginosa* (Savigny, 1826)).

Lumbricus alyattes Kinberg, 1867: 99. — Vaillant 1889: 96.

Lumbricus (*Dendrobaena*) *stagnalis* – Vaillant 1889: 118.

Allolobophora studiosa Michaelsen, 1890c: 50.

Allolobophora (*Octolasion*) *cyanea* (part.) – Rosa 1893: 424 (part valid as *Aporrectodea turgida* (Eisen, 1873)).

Allolobophora cyanea stagnalis – Rosa 1893: 455.

Allolobophora (*Octolasion*) *cyanea studiosa* – Ribaucourt 1896: 95.

Octolasion cyaneum – Michaelsen, 1900a: 506. — Lee 1959: 368. — Gerard 1964: 49. — Gates 1972a: 123; 1972b: 31. — Bouché 1972: 258. — Reynolds 1977: 105, fig. 36. — Easton 1983: 483. — Sims & Gerard 1985: 112, fig. 40. — Blakemore 2002: 342, fig. 4.19, 4.20. — Fragoso & Brown 2007: 71.

Helodrilus kempi Stephenson, 1922: 441.

non *Octolasion cyaneum* – Ljungström & Emiliani 1971: 19. — Ljungström *et al.* 1973: 236 (valid as *Octolasion tyrtaeum* (Savigny, 1826)).

Octolasion cyaneum var. *armoricum* Bouché, 1972: 260.

Octolasium cyaneum – Edwards & Lofty 1972: 214.

DISTRIBUTION. — CHI (Muñoz-Pedreros *et al.* 2001: 27): near Ensenada: Mount Osorno volcano (Zicsi & Csuzdi 2001: 139). ARG (Giménez *et al.* 2005): Tierra del Fuego Prov. (Mischis & Moreno 2003: 49); Santa Cruz Prov. (Mischis & Herrera 2006: 293); Chubut Prov.: Florentino Ameghino dam (Mischis *et al.* 2006: 179); Río Negro Prov.: Bariloche, lengas Wood (Mischis *et al.* 2006: 179); Buenos Aires Prov. (Mischis 2007); La Pampa (Momo *et al.* 1993: 7); Córdoba Prov.: Pampa de Achala (Mischis 1985: 130); Córdoba (Mischis 1996: 6); Sierras Chicas (Mischis 1999: 24); Santa Fé Prov. (Ljungström *et al.* 1973: 240); Entre Ríos Prov.: Victoria (Cognetti 1901b: 2). URU (Grosso *et al.* 2006: 297): Montevideo: Prado (Cordero 1931: 354); Cabaña; Melilla (Grosso & Brown 2007: 284). ECU: Pichincha Prov. (Zicsi & Csuzdi 1988: 218). BRA: RS: Pelotas; (Righi 1967: 342); Gramado; São Leopoldo (Brown *et al.* 2006: 355); Porto Alegre: Guaíba estuary (Knäpper 1976: 39). North America, Iceland, Azores, Europe, Asia, Australia, and New Zealand (Blakemore 2002: 341).

27. ***Octolasion lacteum lacteum*** (Örley, 1881)

?*Lumbricus communis cyaneus* – Hoffmeister 1845: 24 (non *Enterion cyaneum* Savigny, 1826)).

Lumbricus stagnalis Hoffmeister, 1845 (part.): 35 (part valid as *Octolasion cyaneum* (Savigny, 1826)).

Lumbricus terrestris var. *lacteus* Örley, 1881b: 584.

Lumbricus terrestres var. *rubidus* Örley, 1881b: 584 (non *Enterion rubidum* Savigny, 1826, valid as *Dendrodrilus rubidus rubidus* (Savigny, 1826)).

Allolobophora profuga Rosa, 1884: 47. — F. Smith 1900: 441.

Allolobophora rubidus – Örley 1885: 1.

Octolasion rubidum – Örley 1885: 16.

Octolasion profugum – Örley 1885: 17.

Lumbricus (*Allolobophora*) *profuga* – Vaillant 1889: 113.

Allolobophora (*Octolasion*) *rubida* – Ribaucourt 1896: 63.

Allolobophora cyanea profuga sylvestris Ribaucourt, 1896: 67.

Octolasion lacteum (part.) – Michaelsen 1900a: 506. — Gerard 1964: 50.

Allolobophora (*Octolasion*) *profuga* – Michaelsen 1900c: 11.

Octolasium lacteum – F. Smith 1917: 178. — Crossley *et al.* 1952: 71. — Edwards & Lofty 1972: 216.

Octolasion himalayana Cernosvitov, 1937b: 106.

Octolasion ladeum (incorrect spelling) – Goff 1952: 484.

Octolasion tyrtaeum (part.) – Gates 1972a: 125. — Reynolds 1977: 108.

Octolasion lacteum lacteum – Bouché 1972: 253. — Blakemore 2005a: 49.

Octolasion lacteum – Easton 1983: 483. — Blakemore 2002: 345, fig. 4.21. — Zicsi 1993: 639. — Zicsi & Csuzdi 2007: 242.

DISTRIBUTION. — CHI (Zicsi 1993: 638): Chiloé island; Chonchi (Zicsi & Csuzdi 2001: 139). URU: Montevidéo: Colón (Rosa 1898: 277). BOL: Copacabana (Römbke & Zicsi 2007: 229). PER: Junin Prov.: Pachacayo; Huacapistana (Michaelsen 1923: 1; Römbke 2007: 203; Fragoso & Brown 2007: 71). ECU (Zicsi 2007: 192; Fragoso & Brown 2007: 71). COL: Bogotá (Fajardo & Prince 1976); Vale Dep.: El Cerrito (Feijoo 1993, 2007). VEN: Páramo Escorial (Fragoso & Brown 2007: 71). Central America and Mexico (Fragoso & Brown 2007: 71), North America, Africa, Europe, Middle East, Asia (Blakemore 2002: 348).

28. ***Octolasion tyrtaeum*** (Savigny, 1826)

Enterion tyrtaeum Savigny, 1826: 180.

Lumbricus tyrtaeus – Dugès 1837: 17. — Michaelsen 1900a: 513.

Lumbricus argentinus Weyenbergh, 1879: 214.

Octolasion gracile Örley, 1885: 16.

Lumbricus (*Octolasion*) *gracilis* – Vaillant 1889: 113.

?*Allolobophora tyrtaea* – Ribaucourt 1896: 78.

Octolasion lacteum (part.) – Michaelsen 1900a: 506. — Gerard 1964: 50.

Octolasion tyrtaeum (part.) – Gates 1972a: 125. — Reynolds 1977: 108, fig. 38.

Octolasion lacteum gracile – Bouché 1972: 257.

Octolasion tyrtaeum – Gates 1972b: 35. — Reynolds 1977: 108, fig. 38. — Righi 1979: 139; 1984a: 118. — Easton 1983: 483. — Blakemore 2002: 348; 2005a: 49.

Octolasion tyrtaeum tyrtaeum – Sims & Gerard 1985: 115, fig. 41.

DISTRIBUTION. — CHI: Juan Fernandez islands (Römbke & Hanagarth 1994: 12); Imbabura Prov.; Pichincha Prov.; Quito (Zicsi & Csuzdi 1988: 218). ARG: Santa Cruz Prov. (Mischis & Gleiser 1999: 61); Río Negro Prov. (Righi 1979: 140); Buenos Aires Prov.: Buenos Aires (Burela & Cazzaniga 2001: 49); General Pueyrredon (Righi 1984b: 119); San Luis Prov. (Mischis & Brigada 1985: 134); Córdoba Prov.: Sierras Chicas (Mischis 1999: 24); Pampa de Achala (Mischis 1985: 130); near Caballos river (Righi 1984a: 118); Córdoba (Mischis 1997: 63). URU (Righi 1979: 140); Santa Fé Prov. (Ljungström *et al.* 1973: 240): Santa Fé (Righi 1984a: 118); San Tomé (Righi 1978: 168); La Rioja Prov.: Velasco and Famatina mountain range; Castro Barros Dep.: Tucumán Prov. (Mischis 2007). BOL: La Paz Dep.: Murilo Prov: Zongo river valley: near Cambaya (Righi & Römbke 1987: 524); Manco Capac Prov.:

lake Titicaca (Römbke & Hanagarth 1994: 12); Nor Yungas Prov.: Near Unduavi (Zicsi 1995: 606). ECU (Römbke & Hanagarth 1994: 12). COL: Bogotá: Valle Dep.: El Cerrito (Fajardo & Prince 1976; Feijoo 1993). BRA: RS: Porto Alegre: Guaíba estuary (Knäpper 1976: 39). North America, Azores, Atlantic Oceanic islands, Africa (Righi 1979: 140), Europe, Middle East, Asia and Australia (Gerard 1964: 50).

REMARKS

This species has been considered a synonym of *O. lacteum* by Csuzdi & Zicsi (2003).

DISCUSSION

The Lumbricina represent a monophyletic taxon containing all of the large earthworms (Sims 1980). Several alternative names have been applied to this monophylum: Terricolae, Megadrili, Diplotesticulata, and Crassiclitellata. Several autapomorphies support this clade: a multilayered clitellum, relatively small eggs, gastrulation by emboly, a complex circulatory apparatus, specialized intestinal pouches, calciferous glands, two pairs of testicles and of sperm sacs, and male pores located at least two segments behind the posterior testes. I propose that the group has its origin in Pangaea and split into two main lineages with the Triassic breakup of this continent: the Lumbricoidea in Laurasia and the Megascolecoidea + Glossoscolecoidea in Gondwana.

There are several approaches to the study of biodiversity of large, continental areas. An authoritative review of all the previous research in the last 250 years has rarely been attempted before, especially for most groups of non-insect invertebrates.

South America is a megadiverse continental area, perhaps the most diverse of the six continents on our globe. It is also the least known continent regarding basic faunistic and taxonomic initiatives.

In previous centuries most collecting efforts were undertaken by European colonists. All biological specimens were deposited in European museums and taxonomical papers were published in foreign languages. More recently, governmental restrictions have been imposed for the collecting and exchange of biological specimens, specially in Brazil. Much of the effort on biodiversity inventories obtained during the last decade in South America have been published in national languages, sometimes in low impact journals, or in the grey literature, mainly in thesis works and government reports.

While most of the foreign taxonomic effort of European specialists has been conducted in Africa and Asia, the Americans have tended to concentrate their efforts for the study of tropical diversity in the Caribbean region.

All these facts contribute to the poor knowledge of the South American biota. Twenty eight species of Lumbricidae have been registered herein from the South American continent, adding species to the last overview (Fragoso & Brown 2007).

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REFERENCES

ANDERSON C. B. & HENDRIX P. F. 2002. — Hallazgo de *Eiseniella tetraeda* (Savigny 1826) (Annelida: Oligochaeta) en Isla Navarino, Chile. *Anales del Instituto de la Patagonia* Serie Ciencias Naturales 30: 143-146.

ANDRÉ F. 1963. — Contribution à l'analyse expérimentale de la reproduction des lombriciens. *Bulletin biologique de la France et de la Belgique* 81: 1-101.

ARMENDARIZ L. C. & CÉSAR I. I. 2001. — The distribution and ecology of littoral Oligochaeta and Aphanoneura (Annelida) of the natural and historical reserve of Isla Martin Garcia, Rio de la Plata River, Argentina. *Hydrobiologia* 463: 207-216.

BACKLUND H. O. 1948. — *Eisenia fasciata* n. sp. a new lumbricid from Sweden. *Kungliga Fysiografiska Sällskapets Handlingar* 18 (6): 1-5.

BAIRD W. 1873. — Description of some new species of Annelida and Gephyrea in the collection of the British Museum. *The Journal of the Linnean Society of London* 11: 94-97.

BEDDARD F. E. 1891. — The classification and distribution of earthworms. *Proceedings of the Royal Physical Society of Edinburgh* 10: 235-290, pls 13, 14.

BEDDARD F. E. 1896. — Naiden, Tubificiden und Ter-

ricolen. I. Limicole Oligochaeten. *Ergebnisse der Hamburger Magalhaenisch Sammelreise 1892/93* 36 (6): 1-62, 1 pl.

BENHAM W. B. 1890. — An attempt to classify earthworms. *Quarterly Journal of Microscopical Sciences* 31: 201-315.

BERTOLDI DE POMAR H., COPES C., EZCURRA DE DRAGO I. & MARCHESE M. 1986. — Caracteristicas limnológicas del rio Paraná y sus principales tributarios en el tramo Goya-Diamante. Los sedimentos de fondo y su fauna. *Revista de la Asociación de Ciencias Naturales del Litoral* 17: 79-97.

BLAKEMORE J. 1999. — The diversity of exotic earthworms in Australia – a status report, *in* PONDER W. & LUNNEY D. (eds), Proceedings of "The other 99%". *Transactions of the Royal Zoological Society of New South Wales, Australia*, 1999: 182-187.

BLAKEMORE R. J. 2000. — The taxonomic status of the earthworm fauna of lake Pedder, Tasmanian wilderness World Heritage Area – with the description of three new genera and fourteen new species. *Records of the Queen Victoria Museum* 109: 1-36.

BLAKEMORE R. J. 2002. — *Cosmopolitan Earthworms – an Eco-Taxonomic Guide to the Peregrine Species of the World*. VermEcology, Kippax, Australia, 426 p.

BLAKEMORE R. J. 2004. — A provisional list of valid names of Lumbricoidea (Oligochaeta) after Easton, 1983, *in* MORENO A. G. & BORGES S. (eds), *Advances in Earthworms Taxonomy (Annelida: Oligochaeta)*. Editorial Complutense, Madrid: 75-120.

BLAKEMORE R. J. 2005a. — *An updated list of valid, invalid and synonymous names of Criodriloidea (Criodrilidae) and Lumbricoidea (Annelida: Oligochaeta: Sparganophilidae, Ailoscolecidae, Hormogastridae, Lumbricidae, and Lutodrilidae)*. http://bio-eco.eis.ynu.ac.ep/eng/Database/Earthworm.pdf, 68 p.

BLAKEMORE R. J. 2005b. — *American earthworms from north of the Rio Grande – a species checklist*. http://bio-eco.eis.ynu.ac.ep/eng/Database/Earthworm.pdf, 13 p.

BLAKEMORE R. J. 2005c. — *British and Irish earthworms – a checklist of species updated from Sims & Gerard (1999)*. http://bio-eco.eis.ynu.ac.ep/eng/Database/Earthworm.pdf, 12 p.

BLAKEMORE R. J. 2006. — *Checklist of megadrile earthworms from Greenland and Iceland*. http://bio-eco.eis.ynu.ac.ep/eng/Database/Earthworm.pdf, 7 p.

BLANCHARD E. 1849. — Annelida, *in* GAY C. (ed.), *Historia física y politica de Chile, según documentos adquiridos en esta república durante dece años de residencia en ella y publicada bajo las auspicios del supremo gobierno*, Volume 3. E. Thunot, Paris: 37-52.

BLETTER M. C. & MARCHESE R. 2005. — Effects of bridge construction on the benthic invertebrates structure in the Paraná river delta. *Interciencia* 30: 60-67.

BLUMENBACH J. F. 1825. — *Handbuch der Naturgeschichte*. Eleventh edition. Obttingan, Dieterich, Göttingen, 668 p., 2 pls.

BOUCHÉ M. B. 1969. — La biogéographie des lumbricidés de France, son intérêt et ses ambiguités. Cas d'*Allolobophora cupulifera* Tétry, *A. icterica* (Sav.), de *Lumbricus friendi* Cognetti et de *Lumbricus herculeus* (Sav.). *Pedobiologia* 9: 87-92.

BOUCHÉ M. B. 1970. — Observations sur les lombricidés (Troisième série : VII, VIII, IX). *Revue d'Écologie et de Biologie du Sol* 7: 533-547.

BOUCHÉ M. B. 1972. — *Lombriciens de France, écologie et systématique*. Articles de Zoologie-Écologie animale (numéro hors-série). Institut national de la Recherche agronomique, Paris, 621 p.

BOUCHÉ M. B. 1983. — The establishment of earthworm communities, *in* SATCHEL J. E. (ed.), *Earthworm Ecology: From Darwin to Vermiculture*. Chapman & Hall, London: 431-448.

BOUCHÉ M. B. & BEUGNOT M. 1972. — La complexité de *Lumbricus herculeus* illustrée par les caractéristiques des populations de stations de la R. C. P. 40. *Revue d'Écologie et de Biologie du Sol* 9: 697-704.

BRETSCHER K. 1899. — Beitrag zur Kenntniss der Oligochäten-fauna der Schweiz. *Revue suisse de Zoologie* 6: 369-426.

BRETSCHER K. 1901. — Beobachtung über Oligochaeten der Schweiz. *Revue suisse de Zoologie* 9: 189-223, pl. 14.

BRETSCHER K. 1905. — Beobachtung über die Oligochaeten der Schweiz. *Revue suisse de Zoologie* 13: 663-677.

BRINKHURST R. O. 1982. — Evolution in the Annelida. *Canadian Journal of Zoology* 60: 1043-1059.

BROWN G. G. & JAMES S. W. 2006. — Earthworm biodiversity in São Paulo State, Brazil. *European Journal of Soil Biology* 42: 145-149.

BROWN G. G. & JAMES S. W., PASINI A., NUNES D. H., BENITON N. P., MARTINS P. T. & SAUTTER K. D. 2006. — Exotic, peregrine, and invasive earthworms in Brazil: Diversity, distribution, and effects on soils and plants. *Caribbean Journal of Science* 42: 339-358.

BROWN G. G., JAMES S. W., SAUTTER K. D., PASINI A., BENITO N. P., NUNES D. H., KORASAKI E. F., SANTOS C. Y., MATSUMURA C. Y., MARTINS P. T., PAVÃO A., SILVA S. H., GARBELINI G. & TORRES E. 2004. — Avaliação das populações de minhocas como bioindicadores ambientais no norte e leste do Estado do Paraná, *in* SARAIVA O. F. (ed.), *Resultados de pesquisa da EMBRAPA soja 2003: Manejo de solos, plantas daninhas e agricultura de precisão*. Série Documentos, n. 253. Embrapa Soja, Londrina, Paraná, Brazil: 33-46.

BURELA S. & CAZZANIGA N. J. 2001. — Earthworms from southern Buenos Aires Province, Argentina. *Megadrilogica* 8: 49-52.

BURMEISTER H. 1835. — *Zoologischer Hand-Atlas zum Schulgebrauch und Selbstunterricht*. Georg Reiner, Berlin, 42 p.

CASABE N., PIOLA L., FUCHS J., ONETO M. L., PAMPARATO

L., Basacks S., Gimenez R., Massaro R., Papa J. C. & Kestene E. 2007. — Ecotoxicological assessment of the effects of glyphosate and chlorpyrifos in an Argentine soya field. *Journal of Soil and Sediments* 7: 232-239.

Cekanovskaya O. V. 1959. — [On the Oligochaeta fauna of the northern Caucasus]. *Trudy Zoologicheskaya Instituta Akademia Nauk Leningrad* 26: 347-354 (in Russian).

Cekanovskaya O. V. 1962. — The aquatic Oligochaeta of USSR. *Akademiya Nauk SSSR Zoologi Institut Opredi Faune SSSR* 78: 1-411 (in Russian, translated by Amerind Publication Company, New Dehli).

Cernosvitov L. 1929. — Communication préliminaire sur les oligochètes récoltés par M. P. Remy pendant la croisière arctique effectuée par le « Pourquoi-pas ? » en 1926 sous la direction du Dr. J.-B. Charcot. *Bulletin du Muséum d'Histoire naturelle*, Paris, 2e série (1): 144-149.

Cernosvitov L. 1934a. — Les oligochètes de la Guyane Française et d'autres pays de l'Amérique du Sud. *Bulletin du Muséum d'Histoire naturelle*, Paris, 2e série (2): 47-59.

Cernosvitov L. 1934b. — Oligochètes de la Mission du Cap Horn en 1882-1883. *Bulletin du Muséum d'Histoire naturelle*, Paris, 2e série (6): 252-256.

Cernosvitov L. 1937a. — Die Oligochätenfauna Bulgariens. Mitteilungen der Köngelige *Naturwissenschaft der Institut Sofia* 10: 69-92.

Cernosvitov L. 1937b. — On a collection of Indian earthworms of the family Lumbricidae. *Records of the Indian Museum* 39: 105-111.

Cernosvitov L. 1938. — Zur Kenntnis der Oligochätenfauna des Balkans. V. Oligochäten aus Jugoslawien und Albanien. *Zoologischer Anzeiger* 122: 285-289.

Cernosvitov L. 1939. — Oligochaeta, *in* Gilson H. C. (ed.), *The Percy Sladen Trust Expedition to Lake Titicaca in 1937*. Volume 1. Linnean Society of London, London: 81-116.

Cernosvitov L. 1942. — Revision of Friend's types and descriptions of British Oligochaeta. *Proceedings of the Zoological Society of London* Series B 111: 237-280.

Chandebois R. 1958. — *Dendrobaena rivulicola* n. sp., nouveau lumbricide amphibie de la région méditerranéenne. *Bulletin de la Societé zoologique de France* 83: 2, 3, 159-162.

Chen Y. 1931. — On the terrestrial Oligochaeta from Szechuan, with descriptions of some new forms. *Contributions of the Biological Laboratory of the Scientific Society of China* Zoology 7: 117-171.

Chinaglia L. 1911. — Materiali per la fauna alpina del Piemonte II: Lombrichi della Valle del Roja. *Bolletino dei Musei di Zoologia ed Anatomia Comparata della Reale Università di Torino* 26 (635): 1-7.

Claus C. 1876. — *Grundzüge der Zoologie.* Third edition. Volume 1. N. G. Elwert'sche Universität, Marburg, 500 p.

Claus C. 1880. — *Grundzüge der Zoologie.* Fourth edition. Volume 1. N. G. Elwert'sche Universität, Marburg, 530 p.

Cognetti L. 1901a. — Res Italicae III. Gli oligocheti della Sardegna. *Bolletino dei Museo di Zoologia ed Anatomia Comparata della Reale Universitá di Torino* 16 (404): 1-26, pl. 1.

Cognetti L. 1901b. — Oligocheti raccolti dal dott. F. Silvestri nel Chile e nella Republica Argentina. *Bolletino del Museo di Zoologia ed Anatomia Comparata della Reale Universitá di Torino* 16 (407): 1, 2.

Cognetti L. 1903a. — Res Italicae. VI. Lombrichi delle Alpi marittimi. *Bollettino dei Musei di Zoologia ed Anatomia Comparata della Reale Univiversitá di Torino* 18 (434): 1-9.

Cognetti L. 1903b. — Contributo alla conoscenza degli oligochaeti cavernicoli. *Atti della Societá dei Naturalisti e Matematici di Modena* Series 4 5 (36): 3-10.

Cognetti L. 1904a. — Diagnosi di un nuovo lombrico del Chile. *Bolletino dei Musei di Zoologia ed Anatomia Comparata della Reale Universitá di Torino* 191: 1, 2.

Cognetti L. 1904b. — Lombricidi dei Pirenei. *Bolletino dei Musei di Zoologia ed Anatomia Comparata della Reale Universitá di Torino* 19 (476): 1-10.

Cognetti L. 1906. — Nuovi dati sui Lumbricidi dell'Europa orientale. *Bollettino dei Musei di Zoologia ed Anatomia Comparata della Reale Univiversità di Torino* 21 (525): 1-18.

Cordero E. H. 1931. — Notas sobre los oligoquetos del Uruguay. *Anales del Museo Nacional de Historia Natural Bernardino Rivadavia Buenos Aires* 36: 343-357.

Cordero E. H. 1942. — Oligoquetos terrícolas del Museo Argentino de Ciencias Naturales. *Anales del Museo Argentino de Ciencias Naturales Bernardino Rivadavia Buenos Aires* 40: 269-293, pls 1, 2.

Crossley D. A. Jr., Reichled D. E. & Edwards C. A. 1952. — Intake and turnover of radioactive cesium by earthworms (Lumbricidae). *Pedobiologia* 11: 71-76.

Csuzdi C. & Zicsi A. 2003. — *Earthworms of Hungary (Annelida: Oligochaeta: Lumbricidae).* Hungarian Natural History Museum, Budapest, 271 p.

Di Masso R. J. 1999. — Minilivestock in Argentina. Integration with agricultural production. *Tropicultura* 16-17: 212-215.

Di Persia D. H. 1980. — Aportes a la oligoquetofauna acuática y terrestre de la Provincia de Entre Ríos. *Historia Natural* 1: 77-83.

Di Persia D. H., Poledri J. C. & D'Angelo R. A. 1982. — El zoobentos del arroyo Yacarecito (Prov. de Santa Fé, Argentina). *Revista de la Asocicación de Ciencias Naturales del Litoral* 13: 13-24.

Dominguez J. J., Velando A. & Ferreiro A. 2005. — Are *Eisenia fetida* (Savigny, 1826) and *Eisenia andrei* Bouché (1972) (Oligochaeta, Lumbricidae) different biological species? *Pedobiologia* 49: 81-87.

DUGÈS A. 1828. — Recherche sur la circulation, la respiration et la reproduction des annélides sétigères abranches. *Annales des Sciences naturelles*, Paris 15 (1): 284-336.

DUGÈS A. 1837. — Nouvelles observations sur la zoologie et l'anatomie des annélides abranches sétigères. *Annales des Sciences naturelles* Paris Série 2 Zoologie 8: 15-35.

EASTON E. G. 1980. — Japanese earthworms: a synopsis of the megadrile species (Oligochaeta). *Bulletin of the British Museum Natural History Zoology* 40 (2): 33-65.

EASTON E. G. 1983. — A guide to the valid names of Lumbricidae (Oligochaeta), *in* SATCHELL J. E. (ed.), *Earthworm Ecology from Darwin to Vermiculture.* Chapman and Hall, London: 475-485.

EATON T. H. JR. 1942. — Eathworms of the northeastern United States: a key, with distribution records. *Journal of the Washington Academy of Sciences* 32 (8): 242-249.

EDWARDS C. A. & LOFTY J. R. 1972. — *Biology of Earthworms.* Chapman and Hall, London, 283 p.

EISEN G. 1871. — Bidrag till Skandinaviens Oligochaetfauna. I. Terricolae. *Öfversigt af Kongliga Vetenskaps-Akademiens Förhandligar* 27: 953-971.

EISEN G. 1873. — Om Skandinaviens lumbricider. *Öfversigt af Kongliga Vetenskaps-Akademiens Förhandligar* 30 (8): 43-56.

EISEN G. 1874. — New Englands och Canadas Lumbricides. *Öfversigt af Kongliga Vetenskaps-Akademiens Förhandligar Stockholm* 31 (2): 41-49.

EISEN G. 1879. — On the Oligochaeta collected during the Swedish Expeditions to the Arctic regions in the years 1870, 1875 and 1876. *Kongliga Svenska Vetens-Akademiens Handlingar* New Series 15 (7): 1-49, pls 1-16.

EVANS A. C. 1946. — A new earthworm of the genus *Allolobophora*. *The Annals and Magazine of Natural History* London Series 11 13: 98-101.

EVANS A. C. 1948. — On some earthworms from Iowa, including a description of a new species. *The Annals and Magazine of Natural History* London Series 11 14: 514-516.

EZCURRA DE DRAGO I., MARCHESE M. & MONTALTO L. 2007. — Benthic invertebrates, *in* IRIONDO M. H., PAGGI J. C. & PARMA M. J. (eds), *The Middle Paraná River: Limnology of a Subtropical Wetland.* Springer Verlag, Berlin: 251-275.

FABRICIUS O. 1780. — *Fauna Groenlandica, Systematice sistema Animalia Groenlandiae occidentalis hactenus indagata, quoad Nomen specificum, triviale, vernaculumque; Synonyma Auctorum plurium, Descriptionem, Locum, Victum, Generationem, Mores, Usum, Capturamque singuli, pront detegendi Occasio fuit, maximaque Parte secundum proprias Observationes*. Heineck and Faber, Havniae et Lipsiae, 452 p., 1 pl.

FAJARDO G. & PRINCE C. 1976. — *Ciclo biológico y algunos aspectos ecológicos de las lombrices de tierra en dos suelos de la sabana de Bogotá*. Tesis de Licenciatura en Biologia. Universidad Nacional de Colombia, Bogotá, Colombia, 77 p.

FEIJOO A. 1993. — *Inventario de las lombrices de tierra (Annelida, Oligochaeta) de una región del Departamento del Valle, Palmira*. Tesis de Licenciatura. Universidad Nacional de Colombia, Palmira, Colombia, 186 p.

FEIJOO A. 2007. — Lombrices de tierra (Annelida, Oligochaeta) del Parque Nacional Sumapáz, Colombia, *in* VAN DER HAMMEN T. & DOS SANTOS A. G. (eds), *Studies on Tropical Andean Ecosystems*, Volumen 7. J. Cramer, Berlin, 1009 p.

FEIJOO A., KNAPP B. E., LAVELLE P. & MORENO A. G. 1999. — Quantifying soil macrofauna in a Colombian watershed. *Pedobiologia* 43: 513-517.

FEIJOO A., QUINTERO H. & FRAGOSO C. 2006. — Earthworm communities in forest and pasture of the Colombian Andes. *Caribbean Journal of Science* 42: 301-310.

FEIJOO A., QUINTERO H., FRAGOSO C. & MORENO A. G. 2004. — Patrón de distribución y listado de las especies de lombrices de tierra (Annelida: Oligochaeta) en Colombia. *Acta Zoologica Mexicana* 20: 197-220.

FITZINGER L. 1833. — Beobachtungen über die Lumbrici. *Isis* 4: 549-553.

FLETSCHER J. J. 1886. — Notes on Australian earthworms. Part I. *Proceedings of the Linnean Society of New South Wales* 2: 523-576.

FRAGOSO C. 2001. — Las lombrices de tierra de México (Annelida, Oligochaeta): diversidad, ecología y manejo. *Acta Zoologica Mexicana* (Nueva Serie), Número especial 1: 131-171.

FRAGOSO C & BROWN G. G. 2007. — Ecologia y taxonomia de las lombrices de tierra em Latinoamérica. El primer Encuentro Latino-Americano de Ecologia y Taxonomia de Oligochaeta (ELAETAO 1), *in* BROWN G. G. & FRAGOSO C. (eds), *Minhocas na América Latina: biodiversidade e ecologia.* Embrapa Soja, Londrina, Paraná, Brazil: 33-75.

FRIEND H. 1892a. — British Annelida. With special reference to the earthworms of Essex. *The Essex Naturalist* 6: 30-33, 60-65, 107-111, 169-174, 185-190.

FRIEND H. 1892b. — On a new species of earthworm. *Proceedings of the Royal Irish Academy Series 3* 2: 402-410.

FRIEND H. 1892c. — The earthworms of Northants. *Field Club* 3: 83-85, 100-103.

FRIEND H. 1892d. — The earthworms of Middlesex. *Science Gossip* 28: 194-196.

FRIEND H. 1892e. — Studies of British tree-and earthworms. *The Journal of the Linnean Society of London Zoology* 24: 292-312.

FRIEND H. 1893a. — A check-list of British earth-worms. *Naturalist* 48: 17-20.

FRIEND H. 1893b. — On some new Irish earthworms.

Proceedings of the Royal Irish Academy Series 3, 2: 453-462.
FRIEND H. 1897. — Earthworm studies. IV. A check-list of British eathworms. *Zoologist* Series 4, 1: 453-459.
FRIEND H. 1904. — New garden worms. *Gardeners' Chronicle* Series 3, 35: 161.
FRIEND H. 1909. — New garden worms. *Gardeners' Chronicle* Series 3, 46: 243-246, 274, 357.
FRIEND H. 1910a. — New garden worms. *Gardener's Chronicle* Series 3, 48: 98-99.
FRIEND H. 1910b. — New garden worms. *Gardener's Chronicle* Series 3, 47: 329-330, 381.
FRIEND H. 1912. — Annelid hunting in Notts II. *Reports of the Nottingham Nature Society* 60: 50-64.
FRIEND H. 1923. — *British Earthworms and How to Identify Them*. The Epworth Press,, London, 25 p.
FRIEND H. 1927. — A polymorphic oligochaete. *Nature London* 119: 281.
FÜLLER H. 1953. — Tiergeographisch-ökologische Untersuchungen über die Lumbriciden des mittleren Saaletales. *Wissenschaftliche Zeitschrift der Friedrich-Schiller-Universität Jena* 53: 51-60.
GATES G. E. 1941. — Notes on a Californian earthworm, *Plutellus papillifer* (Eisen, 1893). *Proceedings of the California Academy of Sciences* 23: 443-452.
GATES G. E. 1952. — New species of earthworms from the Arnold Arboretum, Boston. *Breviora* 9: 1-3.
GATES G. E. 1958. — Contribution to a revision of the earthworm family Lumbricidae II. Indian species. *Brevoria Museum of Comparative Zoology* 91: 1-16.
GATES G. E. 1969. — On two American genera of earthworm family Lumbricidae. *The Journal of Natural History* 3: 305-307.
GATES G. E. 1972a. — Burmese-Earthworms. An introduction to systematics and biology of megadrile oligochaetes with special reference to Southeast-Asia. *Transactions of the American Philosophical Society* 62 (7): 5-326.
GATES G. E. 1972b. — Towards a revision of the earthworm family Lumbricidae, IV. The *trapezoides* species group. *Bulletin of the Tall Timbers Research Station* 12: 1-146.
GATES G. E. 1974a. — On oligochaete gonads. *Megadrilogica* 1: 1-4.
GATES G. E. 1974b. — Contribution to a revision of the family Lumbricidae, XI. *Eisenia rosea* (Savigny, 1826). *Bulletin of the Tall Timbers Research Station* 16: 9-30.
GATES G. E. 1975a. — Contribution to a revision of the family Lumbricidae, XVIII. *Octolasion calarense* Tétry, 1944. *Megadrilogica* 2: 1-3.
GATES G. E. 1975b. — Contributions to a revision of the earthworm family Lumbricidae. XII. *Enterion mammale* Savigny, 1826 and its position in the family. *Megadrilogica* 2: 1-5.
GATES G. E. 1976a. — On earthworm ovaries and their importance in megadrile systematics. *Megadrilogica* 2: 1-2.
GATES G. E. 1976b. — Contributions to a revision of the earthworm family Lumbricidae. XIX. On the genus of the earthworm *Enterion roseum* Savigny, 1826. *Megadrilogica* 2 (12): 4.
GATES G. E. 1977. — On the correct generic name for some west coast native earthworms, with aids for a study of the genus. *Megadrilogica* 3: 54-60.
GATES G. E. 1978. — The earthworm genus *Lumbricus* in North America. *Megadrilogica* 3: 81-116.
GATES G. E. 1979. — Contributions to a revision of the earthworm family Lumbricidae. XXIII. The genus *Dendrodrilus* Omodeo, 1956 in North America. *Megadrilogica* 3: 151-162.
GATES G. E. 1980. — Contribution to a revision of the family Lumbricidae, XXV. The genus *Allolobophora* Eisen, 1874, in North America. *Megadrilogica* 3: 177-184.
GATES G. E. 1982. — Farewell to North American megadriles. *Megadrilogica* 4: 12-77.
GERARD B. M. 1964. — *Lumbricidae (Annelida), with keys and descriptions.* Synopses of the British fauna, 6. The Linnean Society of London, London, 58 p.
GIANI N. 1978. — Les oligochètes du rio Chama (Venezuela). *Bulletin de la Societé d'Histoire naturelle de Toulouse* 113: 267-272.
GIMÉNEZ R., KESTEN E. & MISCHIS C. C. 2005. — *Earthworm's population to assess the forest health*. XXII IUFRO World Congress, Brisbane, meeting abstract.
GOFF C. C. 1952. — Flood-plain animal communities. *American Midland Naturalist* 47: 478-486.
GRAFF O. 1953. — Zur Berechtigung des Artnames *Lumbricus terrestris* Linnaeus, 1758. *Zoologischer Anzeiger* 161: 324-326.
GROSSO E. G. & BROWN G. G. 2007. — Biodiversidad y ecología de las lombrices de tierra en el Uruguay, *in* BROWN G. G. & FRAGOSO C. (eds), *Minhocas na América Latina: biodiversidade e ecologia.* Embrapa Soja, Londrina, Paraná, Brazil: 281-286.
GROSSO E. G., JORGE G. & BROWN G. G. 2006. — Exotic and native earthworms in various land use systems of central, southern and eastern Uruguay. *Caribbean Journal of Science* 42: 294-300.
HERNANDEZ J. A., RAMIREZ N., BRACHO B. & FARIA A. 1999. — Caracterización del crecimiento de la lombriz roja (*Eisenia* spp.), bajo condiciones de clima cálido. *Revista de la Facultad de Agronomia de Maracay* 25: 139-147.
HOFFMEISTER W. F. L. 1842. — *De vermibus quibusdam genus Lumbricorum perinentibus.* Holmquist, Berlin, 28 p., 2 pls.
HOFFMEISTER W. 1843. — Beitrag zur Kenntnis Deutscher Landanneliden. *Archiv für Naturgeschichte* 9: 183-198.
HOFFMEISTER W. 1845. — *Übersicht aller bis jetzt bekannten Arten aus der Familie der Regenwürmer. Als*

Grundlage zu einer Monographie dieser Familie. Friedrich Vieweg und Sohn, Braunschweig, 43 p.

HUTTON F. W. 1877. — On New Zealand earthworms in the Otago Museum. *Transactions of the New Zealand Institute* 9: 350-353.

HUTTON F. W. 1883. — Synopsis of the genera of earthworms. *New Zealand Journal of Science* 1: 585-586.

JACKSON A. 1931. — The Oligochaeta of south-western Australia. *The Journal of the Proceedings of the Royal Society of Western Australia* 17: 71-137.

JAENIKE J. 1982. — *Eisenia foetida* is two biological species. *Megadrilogica* 4: 6-8.

JAMES S. W. & BROWN G. G. 2006. — Earthworm ecology and diversity in Brazil, *in* MOREIRA F. M. S., SIQUEIRA J. O. & BRUSSAARD L. (eds), *Soil Biodiversity in Amazonian and Other Brazilian Ecosystems.* CABI, Wallingford, UK: 56-116.

JAMIESON B. G. M. 1981. — *The Ultrastructure of the Oligochaeta.* Academic Press, London, 462 p.

JAMIESON B. G. M. 1988. — On the phylogeny and higher classification of the Oligochaeta. *Cladistics* 4: 367-410.

JOHNSTON G. 1865. — *A Catalogue of British Non-Parasitical Worms in the Collection of the British Museum.* Taylor and Francis, London, 366 p., 20 pls.

KINBERG J. G. H. 1867. — Annulata nova. *Öfversigt af Kongliga Vetenskaps-Akademiens Förhandlingar* 23: 97-103.

KNÄPPER C. F. U. 1972a. — Oligoquetas terrestres – uma moderna avaliação. *Publicação do Instituto André Voisin Porto Alegre* 1: 11-19.

KNÄPPER C. F. U. 1972b. — Dominanzverhaltnisse der verschiedenen arten der gattung *Pheretima* in kulturboden von Rio Grande do Sul. *Pedobiologia* 12: 23-25.

KNÄPPER C. F. U. 1976. — Preliminary considerations on the occurrence of oligochaetes in the estuary of the Guaíba, RS. *Estudos Leopoldenses* 38: 39-41.

KNÄPPER C. F. U. 1977. — Ecological niches of *P. diffringens* (Baird, 1869) and *E. lucens* (Waga, 1857) at São Francisco de Paula. *Estudos Leopoldenses* 42: 194-196.

KNÄPPER C. F. U. & HAUSER J. 1969. — Eine anomalie bei *Allolobophora caliginosa* (Savigny, 1826) (Oligochaeta). *Revista Brasileira de Biologia* 29: 411-412.

KNÄPPER C. F. U. & PORTO R. P. 1979. — Ocorrência de oligoquetas nos solos do Rio Grande do Sul. *Acta Biológica Leopoldensia* 1: 137-166.

KOBAYASHI S. 1940. — Terrestrial Oligochaeta from Manchoukou. *The Scientific Reports of the Tôhoku Imperial University* Series 4, 15: 261-315.

KOBAYASHI S. 1941. — Earthworms of Korea I. *The Scientific Reports of the Tohôku Imperial University* Series 4, 16: 1-390.

KULAGIN N. M. 1889. — Materials of the natural world [Materiali pó estestvennoy istoriidozdevych chervei (sem. Lumbricidae)]. *Isvestiya Obshchestva Ljubitelei Estestvoznaniya Antropologii i Ethnografii Moscow* 58 (2): 1-65 (in Russian).

KVAVADZE E. S. 1993. — A new genus of earthworms *Omodeoia* gen. nov. (Oligochaeta: Lumbricidae). *Obshchestva Akademie Nauk Gruz* 148: 129-134.

LAHILLE F. 1922. — *Enumeración sistemática de los anélidos oligoquetos encontrados en la R. Argentina*. Ministerio de Agricultura de la Nación, Buenos Aires, 32 p.

LANGMAID K. K. 1964. — Some effects of earthworm invasion in virgin podzols. *Canadian Journal of Soil Sciences* 44: 34-37.

LEE K. E. 1959. — The earthworm fauna of New Zealand. *Bulletin of the New Zealand Department of Scientific and Industrial Research*, Wellington 130: 1-486.

LEE K. E. 1985. — *Earthworms. Their Ecology and Relationships with Soils and Land Use.* Academic Press, Sydney, 411 p.

LEUCKART R. 1849. — Zur Kenntnis der Fauna von Island. *Archiv für Naturgeschichte* 15: 149-208, pl. 3.

LEVINSEN G. M. R. 1884. — Systematisk-geografisk öfverssigt över de norddiske Annulata, Gephyrea, Chaetognathi og Balanoglossi, II. *Videnskabelige Meddelser fra den Naturhistoriske Forening i Kjöbenhavn* 45: 9-350, pls 1-7.

LIMA A. C. R. & RODRIGUEZ C. 2007. — Earthworm diversity from Rio Grande do Sul. Brazil, with a new native criodrilid genus and species (Oligochaeta: Criodrilidae). *Megadrilogica* 11: 9-20.

LINNAEUS C. 1758. — *Systema Naturae per Regna tria Naturae, secundum Classes, Ordines, Genera, Species, cum characteribus, differentiatiis, synonymis, locis.* 10th edition, volume 1. Laurentii Salvii, Holmiae, 824 p.

LJUNGSTRÖM P. O. 1970. — Introduction to the study of earthworm taxonomy. *Pedobiologia* 10: 265-285.

LJUNGSTRÖM P. O. 1972. — Introduced earthworms of South Africa. On their taxonomy, distribution, history of introduction and on the extermination of endemic earthworms. *Zoologische Jahrbücher Abteilung für Systematik Ökologie und Geographie der Tiere* 99: 1-81.

LJUNGSTRÖM P. O. & EMILIANI E. 1971. — Contribución al conocimiento de la ecología y distribución geográfica de los lombrices de tierra (oligoquetos) de la Prov. de Santa Fe (Argentina). *Idia* 284: 19-32.

LJUNGSTRÖM P. O., EMILIANI F. & RIGHI G. 1975. — Notas sobre los oligoquetos (lombrices de tierra) argentinos. *Revista de la Asociación de Ciencias Naturales del Litoral* 6: 1-42.

LJUNGSTRÖM P.-O., ORELLANA J. A. & DE PRIANO J. J. 1973. — Influence of some edaphic factors on earthworm distribution in Santa Fe Province, Argentina. *Pedobiologia* 13: 236-247.

LÜTKEN J. O. 1876. — *Untersuchungen zur Ersforschung der genealogischen grundlage des Crustaceen-Systems*. Carl Gerould, Wien, 114 p.

MALEVIC J. J. 1947. — [Oligochaeta proper to caves of the Caucasus]. *Byulletin Moskova Obshchet Ispyt*

Priroda Biologii New Series 52 (4): 1-19.
MALEVIC J. J. 1949. — Materials for the knowledge of worms from walnut-fruit forest of South Kyrgyzstan [Materialy k poznaniju dozdevych cervej Orechovo-Plodovych lesov juznoj Kirgizii]. *Doklady Akademii Nauk SSSR Biologie* 47: 397-400 (in Russian).
MALM A. W. 1877. — [Om Daggmasker, Lumbricina]. *Öfversigt af Saleskapett Hortikulturens Vänners Forhandlingar i Göteborg* 1: 34-47 (in Swedish).
MARCHESE M. R. 1984. — Estudos limnologicos en una seccion transversal del tramo medio del rio Paraná. XI. Zoobentos. *Revista de la Asociación de Ciencias Naturales del Litoral* 15: 157-174.
MARCHESE M. R. 1986. — Nuevos aportes al conocimiento de los oligoquetos del Rio Paraná medio y algunos tributarios. *Studies on Neotropical Fauna and Environment* 21: 231-249.
MARCHESE M. R. & EZCURRA DE DRAGO I. 1983. — Zoobentos de los principales tributarios del rio Parana medio en el tramo Goya-Diamante. Su relacion con el cauce principal y causes secundarios. *Revista de la Asociación de Ciencias Naturales del Litoral* 14: 95-109.
MERCADAL DE BARRIO I. T. 1978. — Estudio morfologico y taxonomico de *Octolasium complanatum* (Oligochaeta, Lumbricidae). *Physis* Sección C Buenos Aires 37: 197-216.
MERCADAL DE BARRIO I. T. & BARRIO A. 1988. — New records and other citations of earthworms (Oligochaeta) for Argentina. *Physis* Sección C Buenos Aires 46: 1-4.
MICHAELSEN W. 1889. — Oligochäten des Naturhistorischen Museums in Hamburg. *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten* Hamburg 6: 1-16.
MICHAELSEN W. 1890a. — Oligochaeten des Naturhistorischen Museums zu Hamburg, III. *Mitteilungen aus dem Naturhistorischen Museum in Hamburg* 7: 53-62.
MICHAELSEN W. 1890b. — Die Lumbriciden Norddeutschlands. *Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten* 7: 1-19.
MICHAELSEN W. 1890c. — Die Lumbriciden Mecklenburg's. *Archiv des Vereins der Freunde der Naturgeschichte in Mecklenburg* 44: 48-54.
MICHAELSEN W. 1891a. — Terricolen der Berliner Zoologischen Sammlung. Part I. *Archiv für Naturgeschichte* 57: 1-24, pl. 8.
MICHAELSEN W. 1891b. — Oligochaeten des Naturhistorischen Museums zu Hamburg, IV. *Mitteilungen aus dem Naturhistoriswchen Musem in Hamburg* 8: 1-42.
MICHAELSEN W. 1892. — Terricolen der Berliner Zoologischen Sammlung, Part II. *Archiv für Naturgeschichte* 58: 209-261, pl. 13.
MICHAELSEN W. 1894. — Zur Systematik der Regenwürmer. *Abhandlungen der Gesellschaft Hamburg* 1894: 1-182.
MICHAELSEN W. 1899a. — Terricolen von verschiedenen Gebieten der Erde. *Mitteilungen des Naturhistorische Museums in Hamburg* 16: 1-122.
MICHAELSEN W. 1899b. — Beiträge zur Kenntniss der Oligochäten. *Zoologische Jahrbücher Abteilung für Systematik Ökologie und Geographie der Tiere* 12: 105-144.
MICHAELSEN W. 1899c. — Terricolen (Nachtrag). *Hamburg Magalhaens Sammelreiser* 5: 1-28.
MICHAELSEN W. 1900a. — Oligochaeta*, in Das Tierreich,* volume 10. R. Frieländer and Sohn, Berlin, 575 p.
MICHAELSEN W. 1900b. — Zur Kenntnis der Geoscoleciden Südamerikas. *Zoologischer Anzeiger* 23: 53-56.
MICHAELSEN W. 1900c. — Die Lumbriciden-Fauna Nordamerikas. *Abhandlungen aus dem Gebiete der Naturwissenschaften Herausgegeben vom Naturwissenschaftichen Verein in Hamburg* 16: 1-22.
MICHAELSEN W. 1902. — Neue Oligochaeten und neue Fundorte alt-bekannter. *Mitteilungen aus dem Naturhistorischen Museum in Hamburg* 19: 1-54, 1 pl.
MICHAELSEN W. 1903. — *Die geographische Verbreitung der Oligochäten*. R. Friedländer und Sohn, Berlin, 186 p.
MICHAELSEN W. 1904. — Catalogo de los oligoquetos del territorio chileno-magellanico i descripcion de especies nuevas. *Revista Chilena de Historia Natural* 6: 262-292.
MICHAELSEN W. 1907. — Oligochaeta, *in* MICHAELSEN W. & HARTMEYER R. (eds), *Fauna Südwest-Australiens,* Volume 1, Lief 2. *Ergebnisse Südwest-Australischen Forschung.* Verlag von Gustav Fisher, Jena: 117-232, pls 1, 2.
MICHAELSEN W. 1909. — Oligochaeten, *in* BRAUER A. (ed.), *Die Süsswasser Fauna Deutschlands,* Vol. 13. Gustav Fisher, Jena, 66 p.
MICHAELSEN W. 1910. — Zur Kenntnis der Lumbriciden und ihrer Verbreitung. *Annuaire du Musée zoologique de l'Académie impériale des Sciences* Saint Pétersbourg 15: 1-74.
MICHAELSEN W. 1913. — Die Oligochäten des Kaplandes. *Zoologische Jahrbüch Abteilung für Systematik Ökologie und Geographie der Tiere* 34: 473-556.
MICHAELSEN W. 1914. — Die Oligochäten Columbias. *Mémoires de la Société des Sciences naturelles de Neuchâtel* Nouvelle Série 5: 202-252, 8 pls.
MICHAELSEN W. 1923. — Oligochäten von Peru und Westpatagonien. *Vetenskaps och Vitterhets Samhslles Handlingar Ny Tidsfsljd* Serie 4, 27 (6): 1-12.
MICHAELSEN W. 1927. — Die Oligochätenfauna Brasiliens. *Senckenbergischen Naturforschenden Gesellschaft* 40: 369-374.
MICHAELSEN W. 1932. — Variations und Mutationsverhältnisse bei den Arten der Lumbricidengattung *Eiseniella*. *Zeitschrift für Naturwissenschaften Jena* 67: 141-157.

MICHAELSEN W. 1935. — Oligochaeten aus Peru. *Capita Zoologica's Gravenhage* 6 (2): 1-12.
MICHAELSEN W. 1936. — Zwei neue opisthopore Oligochäten. *Festschrift zum 60. Geburtstagen von Prof. Dr. Embrik Strand* 1: 31-36.
MISCHIS C. C. 1982. — Nota previa sobre las lombrices de tierra (Annelida, Oligochaeta) de la Provincia de Córdoba, Argentina. *Historia Natural Corrientes* 2: 145-150.
MISCHIS C. C. 1985. — The earthworms (Annelida, Oligochaeta) from the Pampa de Achala (Córdoba, Argentina). *Megadrilogica* 4: 130-131.
MISCHIS C. C. 1996. — La oligoquetofauna de la Provincia de Córdoba (Annelida, Oligochaeta), *in* DI TADA I. E. & BUCHER E. H. (eds), *Biodiversidad de la Provincia de Córdoba.* World Congress: 6-63.
MISCHIS C. C. 1997. — Especies del genero *Lumbricus* Linnaeus, 1758 (Annelida, Oligochaeta, Lumbricidae) mencionadas por Weyenbergh para la Provincia de Córdoba (Argentina). *Naturalia Neotropica* 28: 62-64.
MISCHIS C. C. 1999. — Comunidades de lombrices (Oligochaeta) en diferentes ambientes de las Sierras Chicas, Córdoba, Argentina. *Iheringia* Série Zoologia 87: 19-28.
MISCHIS C. C. 2004. — Lombrices de tierra de Argentina: Aspectos faunísticos y biogeográficos, *in* MORENO A. G. & BORGES S. (eds), *Avances in taxonomía de lombrices de tierra.* Editorial Complutense, Madrid: 261-274.
MISCHIS C. C. 2007. — Checklist of earthworms of Argentina. http://www.efn.uncor.edu/departamento/divbioeco/DIvAnil/lombric/lombr_arg.htm.
MISCHIS C. C. & BRIGADA A. M. 1985. — The earthworms (Annelida, Oligochaeta) from the Province of San Luis (Argentina). Part I. *Megadrilogica* 4: 133-134.
MISCHIS C. C. & BRIGADA A. M. 1988. — *Octodrilus transpadanus* (Rosa, 1884) (Oligochaeta, Lumbricidae) from the Province of San Luis (Argentina). Part II. *Megadrilogica* 4: 139-140.
MISCHIS C. C., CSUZDI C., ARGUELLO G. & HERRERA J. A. D. 2006. — A contribution to the knowledge of earthworm fauna (Annelida, Oligochaeta) from the Argentinian Patagonia, *in* POP V. V. & POP A. A. (eds), *Advances in Earthworm Taxonomy, II.* University Press, Cluj: 173-182.
MISCHIS C. C. & GLEISER R. M. 1999. — First record of oligochaete fauna (Annelida, Oligochaeta) from the Province of La Rioja, Argentina. *Megadrilogica* 7: 61-64.
MISCHIS C. C. & HERRERA J. D. 1995. — *Dendrodrilus rubidus* (Savigny, 1826) (Annelida, Oligochaeta, Lumbricidae) found in Córdoba, Argentina, with notes on its morphology and ecology. *Megadrilogica* 6: 70-72.
MISCHIS C. C. & HERRERA J. A. D. 2006. — Review of the distribution of exotic earthworms (Annelida, Oligochaeta) in Argentina and confirmed examples of their introduction. *Caribbean Journal of Science* 42: 285-293.
MISCHIS C. C. & MORENO A. G. 2003. — A preliminary survey of the oligochaete fauna of Tierra del Fuego (Argentina). *Megadrilogica* 9: 49-51.
MISCHIS C. C. & RIGHI G. 1999. — Contribution to knowledge of the oligochaete fauna (Annelida, Oligochaeta) from Argentina. *Gayana* 63: 63-65.
MOMO F. R., GIOVANETTI C. M. & MALACALZA L. 1993. — Relación entre la abundancia de distintas especies de lombrices de tierra (Annelida: Oligochaeta) y algunos parámetros físicoquímicos en un suelo típico de la estepa pampeana. *Ecología Austral* 3: 7-14.
MONTALTO L. & MARCHESE M. 2005. — Cyst formation in Tubificidae (Naidinae) and Opistocystidae (Annelida, Oligochaeta) as an adaptive strategy for drought tolerance in fluvial wetlands of the Paraná River, Argentina. *Wetlands* 25: 488-494.
MOORE H. F. 1893. — Preliminary account of a new genus of Oligochaeta. *Zoologischer Anzeiger* 16: 333.
MOORE H. F. 1895. — On the structure of *Bimastus palustris* a new oligochaete. *Journal of Morphology* 10: 473-496.
MOREIRA C. 1903. — Vermes oligoquetos do Brasil. *Arquivos do Museu Nacional do Rio de Janeiro* 12: 125-136.
MRSIC N. 1991. — *Monograph on Earthworms (Lumbricidae) of the Balkans*. Akademija Znanosti Umetnosti, Ljubljana, Slovenia, 757 p.
MÜLLER O. F. 1774. — *Vermium terrestrium et fluviatilium, seu animalium infusoriorum, helminthicorum, et testaceorum, non marionorum, succinta historia. Pars altera. Helminthica.* Heineck and Faber, Havniae et Lipsiae, 80 p.
MULDAL S. 1952. — A new species of the genus *Allolobophora*. *Proceedings of the Zoological Society of London* 122: 463-465.
MUÑOZ-PEDREROS A., POBLETE C., RUIZ E. & GIL C. 2001. — Ecologia poblacional de lumbricidos silvestres (Lumbricidae Oligochaeta) en dos tipos de sustratos en el sur de Chile. *Gestíon Ambiental* 7: 27-37.
MUÑOZ-PEDREROS A., RUIZ E., POBLETE C. & SANTELICES M. 1997. — Aspectos de la biologia reproductiva de lumbricidos silvestres (Oligochaeta: Lumbricidae) en el sur de Chile. *Revista Chilena de Historia Natural* 70: 101-108.
NUSBAUM J. 1895. — Zur Kenntniss der Würmfauna und Crustaceenfauna Polens. *Biologische Centralblatt* 12: 54-57.
ØIEN N. & STENERSEN J. 1984. — Esterases of earthworms – III. Electrophoresis reveals that *Eisenia fetida* (Savigny) is two species. *Comparative Biochemistry and Physiology* Series C, 78: 277-282.
ÖRLEY L. 1881a. — Beiträge zur Lumbricinen-Fauna der Balearen. *Zoologischer Anzeiger* 4: 284-287.

ÖRLEY L. 1881b. — A Magyarországi Oligochaeták faunája. I. Terricolae. *Mathematikai és Természettudományok Köréből* 16: 562-611.
ÖRLEY L. 1885. — A palearktikus övben élö Terrikoláknak revíziója és elterjedése. *Értekezéseka Természettudományok Köréből* 15 (18): 1-34.
ÖRSTED A. S. 1843. — *Annulatorum Danicorum Conspectus.* Fasc. 1. Maricolae. Hafniae, Copenhagen, 52 p., 7 pls.
OISHI M. 1932. — Earthworms. *Dobutsu Zasshi* Tokyo 44: 17, 18.
OMODEO P. 1950. — Napoli richerce zoologische sul massiccio del pollino (Lucania-Calabria) I. Oligocheti. *Annuario dell'Istituto ed Museo di Zoologia della Università di Napoli* 2 (10): 1-12.
OMODEO P. 1952. — Oligocheti della Turchia. *Annuario dell'Istituto ed Museo di Zoologia della Università di Napoli* 4 (2): 1-10.
OMODEO P. 1956. — Contributo alla revisione dei Lumbricidae. *Archivio Zoologico Italiano* 41: 129-212, 1 pl.
OMODEO P. 1964. — Oligocheti della Sicilia II. *Bollettino della Accademia Gioenia di Scienzia Naturale Catania* Serie 4, 8: 73-85.
OMODEO P. 1998. — History of Clitellata. *Italian Journal of Zoology* 65: 51-73.
OROZOCO F. H., CEGARRA J., TRUJILLO L. M. & ROIG A. 1996. — Vermicomposting of coffee pulp using the earthworm *Eisenia fetida*: effects on C and N contents and the availability of nutrients. *Biology and Fertility of Soils* 22: 162-166.
PACHECO S. M., JUNQUEIRA I. C., WIDHOLZER R. M. B. F., ESMERIO M. E. & NUNES N. 1992. — Contribuição ao conhecimento da fauna de Oligochaeta das áreas de alagamento das usinas hidrelétricas de Itá-Machadinho (RS, SC) e Campos Novos (SC). *Comunicações do Museu de Ciências da Pontifícia Universidade Católica do Rio Grande do Sul Série Zoologia Porto Alegre* 5: 23-28.
PAOLETTI M. G. 1989. — Life strategies of isopods and "soil invertebrates" in Venezuela. *Monograph Series Monitore Zoologico Italiano* 4: 435-453.
PEREL T. S. 1975. — [The genus *Lumbricus* Linné (Oligochaeta: Lumbricidae) in the fauna of USSR]. *Zoologicheski Zhurnal* 54: 994-997 (in Russian).
PEREL T. S. 1976. — A critical analysis of the Lumbricidae genera system (with key to the USSR fauna genera). *Revue d'Écologie et de Biologie du Sol* 13: 635-643.
PEREL T. S. 1977. — *The Earthworms of the Fauna of Russia.* Nauka, Moscow, 97 p.
PEREL T. S. 1979. — [*Range and Regularities in the Distribution of Earthworms of the USSR Fauna*]. Nauka, Moscow, 272 p. (in Russian).
PÉREZ-LOSADA M., EIROA J., MATO S. & DOMINGUEZ J. 2005. — Phylogenetic species delimitation of the earthworms *Eisenia fetida* (Savigny, 1826) and *Eisenia andrei* Bouché, 1972 (Oligochaeta, Lumbricidae) based on mitochondrial and nuclear DNA sequences. *Pedobiologia* 49: 317-324.
PÉREZ-ONTENIENTE A. & RODRÍGUEZ BABIO C. 2002. — Three new species of earthworm (Annelida: Oligochaeta: Lumbricidae) from the Valencian community, Spain. *The Journal of Natural History* 36: 515-530.
PERRIER E. 1872. — Recherches pour servir à l'histoire des lombriciens terrestres. *Nouvelles Archives du Muséum d'Histoire naturelle de Paris* 8: 5-198, pls 1-4.
PICKFORD G. E. 1932. — Oligochaeta. Part II. Earthworms. *Discovery Reports Cambridge Zoology* 4: 265-292.
PLISKO J. D. 1965. — Die in Polen auftretenden morphologischen Formen der Art *Allolobophora rosea* (Savigny 1826) (Oligochaeta Lumbricidae). *Bulletin de l'Academie polonaise des Sciences* 13: 409-416.
PLISKO J. D. 1973. — *Lumbricidae Dzdzownice (Annelida: Oligochaeta).* Fauna Polski, 1. Polish Academy of Sciences, Warszawa, 156 p.
POP V. V. 1938. — Neue Lumbriciden aus Rumänien. *Buletinul Societatii de Stiinte din Cluj* 9: 134-152.
POP V. V. 1941. — Zur Phylogenie und Systematik der Lumbriciden. *Zoologische Jahrbücher Abteilung für Systematik Ökologie und Geographie der Tiere* 74: 487-522, pls 6, 7.
POP V. V. 1943. — Hazai és külföldi Lumbricidák a Magyar Nemzeti Múzeumban. *Annales Historico-Naturales Musei Nationalis Hungarici* 34: 12-24.
POP V. V. 1947. — Lombriciens de la Corse. *Archives de Zoologie expérimentale et générale* 85: 18.
POP V. V. 1948. — Lumbricids of Romania [Lumbricidele din România]. *Anali dell Academii Republici Popular Romanie Series A* 1 (9): 1-124, pls 1, 2 (in Romanian).
POP V. V. 1949. — Lumbricids of Romania [Lumbricidele din România]. *Analele Academiei Republicii Populare Române* 1 (9): 383-505 (in Romanian).
QIU J.-P. & BOUCHÉ M. 2000a. — Liste classée des taxons valides de lombriciens (Oligochaeta: Lumbricoidea) après l'étude des trois cinquièmes d'entre-eux. *Documents pédozoologiques et intégrologiques* Dijon 4: 181-200.
QIU J.-P. & BOUCHÉ M. 2000b. — Révision des taxons supraspécifiques de Lumbricoidea. *Documents pédozoologiques et intégrologiques* Dijon 3: 179-216.
REINECKE A. J. & RYKE P. A. J. 1969. — A new species of the genus *Geogenia* (Microchaetidae: Oligochaeta) from Lesotho, with notes on two exotic earthworms. *Revue d'Écologie et de Biologie du Sol* 6: 515-523.
REYNOLDS J. W. 1972. — Earthworms (Lumbricidae) of the Haliburton highlands, Ontario, Canada. *Megadrilogica* 1: 1-11.
REYNOLDS J. W. 1974. — Checklist, distribution and key to the Lumbricidae in Tennessee. *Journal of the Tennessee Academy of Science* 49: 16-20.
REYNOLDS J. W. 1975. — Les lombricidés (Oligochaeta)

des îles-de-la-Madeleine. *Megadrilogica* 2: 1-8.
REYNOLDS J. W. 1977. — *The Earthworms (Lumbricidae and Sparganophilidae) of Ontario.* Life Sciences Miscellaneous Publications. Royal Ontario Museum, Ontario, 141 p.
REYNOLDS J. W. & CLAPPERTON M. J. 1996. — New earthworm records for Alberta (Oligochaeta: Lumbricidae) including the description of a new Canadian species. *Megadrilogica* 6: 73-82.
REYNOLDS J. W. & COOK D. G. 1976. — *Nomenclatura Oligochaetologica. A Catalogue of Names, Descriptions and Type Specimens of the Oligochaeta*. The University of New Brunswick, Fredericton, 217 p.
RIBAUCOURT E. DE 1896. — Étude sur la faune lombricide de la Suisse. *Revue suisse de Zoologie* 4: 1-110.
RIBAUCOURT E. DE 1901. — Étude sur l'anatomie comparée des lombricides. *Bulletin scientifique de la France et de la Belgique* 35: 211-311.
RIGHI G. 1967. — Sobre algumas Lumbricidae (Oligochaeta) do Estado do Rio Grande do Sul. *Ciência e Cultura São Paulo* 19: 342.
RIGHI G. 1968a. — Sôbre duas espécies novas de Oligochaeta do Brasil. *Anais da Academia Brasileira de Ciências* 40: 545-549.
RIGHI G. 1968b. — Sôbre alguns Oligochaeta do Brasil. *Studies on Neotropical Fauna and Environment* 28: 369-382.
RIGHI G. 1978. — Alguns Oligochaeta megadriles da Argentina. *FAVE* 1: 167-178.
RIGHI G. 1979. — Introducción al estudio de las lombrices del suelo (oligoquetos megadrilos) de la Provincia de Santa Fé (Argentina). *Revista de la Asociación de Ciencias Naturales del Litoral, Colección Climax* 2: 89-155.
RIGHI G. 1980. — Alguns megadrile (Oligochaeta, Annelida) brasileiros. *Boletim de Zoologia da Universidade de São Paulo* 5: 1-18.
RIGHI G. 1984a. — On a collection of neotropical megadrili Oligochaeta, II. *Studies of Neotropical Fauna and Environment* 19: 99-120.
RIGHI G. 1984b. — Nova contribuição ao conhecimento dos Oligochaeta da Venezuela. *Papéis Avulsos de Zoologia São Paulo* 35: 243-256.
RIGHI G. 1989. — Adição ao conhecimento dos Oligochaeta da Venezuela. *Revista Brasileira de Biologia* 49: 1065-1084.
RIGHI G. & RÖMBKE J. 1987. — Alguns Oligochaeta da Bolívia e do Peru. *Revista Brasileira de Biologia* 47: 523-534.
RISSO A. 1826. — Les lombrics, *in Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environs de Nice et des Alpes maritimes.* Volume 4. Levrault, Paris: 426, 427.
RODRÍGUEZ P. F., VELÁSQUEZ G., CHAMORRO C. & MARTÍNEZ N. 1994. — Adaptation tecnologica de la lumbricultura en la zona cafetera de Alban Cundinamarca. *Acta Biologica Colombiana* 7-8: 91-109.
RÖMBKE J. 2007. — Taxonomy and biogeography of Peruvian earthworms, *in* BROWN G. G. & FRAGOSO C. (eds), *Minhocas na América Latina: biodiversidade e ecologia.* Embrapa Soja, Londrina, Paraná, Brazil: 201-206.
RÖMBKE J. & HANAGARTH W. 1994. — The present faunistic knowledge on terrestrial Oligochaeta from Bolivia. *Andrias* 13: 7-16.
RÖMBKE J. & ZICSI A. 2007. — Present state of knowledge of earthworm ecology and taxonomy in Bolivia. Earthworms from South America, 41, *in* BROWN G. G. & FRAGOSO C. (eds), *Minhocas na América Latina: biodiversidade e ecologia*. Embrapa Soja, Londrina, Paraná, Brazil: 223-234.
ROMERO PINTO M. & CHAMORRO BELLO C. 1986. — Registro de *Eisenia fetida* (Savigny, 1862) en Colombia. *Boletin Ecotropica* 15: 41-44.
ROSA D. 1882. — Descrizione de due nuovi lumbrici. *Atti della Accademia della Scienze di Torino* 1 (18): 169-173.
ROSA D. 1884. — *I lumbricidi dei Piemonte.* Unione Tipografico-Editrice, Torino, 54 p.
ROSA D. 1886. — Note sui lombrici del Veneto. *Atti del Istituto Reale Veneto di Scienze* Series 6, 4: 673-687.
ROSA D. 1887. — La distribuzione verticale dei lombrichi sulle Alpi. *Bollettino dei Museo di Zoologia ed Anatomia Comparata della Reale Università di Torino* 2 (31): 1-3.
ROSA D. 1889. — I lombrichi raccolti nell'isola Nias dal signor E. Modigliani e descritti dal dott. Daniele Rosa. *Annali del Museo Civico di Storia Naturale di Genova* 27: 125-146.
ROSA D. 1893. — Revisione dei Lumbricidi. *Memorie della Reale Accademia delle Scienze di Torino* Serie 2, 43: 399-476.
ROSA D. 1896. — *Allolobophora tigrina* ed *A. exacystis* n. sp. *Bolletino dei Musei di Zoologia ed Anatomia Comparata della Reale Università di Torino* 11 (246): 1-4.
ROSA D. 1898. — On some new earthworms in the British Museum. *The Annals and Magazine of Natural History* Series 7, 2: 277-290, pl. 9.
ROSA D. 1905. — Ergebnisse einer naturwissenschaftlichen Reise zum Erdschias-Dagh. Terricolen. *Annalen des K. K. Naturhistorischen Hofmuseums Wien* 20: 104-106.
ROTA E. 1992. — New data on the earthworm fauna of Gallura (northeast Sardinia). *Soil Biology and Biochemistry* Special Issue 24: 1383-1388.
SANTELICES M., IRRIBARRA V., VALDES R. & SILVA F. 1973. — Sobre algunos oligoquetos del Norte Chico (Oligochaeta: Lumbricidae-Megascolecidae). *Anales del Museo de Historia Natural de Valparaiso* 6: 67-74.
SAPKAREV J. 1971. — Neue Regenwürmer (Oligochaeta: Lumbricidae) aus Mazedonien. *Fragmenta Balcanica* Skopje 8: 149-164.

SAPKAREV J. 1975. — Contribution to the knowledge of the earthworms (Lumbricidae) and leeches (Hirudinea) of Kosova, Yugoslavia. *Annuaire de la Faculté des Sciences de l'Université de Skopje* 27-28: 39-54.

SAPKAREV J. 1977. — The fauna of earthworms of Macedonia 7. The earthworms (Oligochaeta: Lumbricidae) of Ohrid-Struga valley. *Annuaire de la Faculté de Biologie de l'Université « Kiril et Metodij » de Skopje* 30: 27-45.

SAVIGNY J. C. 1820. — *Système des Annélides, principalement de celles des côtes de l'Égypte et de la Syrie, offrant les caractères tant distinctifs que naturels des ordres, familles et genres, avec la description des espèces. Description de l'Égypte. Histoire naturelle.* Imprimerie Royale, Paris: 325-472.

SAVIGNY J. C. 1826. — Analyses des travaux de l'Académie Royale des Sciences pendant l'année 1821, partie physique, *in* CUVIER G. (ed.), *Mémoires de l'Académie des Sciences de l'Institut de France* Paris 5: 176-184.

SCHWERT D. P. 1990. — Oligochaeta: Lumbricidae, *in* DINDAL D. L. (ed.), *Soil Biology Guide.* John Wiley and Sons, New York, 353 p.

SCIACCHITANO J. 1932. — Spedizione scientifica all'Oasi di Cufra: Oligocheti. *Annali del Museo Civico di Storia Naturale di Genova* 3 (55): 302-304.

SIMS R. W. 1973. — *Lumbricus terrestris* Linnaeus, 1758 (Annelida, Oligochaeta): designation of a neotype in accordance with accustomed usage. Problems arising from the misidentification of the species by Savigny (1822 and 1826). *Bulletin of Zoological Nomenclature* 30: 27-33.

SIMS R. W. 1980. — A classification and the distribution of earthworms, suborder Lumbricina (Haplotaxida: Oligochaeta). *Bulletin of the British Museum Natural History* Zoology Series 39: 103-124.

SIMS R. W. 1982. — Classification and distribution of the suborder Lumbricina (Haplotaxida, Oligochaeta). *Pedobiologia* 23: 284-285.

SIMS R. W. & GERARD B. M. 1985. — Earthworms, *in* KERMACK D. M. & BARNES R. S. K. (eds), *Synopsis of the British fauna. Keys and notes to the identification and study of species.* No 31. Cambridge University Press, Cambridge, 171 p.

SMITH F. 1900. — Notes on species of North American Oligochaeta. III. List of species found in Illinois, and descriptions of Illinois Tubificidae. *Bulletin of the Illinois State Laboratory of Natural History* 5: 441-458, pls 39, 50.

SMITH F. 1917. — North American earthworms of the family Lumbricidae in the collections of the United States National Museum. *Proceedings of the United States National Museum* 52: 157-182.

SMITH F. & GITTINS E. M. 1915. — Two new species of Lumbricidae from Illinois. *Bulletin of the Illinois State Laboratory of Natural History* 10: 545-559, pl. 4.

SMITH W. W. 1887. — Notes on New Zealand earthworms. *Transanctions of the New Zealand Institute* 19: 122-139.

SMITH W. W. 1894. — Further notes on New Zealand earthworms. *Transanctions of the New Zealand Institute* 26: 155-175.

SOUTHERN R. 1909. — Contributions towards a monograph of the British and Irish Oligochaeta. *Proceedings of the Royal Irish Acadademy* Section B, 27: 119-186.

STEPHENSON J. 1917. — On a collection of Oligochaeta from various parts of India and further India. *Records of the Indian Museum* 13: 353-416.

STEPHENSON J. 1922. — Some earthworms from Kashmir, Bombay and other parts of India. *Records of the Indian Museum* 24: 427-444.

STEPHENSON J. 1923. — *The Fauna of British India, Including Ceylon and Burma. Oligochaeta.* Taylor and Francis, London, 518 p.

STEPHENSON J. 1930. — *The Oligochaeta.* Oxford University Press, Oxford, 978 p.

STEPHENSON J. 1933. — Oligochaeta from Australia, North Carolina, and other parts of the world. *Proceedings of the Zoological Society of London* 1932: 899-941.

STØP-BOWITZ C. 1969. — A contribution to our knowledge of the systematics and zoogeography of Norwegian earthworms (Annelida Oligochaeta: Lumbricidae). *Nytt Magazine Zoologi* 17: 169-280.

STÜTZ A. VON 1909. — Magayaroszág Lumbricidái. *Állattani Közlemények* 8: 120-142.

TAUBER P. 1879. — *Annulata Danica I. En kritisk revision of de i Danmark fundne Annulata, Chaetognatha, Gephyrea, Balanoglossi, Discophoreae, Oligochaeta, Gymnocopa og Polychaeta*. Reitzel, Kjöbenhavn, 144 p.

TEISSAIRE E. S. & ROLDÁN I. A. 1996. — Lombrices de tierra de la Provincia de Tucumán (Annelida: Oligochaeta). Guia para la recoleccion e identificacion. *Miscelanea Fundacion Miguel Lillo* 101: 1-24.

TEISAIRE E. S., ROLDÁN I. A., GARCIA MORENO A. & LÓPEZ DE ARAGÓN M. 2003. — Registros preliminares sobre la oligoquetofauna de Los Toldos, Dpto. Santa Victoria, Salta (Argentina). *Actas de las XX Jornadas Científicas de la Asociación de Biología de Tucumán.* Tafí del Valle, Tucumán, Argentina: 213.

TEMPLETON R. 1834. — Illustrations of some species of British animals which are not generally known, or have not hitherto been described. *The Annals and Magazine of Natural History* 7: 129-131.

TEMPLETON R. 1836. — A catalogue of the species of annulose animals, and of rayed ones, found in Ireland, as selected from the papers of the late J. Templeton, Esq., of Cranmore, with localities, descriptions, and illustrations. *The Annals and Magazine of Natural History* London 9: 233-240.

TÉTRY A. 1937. — Révision des lombriciens de la collection de Savigny. *Bulletin du Muséum national*

d'Histoire naturelle Paris 9: 140-155.
TIMM T. 1980. — Distribution of aquatic oligochaetes, *in* BRINKHURST R. O. & COOK D. G. (eds), *Aquatic Oligochaete Biology.* Plenum Publishing Corporation, New York: 55-77.
TISDALL J. M. 1985. — Earthworm activity in irrigated red-brown earths used for annual crops in Victoria. *Australasian Journal of Soil Research* 23: 291-299.
TZEPELÉ N. D. 1943. — Greek symbols in Hungarian Lumbricidae (Oligochaeta). University of Athens, Dissertation [Symbolé eis tén melethén ton Oligochaeton tés Hellados Magayarország Lumbricidái]. University of Athens, Dissertation, 60 p. (in Romanian).
VAIL V. A. 1974. — Observations on the hatchlings of *Eisenia foetida* and *Bimastus tumidus* (Oligochaeta: Lumbricidae). Contributions to North American earthworms (Annelida), number 11. *Bulletin of the Tall Timbers Research Station* 16: 1-8.
VAILLANT L. L. 1889. — Histoire naturelle des annelés marins et d'eau douce, *in* DE QUATREFAGES A. & VAILLANT L. L. (eds), *Lombriciniens, hirudiniens, bdellomorphes, térétulariens et planariens,* volume 3, Section 2. Nantes, Paris, 340 p.
VEDOVINI A. 1967. — Une nouvelle forme provençale d'*Allolobophora rosea* (Savigny). *Bulletin de la Société zoologique de France* 92: 793-796.
VEDOVINI A. 1971. — Lombricides nouveaux de la région provençale. *Bulletin de la Société zoologique de France* 96: 45-48.
VEJDOVSKÝ F. 1875. — Beiträge zur Oligochaetenfauna Böhmens. *Zpravy Kralovske Ceske Spolecnosti Nauk Praze* 6: 191-201.
VEJDOVSKÝ F. 1882. — *Thierische Organismen der Brunnenwässer von Prag.* F. Temsky, Prague, 77 p., 8 pls.
VEJDOVSKÝ F. 1883. — Revisio Oligochaetarum Bohemiae. *Zpravy Kralovske Ceske Spolecnosti Nauk Praze* 1883: 215-228.
VEJDOVSKÝ F. 1884. — *System und Morphologie der Oligochaeten*. F. Rivnáe, Prague, 136 p.
VEJDOVSKÝ F. 1888. — *Die Entwicklungsgeschichte der Oligochäten, mit Atlas*. Entwickgeschichtliche Untersuchungen, Prague, 401 p.
WAGA A. 1857. — Sprawozdanie z podrózy naturalistów odbytej w r. 1854 do Ojcowa. *Bibliographie Warszawie* 2: 161-227.
WEYENBERGH D. H. 1879. — Descripciones de nuevos gusanos. *Boletin de la Academia Nacional de Ciencias de Córdoba* 3: 212-219.
YAMAGUCHI H. 1953. — Studies on aquatic Oligochaeta of Japan. VI. A systematic report with some remarks on the classification and phylogeny of the Oligochaeta. *Journal of the Faculty of Sciences – Hokkaido University* Series 6 Zoology 11: 277-342, pl. 7.
ZAJONC I. 1970. — Synúzie dázdoviek (Lumbricidae) na Lúkach Karpatskej oblasti Ceskoslovenska. *Biologia Práce* 16 (8): 5-98.
ZICSI A. 1959. — Faunistisch-systematische und ökologische Studien über die Regenwürmer Ungarns. I. *Acta Zoologica Hungarica* 5: 165-189.
ZICSI A. 1960. — Die Regenwürmfauna des oberen ungarischen Donau-Ufergebietes. *Annales Universitatis Scientarium Budapestiensis de Rolando Eötvös Nominatae Sectio Biologica* 3: 427-440.
ZICSI A. 1968a. — Ein zusammenfassendes Verbreitungsbild der Regenwürmer auf Grund der Boden und Vegetations Verhältnis Ungarns. *Opuscula Zoologica* Budapest 8: 99-164.
ZICSI A. 1968b. — Eine neue *Octolasion*-Art (Oligochaeta – Lumbricidae) aus Ungarn. *Acta Zoologica Hungarica* 14: 233-238.
ZICSI A. 1982. — Revised guide to the taxa of the family Lumbricidae (Oligochaeta) described until 1971. *Acta Zoologica Hungarica* 28: 421-454.
ZICSI A. 1991. — Über die Regenwürmer Ungarns (Oligochaeta: Lumbricidae) mit Bestimmungstabellen der Arten. *Opuscula Zoologica* Budapest 24: 167-191.
ZICSI A. 1993. — Neue und bekannte Regenwürmer aus Chile (Oligochaeta). Regenwürmer aus Südamerika, 19. *Revue suisse de Zoologie* 100: 627-640.
ZICSI A. 1995. — Regenwürmer aus Bolivien (Oligochaeta). Regenwürmer aus Südamerika, 23. *Revue suisse de Zoologie* 102: 585-608.
ZICSI A. 2007. — An annotated checklist of the earthworms of Ecuador (Oligochaeta). Earthworms from South America, 42, *in* BROWN G. G. & FRAGOSO C. (eds), *Minhocas na América Latina: biodiversidade e ecologia.* Embrapa Soja, Londrina, Paraná, Brazil: 175-200.
ZICSI A. & CSUZDI C. 1988. —Über einige *Thamnodrilus*-Arten und andere Regenwürmer aus Ekuador (Oligochaeta: Glossoscolecidae, Lumbricidae, Megascolecidae). Regenwürmer aus Südamerika, 3. *Opuscula Zoologica* Budapest 23: 209-218.
ZICSI A. & CSUZDI C. 2001. — Weitere Angaben zur Regenwurmfauna Chiles (Oligochaeta: Glossoscolecida). Regenwürmer aus Südamerika, 33. *Berichte des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck* 88: 129-140.
ZICSI A. & CSUZDI S. 2007. — An annotated checklist of the earthworms of Chile (Oligochaeta). Earthworms from South America 43, *in* BROWN G. G. & FRAGOSO C. C. (eds), *Minhocas na América Latina: biodiversidade e ecologia.*. Embrapa Soja, Londrina, Paraná, Brazil: 235-246.

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