

**An updated list of valid, invalid and synonymous names of Criodriloidea
(Criodrilidae) and Lumbricoidea (Annelida : Oligochaeta : Sparganophilidae,
Ailoscolecidae, Hormogastridae, Lumbricidae, and Lutodrilidae)**

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Summary

The current (up to ca. December, 2006) compilation of about 670 valid species from a total of about 1,130 names of the family Lumbricidae is updated (from Blakemore, 2004, 2005) and modified from that presented twenty-two years earlier by Easton (1983). With the resources of the Natural History Museum at his disposal, Easton compiled a checklist that was supported by his co-worker Sims (1983) who stated:

"Hopefully it will stimulate constructive discussions and lead to the early production of a widely accepted definitive checklist to attain a greater stability in lumbricid taxonomy than we have known hitherto".

Easton (1983: 475) had 386 valid names (plus their specific synonyms included in braces), but his listing without redefinition cast some generic diagnoses and taxa into a confused and non-mutually-exclusive state that conflicted with the subsequent publication by Sims & Gerard (1985; - reprinted as a "revision" in 1999), albeit Sims (1983: 473) had earlier admitted that "generic groups recognized are often units of convenience" (see discussion in Blakemore, 2002).

The current review lists ca. 670 valid names with another 55 or so uncertain names in Lumbricidae. An unpublished database of Megadrile names compiled by Csuzdi (2003) has about 1,000 Lumbricidae names including synonyms and *spp. incertae sedis* and this may be taken as approximately the total nominal taxa. Csuzdi & Zicsi (2003: 18) quote about 961 nominal taxa with perhaps 700 valid names shared among 63 genera. An unknown number of Lumbricidae are cited in Reynolds & Cook (1976) but sometimes they mistakenly list synonymic references as new, e.g., *arborea*.

Introduction

Lumbricidae has an holarctic origin, naturally extending from Vancouver Island, Canada (e.g. *Bimastos lawrenceae* Fender, 1994) east across boreal lands, Mediterranean and Middle East to oriental Korea and Japan [e.g. *Eisenia koreana* (Zicsi, 1972) and *E. japonica* (Michaelsen, 1891)]. Background and historical perspective of the systematics

of the family up to the 1980's was provided by Sims (1983) and to the mid-1990's by Reynolds (1995: 10) who also presented a partial checklist of some North American lumbricids "in the spirit of Easton (1983)". The former paper recognized the wide contributions made by Bouché (1972), who used chemical extraction to unearth new French species deep-burrowing in soils largely unaffected by Pleistocene ice-sheets, but it also criticized "immoderately subjective" changes and, in some cases, the "lamentable reluctance on the part of a few oligochaeta taxonomists to seek and examine type material or read the original descriptions of species". The latter paper criticized Bouché (1970, 1972) for use of varietal names (18 out of 70 new names) which are outside of ICZN nomenclature; for an "overwhelming reliance on intuition"; and for a lack of allowance for the nomenclatural "nightmare" of parthenogenetic polymorphism in species complexes - as was emphasized by Gates (e.g. 1972; 1974). However, the value of Bouché's (and Jiang-Ping Qiu's) later work is to clearly show that the shape of the nephridial bladders, key to generic diagnosis under some systems, may vary greatly from segment to segment within the same specimen of some species (eg. species in *Hormogaster* and in their genus *Zophoscolex*) and are therefore rather unreliable characters for generic diagnosis without considerable risk of fallacy from categorical syllogism. This view is somewhat supported by Csuzdi & Zicsi (2003: 31; figs. 3.15; 6.18.1) although they seem to confuse developmental stages of bilobate or hooked with "ocarina-shaped" bladders i.e., a term to describe bladders that actually look like an ocarina (musical instrument) in outline.

Over twenty-five years ago, in 1980, Gates had published the last two papers in his revision of the Lumbricidae that he over-optimistically hoped would "*enable a solution of the 'systematic chaos' in the European portion of the Lumbricidae*". Yet today there is no consensus on the placement (or validity) even of some of the most commonly encountered lumbricids. For example, in some reports from parts of southern Europe the genus *Nicodrilus* Bouché, 1972 continues in use with the prior *Aporrectodea* Örley, 1885 placed in its synonymy and its type-species, *A. trapezoides* (Dugès, 1828), also listed as a valid member of *Nicodrilus*, despite most other authors, e.g. Sims (1983: 469), Reynolds (1995: 5), Csuzdi & Zicsi (2003: 73), accepting *Nicodrilus* as a junior synonym of *Aporrectodea*. This situation would not be so troublesome except that many *Aporrectodea* are cosmopolitan species having world distributions corresponding to the courses of human history (see Blakemore, 2002); and giving them different names in different places defies the objectives of ICZN (1999), causes confusion, and reduces confidence in the quality and competence of taxonomic services.

Recent contributions of Narcis Mršić {1951-1997} were summarized by Novak

and Celik (2001): in 33 scientific papers on lumbricids, he described 49 new species, 4 subgenera, 2 genera, and additionally 2 species, 1 subgenus, and 4 genera in co-authorship. In his monograph on the earthworms of Balkans, Mrsic (1991a; 1991b) analysed setal formulas, muscle bundles types, shape and orientation of nephridial bladders, position of male pore, structure and position of calciferous glands, and typhlosoles. Using these morphological characters, he carried out a systematical revision of 231 species in 25 genera of Lumbricidae although several uncertainties remained. It should be remembered, however, that precise setal ratios are not a reliable characteristic for biological taxonomy for reasons discussed in Blakemore (2000; 2002) and Csuzdi & Zicsi (2003: 27).

Qiu & Bouché (1998, but sometimes cited as "2000" when it became widely available) published a list of lumbricids up to 1998 after a study of "more than 300 taxons" (but not necessarily type materials of all or any of these?), claimed as three-fifths of the super-family Lumbricoidea, and they presented 62 genera or sub-genera, 24 of these new propositions, plus approximately 100 new specific or sub-specific names. Their revisions were spread across at least 20 papers / volumes e.g. Qiu & Bouché (1998a; 1998), frequently repeating descriptions of their new taxa that were not sorted into any recognizably consistent pattern and not always in the same order nor with the exactly the same orthography thereby introducing nomenclatural inexactitude. Rather inconveniently, the expectation by Qiu & Bouché's (1998: 182) that their descriptions be online at "[http:// ecordre.cnusc.fr: 8030](http://ecordre.cnusc.fr:8030)" was unfulfilled requiring much page-flipping. Moreover, their revisionary studies were again weakened by overuse of sub-specific and unnecessary sub-generic classifications, and possibly flawed from a basis often of their own or earlier workers interpretations mostly of non-type specimens, even where type material is believed still to exist (and be available). For instance, Qiu & Bouché (1998a: 192; 1998: 195) studied the type-species *Eophila tellinii* (Rosa, 1888), but types for this taxon are not listed in Reynolds & Cook (1976) and it was not stated whether one of the "exemplaires" inspected were typified as a neotype, or not. [Incidentally, Omodeo & Rota (2004: 230) for this taxon re-examined only "topotypes" that are unregulated by the ICZN code]. Also, their genus *Heraclescolex* was poorly defined (Qiu & Bouché, 1998: Table 1) because several of the key characters, such as green colour, used to separate it from the prior genera *Allolobophora* and/or *Eophila* were listed as unknown in the Table 2 of their chosen type-species. Synonyms were not adequately considered: some being listed as still valid taxa while others were omitted, and mostly ignored were the revisions of the Lumbricoidea wider than just southern Europe (eg. those by Sims,

Easton, and Sims & Gerard, and in North America by Gates, and Reynolds & Cook, etc.). Thus the major contribution summarized by Qiu & Bouché (1998) is an impressive body of work, but is largely an unresolved repeat, after nearly 30 years, of many of the ambiguities introduced by Bouché (1972).

By way of an example of the calamity invited by such laxity is *Scherotheca* (*Corsicadrilus*) *corsicana magna* Qiu & Bouché, 1998 that may yet be an invalid name if any other author is found to have cited Bouché's (1972) invalid infrasubspecific "magna" proposition as if it were an available name under ICZN (1999: Arts. 10.2; 45.6 Example), thereby themselves assuming authorship. And although the name "*magna* var. *Scherotheca corsicana corsicana* Bouché, 1972" is cited "before 1985" by Reynolds & Cook (1976: 132), this again is an infrasubspecific entity outside of taxonomy so perhaps does not validated (see ICZN, 1999: Arts. 45.6.4.1. and 45.6.4 that allows such infrasubspecific names published before 1961, **or validated before 1985**, to assume sub-specific rank).

Methods

In the current, alphabetically hierarchical list, the valid species names from Easton (1983) are mostly upheld, and, as with Easton (1983: 486) this list concerns all related families such as the Criodrilidae, Hormogastridae, Ailoscolecidae, Lutodrilidae, and Sparganophilidae as well as Lumbricidae, but Easton's work is expanded and here revised to accept certain of the obligatory changes wrought by subsequent authors, e.g., Mrsic (1991a;b), Qiu & Bouché (1998a; 1998), Kvavazde (2000), Csuzdi & Zicsi (2003), etc. As there is not complete agreement between these various earlier treatments, when there is a choice, then the most reasonable course in terms of priority, nomenclatural stability, universality (e.g., ICZN, 1999), and phylogeny is accepted.

New combinations are noted and other comments are contained within braces in the checklist, which may be also computer searched for keywords. It is intended to update and correct the list periodically, and a hope is eventually to expand it to include information on type material and species distributions.

From ICZN (1999: 106-7, 111, 116) definition of some terms used here are:

incertae sedis - "of uncertain taxonomic position", usually referring to a tangible species concept rather than a ascribed name.

lapsus short for *lapsus calami* meaning a slip of the pen, or unintentional misspelling of a name (but not necessarily a printer's error).

nomen dubium (pl. *nomina dubia*) - "a name of unknown or doubtful application".

nomen nudum (pl. *nomina nuda*) - an invalid name that (after 1930) fails to conform to

Article 13 of the Code and is therefore not an available name so may be made available later for the same or for a different concept; in which case it would take authorship and date from that latter act of establishment, not from any earlier publication.

species inquirenda (pl. *species inquirendae*) - a species (cf. genus) of doubtful identity needing further study (cf. *nomen dubium*).

When searching please allow that species names will change endings to agree with the Genus gender, thus it may be best to truncate search strings.

Taxonomic Results

Replacement names are given for permanently and objectively invalid junior primary homonyms and a secondary homonym, formed in accordance with ICZN (1999: Arts. 16; 23.9; 31; 53.3; 57.2 Examples; 57.3; 59; 60) to provide a permanent and public record, each based on the original author's name. [Note: In the original paper (Blakemore, 2004: 77) it was stated that the new species names proposed therein would take authorship as "Blakemore, 2003", since publication was delayed, the authority was actually 'Blakemore, 2004'].

It is formally noted that a replacement names is probably required for permanently invalid prooccupied genus *Reynoldsia* Qiu & Bouché, 1998: 102 (Cs. Csuzdi, 2005 pers. comm.), unless prior spelling "Reynodsia" or "Reynolsia" by Qiu & Bouché (1998: 1, 2) are validated, also see comments below.

Previous replacement names were:

Serbiona dofleini josapi Blakemore, 2006: 5 nom. nov. pro *Allolobophora dofleini udei* Sapkarev, 1991: 54 [non *Allolobophora udei* Sapkarev, 1972 (= *Serbiona joncesapkarevi* Blakemore, 2004: 78) nec *Allolobophora parva udei* Ribaucourt, 1896 (= *Bimastos parvus*)]. Replacement name was based on abbreviation of author's name. Efforts were made, unsuccessfully, to contact the original author: Dr Jonce A. Sapkarev, who has now retired from Institute of Biology, Skopje, Macedonia.

Allolobophora oliveirae trigoae Blakemore, 2004: 77 [nom. nov. pro *Allolobophora oliveirae limicola* Trigo *et al.* in Trigo, Mascato, Briones & Cosin 1990 as cited by BIOSIS (see references) and in Csuzdi (2003), non *Allolobophora limicola* Michaelsen, 1890; albeit the latter is placed in *Aporrectodea* by some authors. Note: under ICZN (1999: 124) CODE OF ETHICS, a new substitute name should not be published for a junior homonym when the author of the latter is alive and they should be informed. Dr. Dolores Trigo, via her colleague Dr. Ana Moreno, agreed to this name

change].

Aporrectodea rosea leocernosvitovi Blakemore, 2004: 78 [nom. nov. pro *Eisenia rosea balcanica* Cernosvitov, 1942 non *Eisenia veneta balcanica* Cernosvitov, 1937 nec *Eiseniella balcanica* Cernosvitov, 1931 (= *Helodrilus balcanicus balcanicus*)].

Eiseniella tetraedra cerni Blakemore, 2004: 78 [nom. nov. pro *Eiseniella tetraedra* var. *intermedia* Cernosvitov, 1934 (= *Eiseniella tetraedra intermedia*) non *Eiseniella intermedius* Jackson, 1931 (= *Eiseniella tetraedra tetraedra*)].

Serbiona joncesapkarevi Blakemore, 2004: 78 [nom. nov. pro *Allolobophora udei* Sapkarev, 1972 non *Allolobophora parva udei* Ribaucourt, 1896].

Serbiona robusta spasenijkaramani Blakemore, 2004: 78 [nom. nov. pro *Allolobophora robusta serbica* Karaman, 1983 non *Eophila serbica* Sapkarev, 1976 (= *Serbiona serbica* - a senior secondary homonym). Note: Dr Spasenija Karaman has retired and moved countries but her colleague, Dr Mira Stojanovic Petrovic <mirasp@kg.ac.yu>, accepted this naming on her behalf (pers. comm. 10th March 2004). A name formed from a woman's name may be written as with ending "ae" or "iae" if a noun in the genitive case ICZN (1999: Art. 31.1), but the correct original spelling is preserved under ICZN (1999: Art. 32.3)].

Spermophorodrilus tzelepei Blakemore, 2004: 78 [nom. nov. pro *Allolobophora antiqua tuberculata* Tzelepe, 1943 (?= *Sph. antiquus*) non *Allolobophora turgida tuberculata* Eisen, 1874 (= *Ap. caliginosa*), nec *Eophila antipae* var. *tuberculata* Cernosvitov, 1935]. Note: Reynolds & Cook (1976: 198) cite this author's name as "Tzelepi, N.", but I believe the correct transliteration is "Tzelepe, N.D." as per Easton (1983) and Csuzdi & Zicsi (2003: 132, 258).

In addition to the new replacement name given above, compared to the original versions (Blakemore, 2004: 2005), this version corrects several small typing errors and other points, mainly on the advice of referees and Dr Cs. Csuzdi; also changes invoked from various authors have been applied, in particular changes due to the recent publication by Kvavadze (2000), Zicsi & Csuzdi (2003), Blakemore (2004), Omodeo & Rota (2004), and divers sources.

Family Criodrilidae is newly added compared to Blakemore (2004, 2005a).

Checklist of valid names of Superfamilies Criodriloidea and Lumbricoidea

(Specific synonyms and those of genera are in braces after the taxon name with occasional Notes; syn. or syns. = synonymy, a "?" mark indicates some uncertainty).

Phylum ANNELIDA de Lamarck, 1803

Subphylum or Superclass CLITELLATA Michaelsen, 1919

Class Oligochaeta Grube, 1850

Order Haplotaxida

Suborder Lumbricina

Superfamily Criodriloidea

Family CRIODRILIDAE Vejdovsky, 1884

[Including monotypic BIWADRILIDAE Brinkhurst & Jamieson, 1971 as Sims (1980: 115; 1982: 285) suggested that the family may be recombined with Criodrilidae since it differs only in details of its vascular system - in particular the presence of a very weak supra-oesophageal vessel (and possible lack of a sub-neural vessel), and presence of male pores and "prostate glands" in 13 in *Biwadrilus* rather than 15 as in *Criodrilus*. Such variation in male pore position is permissible within the Lumbricidae. Stated presence of "a paired lateral line", eg. Sims (1980: 106, 115), appears to be mistaken as the only 'lateral lines' are due to blood vessels clearly visible through the body wall in the anterior segments in live specimens (pers. obs. and see Blakemore, 2006).

Aquatic or semi-aquatic megadriles.

Distribution range from Iberian Peninsular to Pacific-coast of Siberia, introduced into North America (and possibly UK). South American species included in *Criodrilus* by Michaelsen (1900: 468), i.e., *C. breymanni*, *C. buergeri*, *C. iheringi*, were transferred by Michaelsen (1918) to *Drilocrius* Michaelsen, 1917 (Family Almidae), as they possessed spermathecae rather than spermatophores. If genus *Biwadrilus* is again included, then the range extends to Japan.

Michaelsen (1918) and Stephenson (1930: 888, 904) thought affinities of *Criodrilus* were descent from Magagaskan *Kynotus* through an original *Drilocrius*-form which probably inhabited Ethiopian Africa, and they also thought *Criodrilus* was the ancestor of the Lumbricidae. In the alternative view, Stephenson (1930: 889, 904, 910) thought *Criodrilus* a Lumbricid that was modified though having adopted an aquatic life, and that origin of the Lumbricidae needed to be sought elsewhere. For Gates (1972: 50),

the closest relationships of Criodrilidae were with the Moniligastridae or Alluroididae, if not also the Haplotaxidae and the Sparganophilidae. Differences in the ovaries, he believed, contraindicated close relationships between the Criodrilidae and the Lumbricidae; but Sims (1980: 114) and Sims & Gerard (1985: 40; 1999: 40) had Criodrilidae with greater affinities with the superfamily Lumbricoidea comprising of Sparganophilidae, Ailoscolecidae, Hormogastridae, Lumbricidae, and Lutodrilidae].

Biwadrilus Brinkhurst & Jamieson, 1971: 809 [monotypic for *Criodrilus bathybates* Stephenson, 1917: 96 originally from Lake Biwako, Shiga-ken, Japan].

B. bathybates (Stephenson, 1917: 96) [syn. *Criodrilus miyashitai* Nagase & Nomura, 1937: 361; often misspelt "*bathybathes*"].

Criodrilus Hoffmeister, 1845 [syn. *Hydrilus* Qiu & Bouché, 1998 according to Omodeo, Rota and Baha (2003: 463) and Omodeo & Rota (2004: 222)].

Type species: *Criodrilus lacuum* Hoffmeister, 1845.

C. lacuum Hoffmeister, 1845 [?syn. *Hydrilus ghaniae* Qiu & Bouché, 1998: 18, 198 synonymy of this monotypic genus was by Omodeo, Rota & Baha (2003: 463) and Omodeo & Rota (2004: 222) although it may merit retention as a species in new combination as *Criodrilus ghaniae* (Qiu & Bouche, 1998), **comb. nov.**].

C. ochridensis Georgevitch, 1950 (author sometimes miscited as "Gjorgjevic, 1949").

Guarani Rodriguez & Lima in Lima & Rodriguez, in press (December, 2006).

Type species: *Guarani camaqua* Rodriguez & Lima in Lima & Rodriguez, in press.

G. camaqua Rodriguez & Lima in Lima & Rodriguez, in press (Ana Lima pers. comm.); monotypic; from rice fields of Rio Grande do Sul, Brazil.

Superfamily Lumbricoidea

Family SPARGANOPHILIDAE Michaelsen, 1918, 1921, 1928

Sparganophilus Benham, 1892.

Type-species: *S. tamesis* Benham, 1892.

S. gatesi Reynolds, 1980.

S. helenae Reynolds, 1980.

S. komareki Reynolds, 1980.

S. kristinae Reynolds, 1980.

S. langi Bouché & Qiu, 1998: 179 (note correct authority compared to other taxa in this series).

S. meansi Reynolds, 1980.

S. pearsei libertiensis Reynolds, 1980.

S. pearsei pearsei Reynolds, 1975.

S. pearsei sarasotae Reynolds, 1980.

S. sonomae Eisen, 1896.

S. smithi Eisen, 1896.

S. tamesis Benham, 1892 [syns. *S. eiseni* Smith, 1895 - some north American and French authors attempt to maintain *S. eiseni* despite Sims & Gerard's (1985; 1999: 122) explanation for its synonymy; *Sparganophilus benhami* Eisen, 1896; *S. benhami* var. *guatemalensis* Eisen, 1896; *S. benhami* var. *carnea* Eisen, 1896; *Helodrilus elongatus* Friend, 1911; ?*Pelodrilus cuenoti* Tétrý, 1934; synonymy of *cuenoti* by Cernovitov reported in Gates (1972: 314), some other synonyms from Sims & Gerard (1985, 1999: 120). Consistently misspelt "thamesi" in Qiu & Bouché (1998: 180), cf. Qiu & Bouché (1998: 182)].

S. tennesseensis Reynolds, 1977 [misspelt "tennessensis" in Qiu & Bouché (1998: 182)].

S. wilmae Reynolds, 1980.

Family AILOSCOLECIDAE Bouché, 1969 (syn. Komarekionidae Gates, 1974)

[Note: Sims, (1980: 108), for reasons he explains in a footnote that is attached here as an Appendix*, put monotypic Komarekionidae in synonymy, but some American authors, e.g. Reynolds & Cook, (1993), attempt to maintain it].

Ailoscolex Bouché, 1969.

Type-species: *Ailoscolex lacteospumousus* Bouché, 1969.

A. lacteospumousus Bouché, 1969.

Komarekiona Gates, 1974.

Type-species: *Komarekiona eatoni* Gates, 1974.

K. eatoni Gates, 1974.

Family LUTODRILIDAE McMahan, 1976

Lutodrilus McMahan, 1976

Type-species: *Lutodrilus multivesiculatus* McMahan, 1976.

L. multivesiculatus McMahan, 1976.

Family HORMOGASTRIDAE Michaelsen, 1900

[Misspelt "Hormogostridae" by Qiu & Bouché (1998: 1). Sub-families HORMOGASTRINAE Bouché, 1970 (for *Hormogaster* Rosa, 1887 and *Hemigastrodrilus* Bouché, 1970), VIGNYSINAE Bouché, 1970 [misspelt as "Vignysinac (sub. fam. nov.)" by Bouché (1970: 249) for *Vignysa* Bouché, 1970], and XANINAE Diaz Cosin *et al.* 1989 (for *Xana* Diaz Cosin *et al.* 1989)].

Hemigastrodrilus Bouché, 1970 [as "*Hémigastrodilus*" lapsus by Bouché (1970: 248)].

Type-species: *Hemigastrodrilus monicae* Bouché, 1970: 248 (corrected this next line).

Hi. monicae monicae Bouché, 1970 [miscited "Bouché, 1972" in Qiu & Bouché, 1998: 183].

Hi. monicae magnus Bouché, 1970: 249 [**sub-species *inquirenda***, originally cited as invalid "var. nov." variety; overlooked by Qiu & Bouché, 1998, possibly validated by Reynolds & Cook (1976: 132) citation and authorship is therefore uncertain].

Hormogaster Rosa, 1887 [syn. *Hormodrilus* (laps.) Rosa, 1889].

Type-species: *Hormogaster redii* Rosa, 1887

Ho. arenicola Qiu & Bouché, 1998.

Ho. castillana Qiu & Bouché, 1998: 174, 176 (misspelt "castillonana", "castillanana", or "castiollana" by Qiu & Bouché, 1998: 164, 174, 183).

Ho. catalaunensis Qiu & Bouché, 1998.

Ho. elisae Alvarez, 1977: 27.

Ho. eserana Qiu & Bouché, 1998.

Ho. gallica Rota, 1994 [this date rather than "1993" correct E. Rota (pers. comm.)].

Ho. huescana Qiu & Bouché, 1998.

Ho. ireguana Qiu & Bouché, 1998 (sic).

Ho. lleidana Qiu & Bouché, 1998 (sic).

Ho. multilamella Qiu & Bouché, 1998.

Ho. najiformis Qiu & Bouché, 1998.

Ho. oroeli Alvarez, 1971: 110 [originally described as sub-species "*Hormogaster pretiosoides oroeli*" a "lapsus calami" for *Ho. pretiosiformis oroeli* according to Alvarez (1977: 27) who, while merely elevating it to species level, mistakenly redescribed it as "*H. oroeli* n. sp."; the name "pretiosoides" then is a **nomen nudum**; cf. *Ho. elisae* and *Ho. pretiosa arrufati* and see Alvarez (1977) in References below].

Ho. pretiosiformis Zicsi, 1970 (sometimes misspelt "praetiosiformis").

Ho. pretiosa arrufati Alvarez, 1977: 27 [cited without authorship by Onteniente, Babio & Cosin (1998: 115), and Qiu & Bouché (1998: 175) who later appear to overlook this taxon from their checklist].

Ho. pretiosa hispanica Michaelsen, 1925 (sometimes dated "1935", elevated to species level, eg. by Qiu & Bouché, 1998).

Ho. pretiosa nigra Bouché, 1970: 247 [originally cited as invalid "var. nov." variety of "*Hormogaster praetiosa*" possibly validated by subsequent citation, eg. by Reynolds & Cook (1976: 144); omitted by Qiu & Bouché (1998)].

Ho. pretiosa pretiosa Michaelsen, 1899 [originally *Hormogaster praetiosa*, corrected by Michaelsen (1900: 447) and Michaelsen (1917) to *H. pretiosa*, but sometimes still cited as “praetiosa”; Reynolds & Cook (1976: 158) also list it as “preciosa Michaelsen, 1900”; Bouché (1970: 247) has it as “*H. praetiosa typical*”].

Ho. redii gigantea Michaelsen, 1917 (overlooked in Qiu & Bouché, 1998).

Ho. redii insularis Bouché, 1970 (valid “subsp. nov.”, miscited as “Bouché, 1972” in Qiu & Bouché, 1998).

Ho. redii redii Rosa, 1887 [cited by Michaelsen (1900: 446) as originally manuscript name “*Lumbricone*” by Redi in 1684].

Ho. riojana Qiu & Bouché, 1998.

Ho. samnitica lirapora Bouché, 1970: 247 [valid “subsp. nov.” sometimes misspelt “liropora” or “liropara” and miscited as “Bouché, 1972” in Qiu & Bouché, 1998; two invalid varietal names were also proposed by Bouché (1970: 247, 248): “*samnitica lirapora magna*” and “*samnitica lirapora typica*”].

Ho. samnitica samnitica Cognetti, 1914: 2 [originally *H. praetiosa samnitica*; (non *Helodrilus oculatus samnitica* (sic) Cognetti, 1914: 3); cited as *H. samnitica typica* by Bouché, 1970: 247; two invalid nomina nuda also cited by Bouché, 1970: 247 as “*samnitica cognetti*” (sic) and “*samnitica corsicana*”].

Ho. sylvestris Qiu & Bouché, 1998 (non Ribaucourt, 1896).

Vignysa Bouché, 1970: 249.

Type-species: *Vignysa popi* Bouché, 1970: 249 (= *Lumbricus teres* Dugès, 1828).

V. teres (Dugès, 1828) [syn. *popi* Bouché, 1970 - this synonym from Easton (1983: 486) apparently overlooked by Qiu & Bouché, 1998: 183 who also miscite this as “*Vignysa popi popi* Bouché, 1972”), non *Lumbricus teres* Dalyell, 1853: 140 (= *Lumbriculus variegatus* (Müller, 1774)) according to Michaelsen (1900: 58, 516)].

V. vedovinii Rota, 1994 [non Bouché, 1972; the date 1994 rather than “1993” is correct E. Rota (pers. comm.)].

Xana Diaz Cosin *et al.* in Diaz Cosin, Briones & Trigo, 1989

Type-species: *Xana omodeoi* Diaz Cosin *et al.* 1989 in Diaz Cosin, Briones & Trigo, 1989.

X. *omodeoi* Diaz Cosin *et al.*, 1989 in Diaz Cosin, Briones & Trigo, 1989 [non *Allolobophora omodeoi* Zajonc, 1963, nec *Diporodrilus omodeoi* Bouché, 1970, nec *Octodrilus omodeoi* Zicsi, 1981, nec *Scherotheca omodeoi* Qiu & Bouché, 1998].

Family LUMBRICIDAE Rafinesque-Schmaltz, 1815

Subfamily DIPORODRILINAE Bouché, 1970 [proposed for *Diporodrilus* consisting of Corsican species with paired lateral pores rather than dorsal pores - the statement that it is defined by oesophageal gizzard in two segments rather than in one segment as in Lumbricinae by Sims & Gerard (1985; 1999: 46) is mistaken (cf. Csuzdi & Zicsi, 2003: 30); originally as a new family, Diporodrilidae, miscited as "Diporochaetidae" by Reynolds & Cook (1981: 1). Reduced to sub-family by Easton (1983: 475), its re-elevation to family status proposed in Qiu & Bouché (1998: 198) is not supported by Csuzdi & Zicsi (2003) nor here].

Diporodrilus Bouché, 1970

Type species: *Diporodrilus pilosus* Bouché, 1970.

D. bouchei Omodeo, 1984.

D. omodeoi omodeoi Bouché, 1970: 252 [originally invalid "var. nov." variety or "races ecologiques" (ecological races) cited as "typica et postheca" (sic) by Bouché (1970: 254), omitted by Easton (1983: 475), yet cited as "*H. omodeoi omodeoi*" in Qiu & Bouché (1998: 198)].

D. omodeoi postheca (sic) Bouché, 1970: 254 (***nomen dubium*** - invalid varietal name omitted from Qiu & Bouché (1998) but perhaps validated by citation in Reynolds & Cook (1976: 157); not to be confused with *A. chlorotica postepheba* Bouché, 1972).

D. pilosus pilosus Bouché, 1970: 251 [mysteriously cited as "*Diporodrilus pilosus pilosus* Bouché, 1969 (Bouché, 1972)" in Qiu & Bouché (1998: 198)].

D. pilosus minimus Bouché, 1970: 252 (***nomen dubium*** - invalid varietal name omitted from Qiu & Bouché (1998), possibly validated by citation in Reynolds &

Cook (1976: 137)].

Subfamily LUMBRICINAE Rafinesque-Schmaltz, 1815

[?including subfamilies EISENIINAE Omodeo, 1956 (for *Eisenia*, *Eisenoides*, *Dendrodrilus*, *Omodeoia*); SPERMOPHORODRILINAE Omodeo & Rota, 1989 (for genera *Spermophorodrilus* Bouché, 1975 and *Healyella* Omodeo & Rota, 1989) and POSTANDRILINAE Qiu & Bouché, 1998 (for *Postandrilus* Qiu & Bouché, 1998, *Cernosvitovia* Omodeo, 1956 plus *Zicsiona* Mrsic & Sapkarev, 1987, and *Fitzingeria* Zicsi, 1978), and possibly also admitting *Octodriloides*; this latter subfamily was considered too polyphyletic to be acceptable to Csuzdi & Zicsi (2003: 23); ALLOLOBOPHORINAE Kvavadze, 2000: 80 [stated to consist of *Allolobophora*, *Dendrobaena*, *Octolasion*, *Eophila*, *Bimastos*, *Eiseniella*, *Cernosvitovia*, *Microeophila*, *Octodrilus*, *Eiseniona*, *Kritodrilus*, *Scherotheca*, *Opothedrilus*, *Proselodrilus*, *Orodrilus*, *Ethodrilus* (sic), *Satchellius*, *Murchiona*, *Fitzingeria*, *Octodriloides*, *Zicsiona*, *Alpodinaridella*, *Dinaridella*, *Crniella* Mrsic, 1987 (sic probably for *Creinella* Mrsic, 1986), *Meroandriella*, *Serbiona*, *Italobalrniona* (sic), *Panoniona*, *Karpatodinariona*, *Allolobophoridella*, *Dendrodriloides*, *Caucasodrilus*]; and HELODRILINAE Kvavadze, 2000: 82 (consisting of *Helodrilus* and *Proctodrilus*)].

Allolobophora Eisen, 1874 sensu lato [syn. *Allobophora* Lüken, 1876].

Type species: *Enterion chloroticum* Savigny, 1826 (designation by Omodeo, 1956).

Subgenera: *Gatesona* Qiu & Bouché, 1998a: 181 (type-species: *Allolobophora chaetophora* Bouché, 1972); *Panoniona* Mrsic & Sapkarev, 1988 (type-species: *Allolobophora leoni* Michaelsen, 1891) - **sub-genus *inquirenda***: originally a subgenus of *Alpodinaridella* Mrsic & Sapkarev, 1987, *Panoniona* was elevated to genus level by Mrsic (1991: 226), reduced to a sub-genus of *Allolobophora* by Qiu & Bouché (1998: 92), and lately the type species was returned to this latter genus, thus removing this genus, by Csuzdi & Zicsi (2003: 60) who misspell the name "Pannoniona". Note: Easton (1983) and Csuzdi & Zicsi (2003: 49) had separate "unofficial" genera: *Allolobophora* (s. Perel, 1976), and *Allolobophora* (s. lat.); herein the species are merged alphabetically and secondarily with sub-generic abbreviations.

A. ariadne Michaelsen, 1928: 289 [restored from synonymy in *Heliodrilus patriarchalis* (Rosa, 1893) by Zicsi & Michalis (1981: 252) who elevated it to separate specific status in *Allolobophora* from their examination of type material.

Note: Reynolds & Cook (1976: 72) erroneously cite this taxon as '*Eophila ariadne* Werner, 1928: 289'].

- A. andreinii* (Baldasseroni, 1907) [listed as "*Helodrilus andreinii*" and as a synonym of *Scherotheca targionii* on *Fauna Europaea* website - March, 2007].
- A. bartolii alpemarea* (Bouché, 1970) [clearly unsatisfactory placement relative to the nominal type species].
- A. (P.) bartolii bartolii* (Bouché, 1970) [nom. nov. pro *icterica* forma *dicystis* Bartoli, 1963 non Cernosvitov, 1942 (= *Aporrectodea icterica dicystis*)].
- A. (P.) bartolii meougensis* (Bouché, 1970) [clearly unsatisfactory placement relative to the nominal type species].
- A. brunnecephala* Kavadze, 1985 (sometimes misspelt "brunnencephala").
- A. burgondiae* Bouché, 1972.
- A. carpathica* Cognetti, 1927 (*omodeoi* Zajonc, 1963).
- A. (G.) chaetophora argentatensis* Bouché, 1972.
- A. (G.) chaetophora chaetophora* Bouché, 1972.
- A. (G.) chaetophora lablacherensis* Bouché, 1972.
- A. (G.) chaetophora rutena* Bouché, 1972.
- A. (G.) chaetophora serninensis* Bouché, 1972.
- A. chlorotica chlorotica* (Savigny, 1826) (*virescens* Savigny, 1826; *anatomicus* Dugès, 1828; *riparius* Hoffmeister, 1843 (non Bretscher, 1901); *communis luteus* Hoffmeister, 1845; *viridis* Johnston, 1865; *riparius rufescens* Eisen, 1871 (non Johnston, 1827); *riparius pallescens* Eisen, 1871; *neglecta* Rosa, 1882; *cambrica* Friend, 1892 [= *cambria* : Ribaucourt, 1896 (lapsus)]; *chlorotica curiosa* Ribaucourt, 1896; *hortensis* Bretscher, 1901 [non *hortensis* Michaelsen, 1890], *chlorotica kosovensis* Sapkarev, 1975 [this last synonym from Qiu & Bouché, 1998: 91, 199 and Csuzdi & Zicsi, 2003: 51; non *Allolobophora kosowensis* Karaman, 1968 (*sic*)].
- A. chlorotica eotypica* Qiu & Bouché, 1998 [non *Ei. eotypica* (Michaelsen, 1910) nec. *D. pantaleonis eotypica* Omodeo & Rota, 1989: 185].
- A. chlorotica postepheba* Bouché, 1972.
- A. chlorotica waldensis* Ribaucourt, 1896 (*chlorotica morgensis* Ribaucourt, 1896; *nusbaumi* Ribaucourt, 1896; *A. cuginii* Rosa, 1905/6 - *species inquirenda*).
- A. cupulifera* Tétry, 1937.
- A. decui* Botea, 1983: 36 [*species inquirenda* -an unlikely native to Cuba].
- A. eurytanica* Tzelepe, 1943: 93.
- A. festae* Rosa, 1892: 1 [*species inquirenda* - sometimes amended to "festai" as Festa

- was a man (cf. *antipae*); this taxon often misplaced in *Helodrilus* - see Zicsi (1985: 284)].
- A. gestroides* Zicsi, 1970 [returned from *Alpodinaridella* by Csuzdi & Zicsi (2003: 56)].
- A. hrabei* (Cernosvitov, 1935) [originally *Eophila hrabei* Cernosvitov, 1935; in *Allolobophora* according to Easton (1983: 476) and Csuzdi & Zicsi (2003: 59) after its return to *Eophila* in Qiu & Bouché (1998: 187); also (erroneously?) claimed in *Dendrobaena* by Reynolds & Cook (1976: 115); non *Eisenia veneta hrabei* Cernosvitov, 1934 (= *Dendrobaena hrabei*)].
- A. immaculata* Omodeo & Rota, 1989.
- A. kintrishiana* Kvavadze in Kvavadze, Suladze & Gachava, 1987 [misspelt as "kinsrihiana" by Qiu & Bouché (1998: 199) who list it as *incertae sedis*].
- A. kozuensis* Sapkarev, 1971 (name sometimes misspelt "kuzuensis"; non *Allolobophora kosowensis* Karaman, 1968, nec *A. chlorotica kosowensis* Sapkarev, 1975. Note: Qiu & Bouché, 1998: 195 claim that *D. montenigrina* Karaman, 1972 is a junior synonym of *D. kozuensis* but this is not supported here).
- A. lanzai* (Omodeo, 1961).
- A. (?P.) leoni* Michaelsen, 1891: 15 (sometimes misdated "1881" eg Reynolds & Cook, 1992: 11).
- A. macvensis* Sapkarev, 1987 (Reynolds & Cook, 1992: 17 say it was transferred to *Aporrectodea*).
- A. moravica* Pizl & Houskova, 1993 [non *moravica* Proksova, 1954/5 (= *D. platyura depressa* (Rosa, 1893))].
- A. morenoe* Diaz, *et al.*, 1985: 131 [authors "Diaz, Calvin and Mato, 1985", listed thus rather than "Diaz Cosin". Strictly the name formed from a woman's name should be written as "morenoae" if a noun in the genitive case ICZN (1999: Art. 31.1), but the correct original spelling is preserved under Art. 32.3].
- A. negreai* Botea, 1983: 35 [*species inquirenda* - an unlikely native to Cuba].
- A. oliveirae oliveirae* Rosa, 1894 (or "*oliveirae typica*").
- A. oliveirae trigoae* Blakemore, 2004: 77 [nom. nov. pro *Allolobophora oliveirae limicola* Trigo *et al.* in Trigo, Mascato, Iglesias Briones & Diaz Cosin, 1990: 159 as cited by BIOSIS, non *Allolobophora limicola* Michaelsen, 1890 as also cited by some authors (cf. *Aporrectodea limicola*); BIOSIS lists both *Allolobophora limicola* and *Aporrectodea limicola*. See also Souto (1996)].
- A. opisthosellata* Graff, 1961 [misspelt "opisthosellata" and "opistosellata" in Qiu & Bouché (1998: 150; 189)].

- A. orghidani* Botea, 1983: 43 [*species inquirenda* - an unlikely native to Cuba].
- A. pseudonematogena* (Perel, 1967) [tentatively placed in *Microeophila* by some authors, e.g., Qiu & Bouché (1998: 191)].
- A. sarnensis* (Pierantoni, 1904/5) [dated "1904" by Easton (1983) and Qiu & Bouché (1998: 199) who also list it as *incertae sedis*; or "1905" by Reynolds & Cook (1976: 167)].
- A. satchelli* Bouché, 1972.
- A. (G.) sausseyi* Qiu & Bouché, 1998.
- A. smaragdina* Rosa, 1892 [sometimes placed in *Aporrectodea*].
- A. thaleri* Zicsi, 1982.
- A. tiginosa* Bouché, 1972.
- A. (G.) transmatica* Qiu & Bouché, 1998: 90 [misspelt "traumatica" in Qiu & Bouché (1998: 201)].
- A. vardarensis* Sapkarev, 1971 [listed as *incertae sedis* in Mрсic (1990: 55); sometimes misdated as "1991" but definitely it was 1971].
- A. virei* (Cognetti, 1902).
- A. zicsii* Bouché, 1972 [non *Allolobophora zicsi* (sic) Sapkarev, 1975 (= *A. orahoracensis* Reynolds & Cook, 1976: 148; syn. *A. sapkarevi* Easton, 1983: 476 unwittingly provided for the same homonymy); nec *D. zicsii* Karaman, 1973]; [name sometimes misspelt "zicsi"].

Allolobophoridella Mрсic, 1990.

Type-species *Lumbricus eiseni* Levinsen, 1884 [this sub-genus, was elevated by Mрсic (1991) to generic status and included two species, *L. eiseni* and *A. parva* Eisen, 1874, but Mрсic also thought the genus may be a synonym of the mostly North American genus *Bimastos* and this is where its two species were placed by Qiu & Bouché (1998:197). Most recently, Csuzdi & Zicsi (2003: 69) have shown that the genus is supported separately from the North American genus *Bimastos*].

- Ad. eiseni* (Levinsen, 1884) [syn. *Allolobophora rubra* Bretscher, 1900 (non Vedovini, 1969); *eiseni gracilis* Friend, 1911 (nom. nud.); *merciensis* Friend, 1911; *oltenicus* Pop, 1938 (non *Eiseniella oltenica* Pop, 1938: 135)].
- Ad. xylophila* (Omodeo & Martinucci, 1987) [misspelt and miscited as "xylophyla Perel" in Qiu & Bouché (1998: 190); misspelt "xilophila" and transferred from *Eisenia* by Csuzdi & Zicsi (2003: 69)].

Aporrectodea Örley, 1885 [syns. *Eiseniona* Omodeo, 1956 (type species: *Allolobophora handlirschi* Rosa, 1897); *Nicodrilus* (*Nicodrilus*) Bouché, 1972 [type species: *Enterion terrestre*: Savigny, 1826 (misapplication of the Linnaean name to a species now known as *Allolobophora giardi* Ribaucort, 1901) - see Sims (1983: 468)]; *Nicodrilus* (*Rhodonicus*) Bouché, 1972 (type species: *Allolobophora arverna* Bouché, 1969); *Koinodrilus* Qiu & Bouché, 1998a: 181 (type-species: *Allolobophora georgii* Michaelsen, 1890), placed in synonymy by Csuzdi & Zicsi (2003: 73)].

Type species: *Lumbricus trapezoides* Dugès, 1828.

Sub-genus: *Creinella* Mrsic, 1986 (type-species *Creinella predalpina* Mrsic, 1986); [sub-generis *inquirenda* - possibly the subgenus is not tenable].

[Note: Qiu & Bouché (1998a: 196) admit *Nicodrilus* (and its sub-genus?) may be a sub-genus of *Eiseniona*, the type-species of which is in *Aporrectodea*, but overlook *Creinella* Mrsic, 1986 apart from placing its type-species in *Eiseniona*, which as we have just noted is already a synonym of *Aporrectodea*. *Koinodrilus* appears to be a rather arbitrary separation from Qiu & Bouché's (1998: 196) contentious concept of *Nicodrilus* that is itself in synonymy of *Aporrectodea* according to Sims (1983), Easton (1983), Mrsic (1991), Reynolds (1995) and Csuzdi & Zicsi (2003: 73) and, indeed, the latter authors include *Koinodrilus* in synonymy. Also unreconciled in Qiu & Bouché (1998a: 197; 1998: 187) is why *Allolobophora roseus vedovinii* (*sic*) Bouché, 1972 - a replacement name for *A. rosea alpina* Vedovini, 1967 (non Rosa, 1884; nec Bretscher, 1905), should go into *Koinodrilus* when this latter species has been synonymized with *Ap. handlirschi* Rosa, 1897 (e.g. by Easton, 1983: 477) that is type of *Eiseniona* (i.e., = *Aporrectodea*). These issues need to be thoroughly resolved, with reference to types, before we can accept restoration of either *Eiseniona* or *Koinodrilus*].

Ap. arverna (Bouché, 1969) [misspelt "arvenus" in Qiu & Bouché (1998: 188)].

Ap. balisa (Bouché, 1972) [cited by Qiu & Bouché, 1998: 266 as "*Nicodrilus balisus balisus* "].

Ap. bohiniana Mrsic, 1987.

Ap. burgosana (Qiu & Bouché, 1998).

Ap. calignosa alternisetosa (Bouché, 1972) (?= *nocturna*) [**species inquirenda** - cited by Easton (1983: 477) but omitted by Qiu & Bouché, 1998 possibly because this was originally a varietal name outside of ICZN taxonomy, but name possibly validated by citation in Reynolds & Cook (1976: 68) and by Easton (1983)].

Ap. caliginosa caliginosa (Savigny, 1826) [*carneum* Savigny, 1826 (non Friend, 1911); *lividus* Templeton, 1836; *gordianus* Templeton, 1836; *purus* Dugès, 1837; *communis cyaneus* Hoffmeister, 1845 [non *cyaneum* Savigny, 1826 (= *Octolasion cyaneum*)]; *?helenae* Kinberg, 1867: 98; *hortensiae* Kinberg, 1867: 98; *novaehollandiae* Kinberg, 1867; *communis olivaceus* Eisen, 1871; *communis pellucidus* Eisen, 1871 [non *pellucidus* Templeton, 1834]; *turgida turgida* Eisen, 1873: 46 [sometimes date (mis)quoted as “1874”, eg by Gates (1972: 84) and Easton (1983: 479)]; *?turgida tuberculata* Eisen, 1874: 43 (cf. *Ap. tuberculata*); *levis* Hutton, 1877; *australiensis* Fletcher, 1886; *borellii* Cognetti, 1904; *similis* Friend, 1910; *remyi* Cernosvitov, 1929 (sometimes miscited as 1931); *caliginosa hellenica* Tzelepe, 1943; *nocturna* Evans, 1946 [?= *A. giardi* (cf. *A. longa*); misspelt "noctunus" in Qiu & Bouché, 1998: 188]; *arnoldi* Gates, 1952; *molita* Gates, 1952; *Nicodrilus caliginosus caliginosus paratypicus* Bouché, 1972 (invalid varietal name); *Nicodrilus monticola* (sic) Pérez-Onteniente & Rodriguez Babio, 2002: 517; *N. carochensis* Pérez-Onteniente & Rodriguez Babio, 2002: 520; *N. tetramammalis* Pérez-Onteniente & Rodriguez Babio, 2002: 521; these last four synonyms from Csuzdi & Zicsi (2003: 75-76) where *tetramammalis* is miscited as "tetramuralis" and the last three taxa are attributed to "Perez & Rodriguez, 2003" with the reference cited as "PEREZ ONTENIENTE, A. & RODRIGUEZ BABIO, C. (2002), but sometimes cited as just "Onteniente & Babio" or just "Ontenienta" (sic). The Journal of Natural History's website cites names as "A. Pérez Onteniente and C. Rodríguez Babío" <http://taylorandfrancis.metapress.com/app/home/contribution.asp?wasp=23tyjy0qyn3yrhdaxnby&referrer=parent&backto=issue,2,7;journal,62,102;linkingpublicationresults,1:102470,1> . The types of these latter in the "Antonio Pérez-Onteniente" collection of the Valencia Natural History Museum <http://www.naturamuseo.org/coles/coles1.htm>]. [Note: some North American authors attempt to retain the name *turgida* Eisen, 1873 in preference to the prior *caliginosa* Savigny, 1826 on the grounds that Savigny's species was inadequately defined, however its name was validated by the restriction and usage by other authors, eg. Michaelsen (1900: 482), according to Sims & Gerard (1985; 1999: 44). The names *tuberculata* and *nocturna* are sometimes retained as separate taxa, however, it is also possible that the *nocturna* morph is in the ambit of *Aporrectodea giardi giardi*. And while *A. trapezoides* is sometimes placed as a synonym or subspecies of *caliginosa*, herein it is maintained separately as per Gates (1972a) cited in Reynolds (1995: 5)].

- Ap. caliginosa meridionalis* (Bouché, 1972) [*species inquirenda* - cited by Easton (1983: 477 and possibly obtaining authorship from this) but omitted by Qiu & Bouché, 1998 possibly because this was a varietal name; under this taxon Bouché (1972: 335) also proposed an intrasubspecific varietal name "pseudolongus" that is outside of ICZN nomenclature. Misspelt as sub-species "*merionalis* ss. *Nicodrillus caliginosus* Bouché, 1972" (sic) in Reynolds & Cook (1976: 135) who also cf. *Allolobophora turgida* f. *tuberculata* Eisen, 1874 (sic). Further cited as "*Nicodrillus caliginosus meridionalis* (Bouché, 1992)" (sic) from Algeria in Bouché *et al.* (2004: 391)].
- Ap. caliginosa obscuricola* (Cernosvitov, 1936).
- Ap. cemernicensis* Mrsic, 1991 (also spelt "cermermicensis").
- Ap. cuendeti* (Qiu & Bouché, 1998). [Note: stated to be similar to "nocturna", therefore probably similar to *giardi* and/or *longa*].
- Ap. dubiosa dubiosa* (Örley, 1881) (*blinovi* Cernosvitov, 1938; *dubiosa pontica* Pop, 1938); sometimes misspelt "bubiosa".
- Ap. dubiosa monchicana* Trigo *et al.*, 1990 [authorship sometimes cited as Diaz Cosin *et al.*, 1990].
- Ap. faeculentas* (Qiu & Bouché, 1998) (sic).
- Ap. georgii* (Michaelsen, 1890) (*georgii transylvanica* Pop, 1938).
- Ap. giardi giardi* (Ribaucourt, 1910) (*terrestre*: Savigny, 1826 [missapplication by Savigny of the name *L. terrestris* Linnaeus, 1758 according to Sims (1983: 468) and Easton (1983: 477)]; *bretscheri* Cognetti, 1903; *longus oculatus* Cognetti, 1904).
- Ap. giardi voconca* (Bouché, 1972) [misspelt "voconea" in Easton (1983)].
- Ap. gogna* (Bouché, 1972) [cited by Qiu & Bouché, 1998 as "*Nicodrillus gognus gognus*"].
- Ap. handlirschi handlirschi* (Rosa, 1897) [*rhenani* Bretscher, 1899: 417 a junior homonym replacement for *A. norvegica* Bretscher, 1899: 415 (non Eisen, 1874) as noted by Michaelsen (1900: 489), retained but miscited as "*rhenani* Rosa, 1897" in Qiu & Bouché (1998: 188), sometimes also misspelt "rehnani"]; *vejdovskyi* Bretscher, 1899: 419 (non Cernosvitov, 1935); *aporata* Bretscher, 1901; *Allolobophora roseus vedovinii* Bouché, 1972 (sic) nom. nov. pro *A. rosea alpina* Vedovini, 1967 (non *A. alpina* Rosa, 1884, nec Bretscher, 1905), placed in synonymy of *handlirschi* in Easton (1983: 477)]. [Note: *Ap. handlirschi* was made type species of new genus *Eiseniona* Omodeo, 1956, however the genus was not accepted by Bouché (1972), Zicsi (1981; 1982b), Mrsic (1991), nor

Blakemore (2004), although Qiu & Bouché (1998) and Omodeo & Rota (2004: 225) appear to attempt to maintain it, just as they attempt to maintain the *Nicodrilus* synonym of *Aporrectodea*. Csuzdi & Zicsi (2003: 73, 84) accept Easton (1983) and list *handlirschi* in *Aporrectodea*, as herein. Name sometimes misspelt "handlerschi" eg. on <http://enrin.grida.no/biodiv/ru/national/russia/state/00440.htm>].

Ap. handlirschi mahnerti (Zicsi, 1973).

Ap. haymozi (Zicsi, 1977) [new combination by Zicsi & Csuzdi (1999: 997)].

Ap. haymoziformis Zicsi & Csuzdi, 1999.

Ap. icterica icterica (Savigny, 1826) (*claparedi* Ribaucourt, 1896 (corr. *claparedei*); *icterica* (lapsus) Michaelsen, 1900: 500; *capilla* Ribaucourt, 1901). [Note: recently Qiu & Bouché (1998) proposed transfer of *icterica* to their dubious genus *Heraclescolex*; name sometimes misspelt "icteria"].

Ap. icterica dicystis (Cernosvitov, 1942) [non Bartoli, 1963 (= *Allolobophora bartolii bartolii*)].

Ap. icterica occidentalis (Graff, 1957) (non Michaelsen, 1922, nec Qiu & Bouché, 1998).

Ap. jassyensis jassyensis (Michaelsen, 1891) [*jassyensis orientalis* Michaelsen, 1897 - possibly not in synonymy as (apart from subsequent citations by Bodenheimer, 1935 and Omodeo, 1956), omitted by Csuzdi & Pavlicek (2005a); *cavaticus* Michaelsen, 1910; name sometimes misspelt "jassiensis"].

Ap. kozjekensis Mrsic, 1991.

Ap. limicola (Michaelsen, 1890).

Ap. longa longa (Ude, 1885) [syns. *lactea* Friend, 1892; *intermedium* Friend, 1909; miscited as "Ude, 1886" in Qiu & Bouché (1998: 188); *Nicodrilus longus longus ambiguus* Bouché, 1972 and *N. longus longus amplisellus* Bouché, 1972 are invalid varietal names listed in synonymy by Csuzdi (2003)].

Ap. longa ripicola (Bouché, 1972) [Csuzdi (2003) lists synonym *N. longus ripicola viridis* Bouché, 1972 an invalid varietal name).

Ap. pallida (Bretscher, 1900) [resurrected by Zicsi (1982: 560) from *handlirschi* synonymy to its original genus *Allolobophora* but belongs in *Aporrectodea* according to Cs. Csuzdi (2003 and pers. comm.) cf. Omodeo & Rota (2004: 226) who place it in synonymy of *Ap. handlirschi*; non *Eisenia nordenskioldi pallida* Malevics, 1956].

Ap. pannoniella Mrsic, 1987 (sometimes spelt "pannonilella").

Ap. papukiana Mrsic, 1987 (non *Dendrobaena papukiana* Mrsic, 1988).

- Ap. phoebea* (Cognetti, 1913) [regarded as subspecies of *Ap. jassyensis* by Zicsi & Michalis (1981: 250), reelevated to species level by Csuzdi & Zicsi (2003: 88)].
- Ap. (C.) predalpina* Mrsic, 1986 [Note: it is not certain that this subgenus is tenable; Qiu & Bouché (1998: 188) have this type-species in *Eiseniona* which, according to Easton (1983), etc., is in synonymy of *Aporrectodea*].
- Ap. pseudoantipai* (Qiu & Bouché, 1998) (sic).
- Ap. pseudoeiseni* (Qiu & Bouché, 1998).
- Ap. rosea bimastoides* (Cognetti, 1901) (sometimes quoted as 1906; syn. *kulagini* Malevics, 1949; *rosea troglodyta* Alvarez, 1971 - sometimes quoted as Sanchez, 1971).
- Ap. rosea leocernosvitovi* Blakemore, 2004: 78 [nom. nov. pro *Eisenia rosea balcanica* Cernosvitov, 1942: 223 [non *Eisenia veneta balcanica* Cernosvitov, 1937 (= *Dendrobaena* or *Allolobophora balcanica*), nec *Allolobophora balcanica balcanica* Cernosvitov, 1931 (= *Helodrilus balcanicus balcanicus*)].
- Ap. rosea rosea* (Savigny, 1826) [*mucosa* Eisen, 1874; *aquatilis* Vejdovsky, 1875 [misspelt "aquatlis" by Örley, 1885]; *mediterranea* Örley, 1881; *rosea macedonica* Rosa, 1893 [non *Allolobophora macedonica* Sapkarev, 1971 (= *Helodrilus balcanicus*)]; *danielirosai* Ribaucourt, 1896; *alpestris* Bretscher, 1899; *nobilii* Cognetti, 1903; *diomedaeus* Cognetti, 1906; ?*indicus* Michaelsen, 1907 [this synonym advocated by Gates (1972: 107) but rejected by Cs. Csuzdi, pers. comm.; cf. genus *Healyella*]; *rosea budensis* Szüts, 1909 [placed in synonymy by Csuzdi & Zicsi (2003: 92)]; *rosea glandulosa* Friend, 1910; *prashadi* Stephenson, 1922; *dairenensis* Kobayashi, 1940: 291; *harbinensis* Kobayashi, 1940: 290; *hataii* Kobayashi, 1940: 288; *jeholensis* Kobayashi, 1940: 293; *rosea paucipartita* Tzelepe, 1943 (sometimes spelt "pauci partita"); *rosea dendrobaenoides* Omodeo, 1950; *jenensis* Fuller, 1953; *moderata* Chekanovskaya, 1959 [author's name misspelt " Csekanovszkaja" in Easton (1983:477)]; *rosea interposita* Plisko, 1965; *Ap. bowcrowensis* Reynolds & Clapperton, 1996: 77 (this latter synonymy by Csuzdi & Zicsi (2003: 93) who misspell the name "bowcowensis" and also note lapsus "bowrcowensis" by Qiu & Bouché, 1998: 187)]. [Note: *rosea* was previously included in *Eisenia* but was officially transferred to the genus *Aporrectodea* by Gates (1976) who earlier (1974) provided about four pages of synonyms, however some authors retain it in *Eisenia* (perhaps due to its anterior dorsal pores?); cf. Qiu & Bouché (1998: 187) who place it in their new genus *Koinodrilus*].

- Ap. rubicunda acidicola* (Bouché, 1972) [originally named *Nicodrillus (Rhodonicus) rubicundus acidicola (sic)*].
- Ap. rubicunda rubicunda* (Bouché, 1972) [nom. nov. pro *Allolobophora rubra* Vedovini, 1969 (non Bretscher, 1900)].
- Ap. sineporis* (Omodeo, 1952) [formerly *Allolobophora balcanica sine-poris*; overlooked by Reynolds & Cook (1976); transferred to *Aporrectodea* by Csuzdi & Zicsi (2003: 99)].
- Ap. smaragdinoidea* Sapkarev, 1989 [alternatively spelt "smaragdioides" eg. by Qiu & Bouché (1998: 188)].
- Ap. subterrestris* (Lainez & Jordana, 1983) [originally in *Nicodrillus*; authors' names sometimes miscited as "Lainé et Jorand"].
- Ap. trapezoides* (Dugès, 1828) [*capensis* Kinberg, 1867; *caliginosa beddardi* Ribaucourt, 1896 (non *beddardi* Michaelsen, 1894); *inflata* Michaelsen, 1899; *iowana* Evans, 1948; *mariensis* Stephenson, 1917; *augilensis* Sciacchitano, 1931; *samarigera graeca* Cernosvitov, 1938 (non Omodeo, 1955)]. [The taxa *inflata* and *iowana* are added following synonymies of Michaelsen (1900: 483) and Reynolds (1977: 46); in Easton (1983: 477) *trapezoides* is a subspecies of *A. caliginosa*].
- ?*Ap. tuberculata* (Eisen, 1874: 43) [originally *Allolobophora turgida tuberculata*; often retained as a separate taxon, cf. *Ap. caliginosa* and *Ap. trapezoides*].
- Ap. velox* (Bouché, 1967).

Avelona Qiu & Bouché, 1998a: 181.

Type species (monotypic): *Octolasion ligrum* Bouché, 1969.

Av. ligra (Bouché, 1969).

Bimastos Moore, 1893 (syn: *Bimastus*: Michaelsen, 1900 invalid emendation).

Type species: *Bimastos palustris* Moore, 1895 (= *Bimastos* sp. Moore, 1893).

[Note: Easton (1983) includes *Spermophorodrillus* Bouché, 1975 in synonymy, but it is maintained separately here, thus leaving *Bimastos* endemic to North America].

B. gieseleri gieseleri (Ude, 1895) (sometimes put in synonymy of *B. tumidus*).

B. gieseleri hempeli (Smith, 1915) (sometimes put in synonymy of *B. tumidus*).

- B. heimbergeri* Smith, 1928.
- B. lawrenceae* Fender, 1994 in Fender, McKey-Fender & Marshall, 1994.
- B. palustris* Moore, 1895 (*B. sp.* Moore, 1893).
- B. parvus* (Eisen, 1874: 46) [*beddardi* Michaelsen, 1894 (non Ribaucourt, 1896) miscited as "*Bimastos beddardi* Michaelsen, 1900" by Qiu & Bouché (1998: 1979); *parva udei* Ribaucourt, 1896 (non Sapkarev, 1972 = *Serbiona jancesapkarevi* Blakemore, 2004: 78; nec Sapkarev, 1991 = *Allolobophora dofleini josapi* Blakemore, 2006); *consticta geminata* Friend, 1897 (often misspelt "germinata" or "gaminata"); ?*longicinctus* Smith & Gittins, 1915: 548]. [Note: this taxon recently transferred from *Allolobophoridella* to *Bimastos* by Csuzdi & Zicsi (2003: 69, 71), although sometimes still reported as *Allolobophora parva* or *Eisenia parva* and some authors revoke the probable *beddardi* and possible *longicinctus* synonyms].
- B. sophiae* Mercandal de Barrio et Barrio, 1988: 2 *species inquirenda* (originally *Bimastos beddardi sophiae* from Argentina but unlikely to be native, possibly a synonym of *B. parvus* as is *B. beddardi*, overlooked by Qiu & Bouché (1998)].
- B. tumidus* (Eisen, 1874) (*ducis* Stephenson, 1932/3).
- B. welchi* (Smith, 1917).
- B. zeteki* (Smith & Gittins, 1915) [sometimes misspelt "zeteski" or "zetzki"].

Cataladrius Qiu & Bouché, 1998a:190

Type species: *Cataladrilus monticola* Qiu & Bouché, 1998.

Subgenus: *Latisetinella* Qiu & Bouché, 1998a:191 (type-species: *Cataladrilus microendogeus* Qiu & Bouché, 1998).

Ca. albus Qiu & Bouché, 1998.

Ca. annulus Qiu & Bouché, 1998 [misspelt "annulatus" in Qiu & Bouché, 1998: 185].

Ca. edwardsi Qiu & Bouché, 1998.

Ca. monticola Qiu & Bouché, 1998 [misspelt "moticola" in Qiu & Bouché, 1998: 185].

Ca. (La.) microendogeus Qiu & Bouché, 1998.

Ca. (La.) mrsici Qiu & Bouché, 1998 (non *Dendrobaena mrsici* Qiu & Bouché, 1998).

Ca. (La.) multithecus Qiu & Bouché, 1998.

Ca. retropubertus Qiu & Bouché, 1998.

Ca. sardonica catalaunensis (Bouché, 1972) [sometimes elevated to specific status, e.g. Qiu & Bouché (1998: 185)].

Ca. sardonicus sardonica (Cognetti, 1904).

Cernosvitovia Omodeo, 1956 (sensu Zicsi, 1981)

Type species: *Allolobophora rebelii* Rosa, 1897.

Subgenus: *Zicsiona* Mrsic & Sapkarev, 1987 [type-species: *Ce. (Z.) silicata* Mrsic & Sapkarev, 1987].

Ce. (Ce.) biserialis (Cernosvitov, 1937) (non Bouché, 1972).

Ce. (Ce.) bulgarica (Cernosvitov, 1934).

Ce. (Ce.) dobrogeana (Pop, 1938).

Ce. (Ce.) munteniana Zicsi & V.V. Pop, 1991 [misspelt and miscited as "muntenicana Zicsi et Pop, 1992" in Qiu & Bouché (1998: 198)].

Ce. (Ce.) rebelii (Rosa, 1897) (name sometimes spelt "rebeli").

Ce. (Ce.) schweigeri (Zicsi, 1973: 226) [originally in *Allolobophora* (non *Bimastos schweigeri* Zicsi, 1981: 434)].

Ce. (Zi.) crnicae Karaman, 1987 (name sometimes misspelt "crnice").

Ce. (Zi.) dudichi Zicsi & Sapkarev, 1982 [misspelt "didichi" in Qiu & Bouché (1998: 198); non *oculatus dudichi* Pop, 1943].

Ce. (Zi.) krainensis (Sapkarev, 1987) [originally *Eophila opisthocystis krainensis* but Reynolds & Cook (1992: 16) suggest publication is "(in print ?)" cf. their acceptance of *macvensis*; transferred to *Italobalkaniona*, then to *Cernosvitovia* and elevated to specific status by Zicsi (1995: 128/9); sometimes misspelt "crainensis"; recently Cs. Csuzdi and V.V. Pop (pers. comm. ISEE8, Sept. 2006) question whether *It. knazevensis* Sapkarev, 1989 is possibly a synonym].

Ce. (Zi.) opisthocystis (Rosa, 1895) [originally *Allolobophora*, transferred to *Cernosvitovia* and elevated to specific status by Zicsi (1995: 127); recently Cs. Csuzdi and V.V. Pop (pers. comm. ISEE8, Sept. 2006) suggest *crnicae* is a synonym].

Ce. (Zi.) paradoxa Mrsic, 1992 (non Cognetti, 1904).

Ce. (Zi.) silicata Mrsic & Sapkarev, 1987.

Dendrobaena Eisen, 1874: 53 [syn. *Omodeoia* Kvavadze, 1993: 132 with type-species *D. byblica* (Rosa, 1893) - syn. nov. from Csuzdi & Zicsi (2003: 107)].

Type species: *Dendrobaena boeckii* Eisen, 1873/4 (= *D. octaedra*).

Sub-genera: *Alpocaucasiona* Kvavadze, 2000: 77 [type-species *D. alpina alpina* (Rosa, 1884)]; *Caucasodrilus* Kvavadze, 2000: 79 (type-species *D. schmidti marinae* Kvavadze, 1985)].

D. adaiensis (Michaelsen, 1900: 9) [?syn. *schmidti violacea* Michaelsen, 1910; this doubtful synonym from Easton (1983: 478) who also included *schmidti* Michaelsen, 1907: 90 and its junior synonym *montanus* Michaelsen, 1910: 68 [non *veneta montana* Michaelsen, 1901: 30 (= *Dendrodriloides grandis montanus*)] that, nevertheless, is listed separately here as per Cs. Csuzdi (2003). Due to "Priority", Easton (1983: 478, 486) listed its sub-species as *adaiensis surbiensis* and *adaiensis tellermanica*, cf. Omodeo & Rota (1989: 186) who thought *D. surbiensis* (at least?) deserved species status, although these two taxa were retained as sub-species of *schmidti* in Csuzdi (2003) who further included *schmidti violacea* Michaelsen, 1910 in synonymy of *D. schmidti schmidti* (Michaelsen, 1907) proper (see below)].

D. aegea (Cognetti, 1913).

D. (A.) alpina alpina (Rosa, 1884: 28) (*alpina armeniaca* Rosa, 1893: 431 [retained as invalid variety "var." in Kvavadze (2000: 77); miscited as "armenica alpina" in Reynolds & Cook (1976: 68)]; *alpina tatrensis* Nusbaum, 1895; *octaedra irregularis* Ribaucourt, 1896; *veneta cognettii* Cernosvitov, 1935 (non Michaelsen, 1903); *alpina alteclitellata* Pop, 1938: 136 [miscited as *D. alpina* Pop, 1938 in Reynolds & Cook (1976: 68)]; *hypogea* Malevics, 1947). [Original name *Allolobophora alpina* Rosa, 1884 (non Vedovini, 1967, nec *Octolasium transpadanum alpinum* Bretscher, 1905)].

D. (A.) alpina diplotritheca Kvavadze, 1972 [Note: Easton (1983) overlooked this taxon].

D. (A.) alpina graffi Easton, 1983 [nom. nov. pro *Allolobophora rosea lusitana* Graff, 1957: 301 (non *Dendrobaena lusitana* Graff, 1957: 303)].

D. (A.) alpina mavrovensis Sapkarev, 1971 (sometimes misspelt "alpina mavronensis").

D. (A.) alpina orientaloides Zicsi, 1985 (sometimes elevated to species level).

D. (A.) alpina popi Sapkarev, 1971.

D. (A.) alpina zeugochaeta Bouché, 1972.

D. alvaradoi Moreno *et al.*, 1982 (authors "Moreno, Benito and Diaz, 1982" sometimes cited as "Moreno, Jesus & Cosin Diaz" and dated "1983").

D. apora Qiu & Bouché, 1998 [non *Oc. aporus* Pop, V.V., 1989].

- D. attemsi* (Michaelsen, 1902/3) [originally *Helodrilus (Dendrobaena) attemsi*].
- D. auriculata* (Rosa, 1897) (*skorikowi* Michaelsen, 1902).
- D. auriculifera* Zicsi, 1969 [non *D. auriculata* (Rosa, 1897)].
- D. baksanensis* Pizl, 1984 [syn. *D. schmidti colchica* Kvavadze, 1985 (non *Eisenia colchidica* Perel, 1967); synonymy by Kvavadze, Patsiashvili & Suladze (1989); misspelt "baksanesis" Qiu & Bouché (1998: 195)].
- D. balcanica* (Cernosvitov, 1937) [originally *Eisenia veneta balcanica* Cernosvitov, 1937; removed from synonymy of *D. veneta veneta* and elevated to specific rank by Zicsi & Csuzdi (1986: 115): non. *Eisenia rosea balcanica* Cernosvitov, 1942 (= *A. leocernosvitovi* nom. nov.); miscited as "*Dendrobaena balcanica* Cernosvitov, 1937" (sic) by Qiu & Bouché (1998: 194)].
- D. bokakotorensis* Sapkarev, 1975 [misspelt "bikakotorensis" in Qiu & Bouché, 1998: 195].
- D. boneiensis* (Michaelsen, 1910: 33) [correct citation confirmed by Cs. Csuzdi (2003 pers. comm.); misspelt "boneinensis" in Easton (1983: 478) and "boeiensis" in Qiu & Bouché (1998: 194); cf. Reynolds & Cook (1976) who cite none of these].
- D. bosniaca* Mrcsic, 1988 (sometimes misdated as "1991").
- D. bruna* Omodeo & Rota, 1989 [miscited as "Omodeo, 1989" in Qiu & Bouché, 1998: 195].
- D. burgosana* Qiu & Bouché, 1998.
- D. byblica arsanica* Kvavadze, 1985 [sometimes misspelt "arsianca"].
- D. byblica byblica* (Rosa, 1893) [*ganglbaueri annectens* Rosa, 1895 (restored or just claimed as *Fitzingeria annectens* (Rosa, 1895) by Qiu & Bouché, 1998: 198); *fedtschenkoi* Michaelsen, 1900; *ganglbaueri olympiacus* Michaelsen, 1902; *thyrrenus* Baldasseroni, 1907; *ganglbaueri daghestanensis* Michaelsen, 1907 (sometimes dated as 1910); *schelkovnikovi* Michaelsen, 1907 [misdated "1900" and cited in *Omodeoia* by BIOSIS; retained as a valid species by Kvavadze & Nikilaishvili (1980), also placed as a sub-species of *D. surbiensis* by some authors]; *ganglbaueri meledaensis* Michaelsen, 1908; *schelkovnikovi veliensis* Michaelsen, 1910; *schelkovnikovi bakuensis* Michaelsen, 1910; *fedtschenkoi lenkoranensis* Michaelsen, 1910; *insularis* Chinaglia, 1913; *lacustris* Stephenson, 1913; *ganglbaueri bulgarica* Cernosvitov, 1937; *ganglbaueri cylindrica* Tzelepe, 1943; *ganglbaueri differentis* Tzelepe, 1943; *schelkovnikovi gracea* Omodeo, 1955: 8 [non Cernosvitov, 1938, name not replaced as synonyms exist]; *galloprovincialis* Bartoli, 1962; *hyrcanica*

- Kvavadze & Nikolashvili, 1980: 440 - sometimes dated as 1979 and attributed as *Omodeoia hyrcanica*; misspelt "*hurcanica*" by Reynolds & Cook (1989: 18), and apparently overlooked by Easton (1983); this synonymy mostly from Csuzdi (2003); cf. *D. ganglbaueri* Rosa, 1894].
- D. byblica herethica* Kvavadze, 1985 [originally *D. schelkovnikovi herethica* Kvavadze, 1985: 155-157, sometimes transferred to *Omodeoia* - a junior synonym of *Dendrobaena*; the listing in Kvavadze (2000: 77) of both "*D. byblica herethica*" and "*D. heretica*" as separate taxa is a typing error and/or a mistake as the correct citation should be "*Dendrobaena byblica heretica* Kvavadze, 1985" as here, with no braces needed under ICZN (1999: Art. 51.3.2) as taxon remains in the same genus, E. Kvavadze pers. comm., (16.ii.2007); thus "*D. heretica*" is a *lapsus calami* and *nomen nudum*].
- D. (A.) clujensis* Pop, 1938 [miscited and misspelt as "cluensis Pop, 1926" in Kvavadze (2000: 77)].
- D. decipiens* (Michaelsen, 1910) [originally *Helodrilus (Eisenis) alpinus decipiens*, put as sub-species (or synonym) of *attemsi* by some authors but elevated to species level by Omodeo & Rota (1989: 191)].
- D. durmitorensis* Mnsic, 1988 (spelt as "durmitirensis" in Qiu & Bouché, 1998: 195).
- D. epirotica* Zicsi & Michalis, 1993: 306 [overlooked by Qiu & Bouché (1998); cited by Csuzdi (2003)].
- D. faucium* (sic) Michaelsen, 1910.
- D. franzi* Zicsi, 1965.
- D. fridericae fridericae* Omodeo & Rota, 1989 [miscited as "Omodeo, 1989" in Qiu & Bouché (1998: 195)].
- D. fridericae uludagi* Omodeo & Rota, 1991: 179.
- D. gallurensis* Rota, 1992 [originally *D. cognettii gallurensis* misspelt "cognetti gallurensis" in Qiu & Bouché (1998: 195); cf. *D. cognettii* (Michaelsen, 1903) in synonymy of *D. pygmaea* wherewithin this subspecies may also belong].
- D. ganglbaueri* Rosa, 1894 [restored from Easton's synonymy in *D. byblica* by Zicsi (1991: 168); it is not entirely certain what is the fate of its several subspecies, listed herein under *D. byblica*].
- D. grmecensis* Mnsic, 1991.
- D. hamzalensis* Mnsic, 1991 [misspelt "hamealensis" in Qiu & Bouché (1998: 195)].
- D. hauseri* Zicsi, 1973 [misquoted as *Bimastos* by Easton (1983)].
- D. heretica* [**nomen nudum**; as listed in Kvavadze (2000: 77) as a typing error and/or mistake; see *D. byblica herethica* Kvavadze, 1985].

- D. hortensis* (Michaelsen, 1890: 15) (*hibernica* Friend, 1892; *veneta tepidaria* Friend, 1904; *veneta dendroidea* Friend, 1909; *Allolobophora veneta robusta* Friend, 1909 [a permanently invalid primary homonym of *Allolobophora robusta* Rosa, 1895 under ICZN (1999) that is not replaced as valid synonyms exist; found to be *D. hortensis* rather than *D. veneta* by Csuzdi & Zicsi (2003: 119)]; *birsteini* Malevics, 1947; *nicaensis* Vedovini, 1971; *pseudohortensis* Sapkarev, 1976; [these last two synonyms in Csuzdi & Zicsi (2003: 119)]. [Note: originally described as *Allolobophora subrubicunda forma hortensis*, although cited as *E. veneta* var. *hortensis* in Michaelsen (1900: 477); some authors mistake Michaelsen's publication date as "1889" or as "1907" when he described the unrelated *Notoscolex hortensis*].
- D. hrabei* (Cernosvitov, 1934) [originally *Eisenia veneta hrabei* Cernosvitov, 1934; retained in *Eisenia* in Easton (1983: 480) but placed in *Dendrobaena* by Zicsi & Csuzdi (1986: 119) and Qiu & Bouché (1998: 194); non *Eophila hrabei* Cernosvitov, 1935 (= *Allolobophora hrabei*)].
- D. ilievae* Kvavadze & Miloikova, 1993 (her name sometimes spelt "Milojkova" and dated 1991).
- D. illyrica* (Cognetti, 1906) (*illyricus hintzei* Michaelsen, 1906/7; *bohemicus* Cernosvitov, 1931; non *Octodrilus illyricus* Mrsic, 1987).
- D. imeretiana* Kvavadze, 1992.
- D. jahorensis* Mrsic, 1991.
- D. jastrebensis* Mrsic & Sapkarev, 1987.
- D. jeanneli* Pop, 1948.
- D. juliana auriculifera* Zicsi, 1969 [designation by Easton (1983)].
- D. juliana colloquia* Bouché, 1973 [originally subspecies *D. auriculifera colloquia* listed with specific status in Qiu & Bouché (1998: 195); Csuzdi (2003) has it as a synonym of *D. auriculifera*].
- D. juliana juliana* Omodeo, 1954 [syn. is *D. auriculifera juliana*; originally *D. schmidti* f. *juliana*, raised to specific rank by Kerovec & Mrsic (1981) as cited in Omodeo & Rota (1989: 186) cf. same claim by Easton (1983: 479; 486); Csuzdi (2003) lists it as a subspecies of *D. auriculifera*].
- D. kervillei* (Michaelsen, 1910) [Michaelsen twice described this species: as *Helodrilus (Eisenia) venetus* var. *kervillei* Michaelsen, 1910, 166-167 and as *Eisenia veneta* var. *kervillei* Michaelsen, 1926: 352 (non *Dendrobaena semitica* var. *kervillei* Michaelsen, 1910: 167; 1926: 353 (= *D. semitica michaelseni* Easton, 1983 that is now in synonymy of *D. semitica* (Rosa, 1893)). Csuzdi &

Pavlicek (2002: 110) elevated this taxon to specific status and include in synonymy a reference by Rosa (1893b) to his earlier *A. alpina* Rosa, 1884 [non *A. alpina armeniaca* Rosa, 1893a), although the species *D. alpina* (Rosa, 1884) is separate with no affinity with *D. kervillei* according to Cs. Csuzdi (2003 pers. comm.)].

D. kelassuriensis Kvavadze, 1985.

D. kurashvili Kvavadze, 1971 [misspelt "kuraschvili" by Perel (1979: 237)].

D. lusitana Graff, 1957 [syn. *carusoi* Omodeo & Martinucci, 1987 (this synonymy from Csuzdi, 2003 cf. Easton, 1983); non *Allolobophora rosea lusitana* Graff, 1957 (= *D. alpina graffi*)].

D. macedonica Mrsic, 1991 [non *A. rosea macedonica* Rosa, 1893 (= *Aporrectodea rosea*) nec its junior homonym *Allolobophora macedonica* Sapkarev, 1971 (= *Helodrilus balcanicus*) nec *Eophila macedonica* Sapkarev, 1977 (= *Italobalkaniona macedonica*)].

D. madeirensis Michaelsen, 1891 [retained in *Allolobophora* by Easton (1983)].

D. mahnerti Zicsi, 1974 [sometimes misspelt "manherti"].

D. (Ca.) malevici Kvavadze, 1985 [(non *Eisenia malevici* Perel, 1962); originally *D. schmidti malevici*, this taxon was elevated to specific status and transferred to *Caucasodrilus* by Kvavadze (2003: 79) - see also *D. marinae*].

D. mamissonica Kvavadze, 1984 [sometimes misspelt "manissonica"].

D. (Ca.) marinae Kvavadze, 1985 [originally as *D. schmidti marinae* Kvavadze, 1985, elevated to specific rank in Omodeo & Rota (1989: 186) but erroneously listed as a sub-species of *D. adaiensis* by Qiu & Bouché (1998: 195); this species is claimed to be type of new sub-genus *Caucasodrilus* - see also *D. malevici*].

D. (A.) metallorum (Tétry, 1936) [miscited and misspelt as "mataorum Tertry, 1926" in Kvavadze (2000: 77)].

D. michalisi Karaman, 1972 [syn. *sanquinea* Michalis, 1972 - this synonymy from Zicsi & Michalis (1981) and Csuzdi (2003); non *Allolobophora antiqua michalisi* Karaman, 1972].

D. monspessulana Qiu & Bouché, 1998.

D. montenegrina Mrsic, 1988 (*sic*) [*mrsici* Qiu & Bouché, 1998, non *Dendrobaena montenegrina* Karaman, 1972 nec *Allolobophora kosowensis montenegrina* Sapkarev, 1975. Note: Qiu & Bouché (1998: 195) provide the unnecessary replacement name *D. mrsici* for Mrsic's taxon erroneously believing it to have same spelling as Karaman's taxon; the single letter difference is not listed as acceptable for homonymy by ICZN (1999: Art. 58)].

- D. montenegrina* Karaman, 1972 (*sic*) (non *montenegrina* Sapkarev, 1975).
- D. mrazeki* (Cernosvitov, 1935).
- D. nassonovi* Kulagin, 1889 [name misspelt "nasonowii" in Reynolds & Cook (1976);
syns. *mariupoliensis* Wyssotzky, 1898 (misspelt "mariupoliensis" by Easton (1983: 479) and misdated "1893" by Perel (1979: 233; 1997: 80) and erroneously listed as senior synonym); *crassa* Michaelsen, 1900: 10; *mariupoliensis monticolus* Michaelsen, 1910; *mariupoliensis relictata* Perel, 1967 (non Southern, 1909); *mariupoliensis adjarica* Kvavadze, 1973).
- D. negevis* Csuzdi & Pavlicek, 1999.
- D. nevoi* Csuzdi & Pavlicek, 1999.
- D. nivalis* Omodeo & Rota, 1989 [miscited as "Omodeo, 1989" in Qiu & Bouché, 1998: 195; possibly has affinities with *D. adaiensis* (Michaelsen, 1900) or *D. boneinensis* (Michaelsen, 1910); non Bretscher, 1899].
- D. octaedra* (Savigny, 1826) (originally *Enterion octaedrum*, syns. *vetaedrus* (laps.): Duges, 1837; *octoedra* (laps.): Rosa, 1887; *flaviventris* Leuckart, 1849; *boeckii* Eisen, 1873/4; *camerani* Rosa, 1882; *octaedra alpinula* Ribaucourt, 1896; *octaedra liliputiana* Ribaucourt, 1896; *octaedrus casterinensis* Chinaglia, 1911; *octaedra quadrivesiculata* Pop, 1938; *octaedra brevisella* Bouché, 1972 [(non *Sc. dugesi brevisella* Bouché, 1972); overlooked by Easton (1983) and Qiu & Bouché (1998) but cited in Reynolds & Cook (1976: 81) and put in synonymy of *D. octaedra*, e.g. by Csuzdi & Zicsi (2003: 121)].
- D. olympica olympica* (Cernosvitov, 1938).
- D. olympica pelisterica* Sapkarev, in Sapkarev *et al.* 2001 (*inquirenda* misspelt "olimpica pelisterica" <http://www.biodiv.org/doc/world/mk/mk-nr-01-en.pdf> Feb., 2004 and http://www.moe.gov.mk/CHM/STUDY_RM.pdf March, 2006).
- D. orientalis karak* Csuzdi & Pavlicek, 2005b: 71.
- D. orientalis orientalis* Cernosvitov, 1940 (?syn. *ressli* Zicsi, 1973).
- D. osellai* Zicsi, 1970 [non *Allolobophora osellai* Zicsi, 1981 (= *Italobalkaniona* or ?*Pietromodeona osellai*].
- D. pantaleonis eotypica* Omodeo & Rota, 1989 [non *Ei. eotypica* (Michaelsen, 1910); misquoted as "Omodeo, 1986" in Qiu & Bouché (1998: 195)].
- D. pantaleonis pantaleonis* (Chinaglia, 1913) [*D. pantaleonis balagnensis* Bouché, 1972 - this synonym from Omodeo & Rota (1989: 184)].
- D. papukiana* Mrcsic, 1987/8 (non *Aporrectodea papukiana* Mrcsic, 1987).
- D. parabyblica* Perel, 1972.
- D. petheri* (Rosa, 1905) (*schemachaensis* Michaelsen, 1910).

- D. persimilis* Omodeo & Rota, 1989 [miscited as "Omodeo, 1989" in Qiu & Bouché, 1998: 195].
- D. perula* Omodeo & Rota, 1989 [miscited as "Omodeo, 1989" in Qiu & Bouché, 1998: 195].
- D. pindonensis* Zicsi & Michalis, 1993.
- D. proandra* Omodeo & Rota, 1989 [miscited as "Omodeo, 1989" in Qiu & Bouché, 1998: 195].
- D. pygmaea* (Savigny, 1826) [non *Dendrobaena arborea pygmaea* Friend, 1923: 23 - this secondary homonym is not replaced as it is believed to be in synonymy (?= *Dendrodrilus rubidus subrubicundus*); syn. *Allolobophora minima* Rosa, 1884 non Muldal, 1953 (= *Murchieona minuscula*); *cognettii* Michaelsen, 1903 nom. nov. pro *ribaucourti* Cognetti, 1901 non Bretscher, 1901 (= *L. rubellus*); *pygmaea cognettii*: Bouché, 1972: 391, misspelt "pygmea cognettii Mich, 1903" in Qiu & Bouché (1998: 194)]. [Note: some authors (such as Omodeo & Rota, 2004: 248-9) replace *D. pygmaea* (Savigny, 1826) by *cognettii* Michaelsen, 1903 even though another older name, *minima* (Rosa, 1884), is available, on the grounds that Savigny's species was inadequately defined (as if this was an unique occurrence), but this ignores the subsequent restriction and usage e.g. by Michaelsen (1900: 495) that validates the name *pygmaea* according to Sims & Gerard (1985: 44; 1999: 44). Some authors also maintain *cognettii* as a parthenogenetic morph that lacks (dorsal pores?), spermathecae, and genital tuberculata; but these distinctions seem somewhat arbitrary for its range of parthenogenetic degradation].
- D. resslii* Zicsi, 1973 (probably a synonym of *D. orientalis* Cernosvitov, 1940).
- D. rhodopensis* (Cernosvitov, 1937).
- D. rothschildae* Csuzdi & Pavlicek, 1998/9.
- D. ruffoi* Zicsi, 1970 (non *Octodrilus ruffoi* Zicsi, 1981/2).
- D. saccharophila* Qiu & Bouché, 1998 - *species inquirenda* [originally described as a sub-species of Stephenson's (1913) *lacustris* that is in synonymy of *D. byblica* according to Easton (1983) and Mrsic (1991), thus here elevated to specific status although it may equally be synonymous with *D. byblica*].
- D. samarigera* (Rosa, 1893) [*nomen inquirenda* - originally spelt *samarigera* but deliberately spelt "samariger" in Michaelsen (1900: 489, 495), non *A. smaragdina* Rosa, 1892; removed from *Bimastos* to *Dendrobaena* by Qiu & Bouché (1998) and by Csuzdi & Pavlicek (1999)].
- D. sasensis* Sapkarev, 1983 [*inquirenda* - sometimes dated as "1977", listed as "nom.

- nud." by Qiu & Bouché (1998: 195) but redescribed, and thus possibly validated, by Sapkarev (1993: 22)].
- D. schmidti jalonensis* Kvavadze, 1985 [misspelt "jalonensis" in Reynolds & Cook (1992: 16) and "jaloninensis" in Qiu & Bouché (1998: 195)].
- D. schmidti schmidti* Michaelsen, 1907 [syn. *Helodrilus (Eophila) montanus* Michaelsen, 1910: 68 [non *Helodrilus (Eisenia) venetus montanus* Michaelsen, 1910: 30 (= *Dendrodriloides grandis montanus*)]; ?syn. *schmidti violacea* Michaelsen, 1910. This synonymy after Cs. Csuzdi (2003, and pers. comm.), cf. *D. adaiensis* Michaelsen, 1900]. [Note: *Helodrilus (D.) schmidti* was listed by Easton (1983: 478; 486) as a junior synonym of *D. adaiensis* (Michaelsen 1900) due to "Priority", but this was apparently rejected by Omodeo & Rota (1989: 185) who suggest that rather than subspecies or 'varieties' the (?ten) component taxa of *schmidti* are true species. Qiu & Bouché (1998: 194-5) variously retain some as subspecies and raise others to species level, but they appear to have overlooked *D. schmidti* proper].
- D. schmidti tellermanica* Perel, 1966 [re-combined as sub-species of *D. adaiensis* by Easton (1983: 478), cf. Csuzdi (2003) who lists it in its original configurations, as here].
- D. semitica* (Rosa, 1893) [syn. *D. semitica michaelseni* Easton, 1983: 479, 486 **syn. nov.**]. [This synonymy is derived from the *semitica kervillei* synonymy by Csuzdi & Pavlicek (1999: 477) who overlook Easton's (invalid due to strict page priority?) nom. nov. pro *Dendrobaena semitica* var. *kervillei* Michaelsen, [1910: 167;] 1926: 353, non *Eisenia veneta kervillei* Michaelsen, [1910: 166;] 1926: 352 (= *D. kervillei*), for this taxon that was accidentally twice described [both for *semitica kervillei* as for *veneta kervillei*] by Michaelsen (1910 and 1926) with only the latter dates [viz. *semitica kervillei* Mich. 1926: 353 and *veneta kervillei* Mich. 1926: 352] recorded by Reynolds & Cook (1976: 122-3, 123; 1989: 21)].
- D. serbica* Karaman, 1973 [non *Eophila serbica* Sapkarev, 1976 (= *Serbiona serbica*) nec *Allolobophora robusta serbica* Karaman, 1983 (= *Serbiona robusta spasenijakaramani* Blakemore, 2004 nom. nov.) nec *Helodrilus serbicus* Sapkarev, 1989; nec *D. surbiensis* (Michaelsen, 1910)].
- D. sketi* Karaman, 1972.
- D. slovenica* Mrsic, 1991 (non *Octolasion mima slovenica* Karaman, 1972; nec *Helodrilus slovenicus* Mrsic, 1991).
- D. steineri* Zicsi, 1994.

D. surbiensis (Michaelsen, 1910: 41) [originally *Helodrilus (Dendrobaena) schmidti surbiensis*, elevated to specific rank in Omodeo & Rota (1989: 186); previously listed as *D. adaiensis surbiensis* (Michaelsen, 1910) by Easton (1983: 478, 486); cf. maintained, as originally, as *D. schmidti surbiensis* (Michaelsen, 1910) by Csuzdi (2003, and pers. comm.) who believes Omodeo & Rota's (1989: 186) "*D. surbiensis*" is actually a mistake for *D. schmidti tellermanica* thereby probably requiring return of *D. surbiensis* to the ambit of *D. schmidti*].

D. swanetiana Kvavadze, 1992 (sometimes misspelt "swanetianai").

D. vej dovskyi (Cernosvitov, 1935) (*octaedra filiformis* Pop, 1947).

D. velkovrhia Mrsic, 1988 (sometime spelt "velkovrhi" or "velkhovrhia").

D. veneta meleica (Tzelepe, 1943) [retained by Easton (1983); listed as "nom. nud." by Qiu & Bouché (1998: 194); placed in synonymy of *D. veneta veneta* by Csuzdi (2003)].

D. veneta ochridana Sapkarev, 1977 (non *Eiseniella ochridana* Cernosvitov, 1931).

D. veneta veneta (Rosa, 1886: 674) [misspelt "venata" in Qiu & Bouché (1998: 194) and sometimes misdated as "Rosa, 1888"; (syn. *caucasica* Kulagin, 1889; *bogdanowii* Kulagin, 1889; *veneta zebra* Michaelsen, 1902; *veneta succinta* Rosa, 1905; *venetus concolor* Michaelsen, 1909; *veneta picta* Michaelsen, 1910; *veneta tumida* Friend, 1927 (non Eisen, 1874); *austriaca* Michaelsen, 1936; *veneta crassa* Malevics, 1947 [non Michaelsen, 1900]; *veneta minuta* Malevics, 1947; *svetlovia* Grieb, 1948)]. [Note: *A. veneta balcanica* was elevated from synonymy of *D. veneta* to specific status by Zicsi & Csuzdi (1986: 115)].

D. verihemiandra Kvavadze *et al.* in Kvavadze, Patsiashvili & Suladze, 1989.

D. vranicensis Mrsic, 1991 [misspelt "vraicensis" in Reynolds & Cook (1992: 22)].

D. zicsii Karaman, 1973 (non *A. zicsii* Bouché, 1972).

Dendrodrilus Omodeo, 1956

Type species: *Enterion rubidum* Savigny, 1826.

De. rubidus rubidus (Savigny, 1826) [*xanthurus* Templeton, 1836; *puter* Hoffmeister, 1845; *pieter* Udekem, 1865; *havaicus* Kinberg, 1867 (sometimes misspelt *Hypogaeon* "havaicum"); *victoris* Perrier, 1872; *arborea* Eisen, 1874 -

Reynolds & Cook (1976: 71) miscite a reference to this taxon as *A. putris arborea* by Michaelsen (1890: 49) as a different species; *constricta* Rosa, 1884; *darwini* Ribaucourt, 1896; *putris subrubicunda* var. *helvetica* Ribaucourt, 1896; *magnesa* Tzelepe, 1943]. [Omodeo & Rota (2004: 250) suggest reservation of the "name" *D. rubidus constrictus* "to the forms devoid of spermathecae" even though "forms" are deemed of infrasubspecific rank and are thereby excluded from the taxonomic code of ICZN (1999)].

De. rubidus norvegicus (Eisen, 1874: 48) [non *norvegica* Bretscher, 1899 (= *Ap. handlirschi*)].

De. rubidus subrubicundus (Eisen, 1874: 51) [?*valdiviensis* Blanchard, 1849 - given questionable synonymy by Csuzdi & Zicsi (2003: 136) after Michaelsen (1900: 491), but if so this taxon would possibly compete for priority, cf. *De. r. rubidus*; *fraisei* Örley, 1881 - this synonym from Csuzdi & Zicsi (2003: 136); *putris dieppi* Ribaucourt, 1901; ?*arborea pygmaea* Friend, 1923 [non *pygmaeum* Savigny, 1826] - this synonym from Easton (1983: 479) ignored by Csuzdi & Zicsi (2003); *subrubicunda* var. *papillosa* Pop, 1938 [non *Lumbricus papillosus* Friend, 1893] - this synonym from Csuzdi & Zicsi (2003: 136); *rivulicola* Chandebois, 1958. Note: Michaelsen (1891: 3) misidentified this taxon as *A. nordenskioldii* according to Michaelsen (1900: 491) although in this latter synonymy he also includes *darwini* and *helvetica* under *rubidus subrubicundus* (cf. *De. rubidus rubidus*)].

De. rubidus tenuis (Eisen, 1874: 44) *species incertae sedis* [for some reason elevated to specific status in Qiu & Bouché, 1998: 195; listed as a subspecies of *rubidus* by Easton (1983: 480); placed in synonymy of nominal subspecies in Csuzdi & Zicsi (2003: 132); cf. Omodeo & Rota (2004: 250) who suggest reserving the name *D. rubidus tenuis* for some parthenogenetic forms even though "forms" are strictly invalid under ICZN (1999) code].

Dendrodriloides Kvavadze, 2000: 345

Type species : *Eisenia grandis* Michaelsen, 1907.

Notes: Sometimes cited as "*Dendrodriloides* Kvavadze, 1999" when paper was submitted. ICZN (1999: Art. 30.1.4.4) states " A compound genus-group name ending in suffix ... - *oides* ... is to be treated as masculine unless its author, when establishing the name, stated that it had another gender...". Names of species transferred are

changed to agree in masculine gender.

Di. ebneri (Michaelsen, 1914) (formerly *Eisenia grandis ebneri*).

Di. ganjiensis (Kvavadze, 1985) (formerly *Eisenia grandis ganjiensis*).

Di. grandis grandis (Michaelsen, 1907) (originally *Eisenia grandis*; placed in *Eophila* by Omodeo & Rota (1989), and mooted as *Dendrobaena* by Csuzdi & Zicsi (2003: 139) who appear to have overlooked Kvavadze's (2000) paper].

Di. grandis montanus (Michaelsen, 1910: 30) [originally *Helodrilus (Eisenia) venetus montanus* Michaelsen, 1910: 30, transfer from *Dendrobaena* with status of subspecies of *Di. grandis* by Kvavadze (2000: 346)]; name misspelt "venetusmontanus" by Easton (1983: 478) yet maintained as *D. montana* (Michaelsen, 1910) by Easton (1983: 479); this taxon apparently overlooked by Reynolds & Cook (1976)]. [Non *Helodrilus (Eophila) montanus* Michaelsen, 1910: 68 (= *D. schmidti* (Michaelsen, 1907) or possibly a *D. schmidti* sub-species?)].

Di. grandis perelae (Kvavadze, 1973) [originally *Eisenia grandis perelae* later held as synonym of *E. grandis*, transferred and restored by Kvavadze (2000: 346); Reynolds & Cook (1992: 19) cite a synonym of "*Eisenia perelae*" as *Eisenia perelae polysegmentica* Kvavadze, 1979 (non Kvavadze, 1973)].

Di. grandis storkani (Cernosvitov, 1934) [previously as *Eisenia grandis storkani* but transferred by Kvavadze (2000: 346) after being restored from synonymy in *Ap. rosea rosea* by Zicsi & Csuzdi (1986: 119) where it was listed with uncertain affinities as ?*Eisenia* ?*Dendrobaena grandis storkani* (Cernosvitov, 1934)].

Di. hydrophilicus (Kvavadze, 1979: 143) [originally *E. grandis hydrophilica*; sometimes dated "1973" e.g. by Kvavadze (2000: 346)].

Di. kattoulasi (Zicsi & Michalis, 1981) [originally in *Eisenia*, included in *Allolobophora* by Omodeo & Rota (1989); misspelt "Katoulasi" and attributed to Omodeo (1956) by Kvavadze (2000: 345)].

Di. polysegmenticus (Kvavadze, 1973) [originally subspecies *Eophila grandis polysegmentica*, and then in synonymy of *E. grandis*, restored and transferred by Kvavadze (2000: 346) where name misspelt "polysegmentius"; sometimes also miscited as "*Dendrodriloides polysegmentica* Kvavadze, 1973"; non *Eisenia perelae polysegmentica* Kvavadze, 1979].

Di. supsaiensis (Kvavadze, 1985) [transferred and upgraded subspp. of *E. grandis*; misspelled as *Di. grandis supsaensis* in Reynolds & Cook (1992: 21)].

Di. thamarae (Kvavadze in Kvavadze and Nikolashvili, 1983) [name sometimes miscited as "thararae" e.g. by Kvavadze (2000: 346)].

Eisenia Malm, 1877 (*sensu* Perel, 1974) [non *Eisenia* Vaillant, 1889 n.n. pro *Tetragonurus* Eisen 1874 (see *Eiseniella*); nec *Eisenia* Ashmead, 1904 (Hym.)]; [syn. *Allolobophora* (*Notogama*) Rosa, 1893 (type species *Enterion fetidum* Savigny, 1826: new designation to remove nomenclatural conflict by Easton, 1983)].

Type species: *Enterion fetidum* Savigny, 1826.

[Notes: three taxa, *Eiseniona carpetana* Alvarez, 1970, *Eisenia veneta hrabei* Cernovitov, 1934 and *Helodrilus longicinctus* Smith & Gittins, 1915, were excluded from *Eisenia* by Perel (1974) but were provisionally retained in *Eisenia* by Easton (1983) since, at that time, they had not been assigned to other genera. Subsequently, *carpetana* was placed in *Iberoscolex* by Qiu & Bouché (1998); *E. veneta hrabei* was decided as *Dendrobaena hrabei* by Zicsi & Csuzdi (1986: 119); and Easton (1983) apparently rejected, or was unaware of, the synonymy of *Helodrilus longicinctus* Smith & Gittins, 1915 in *Allolobophora parva* Eisen, 1874 tentatively advocated by Gates (1972: 85); some authors still retain this latter taxon in *Bimastos* or *Eisenia*. This genus name is also applied to brown algae under Botanical nomenclature].

E. altaica Perel, 1968 (originally *E. nobilii altaica*).

E. angusta Perel, 1994.

E. atlavinyteae Perel & Graphodatsky, 1984/5 [also misspelt "atlavinytae" and "Graphodastsky"].

E. balatonica (Pop, 1943) (syn. *ukrainae* Malevics, 1950); [miscited as "*balantonica*" by Reynolds & Cook (1976: 72); originally in *Eiseniella* but in *Eisenia* by Zicsi & Csuzdi (2003: 141)].

E. bashkirica (Malevitch, 1950) [Gates (1972: 69) thought this taxon, overlooked by Easton (1983), would qualify for *Aporrectodea*].

E. djungarica (Perel, 1969).

E. fetida (Savigny, 1826) (*foetida*: Michaelsen, 1900 (illegal emendation); *semifasciatus* Burmeister, 1835; *annularis* Templeton, 1836; *olidus* Hoffmeister, 1842; *luteus* Blanchard, 1849; *rubofasciatus* Baird, 1873; *annulatus* Hutton, 1877 [non Perel, 1975 (= *L. polyphemus*)]; *ruber* Boeck, 1892 (?nom. nud.); *costatus* Grube, 1892 (?nom. nud.); *fetida fimetoria* Örley, 1881 [misspelt "fimetora" by Csuzdi & Zicsi, 2003: 143; non *fimetorum* Fitzinger, 1833]; *nordenskioldi caucasica* Michaelsen, 1902; *fetida attica* Tzelepe, 1943 [misspelt as "athica"]

by Reynolds & Cook (1976: 73)]; *fasciata* Backlund, 1948; *fetida andrei* Bouché, 1972 nom. nov. pro *E. fetida* var. *unicolor* André, 1963). [Note: *E. fetida andrei*, placed in synonymy by Easton (1983) and Csuzdi & Zicsi (2003: 143) is sometimes given separate specific status, but this is almost arbitrary between authors - see discussion of this in Blakemore (2002; 2006)].

E. gordejefi (Michaelsen, 1899).

E. intermedia (Michaelsen, 1901) (*kazanensis* Michaelsen, 1910; *tanaitica* Malevics, 1953). [Note: date mistyped as "1910" in Reynolds & Cook (1976: 118)].

E. iverica (Kvavadze, 1973).

E. japonica (Michaelsen, 1891) (*japonica gigantea* Oishi, 1934; *japonica minuta* Oishi, 1934).

E. kafaniensis Kvavadze, 1985.

E. koreana (Zicsi, 1972) [returned to original *Eiseniella* in Csuzdi (2003), cf. Easton (1983)].

E. kucenkoi Michaelsen, 1902 [dated "1903" by Perel (1979)].

E. lucens (Waga, 1857) (*submontanus* Vejdovsky, 1875/6; *foetida hungarica* Örley, 1881; *tigrina* Rosa, 1896; *latens* Cognetti, 1902; *rosea croatica* Szuts, 1909; *gavrilovi* Cernosvitov, 1942).

E. magnifica (Svetlov, 1957).

E. malevici Perel, 1962 (non *D. malevici* Kvavadze, 1985).

E. nana Perel, 1985.

E. nordenskioldi nordenskioldi (Eisen, 1879: 6) **Emend.** (syn. *acystis* Michaelsen, 1902, but cf. *E. n. pallida*). [Micated as "nordenskiöldi" by Blakemore (2004: 98) after Easton (1983: 480) but originally spelt "*nordenskiöldi*" according to Michaelsen (1900: 479), and because it is likely named after the famous Finnish explorer then, because the "ö" here is a special letter of the Finnish alphabet and not the German umlaut sign, under the code ICZN (1999: Art: 32.5.2.1) it is corrected with only the diacritic removed rather than changed to "oe". Alternate original spelling "*nordenskiöldii*" Eisen (1879: 46); name sometimes misspelt "*nordenskiöldii*", "*nordenskjöldii*", "*nordenscioldi*", "*nordenskiöldii*", or "*nordenskjöldi*" e.g. by Reynolds & Cook (1976: 145), or "*nordenskiöldi*" e.g. by Easton (1983: 480); misquoted as "Eisen, 1873" in Perel (1997: 69)].

E. nordenskioldi lagodechiensis Michaelsen, 1910 [returned to separate species level, by Kvavadze (1993)].

E. nordenskioldi manshurica Kobayashi, 1940 misspelt as "*nordenscioldi* f. *manshurica*

- Kobayashi, 1940" by Perel (1997: 22).
- E. nordenskioldi pallida* (Malevics, 1956) **species inquirenda**, overlooked by Reynolds & Cook (1976) and Easton (1983), cited in Perel (1979: 75, 267; 1997: 69, 70) as *E. nordenskioldi pallida* Malevics, 1956 (non *pallida* Bestscher, 1900) latterly with restoration of synonym *E. acystis* (Michaelsen, 1903) (sic) - this possibly a mistake as the priority would yield to *E. acystis* that possibly remains a synonym of the nominal subspecies; [originally *Helodrilus acystis* Michaelsen, 1902: 43 (non *Haplotaxis acystis* Michaelsen, 1903: 43)].
- E. nordenskioldi polypapillata* Perel, 1969.
- E. oltenica* (Pop, 1938) (syn. *colchidica* Perel, 1967).
- E. salairica* Perel, 1968.
- E. sibirica* Perel & Graphodatsky, 1985 [spelt as in Perel (1997: 24), sometimes misspelt "sibirica" and "Graphodatsky"].
- E. spelaea athenica* Cernosvitov, 1938 [misspelt as "spelea" and as "aetenica" e.g. by Qiu & Bouché, 1998:189 and overlooked by Reynolds & Cook (1976), and although cited by Reynolds & Cook (1992: 12), misdated as "1901"].
- E. spelaea spelaea* (Rosa, 1901) (*triglavensis* Pop, 1943) [misspelt and miscited as "*spalaea*, *Allolobophora* Rosa, 1891" by Reynolds & Cook (1976: 173); the only remarkable difference from *lucens* is lack of recorded bioluminescence; should this be proven then the two taxa merge, with *lucens* taking priority. Omodeo & Rota (2004: 225) say that *lucens* is a humus dweller, non-aquatic and tetraploid (66-68 chromosomal sets) while *spelaea* is hexaploid (102 chromosomal sets), but polyploidy is common in parthenogenetic morphs].
- E. tracta* Perel, 1985.
- E. transcaucasica breviclitellata* Kvavadze, 1985 (name sometimes misspelt "breviclitellata").
- E. transcaucasica transcaucasica* (Perel, 1967).
- E. uralensis* (Malevics, 1950).
- E. ventripapillata* Perel, 1985.

Eiseniella Michaelsen, 1900 [nom. nov. pro *Allurus* Eisen, 1874, vol. 30: 45, 54 non Foerster, 1862 (Hymenoptera)] [non *Eiseniella* Ashmead, 1906 (Hym.)]; syn. *Tetragonurus* Eisen, 1874 vol. 31: 47 [type species: *T. pupus* Eisen, 1874 (= *E. tetraedra pupa*) non Risso, 1810 (Pisces)].

Type species: *Enterion tetraedrum* Savigny, 1826

- Ei. eutypica* (Michaelsen, 1910) [maintained separately from *Ei. tetraedra*].
- Ei. ochridana ochridana* Cernosvitov, 1931 (*ochridana stankovici* Cernosvitov, 1931; *Allolobophora lacustris* Cernosvitov, 1931 [non *Helodrilus lacustris* Stephenson, 1913 (= *D. byblica*)]; *lacustris ochridana* Cernosvitov, 1931).
- Ei. ochridana profunda* Cernosvitov, 1931: 97 (originally *Eiseniella tetraedra* var. *ochridana* forma *profunda*; synonym is *lacustris naumi* Cernosvitov, 1931).
- Ei. neapolitana* (Örley, 1885) (?*ninnii* Rosa, 1886; *tetraedra sewelli* Stephenson, 1924) [regarded as a subspecies of *tetraedra* or as a valid taxon at species rank eg. by Omodeo & Rota (2004: 238) who, nevertheless, avoided inspection of types and overlooked synonyms; elevated here as by Csuzdi & Pavlicek (2005a: 91)].
- Ei. paradoxoides* (Alvarez, 1971) (sometimes quoted as Sanchez, 1971).
- Ei. tetraedra cerni* Blakemore, 2004: 78 [nom. nov. pro *Eiseniella tetraedra* mut. *intermedia* Cernosvitov, 1934: 17 non *Eiseniella intermedius* Jackson, 1931: 123 (sic) (= *Eiseniella tetraedra tetraedra*). Note: misquoted as "Cernosvitov, 1931" in Qiu & Bouché (1998:196); possibly in synonymy of *Ei. tetraedra* but noted as possibly a separate subspecies by Csuzdi & Zicsi (2003: 154, 157)].
- Ei. tetraedra peleensis* Tzelepe, 1943 [elevated to species level in Easton (1983) but not in Csuzdi (2003) (non *Octodrilus peleensis* Michalis, 1995)].
- Ei. tetraedra tetraedra* (Savigny, 1826) [*quadrangularis* Risso, 1826; *amphisbaena* Dugès, 1828; *agilis* Hoffmeister, 1843; *tetraedrus luteus* Eisen, 1871; *tetraedrus obscurus* Eisen, 1871; *dubius* Michaelsen, 1890; *tetragonurus* Friend, 1892; *flavus* Friend, 1893; *macrurus* Friend, 1893; *tetraedrus novis* Ribaucourt, 1896; *tetraedrus bernensis* Ribaucourt, 1896; *tetraedrus infinitesimalis* Ribaucourt, 1896; *tetraedra hammoniensis* Michaelsen, 1909; *mollis* Friend, 1911; *intermedius* (sic) Jackson, 1931 non Cernosvitov, 1934 (= *E. tetraedra cerni*); *tetraedra popi* Zicsi, 1960; *tetraedra proporandra* Qiu & Bouché, 1998 - placed in synonymy of *Ei. tetraedra* by Csuzdi & Zicsi (2003: 153)].
- Ei. tetraedra phorogenesa* Qiu & Bouché, 1998 [Note: possibly a synonym of *hercynius* (= *E. tetraedra pupa*) - placed in synonymy of *Ei. tetraedra* by Csuzdi & Zicsi (2003: 153)].
- Ei. tetraedra pupa* (Eisen, 1874) (*hercynius* Michaelsen, 1890; *tetraedra quadripora* Cernosvitov, 1942). [Either in synonymy of *Ei. tetraedra* by Csuzdi & Zicsi (2003: 153), or (Csuzdi & Zicsi, 2003: 154, 157) maintained with separate

subspecific status as *E. tetraedra hercynia*; these authors also say that the only differences of several *tetraedra* morphs are the locations of the male pores, thus possibly just varieties rather than (sub)species].

Eisenoides Gates, 1969

Type species: *Allolobophora lönnbergi* Michaelsen, 1894.

[As with *Bimastos*, this is a North American genus].

Es. carolinensis (Michaelsen, 1910) (*pearsei* Stephenson, 1932).

Es. lönnbergi (Michaelsen, 1894: 179) [originally *lönnbergi*, sometimes spelt "loennbergi" but, as the name is of Scandinavian rather than German origin (named for collector Dr Einar Lönnberg), under ICZN (1999: Art: 32.5.2.1) it is corrected to "o" with only the diacritic removed rather than changed to "oe"].

Eophila Rosa, 1893 [syn. *Heraclescolex* Qiu & Bouché, 1998: 140 - this genus was poorly differentiated from the prior genera *Allolobophora* Eisen, 1874 and/or *Eophila* but because its type-species, *Allolobophora moebii* Michaelsen, 1895, was accommodated in *Eophila*, it was made "**syn. nov.**" of *Eophila* by Blakemore (2004: 99). More recent placement of this type-species, *A. moebii* Michaelsen, 1895, in synonymy of *Allolobophora molleri* Rosa, 1889 by Trigo *et al.* (1990) is not accepted here and *molleri* is retained, at least provisionally, in *Eophila* along with its subspecies. Both *moebii moebii* (Michaelsen, 1895) and *molleri* (Rosa, 1889) were placed in *Eophila* by Easton (1983: 481), and several new subspecies of these proposed by Qiu & Bouché (1998) were transferred from *Heraclescolex* to *Eophila* by Blakemore (2004: 100). Independently, Csuzdi & Zicsi (2003: 102) reversed Qiu & Bouches' attempted placement of *Ap. dubiosa* in *Heraclescolex* and further noted that their genus was not "robust enough" taxonomically].

Type species: *Allolobophora tellinii* Rosa, 1888.

Sub-genus: *Trapezonscolex* Qiu & Bouché, 1998a: 181 (type-species: *Eophila cavazzutii* Omodeo, 1988) [misspelt "Trapezouscolex" in Qiu & Bouché, 1998: 88].

Note: Omodeo & Rota (2004: 230) claim that *Alpodinaridella*, *Italobalkaniona*, *Karpatodinariona* and *Serbiona* are new synonyms of *Eophila*, but they apparently avoided inspection of types (except for "topotypes" that are ungoverned by ICZN, 1999)

and they overlooked the sub-genus and the *Heraclescolex* synonym. Their conclusions are therefore not wholly acceptable herein, pending further review.

Eo. asconensis asconensis (Bretscher, 1900).

Eo. asconensis silvatica (Zicsi, 1976) [Qiu & Bouché (1998a: 192) thought this species was *incertae sedis*].

Eo. kioniona (Qiu & Bouché, 1998: 146) (originally *Heraclescolex kionionus*).

Eo. moebii moebii (Michaelsen, 1895) **species inquirenda** [syn. *moebii tenerifana* Cognetti, 1931; formerly in *Allolobophora*, *A. moebii* was placed in synonymy of *A. molleri* by Trigo *et al.* (1990: 535) but because the fates of the subspecies were undecided, it is retained in *Eophila*, at least temporarily, as per Easton (1983)].

Eo. moebii baeticae Sims, 1962 [misspelt "baetica" in Qiu & Bouché (1998: 189)].

Eo. moebii dehensis (Qiu & Bouché, 1998: 145).

Eo. moebii michaelseni (Qiu & Bouché, 1998: 146).

Eo. moebii talaverai (Qiu & Bouché, 1998: 144) [originally misspelt by Qiu & Bouché (1998: 144) as "talavarai" and later (1998: 189) as "talavarei", under ICZN (1999: Arts. 19.3, 24.2.3, 32.2.1, 32.4) the name was formally fixed by Blakemore (2004: 100) as *talaverai* as the authors' state the name is for a Dr Talavera Sosa].

Eo. molleri abyhana (Qiu & Bouché, 1998: 142) (originally spelt "abyhanus").

Eo. molleri molleri (Rosa, 1889) [syn. *Allolobophora fernandae* Graft, 1957 by Trigo *et al.* (1990: 535); cf. *Eo. moebii*].

Eo. molleri palmensis (Qiu & Bouché, 1998: 143) [non *Postandrilus palmensis* Qiu & Bouché, 1998].

Eo. molleri salobrenana (Qiu & Bouché, 1998) (originally spelt "*Heraclescolex molleri salobrenanus*").

Eo. molleri sefia (Qiu & Bouché, 1998: 141) [originally spelt "*Heraclescolex molleri sefia*" (sic); misspelt "sifia" by Bouché *et al.* (2004: 391)].

Eo. rifana (Qiu & Bouché, 1998) [syn. *rifanus rosanus* Qiu & Bouché, 1998 (sic); name originally spelt "*Heraclescolex rifanus rifanus*", non *Helodrilus rifensis* Qiu & Bouché, 1998].

Eo. postsellis (Qiu & Bouché, 1998).

Eo. tellinii (Rosa, 1888) [name sometimes spelt "tellini"; miscited as "Rosa, 1886" in Easton (1983: 481), or as "Rosa, 1894" in Qiu & Bouché (1998: 187); the correct authority, from Michaelsen (1900: 500), Reynolds & Cook (1976: 178)

is *tellinii* Rosa, 1888: 1].

Eo. (Tr.) cavazzutii cavazzutii Omodeo, 1988 [misspelt "cavazzuttii" in Qiu & Bouché (1998a: 195; 1998: 137)].

Eo. (Tr.) cavazzutii pascuorum Omodeo, 1988.

Ethnodrilus Bouché, 1972

Type species: *Ethnodrilus zajonci* Bouché, 1972.

Et. aveli Bouché, 1972.

Et. gatesi Bouché, 1972.

Et. lydiae Bouché, 1972.

Et. setusmonsanus Qiu & Bouché, 1998 [variously misspelt from Qiu & Bouché (1998:1) as "setusmontanus" or "setusmonsana" or "setusmonspeulensis", under ICZN (1999: Arts. 19.3, 24.2.3, 32.2.1, 32.4) the name was formally fixed by Blakemore (2004: 101) as *setusmonsanus*].

Et. zajonci Bouché, 1972.

Eumenescolex Qiu & Bouché, 1998a: 181.

Type-species: *Eumenescolex heideti* Qiu & Bouché, 1998.

Eu. emiliae Qiu & Bouché, 1998.

Eu. gabriellae gabriellae (Omodeo, 1984) [formerly *Eiseniona gabriellae*].

Eu. gabriellae gallurae (Omodeo, 1984) [Qiu & Bouché (1998) overlook this subspecies].

Eu. heideti Qiu & Bouché, 1998.

Eu. pereli (Bouché, 1972) [formerly *Allolobophora pereli*].

Eu. simplex (Zicsi, 1981) (formerly *Allolobophora corsicana simplex*).

Fitzingeria Zicsi, 1978 [misspelt "Fitzingseria" by Qiu & Bouche (1998: 2)].

Type species: *Enterion platyurum* Fitzinger, 1833.

F. annectens (Rosa, 1895) (originally as *Allolobophora ganglbaueri annectens*; in synonymy of *D. byblica* (Rosa, 1893) in Easton (1983: 478); restored

following examination of types by Zicsi & Pop (1984: 246), as cited by Qiu & Bouché (1998: 198) and by Csuzdi (2003)).

F. loebeli Zicsi, 1985 (misspelt "loebli" in Qiu & Bouché, 1998).

F. platyura depressa (Rosa, 1893) [*platyura moravica* Proksova, 1955 (non *A. moravica* Pizl, 1994); *platyura panonica* Proksova, 1955; *platyura quadrivesiculata* Qiu & Bouché, 1998: 198 (non Pop, 1938) - this last synonym from Csuzdi & Zicsi (2003: 162)].

F. platyura montana (Cernosvitov, 1932) [non *Ot. montanum* (Wessley, 1905)].

F. platyura platyura (Fitzinger, 1833) (*terrestris platyurus* Örley, 1881; *oerleyi* Horst, 1887; *fitzingeri* Beddard, 1895).

F. viminiana Mrsic, 1986.

Healyella Omodeo & Rota, 1989.

Type species: *Allolobophora syriaca* Rosa, 1893. This genus characterized by male and female pores in setal *ab* lines rather than *bc* as is all other known lumbricid species.

[Note: Omodeo & Rota (1989: 173) thought that *Helodrilus (Bimastus) indicus* Michaelsen, 1907 may also belong in the genus perhaps because Stephenson (1923: 506) said it seems to be closely allied to *H. syriaca* (Rosa, 1893). However, this taxon, said to be a synonym of *A. rosea* by Gates (1972: 107), was nevertheless retained in *Dendrobaena* by Easton (1983), by Qiu & Bouché (1998:194), and by Cs. Csuzdi (2003 pers. comm.) who informs me that "I have seen the two type specimens. It seems a distinct species with unknown origin". It is unlikely to be native to India].

H. baloghi (Zicsi, 1981).

H. boluana Omodeo & Rota, 1989 (misspelt "bolunna" in Qiu & Bouché, 1998: 197).

H. jordanis (Csuzdi & Pavlicek, 1999) [originally included in *Bimastos*, this transfer suggested by Cs. Csuzdi (2003, pers. comm.)].

H. kossiwigi (Omodeo, 1952). [Note: this taxon was put in synonymy of *syriaca* by Easton (1983) but was revived by Omodeo & Rota (1989: 174)].

H. mariae Omodeo & Rota, 1989.

H. michaelseni Omodeo & Rota, 1989 [non *Lumbricus michaelseni* Ribaucourt, 1896 nec *D. semitica michaelseni* Easton, 1983:479 nom. nov. pro *Dendrobaena semitica* var. *kervillei* Michaelsen, [1910: 167;] 1926: 353 (= *D. semitica*)].

H. naja Omodeo & Rota, 1989.

H. schweigeri (Zicsi, 1981: 434) [originally in *Bimastos* (non *Allolobophora schweigeri*

Zicsi, 1973: 226)].

H. syriaca (Rosa, 1893) (syn. *atheca* Cernosvitov, 1940) [formerly as *Bimastos syriacus*].

H. zapparolii Omodeo & Rota, 1989.

Helodrilus Hoffmeister, 1845 [syns. *Helodrylus* Udekem, 1855 (lapsus pro *Helodrilus*); *Anagaster* Friend, 1921 (type species: *Anagaster fontinalis* Friend, 1921 (= *H. oculatus*))].

Type species: *Helodrilus oculatus* Hoffmeister. 1845.

Sub-genus: *Acystodrilus* Qiu & Bouché, 1998a (type-species *Helodrilus cortezi* Qiu & Bouché, 1998.)

He. balcanicus balcanicus (Cernosvitov, 1931) [syn. *Allolobophora macedonica* Sapkarev, 1971 - non *Allolobophora rosea macedonica* Rosa, 1893 (the primary homonym is not replaced as a valid synonym exists as per ICZN (1999: Art. 60)) non *Eophila macedonica* Sapkarev, 1977 (= *Italobalkaniona macedonica*), nec *Dendrobaena macedonica* Mrsic, 1991. Note: Easton (1983: 476) appears to retain this taxon in *Allolobophora* as "*A. balcanica balcanica* (Cernosvitov, 1942)" but he may have confused it with *A. rosea balcanica* Cernosvitov, 1942 that he cites on page 477. Qiu & Bouché (1998: 197) list the taxon as "*Helodrilus balcanica balcanica* (Cernosvitov, 1931)".

He. balcanicus plavensis (Karaman, 1972).

He. cartlicus Kvavadze, 2000: 82.

He. cernosvitovianus (Zicsi, 1967) [miscited as "cernosvitoviana Zicsi, 1969" in Qiu & Bouché (1998: 196)].

He. colchicus Kvavadze, 2000: 82 [possibly synonym of widely distributed and variable *He. patriarchalis* (Rosa, 1893) - Cs. Csuzdi, pers. com., cf. *He. zicsianus*].

He. (Ac.) cortezi Qiu & Bouché, 1998.

He. deficiens Zicsi, 1985.

He. dinaricus Mrsic, 1991 (non *Meroandriella dinarica* Mrsic, 1987, nec *Octodriloides dinaricus* Mrsic, 1991).

He. duhlińskae Zicsi & Csuzdi 1986.

He. italicus Zicsi, 1985.

He. jadronensis Sapkarev, 1989 (dated as "1988" in Reynolds & Cook, 1992: 16).

He. kratochvili (Cernosvitov, 1937).

He. mozsaryorum (Zicsi, 1974) [sic - meaning "of the Mozsarys", sometimes misspelt "mozsariorum"].

He. (Ac.) musicus Qiu & Bouché, 1998.

He. oculatus oculatus Hoffmeister, 1845 (*hermanni* Michaelsen, 1890; *fontinalis* Friend, 1921).

He. oculatus samniticus Cognetti, 1914: 3 [*oculatus dudichi* Pop, 1943: 14; (a further possibly synonym is the homonym *Allolobophora samnitica* Pop, 1943: 14); *massiliensis* Bartoli, 1962 (regaded as valid by Omodeo & Rota, 2004: 239); non *Hormogaster praetiosa samnitica* Cognetti, 1914: 2]. [Note: the taxa *samniticus* and *massiliensis* apparently overlooked by Qiu & Bouché (1998)].

He. ospensis Mrsic, 1991.

He. patriarchalis (Rosa, 1893) [synonymy of the species *ariadne* Michaelsen, 1928 was not acceptable to Zicsi & Michalis (1981: 252) who elevated it to separate specific status in *Allolobophora*. Omodeo & Rota (2004: 240) thought *patriarchalis* had close relationship with *massiliensis* (= *He. oculatus samniticus*); cf. *He. colchicus*, *He. zicsianus*].

He. phillipei Qiu & Bouché, 1998 [sometimes misspelt "*philippe*"].

He. (Ac.) putricolus orionensis (Zicsi, 1977) [name sometimes spelt "*orionense*" or "*orionse*"; transferred to *Helodrilus* by Zicsi & Csuzdi (1999: 991)].

He. (Ac.) putricolus putricolus (Bouché, 1972).

He. (Ac.) rifensis Qiu & Bouché, 1998.

He. (Ac.) segalensis (Bouché, 1972).

He. serbicus Sapkarev, 1989: 33 [quoted thus in Qiu & Bouché (1998: 197), Csuzdi (2003), and BIOSIS; non *Dendrobaena serbica* Karaman, 1973 nec *Serbiona serbica* (Sapkarev, 1976) nec *Serbiona robusta serbica* (Karaman, 1983)].

He. slovenicus Mrsic, 1991.

He. (Ac.) tebrus (Bouché, 1972) (formerly *A. putricola tebra* Bouché, 1972; miscited as "tebra" in Qiu & Bouché, 1998: 15).

He. turquini Qiu & Bouché, 1998.

He. vagneri Mrsic, 1991.

He. zicsianus Kvavadze, 2000: 83 [possibly synonym of widely distributed and variable *He. patriarchalis* (Rosa, 1893) - Cs. Csuzdi, pers. com., cf. *He. colchicus*].

Iberoscolex Qiu & Bouché, 1998a

Type species: *Iberoscolex microepigeus* Qiu & Bouché, 1998.

I. albolineatus (Diaz, *et al.*, 1989) [originally in *Eiseniona albolineata* in Diaz, Trigo & Mato, 1989; citation is Diaz rather than "Diaz Cosin" or "Cosin"].

I. carpetanus (Alvarez, 1970).

I. microepigeus Qiu & Bouché, 1998.

I. pseudorroseeus (Moreno *et al.*, 1982) [originally *Dendrobaena pseudorrosea* (sic), sometimes misspelt "pseudorrosea"; authors "Moreno, Jesus et Diaz Cosin, 1982", sometimes cited as "Moreno, Benito and Diaz, 1982" or "1893"].

Italobalkaniona Mrcsic & Sapkarev, 1988

Type species: *Eophila pyrenaicoides* Sapkarev, 1977.

It. demirkapiae (Karamen, 1969).

It. getica (Pop, 1947) (originally *Allolobophora dugesi getica*) [recently Cs. Csuzdi and V.V. Pop (pers. comm. ISEE8, Sept. 2006) support return to *Cernosvitovia* (*Zicsiona*), and with *silicata* and *paradoxa* in its synonymy].

It. knazevensis Sapkarev, 1989.

It. orahovacensis (Reynolds & Cook, 1976: 148) [nom. nov. pro *Allolobophora zicsi* Sapkarev, 1975 (*sic*) [also spelt "zicsii" by Eason (1983: 486)] non *Allolobophora zicsii* Bouché, 1972; syn. *sapkarevi* Easton, 1983 misspelt as "sapkarov" or "sapkarovi" by Reynolds & Cook (1989: 25). Notes: Easton (1983: 476) also supplied a replacement name that enters synonymy that had an incorrect original spelling by Easton (1983: 476) as "*A. sapkarev*" corrected to *A. sapkarevi* by Blakemore (2004: 104) as per Easton (1983: 486) in accordance with ICZN (1999: Art. 32.5.1). Qiu & Bouché (1998: 184) appear to have overlooked these primary homonym replacement names and retained Sapkarev's specific epithet that is, however, permanently invalid under ICZN (1999: Art. 57.2); non *Postandrilus sapkarevi* Qiu & Bouché, 1998].

It. macedonica (Sapkarev, 1977) [originally *Eophila macedonica* Sapkarev, 1977, non *A. rosea macedonica* Rosa, 1893 (= *Aporrectodea rosea*) *nec* its junior homonym *Allolobophora macedonica* Sapkarev, 1971 (= *H. balcanicus*)].

It. pyrenaicoides (Sapkarev, 1977).

It. stankovici (Sapkarev, 1971) (originally *Allolobophora jaunaeargenti stankovici* Sapkarev, 1971, non *Eiseniella tetraedra* var. *ochridana* f. *stankovici*

Cernosvitov, 1931 an invalid varietal name).

It. treskavicensis Mrsic, 1991 (misspelt "*treskavensis*" on http://www.moe.gov.mk/CHM/STUDY_RM.pdf).

Karpatodinariona Mrsic & Sapkarev, 1988: 19

Type species: *Allolobophora altimontana* Mrsic, 1982.

Note: Omodeo & Rota (2004: 230) claim that *Karpatodinariona* is a new synonym of *Eophila*.

K. altimontana (Mrsic, 1982).

K. dacica (Pop, 1938) [placed by some authors in *Scherotheca*, this species was returned to *Allolobophora* in Csuzdi & Zicsi (2003: 53)].

K. sturanyi dacidoides (Bouché, 1973).

K. sturanyi sturanyi (Rosa, 1895) [placed by some authors in *Eophila*].

Kritodrilus Bouché, 1972

Type species: *Octolasium calareense* Tétrý, 1944.

[Note: in the last review, Qiu & Bouché (1998) only retained the type species, whereas Perel (1976; 1979) had added *A. auriculata* Rosa, 1897, and Omodeo & Rota (1989) had advocated adding *osellai*, *ruffoi*, *pseudorrosea*, and *crassa*].

Kr. calarensis (Tétrý, 1944) [misspelt "*calcarensis*" in Easton (1983: 482).

Kr. micrurus Zicsi & Csuzdi, 1999.

Kr. tetryae Zicsi & Csuzdi, 1999.

Lumbricus Linnaeus, 1758 [syns. *Enterion* Savigny, 1824 (type species: *Lumbricus terrestris* Linnaeus, 1758); *Omilurus* Templeton, 1836 (type species: *Omilurus rubescens* Templeton, 1836 (= *L. festivus*)].

Type species: *Lumbricus terrestris* Linnaeus, 1758.

L. badensis Michaelsen, 1907.

L. baicalensis Michaelsen, 1900 (*duegelii* Bretscher, 1903 - sometimes spelt "*duggelii*" or "*düggelii*"; *pusillus* Wessely, 1905).

L. castaneus (Savigny, 1826) [*pumilum* Savigny, 1826; *triannularis* Grube, 1851; *minor* Johnston, 1865 (non Pennant, 1766); *josephinae* Kinberg, 1867; *purpureus* Eisen, 1871; *pumilosum* Beddard, 1895 (lapsus); *castaneus morelli* Ribaucourt, 1896; *castaneus perrieri* Ribaucourt, 1896; *brunescens* Bretscher, 1900 (miscited as "brunescene" by Reynolds & Cook, 1976: 82); *castaneus disjunctus* Tétry, 1936; *castaneus pictus* Chandebois, 1957; *castaneus rubelloides* Hidvegi & Josens, 1990/1 - this latter synonym from Csuzdi & Zicsi (2003: 178). Zicsi (1965: 267) under *Lumbricus castaneus* listed a name "*L. castaneus* v. *corinthius* .. don. Ganglbauer" from Koralpe in Vienna Museum, but this is *inquirenda*, possibly a manuscript name outside of nomenclature as I can find no other listing, even though Ganglbauer (1896) described a Coleopteran as "*carinthiacus*".

L. centralis Bouché, 1972.

L. festivus (Savigny, 1826) (*omilurus* Templeton, 1836; *rubescens* Templeton, 1836).

L. friendi bouchei Zicsi & Csuzdi, 1999: 988. [A subspecies named on new material found to be the same as that given the invalid varietal name "*L. friendi* var. *lineatus*" by Bouché (1972: 357) - possibly validated by subsequent citation (e.g. by Reynolds & Cook, 1976: 128 although Qiu & Bouché, 1998 make no mention of this subspecies); herein also determined as a primary homonym of *Lumbricus lineatus* Müller, 1774: 29 (Enchytraeidae) so that Zicsi & Csuzdi have, in effect, also provided a replacement name].

L. friendi friendi Cognetti, 1904 [nom. nov. pro *L. papillosus* Friend, 1893 non Müller, 1776 = *Arenicola marina* (Polychaeta); syn. *lumbricoides* Bretscher, 1901].

L. improvisus Zicsi, 1963.

L. klarae Zicsi & Csuzdi, 1999.

L. meliboeus Rosa, 1884 (*michaelseni* Ribaucourt, 1896) [misspelt "moliboeus" in Qiu & Bouché, 1998: 192].

L. polyphemus (Fitzinger, 1833) [*annulatus* Perel, 1975 [non Hutton, 1877 (= *E. fetida*) this synonym in Csuzdi (2003) after work by Perel; misdated "Fitzinger, 1883" in Qiu & Bouché, 1998: 192].

L. rubellus castaneoides Bouché, 1972. [Possibly in synonymy of nominal species].

L. rubellus friendoides Bouché, 1972. [Possibly in synonymy of nominal species].

L. rubellus rubellus Hoffmeister, 1843 (*campestris* Hutton, 1887; *rubellus curticaudatus* Friend, 1892; *rubellus tatrensis* Nusbaum, 1895 [or *alpina tatrensis*?]; *herculeana* Bretscher, 1899; *ribaucourti* Bretscher, 1901; *relictus* Southern, 1909: 169; *rubellus tristani* Pickford, 1932).

L. terrestris Linnaeus, 1758 (*herculeum* Savigny, 1826; *agricola* Hoffmeister, 1842; *infelix* Kinberg, 1867; *americanus* Perrier, 1872; *studerii* Ribaucourt, 1896).

Meroandriella Mrsic, 1987.

Type-species: *M. dinarica* Mrsic, 1987.

M. dinarica Mrsic, 1987.

Microeophila Omodeo, 1956 [originally a sub-genus of *Allolobophora* elevated by some authors, e.g. by Easton (1983: 482)].

Type species: *Eophila marcuzzii* Omodeo, 1952.

M. alzonai (Cognetti, 1904) [sometimes misspelt "alzonae"].

M. cryptocystis (Cernosvitov, 1935) [misspelt "cryptoystis" in Qiu & Bouché, 1998: 191].

M. marcuzzii (Omodeo, 1952).

M. nematogena (Rosa, 1903/4) (*meledaensis* Michaelsen, 1908; *bellicosus* Ude, 1922; *dudichiana* Zicsi, 1966). [Omodeo & Rota (1991: 177) argue for the validity of *Allolobophora bellicosa* but Csuzdi & Zicsi (2003: 67) disagree while keeping this species in *Allolobophora* (s.l.)].

M. sotschiensis (Michaelsen, 1902).

Murchieona Gates, 1978

Type species: *Allolobophora minima* Muldal, 1952 (= *Mu. muldali*).

Mu. minuscula (Rosa, 1905/6) [*icenorum* Pickford, 1926; miscited as "icenarum" by Reynolds & Cook (1976: 115); more often dated "1906"].

Mu. muldali (Omodeo, 1956) [nom. nov. pro *Allolobophora minima* Muldal, 1952 non *A. minima* Rosa, 1884 (= *Dendrobaena pygmaea*); the fate of *Allolobophora muldali* var. *pickfordi* Bouché, 1972 illegitimate varietal name is unknown. Note: *Mu. muldali* was resurrected from synonymy in *Mu. minuscula* by Zicsi & Csuzdi (1999: 990)].

Octodriloides Zicsi, 1986

Type species: *Octolasium (Octodrilus) kovacevici* Zicsi, 1970

O. aelleni (Zicsi, 1979).

O. benhami (Bretscher, 1900).

O. besucheti (Zicsi, 1979).

O. binderi (Zicsi, 1979).

O. bolei Mrsic, 1987.

O. boninoi (Omodeo, 1962).

O. bosniensis Mrsic, 1991.

O. dinaricus Mrsic, 1991 (non *Meroandriella dinarica* Mrsic, 1987; nec. *Helodrilus dinaricus* Mrsic, 1991).

O. eubenhami (Zicsi, 1971).

O. janetscheki (Zicsi, 1970) (sometimes misspelt "janatscheki").

O. kamnensis (Baldasseroni, 1919) [originally *Octolasium (Octodrilus) kamnense*; or *O. complanatum kamnensis*; sometimes misspelt "camnensis"].

O. karawankensis (Zicsi, 1969) (probably a synonym of *kamnensis* according to Csuzdi & Zicsi, 2003: 221).

O. kovacevici (Zicsi, 1970).

O. marinceki Mrsic, 1987.

O. minoris (Omodeo, 1952) (originally *Octolasium mima minore* Omodeo, 1952; possibly valid declention for male gender of *Octodrilus* - <http://www.iczn.org/linguistic%20appendices.pdf>).

O. nazarensis Mrsic, 1991.

O. omodeoi (Zicsi, 1982) [possibly a variety of *Oc. hemiandrus*].

O. phaenohemiandrus (Zicsi, 1971) [possibly a variety of *Oc. hemiandrus*].

O. pokloensis Mrsic, 1991 (sometimes misspelt "poklonensis").

O. pseudokovacevici (Zicsi, 1971) [Originally in *Octolasium* (sic)].

O. transylvancus (Zicsi & Pop, 1983/4).

O. zupancici Mrsic, 1987.

Octodrilus Omodeo, 1956 (sensu Zicsi & Sapkarev, 1982) [syn. *Octolasion (Purpureum)* Omodeo, 1952 (type species *Allolobophora lissaensis* Michaelsen, 1891) - although this subgenus has strict priority, it was suppressed in favour of the nominal

subgenus by ICZN (1986) Opinion No. 1403 according to Csuzdi & Zicsi (2003: 191, 206)].

Type species: *Lumbricus complanatus* Dugès, 1828.

Oc. aporus Pop, V.V., 1989 [non *D. apora* Qiu & Bouché, 1998].

Oc. argoviensis (Bretscher, 1899) (syn. *Octolasion croaticum eutypicum* Pop, 1947).

Oc. besucheti Zicsi, 1979 [misspelt "besncheti" in Easton (1983: 483), not to be confused with *Oc. bretscheri*].

Oc. bihariensis bihariensis Pop, V.V., 1989.

Oc. bihariensis rendzinicola Pop, V.V., 1989.

Oc. bretscheri (Zicsi, 1969) (not to be confused with *O. besucheti*).

Oc. complanatus (Dugès, 1828) [misspelt "*Octodrilus camplatanus*" by Bouché *et al.* (2004: 391)].

Oc. compromissus compromissus Zicsi, & Pop, V.V., 1984 (sometimes "1983").

Oc. compromissus minimus Pop, V.V., 1989.

Oc. croaticus (Rosa, 1895) (originally spelt *liassaensis croaticum*).

Oc. damianii (Cognetti, 1905) [removed from *Octochaetiodes* e.g. by Omodeo & Rota (2004: 246); possibly a variety of *Oc. hemiandrus*].

Oc. exacystis exacystis (Rosa, 1896).

Oc. exacystis oresbius Pop, V.V., 1989.

Oc. exacystis meziadensis Pop, V.V., 1989.

Oc. frivaldszkyi (Örley, 1885).

Oc. gradinescui (Pop, 1938: 151) [misidentified as *Oc. exacystis* by Zicsi (1967) according to Csuzdi & Zicsi (2003: 208)].

Oc. hemiandrus (Cognetti, 1901). [Originally *Octolasion hemiandrum*; highly variable species; sometimes misspelt "hemiander"].

Oc. illyricus Mrsic, 1987 [non *Dendrobaena illyrica* (Cognetti, 1906)].

Oc. istrianus Mrsic, 1991.

Oc. juvyi Zicsi & Cuendet, 2005.

Oc. kabylianus Omodeo & Martinucci, 1987.

Oc. kvarnerus Mrsic, 1987.

Oc. lissaensioides (Zicsi, 1971) (highly variable, possibly a variety of *Oc. lissaensis*; name sometimes misspelt "lissaensiodes").

Oc. lissaensis (Michaelsen, 1891).

Oc. maghrebinus maghrebinus Omodeo & Martinucci, 1987.

Oc. maghrebinus trigintus Omodeo & Martinucci, 1987 (originally spelt "triginta").

Oc. marenzelleri (Michaelsen, 1910)
Oc. meroandricus Mrsic, 1985.
Oc. mimus (Rosa, 1889) [previously *Octolasion mima* and sometimes still miscited as "*Octodrilus mima*" eg. on <http://www.faunaitalia.it/checklist/invertebrates/families/Lumbricidae.html>].
Oc. oesophagus Mrsic, 1991 (name sometimes misspelt "oesopgagus").
Oc. ophiomorphus Pop, V.V., 1989.
Oc. ortizi (Alvarez, 1970).
Oc. peleensis Michalis, 1995.
Oc. permagnus Pop, V.V., 1989.
Oc. pseudocomplanatus (Omodeo, 1962) (originally *Oc. kamense pseudocomplanatus*).
Oc. pseudolissaensioides Zicsi, 1994 (non *pseudolissaensis* Mrsic, 1991).
Oc. pseudolissaensis Mrsic, 1991 (non *pseudolissaensioides* Zicsi, 1994; name sometimes misspelt "preudolissaensis").
Oc. pseudotranspadanus (Zicsi, 1971).
Oc. pseudozirianus Mrsic, 1991.
Oc. racovitzai (Pop, 1938) (overlooked in Qiu & Bouché, 1998: 193).
Oc. robustus Pop, 1973 (misdated "1938" in Qiu & Bouché, 1998: 193).
Oc. rucneri Plisko & Zicsi, 1970.
Oc. ruffoi Zicsi, 1981 (sometimes Zicsi, 1982; non *Dendrobaena ruffoi* Zicsi, 1970).
Oc. savinensis Mrsic, 1987 (*creinensis* Mrsic, 1987/8 - synonym from Csuzdi, 2003).
Oc. slovenicus Karaman, 1972 (originally *Octolasion mima slovenica*).
Oc. tergestinus (Michaelsen, 1910).
Oc. transpadanoides Zicsi, 1981/2.
Oc. transpadanus (Rosa, 1884) [*opimum* Savigny, 1826 (part.); *transpadana cinerea* Rosa, 1886; *cyanea recta* Ribaucourt, 1896; *sulfurica* Ribaucourt, 1896; *nivalis* Bretscher, 1899; *transpadanum alpinum* Bretscher, 1905; often misspelt "*Octodrilus transpadanum*"].
Oc. velebiticus Mrsic, 1991.
Oc. vallorus (Baldasseroni, 1920).
Oc. velebiticus Mrsic, 1991.
Oc. zirianus Mrsic, 1987.

Octolasion Örley, 1885 [syn. *Alyattes* Kinberg, 1867 (type species: *Lumbricus alyattes* Kinberg, 1867 (= *O. cyaneum*) - Sims (1983: 470; 1984) discusses reasons for the

non-priority of this synonym); *Octalasion* Ribaucourt, 1896 (lapsus); *Octolasion* Michaelsen 1900 (invalid emendation of *Octalasion*); *Octalasion* Cognetti, 1905 (lapsus); *Octolasion* (*Incolore*) Omodeo, 1952 (type species: *Lumbricus terrestris lacteus* Örley, 1881)].

Type species: *Lumbricus terrestris* var. *lacteus* Örley, 1881 (subsequent designation: Omodeo, 1956; non Omodeo, 1952 - by ICZN Nom. Opinion No. 1403). [Note: Citations of type species as “*O. lacteum* Oerley, 1885 = *Enterion tyrtaeum* Savigny, 1836” e.g. by both Gates (1972: 123) and Reynolds (1977), are incorrectly dated but follow the synonymy of Cernosvitov (1931: 203); and whereas Sims (1983: 471) after Bouché (1972) says *O. tyrtaeum* has two French subspecies: *O. tyrtaeum tyrtaeum* (Savigny, 1826) and *O. t. gracile* (Örley, 1885), Easton (1983: 483) lists both *O. lacteum* (Örley, 1881) and *O. tyrtaeum* (Savigny, 1826) as valid names, with *O. gracile* (Örley, 1885) a junior synonym of the latter species. It seems the subsequent listing by Qiu & Bouché (1998: 192) of these latter two as sub-species is a mistake for *O. lacteum* according to Csuzdi & Zicsi (2003: 197) but in this latter publication, *O. tyrtaeum* is ignored and its characteristics are included in a wide concept of *O. lacteum*. For more information, see below and see also discussion in Blakemore (2002: 342)].

Ot. cyaneum (Savigny, 1826) [non *communis cyaneus* Hoffmeister, 1845 (= *Aporrectodea caliginosa*); syn. *stagnalis* Hoffmeister, 1845; *alyattes* Kinberg, 1867; *studiosa* Michaelsen, 1890; *kempi* Stephenson, 1922; *cyaneum* var. *armoricum* Bouché, 1972 [overlooked by Qiu & Bouché (1998: 192)] this synonymy by Csuzdi & Zicsi (2003: 193), thus the nominal subspecies elevated to specific status].

Ot. lacteovicinum Zicsi, 1968 (sometimes misspelt " *lacteovicinus* ").

Ot. lacteum lacteum (Örley, 1881: 584) [*terrestris rubidus* Örley, 1881: 584 (also cited later by Örley, 1885: 21); *profuga* Rosa, 1884; *cyanea profuga sylvestris* Ribaucourt, 1896; *himalayana* Cernosvitov, 1937); (cf. the prior *Ot. tyrtaeum* with which it has frequently been confused with in the literature, old and recent); the issue of validity of these taxa is still not fully resolved].

Ot. lacteum giganteum Mrsic, 1983 [overlooked by Qiu & Bouché (1998: 192); in synonymy of *lacteum* (?= *tyrtaeum*) in Csuzdi & Zicsi (2003: 197)].

Ot. montanum (Wessely, 1905) [non *Ot. montanum* Cernosvitov, 1932 (= *Fitzingeria platyura montana*)].

Ot. tyrtaeum (Savigny, 1826: 180) (*gracile* Örley, 1885 [a synonym according to Easton (1983: 483), cf. Sims (1983: 471) and Sims & Gerard (1999: 116) who

mention Bouché's various subspecies concepts of *tyrtaeum* that maintained "*gracile*", and cf. Csuzdi & Zicsi (2003: 197) who put *gracile* in synonymy of their concept of *lacteum*]; ?*Allolobophora tyrtaea* Ribaucourt, 1896: 78 [that would be a junior secondary homonym if it were a synonym (cf. *H. antipae*) according to Gates (1972: 128) who also noted that *tyrtaea* may equally well be a synonym of *cyaneum* and further that Cernovitov (1931) had previously recognized Savigny's *tyrtaeum* was the same as Örley's *lacteum* although Csuzdi & Zicsi (2003: 198, 224) (erroneously?) have *Enterion tyrtaeum* as a *species incertae sedis*, place *gracile* in synonymy of *lacteum*, and appear to overlook *Allolobophora tyrtaea*]. Qiu & Bouché (1998: 192) cite and misspell name as "*tyrtaeum tyraeum*".

Orodrilus Bouché, 1972

Type species: *Helodrilus* (?*Dendrobaena*, ?*Allolobophora*) *doderoi* Cognetti, 1904, cf. page prior *Or. paradoxus*, if indeed in synonymy.

Or. doderoi (Cognetti, 1904: 6) [put in synonymy of *paradoxus* in Csuzdi (2003)].

Or. gavarnicus (Cognetti, 1904).

Or. paradoxus paradoxus (Cognetti, 1904: 4) (non Mrsic, 1992).

Or. paradoxus magnei Bouché, 1972 [misspelt "*paradorus magnei*" in Qiu & Bouché (1998: 196)].

Or. septumperforatus Galar & Diaz Cosin, 1993.

Perelia Easton, 1983: 484 [nom. nov. pro *Allolobophora* (*Svetlovia*) Perel, 1976 non *Svetlovia* Chekanovskaya, 1975 (Tubificidae) nom. preocc.. Syns. *Alpodinaridella* Mrsic, 1987 [with type-species *Helodrilus* (*Eophila*) *gestri* (sic laps. pro *gestroi*) Cognetti, 1905], and its subgenus *Dinaridella* (monotypic for *Allolobophora biokovica* Mrsic, 1986) - both new synonyms from Csuzdi & Pavlicek (2005a: 77)].

Type species: *Eophila arnoldiana* Perel, 1971.

P. aharonii (Stephenson, 1922) [new combination by Csuzdi & Pavlicek (2005a: 79)].

P. albicauda (Perel, 1977).

P. agatschiensis (Michaelsen, 1910).

- P. arnoldiana* (Perel, 1971).
- P. biokovica* (Mrsic, 1986) [new combination from Csuzdi & Pavlicek (2005a)].
- P. bouchei* (Perel, 1977) [originally *Allolobophora bouchei* Perel, 1977, non *Bimastos antiquus bouchei* Zicsi & Michalis, 1981, nec *Diporodrilus bouchei* Omodeo, 1984, nec *Lumbricus friendi bouchei* Zicsi & Csudsi, 1999].
- P. chlorocephala* (Perel, 1977).
- P. ferganae* (Malevics, 1949) [*brunnea* Perel, 1971 (this synonym from Csuzdi, 2003)].
- P. galileana* Csuzdi & Pavlicek, 2005a: 81.
- P. gestroi* (Cognetti, 1905: 114) [**Comb. nov.**, *species inquirenda* - formerly *Alpodinaridella* (*Alpodinaridella*) *gestroi*; syns. *laurentii* Chinaglia, 1910; *chinagliae* Baldasseroni, 1919 - misquoted as "*chinagliae* Baldscher, 1919" in Easton (1983: 481) who gives these synonyms but who lists the taxon as *Eophila gestroi* (Cognetti, 1905) cf. Qiu & Bouché (1998a: 202) who have "*gestri* Cognetti, 1905" or Qiu & Bouché (1998: 187) "*gestroi* (Cognetti, 1906)" and "*gestrii* (Cognetti, 1906)" or Qiu & Bouché (1998: 192) who cite "*gestri* Cognetti, 1906" and who completely overlook the synonyms above; whereas BIOSIS/ION gives the citation: *Helodrilus* (*Eophila*) *gestri* Cognetti, 1905, but nothing for "*gestroi*"; non "*Helodrilus gestroi* Ude, 1905" a *nomen nudum* or miscitation by Reynolds & Cook (1976: 106). Note: Dr Csaba Csuzdi (2003 pers. comm.) states the correct name is *gestroi* Cognetti, 1905 - an emendation from Cognetti's lapsus "*gestri*"; possibly named after his contemporary Prof. Raffaello Gestro of Genoa. Recently it was suggested by Omodeo & Rota (2004: 231) that this taxon, cited as "*gestri*", be synonymized in *Eophila schneideri* (Michaelsen, 1900) and although the *laurentii* synonym was noted, they overlooked the *chinagliae* synonym and avoided inspection of types thereby leaving residual uncertainty. Because this taxon was type of *Alpodinaridella* as subsumed in *Perelia* by Csuzdi & Pavlicek (2005a: 77), it is consequently reallocated herein as a new combination in *Perelia*; however Csuzdi & Pavlicek (2005a: 78) did not explicitly state they inspected types nor new material of this taxon therefore some slight doubt remains. Cf. *A. gestroides*].
- P. ghilarovi* (Malevics, 1949).
- P. graciosa* (Perel, 1977).
- P. kaznakovi* (Michaelsen, 1910) (*asiatica* Malevics, 1949).
- P. kirgisica* (Perel, 1971).
- P. longoclitellata* (Perel, 1977).

- P. lozniciana* Mrsic, 1987 [misquoted twice as "loznicina" in Qiu & Bouché (1998a: 202; 1998: 192); new combination from Csuzdi & Pavlicek (2005a)].
- P. media* (Perel, 1977).
- P. microtheca* (Perel, 1977).
- P. muganiensis* (Michaelsen, 1910) (originally *Helodrilus schneideri muganiensis*).
- P. ophiomorpha* (Perel, 1977).
- P. persiana* (Michaelsen, 1900).
- P. polytheca* (Malevics, 1949) [Qiu & Bouché (1998a: 192) thought this species was *incertae sedis*].
- P. shamsi* Csuzdi & Pavlicek, 2005a: 84.
- P. sokolovi* (Perel, 1969).
- P. stenosoma* (Perel, 1977).
- P. schneideri* (Michaelsen, 1900) (sometimes misdated as "1910") [Omodeo & Rota (2004: 231) have this species in *Eophila* and put *H.(E.) gestri* Cognetti, 1905, *E. laurentii* Chinaglia, 1909 and "*Allolobophora gestroi* : Zicsi, 1970; 1981" in synonymy but none of the new synonyms were necessarily confirmed by inspection nor, where necessary, by designation of types].
- P. taschkentensis* (Michaelsen, 1900).
- P. tuberosa* (Svetlov, 1924) (*baschirica* Malevics, 1950) [in *Eiseniella* in Csuzdi (2003)].
- P. turcmenicum* (Malevics, 1941) [misspelt "turkmenica" by Perel (1979: 83) and Easton (1983: 484) and "turcencum" by Qiu & Bouché (1998: 191)].
- P. umbrophila* (Perel, 1977).

Pietromodeona Qiu & Bouché, 1998a: 194 (sic) [named for Pietro Omodeo].

Type species: *Helodrilus (Eophila) januae-argenti* Cognetti, 1903.

[Note: Qiu & Bouché (1998: 187) only tentatively add other species to the genus].

?*Pi. apuliae* (Baldasseroni, 1913) [regarded as a synonym of *Pi. januaeargenti* by Omodeo & Rota (2004: 235)].

Pi. januaeargenti januaeargenti (Cognetti, 1903) [Name misspelt "jaunae-argenti" by Reynolds & Cook (1976: 120) and misformed under ICZN (1999 Art.: 32.5.2) as "januae-argenti" in Qiu & Bouché (1998a: 194; 1998: 187); cf. Easton (1983: 481) who cites name as here].

?*Pi. jaunaeargenti sarda* (Michaelsen, 1910) [*Helodrilus (Eophila) sardus* Michaelsen,

1910 was regarded as a synonym of *Pi. januaeargenti* by Omodeo & Rota (2004: 235)].

?*Pi. osellai* (Zicsi, 1981) [formerly *Allolobophora osellai*, transferred to *Italobalkaniona* by Mrcic (1991); Note: BIOSIS has name as both "osellai" or "osselai"; Qiu & Bouché (1998a: 192) have "osselai Zicsi, 1981", but this taxon listed by Easton (1983: 476) as "*osellai* Zicsi, 1981"; non *Dendrobaena osellai* Zicsi, 1970].

Postandrilus Qiu & Bouché, 1998a: 211.

Type-species: *Postandrilus palmensis* Qiu & Bouché, 1998: 66.

Sub-genera: *Galicianadrilus* Qiu & Bouché, 1998a: 213 (type-species: *Cernosvitovia bertae* Diaz *et al.*, 1985/6); *Merandrilus* Qiu & Bouché, 1998a: 213 (type-species: *Merandrilus majorcanus* Qiu & Bouché, 1998).

Po. lavellei Qiu & Bouché, 1998.

Po. palmensis Qiu & Bouché, 1998.

Po. sapkarevi Qiu & Bouché, 1998 [non *Allolobophora sapkarevi* Easton, 1983].

Po. (Ga.) bertae (Diaz, *et al.* in Diaz, Mato & Mascato, 1986) [often cited as Diaz rather than "Diaz Cosin"; sometimes dated "1985"].

Po. (Me.) majorcanus Qiu & Bouché, 1998.

Po. (Me.) medoakus Qiu & Bouché, 1998.

Proselldrillus Bouché, 1972

Type species: *Proselldrillus idealis* Bouché, 1972.

Subgenera: *Kenleenus* Qiu & Bouché, 1998a: 181 [misspelt "Kenlnus" Qiu & Bouché, 1998a: 187 and variously as "Keeleenus" or "Kelleenus" in Qiu & Bouché 1998: 269] (type-species *Proselldrillus amplisetosus amplisetosus* Bouché, 1972); *Pyrenodrillus* Qiu & Bouché, 1998a: 181 (type-species *Proselldrillus fragilis fragilis* Bouché, 1972).

Pr. albus Zicsi & Csuzdi, 1999.

Pr. arericolus Qiu & Bouché, 1998 [emed. nov. of original "*arericola*" (sic)].

Pr. biserialis Bouché, 1972 (formerly *Pr. fragilis biserialis*; non Cernosvitov, 1937).

Pr. calcicolus Qiu & Bouché, 1998 [emed. nov. of original "*calcicola*" (sic)].

Pr. dactylothecus Qiu & Bouché, 1998.

Pr. dipterus Qiu & Bouché, 1998.
Pr. doumandjii Baha & Berra, 2001.
Pr. elusatus Bouché, 1972 (formerly *Pr. fragilis elusatus*; sometimes misspelt "elisatus").
Pr. idealis Bouché, 1972.
Pr. jamiesoni Qiu & Bouché, 1998.
Pr. ombrophilus Qiu & Bouché, 1998.
Pr. praticola Bouché, 1972 (sic).
Pr. proporus Qiu & Bouché, 1998.
Pr. psammophilus magnus Qiu & Bouché, 1998.
Pr. psammophilus psammophilus Qiu & Bouché, 1998.
Pr. (Ke.) amplisetosus amplisetosus Bouché, 1972.
Pr. (Ke.) amplisetosus hexathecosus Bouché, 1972.
Pr. (Ke.) occidentalis Qiu & Bouché, 1998 (non Michaelsen, 1922, nec Graff, 1957).
Pr. (Ke.) ticalus Qiu & Bouché, 1998.
Pr. (Py.) alatus Bouché, 1972.
Pr. (Py.) biauriculatus Bouché, 1972.
Pr. (Py.) bidasoana Qiu & Bouché, 1998 (sic).
Pr. (Py.) fragilis Bouché, 1972 [misspelt "fragilus" in Qiu & Bouché (1998:37)].
Pr. (Py.) hyperopterus Qiu & Bouché, 1998.
Pr. (Py.) matoi Qiu & Bouché, 1998.
Pr. (Py.) polythecosus Bouché, 1972 (sometimes misspelt "polytheca").
Pr. (Py.) pyrenaicus abduli Qiu & Bouché, 1998: 37, 44, 184 [misspelt "abdulridai" in Qiu & Bouché (1998: 63)].
Pr. (Py.) pyrenaicus aragonicus (Alvarez, 1971).
Pr. (Py.) pyrenaicus haasi (Michaelsen, 1925).
Pr. (Py.) pyrenaicus postandrus Qiu & Bouché, 1998.
Pr. (Py.) pyrenaicus pyrenaicus (Cognetti, 1904).
Pr. (Py.) trigoi Qiu & Bouché, 1998.

Proctodrilus Zicsi, 1985.

Type species: *Allolobophora antipae* Michaelsen, 1891.

Pt. antipae antipae (Michaelsen, 1891: 16) **Emend.** (syn. *?tyrtaea* Ribaucourt, 1896;
riparia Bretscher, 1901 [non Hoffmeister, 1843; restored from synonymy in *Ap.*

handlirschi (Rosa, 1897) by Zicsi (1982)]; *cuginii helodriloides* Chandebois, 1957/8). [Note: Michaelsen (1900: 498), Reynolds & Cook (1976: 71), Easton (1983: 482) and Cherevatov (1994, 2000) use the original spelling *antipae*, but the name often spelt "antipai" eg. Zicsi (1982), Omodeo & Rota (1989: 194; 2004: 240), Qiu & Bouché (1998: 197), and Csuzdi & Zicsi (2003: 224) presumably on the basis that the taxon was named from the modern name of a man in the genitive case (e.g., ICZN, 1999: Art. 31.1.2 Examples). However, ICZN (1999: Art. 31.1.1 Examples) appears to allow the "e" ending, even if based on a man's name, when the name is treated as a latinized noun in the genitive case and this is possibly the intention of Michaelsen (1891) as his original spelling is ostensibly the same in Michaelsen (1900: 498). This taxon previously held in *Helodrilus* with the highly dubious and atypical *tyrtaea* Ribaucourt, 1896 synonym after Easton (1983: 482) but Csuzdi & Zicsi (2003: 224) omit this synonym].

Pt. antipae vogesianus (Tétry, 1938) [sometimes (mis)spelt "*antipai vogesiana*"].

Pt. opisthoductus Zicsi, 1985.

Pt. tuberculatus (Cernosvitov, 1935); [originally *Eophila antipae* var. *tuberculata*, this previous secondary junior homonym, from Reynolds & Cook (1976: 183), of *Allolobophora turgida tuberculata* Eisen, 1874 was removed by transfer to *Helodrilus* and more recently to *Proctodrilus* where it is sometimes (mis)spelt "*antipai tuberculatus*"; elevated to specific status by Zicsi (1985; 1991) and Csuzdi & Zicsi (2003: 229). Non *Allolobophora antiqua tuberculata* Tzelepe, 1943 (= *Spermophorodrilus tzelepei* Blakemore, 2004: 78)].

Reynoldsia Qiu & Bouché, 1998: 102 [misspelt "Reynodsia" Qiu & Bouché, 1998: 1]

Type species: *Reynoldsia andaluciana* Qiu & Bouché, 1998.

NOTE: Dr Cs. Csuzdi (21.x.2005) informs he notified Dr M. Bouché that this genus name is preoccupied by *Reynoldsia* Malloch, 1934: 230 (Muscidae: Diptera), thus a replacement name is required, unless the prior spelling "*Reynodsia*" is accepted as valid [although the genus was to be a patronym for "Dr J. Reynolds", therefore "Reynoldsia"].

R. andaluciana Qiu & Bouché, 1998: 103 [misspelt "*andalousia*" Bouché *et al.*, 2004: 386].

Rhiphaeodrilus Csuzdi & Pavlicek, 2005a: 86

Type species: *Allolobophora handlirschi diplotetratheca* Perel, 1967.

R. diplotetrathecus (Perel, 1967) [removed from *Perelia*].

Satchellius Gates, 1975

Type species: *Enterion mammale* Savigny, 1826.

S. gatesi Qiu & Bouché, 1998 (non *Ethnodrilus gatesi* Bouché, 1972).

S. mammalis hispanicus Qiu & Bouché, 1998.

S. mammalis mammalis (Savigny, 1826) (*celtica* Rosa, 1886; *celtica rosea* Friend, 1893); [misspelt "amammalis" and "mammalia" by Ribaucourt, 1896].

Scherotheca Bouché, 1972

Type species: *Lumbricus gigas* Dugès, 1828.

Sub-genera: *Corsicadrilus* Qiu & Bouché, 1998a: 181 (type-species: *Allolobophora dugesi* var. *corsicana* Pop, 1947: 4); *Opothedrilus* Bouché, 1972 (type-species: *Allolobophora savignyi* Guerne & Horst, 1893); *Rosanus* Qiu & Bouché, 1998a: 181 (type-species: *Allolobophora dugesi* Rosa, 1895). Note: Omodeo (1988) erroneously thought the genus *Scherotheca* was close to *Eophila* according to Csuzdi & Zicsi (2003: 234) who misspell the genus "Scheroteca".

Sc. (Co.) albomaculata Bouché, 1972 (formerly *Sc. corsicana albomaculata*) [regarded as a new synonym of *Sc. corsicana* by Omodeo & Rota (2004: 234)].

Sc. (Co.) corsicana corsicana (Pop, 1947: 4) [formerly *Allolobophora dugesi* var. *corsicana*; Omodeo & Rota (2004: 234) thought *albomaculata*, *portonana*, and *omodeoi* were new synonyms].

Sc. (Co.) corsicana magna Qiu & Bouché, 1998 [the subspecies takes authorship from Qiu & Bouché (1998: 126) where it is cited as "subsp. nov." for the invalid infrasubspecific name given by Bouché (1972) now made available under ICZN (1999: Art. 10.2); however, if any previous author has used Bouché's infrasubspecific name as a valid scientific name, then they take authorship under ICZN (1999: Art. 10.2) and Qiu & Bouché's new name is itself invalid].

Sc. (Co.) corsicana popi Qiu & Bouché, 1998 [the subspecies takes authorship from Qiu

- & Bouché (1998: 125) where the invalid infrasubspecific name given by Bouché (1972) is made available under ICZN (1999: Art. 10.2)].
- Sc. (Co.) omodeoi* Qiu & Bouché, 1998 [regarded as a new synonym of *Sc. corsicana* by Omodeo & Rota (2004: 234)].
- Sc. (Co.) portonana* Qiu & Bouché, 1998 [regarded as a new synonym of *Sc. corsicana* by Omodeo & Rota (2004: 234)].
- Sc. (Op.) brevipubercula* Qiu & Bouché, 1998.
- Sc. (Op.) chicharia* (Bouché, 1967) (originally *occidentalis chichariai* Bouché, 1967).
- Sc. (Op.) michaelsoni* Qiu & Bouché, 1998.
- Sc. (Op.) minor minor* (Stephenson, 1931) (originally *Allolobophora savignyi* var. *minor*; non Johnston, 1865).
- Sc. (Op.) minor minorissima* Qiu & Bouché, 1998.
- Sc. (Op.) nivicola* Bouché, 1972 (originally *savignyi nivicola* subspecies).
- Sc. (Op.) occidentalis* (Michaelson, 1922).
- Sc. (Op.) savignyi* (Guérne & Horst, 1893) (misspelt "savigneyi" in Reynolds & Cook, 1989: 11).
- Sc. (Op.) thibauti* Bouché, 1972 (originally *occidentalis thibauti* Bouché, 1972).
- Sc. (Op.) thomasi* Bouché, 1972 [overlooked by Easton (1983)].
- Sc. (R.) brevisella* Bouché, 1972 [originally *Sc. dugesi brevisella* ; falsely attributed to "Tetry, 1939" by Qiu & Bouché (1998: 117); non *D. octaedra brevisella* Bouché, 1972].
- Sc. (R.) dervillei* Qiu & Bouché, 1998: 118.
- Sc. (R.) dollfusi* (Tetry, 1939).
- Sc. (R.) dugesi dugesi* (Rosa, 1895) [syn. *Allolobophora gigas* : Rosa, 1886 (non Dugès, 1828); cited as "*dugesi* (Rosa, 1895)" in Michaelson (1900: 500) as "*dugesii* Rosa, 1895" in Reynolds & Cook (1976: 96), and as "*dugesi dugesi* (Rosa, 1886)" in Easton (1983: 484) and by Csuzdi (2003), and either way by Omodeo & Rota (2004: 233)].
- Sc. (R.) dugesi provincialis* (Vedovini, 1971) [syn. *S. dugesi porotheca* Bouché, 1972; this synonym from Easton (1983:484) apparently overlooked by Qiu & Bouché (1998) who maintain *porotheca* but transfer it to *Rosanus* subgenus, as here].
- Sc. (R.) dugesi sanaryensis* (Tetry, 1942) [misspelt "asnargensis" in Qiu & Bouché (1998: 186); misdated as "1939" in Omodeo & Rota (2004: 234)].

Sc. (R.) targionii (Baldasseroni, 1906) [misspelt "tardionii" in Easton (1983: 481); see also *A. andreinii*].

Sc. (Sc.) aquitania Bouché, 1972 (originally *Sc. gigas aquitania*).

Sc. (Sc.) campoii Lainez & Jordana, 1983 (names sometimes miscited as "Lainé et Jorand" and misdated "1987").

Sc. (Sc.) coineaui Bouché, 1972.

Sc. (Sc.) cyrnea (Michaelsen, 1926) [apparently overlooked by Qiu & Bouché (1998)].

Sc. (Sc.) dinoscolex dinoscolex Bouché, 1972 (formerly *Sc. gigas dinoscolex*).

Sc. (Sc.) dinoscolex jacana Qiu & Bouché, 1998.

Sc. (Sc.) gigas gigas (Dugès, 1828).

Sc. (Sc.) gigas heraultensis Qiu & Bouché, 1998.

Sc. (Sc.) gigas mifuga Bouché, 1972.

Sc. (Sc.) guipuzcoana guipuzcoana Bouché, 1979: 91 [misspelt as "quipuzcoana" in Qiu & Bouché (1998: 118) and misquoted as "Bouché, 1972" in Easton (1983: 484)].

Sc. (Sc.) guipuzcoana oyarzunana Bouché, 1979: 91 (originally invalid varietal name).

Sc. (Sc.) hexatheca (Michaelsen, 1926) [apparently overlooked by Qiu & Bouché (1998)].

Sc. (Sc.) hispanica (Ude, 1885).

Sc. (Sc.) monospessulensis idica Bouché, 1972.

Sc. (Sc.) monospessulensis monospessulensis Bouché, 1972.

Sc. (Sc.) orbiensis larzacensis Qiu & Bouché, 1998.

Sc. (Sc.) orbiensis orbiensis Bouché, 1972 (formerly *S. gigas orbiensis*).

Sc. (Sc.) rhodana rhodana Bouché, 1972 (formerly *S. gigas rhodana*).

Sc. (Sc.) rhodana pellerini Qiu & Bouché, 1998.

Sc. (Sc.) rouxi Qiu & Bouché, 1998.

Sc. (Sc.) shuangae Qiu & Bouché, 1998.

Genus *Serbiona* Masic & Sapkarev, 1988: 24

Type-species: *Allolobophora robusta* Rosa, 1895 [non Friend, 1909].

Note: Originally a sub-genus of *Allolobophora*, it is claimed by Omodeo & Rota (2004: 230) that *Serbiona* is a new synonym of *Eophila*; however, this status is deferred here.

Se. carneluttii Masic, 1990 [name sometimes spelt "carnelutti"].

- Se. dofleini dofleini* (Ude, 1922) [placed in *Eophila* by some authors].
- Se. dofleini josapi* Blakemore, 2006 nom. nov. pro *Allolobophora dofleini udei* Sapkarev, 1991: 54 [non *Allolobophora udei* Sapkarev, 1972 (= *Serbiona joncesapkarevi* Blakemore, 2004: 78) nec *Allolobophora parva udei* Ribaucourt, 1896 (= *Bimastos parvus*)]. Sapkarev (1972) omitted from Reynolds & Cook (1976) but listed by Csuzdi (2003 pers. com.) and on BIOSIS. Sapkarev (1991) placed in *Serbiona* rather than *Allolobophora* or *Eophila* on websites : http://www.moe.gov.mk/CHM/STUDY_RM.pdf and <http://biodiv.org/doc/world/mk/mk-nr-01-en.pdf> March, 2006).
- Se. joncesapkarevi* Blakemore, 2004: 78 [nom. nov. pro *Allolobophora udei* Sapkarev, 1972: 120 (non *Allolobophora parva udei* Ribaucourt, 1896 nec *Allolobophora dofleini udei* Sapkarev, 1991)].
- Se. kosowensis kosowensis* (Karaman, 1968).
- Se. kosowensis montenegrina* (Sapkarev, 1975) (*sic*, non *Dendrobaena montenegrina* Karaman, 1972, nec *D. montenegrina* Mrsic, 1988; note: misspelt "montengrina (Saparkev, 1975)" (*sic*) in Qiu & Bouché, 1998: 191).
- Se. matjasici* Mrsic, 1990) [originally *Allolobophora (Serbiona) matjasici*].
- Se. mayeri* (Mrsic, 1990) [originally *Allolobophora (Serbiona) mayeri*].
- Se. mehadiensis boscaiui* (Pop, 1948).
- Se. mehadiensis mehadiensis* (Rosa, 1895) [misspelt "Serbiona mehadiensis mehadiensis" in Qiu & Bouché (1998: 191); Omodeo (1988) had this species in *Eophila*, but it, and all three sub-species, returned to *Allolobophora* in Csuzdi & Zicsi (2003: 64)].
- Se. mehadiensis oreophila* (Pop, 1978).
- Se. mehadiensis voivodinensis* (Sapkarev, 1989) (sometimes spelt "voivodiensis" or "voidodiensis" or "voidodensis", and possibly the latter spelling is correct?).
- Se. pannonica* (Cognetti, 1906) [formerly *Helodrilus (Eophila) icterica pannonica* Cognetti, 1906; and hopped into several other genera too; claimed to be *Se. mehadiensis pannonica* by Reynolds & Cook (1992: 19)].
- Se. paratuleskovi* (Sapkarev, 1975).
- Se. robusta robusta* (Rosa, 1895) [non *veneta robusta* Friend, 1909 (= *D. hortensis*)].
- Se. robusta spasenijkaramani* Blakemore, 2004: 78 [nom. nov. pro *Allolobophora robusta serbica* Karaman, 1983: 51, non *Eophila serbica* Sapkarev, 1976/7 (= *Serbiona serbica*) - this new name for a subjectively invalid junior secondary homonym as combined by Qiu & Bouché (1998: 191)]. [Cf. *Dendrobaena serbica* Karaman, 1973 et *Helodrilus serbicus* Sapkarev, 1989].

Se. serbica (Sapkarev, 1976) [sometimes dated 1977].

Se. speciosa (Mrsic & Sapkarev, 1987) [originally in *Eophila*; date and author misquoted in Qiu & Bouché (1998: 191) as "(Mrsic et Sapparkev, 1988)"].

Se. strumicae (Sapkarev, 1973) (originally *Allolobophora dofleini strumicae*; name sometimes misspelt "sturmicae").

Se. tuleskovi (Cernosvitov, 1934).

Se. yugoslavica (Sapkarev, 1976) (sometimes dated 1977).

Se. zarandensis (Pop, 1978) (non *Eophila zarandensis* Cognetti, 1904), misspelt "zarandenis" by Kvavadze (2000: 344).

Spermophorodrilus Bouché, 1975.

Type species: *Spermophorodrilus albanianus* Bouché, 1975 (= *Eophila antiqua* Cernosvitov, 1938). Note: in Zicsi & Michalis (1981: 244) and Easton (1983: 477) the original type species was considered a synonym of *Allolobophora antiqua michalisi* Karaman, 1972 that was at that time placed in the genus *Bimastos*, therefore the genus *Spermophorodrilus* was considered a synonym of the North American genus *Bimastos* by Easton. However, *Spermophorodrilus* was restored, as it is provisionally retained here, by Omodeo & Rota (1989: 169).

Sp. antiquus (Cernosvitov, 1938) [syn. ?*Spermophorodrilus tzelepei* Blakemore, 2004: 78 [nom. nov. pro *Allolobophora antiqua tuberculata* Tzelepe, 1943: 1 (non *Allolobophora turgida tuberculata* Eisen, 1874, nec *Eophila antipae tuberculata* Cernosvitov, 1935); *Allolobophora antiqua michalisi* Karaman, 1972 [(mis?)cited as "antique" and in Reynolds & Cook (1976: 136) and as "machalisi" in Reynolds & Cook (1981: 32); and misspelt "michalis" in Qiu & Bouché (1998: 197), non *Dendrobaena michalisi* Karaman, 1972]; *S. albanianus* Bouché, 1975; *Bimastos antiquus bouchei* Zicsi and Michalis, 1981 (sometimes cited as "Michalis, 1980"). Note: this synonymy list is according to Omodeo & Rota (1989: 170) who advocate retaining the genus, cf. the most recent revision by Qiu & Bouché (1998: 197) who maintain most of the synonyms, except for *albanianus*, as valid taxa in *Spermophorodrilus* thereby supporting use of a substitute name for *tuberculata*].

Sp. simsoni Omodeo & Rota, 1989.

Sp. vignai Omodeo & Rota, 1989.

Zophoscolex Qiu & Bouché, 1998a: 181.

Type species: *Eophila atlantica* Bouché, 1969.

Sub-genera: are: *Aquilonibericus* Qiu & Bouché, 1998a: 181 [type-species *Zophoscolex navarrensis* Qiu & Bouché, 1998 (sic)]; *Castillodrillus* Qiu & Bouché, 1998a: 181 [type-species *Zophoscolex opisthoporus* Qiu & Bouché, 1998 (sic); Note: formal definition of this subgenus is spread across several papers and the name is spelt *Castillodrillus* in Qiu & Bouché (1998a: 181 and 1998: 86) but "Castellodrillus" in Qiu & Bouché (1998a: 189) and "Castilloodrillus" in Qiu & Bouché (1998: 185), the latter two are probably lapsae and the former spelling was formally fixed by Blakemore (2004: 116) under ICZN (1999: Arts. 19.3, 24.2.3, 32.2.1, 32.4)]; *Euibericus* Qiu & Bouché, 1998a: 181 [type-species *Zophoscolex joffrei* Qiu & Bouché, 1998 (sic)]; and there are also notes in Qiu & Bouché (eg. 1998: 36) about a subgenus "*Vascodrillus*" that is probably a lapsus pro *Castillodrillus*].

Z. (Aq.) alavanensis Qiu & Bouché, 1998.

Z. (Aq.) aragonensis Qiu & Bouché, 1998.

Z. (Aq.) hongae Qiu & Bouché, 1998.

Z. (Aq.) lopezi (Bouché, 1979).

Z. (Aq.) microcoprodomas Qiu & Bouché, 1998 [misspelt "microcoprodomos" in Qiu & Bouché, 1998: 185].

Z. (Aq.) navarrensis Qiu & Bouché, 1998 [non *Scherotheca navarrensis* Laine & Jordana, 1983].

Z. (Aq.) vasconensis (Bouché, 1979) [spelt thus in Easton (1983: 476); misspelt "vaconensis" in Qiu & Bouché, 1998: 185, and sometimes as "vascoensis"; BIOSIS has no listing for any of these names. Non *Eophila asconensis* (Bretscher, 1900)].

Z. (Ca.) eurytrichos Qiu & Bouché, 1998 (sic).

Z. (Ca.) opisthoporus Qiu & Bouché, 1998 (sic).

Z. (Eu.) anamariae Qiu & Bouché, 1998 emend. Blakemore (2004: 116) - correction from original "ana-mariae" under ICZN (1999: Art. 32.5.2).

Z. (Eu.) chitae (Diaz *et al.*, in Diaz, Mato & Trigo, 1988) [Diaz listed thus, rather than "Diaz Cosin"].

Z. (Eu.) ibericus (Trigo, Marino & Diaz Cosin, 1988) [Note: Qiu & Bouché (1998: 20,

- 185) misquote this species as "icterica", and "iberica" (1998: 185)].
- Z. (Eu.) joffrei* Qiu & Bouché, 1998.
- Z. (Eu.) pulvinus* Qiu & Bouché, 1998 (sic).
- Z. (Z.) andorranensis* Qiu & Bouché, 1998.
- Z. (Z.) atlanticus* (Bouché, 1969) [originally *Allolobophora altantica*].
- Z. (Z.) byanensis* Qiu & Bouché, 1998.
- Z. (Z.) cyaneus* (Briones & Diaz 1993) [originally as *Eophila cyanea* (non *communis* *cyaneus* Hoffmeister, 1845, nec *cyaneum* Savigny, 1826 (= *Octolasion cyaneum*)]]; the name Diaz listed thus, rather than "Diaz Cosin"].
- Z. (Z.) diazi* Qiu & Bouché, 1998 [misspelt "daisi" in Qiu & Bouché (1998: 185)].
- Z. (Z.) graffi* (Bouché, 1972).
- Z. (Z.) micellus* (Bouché, 1972) [originally *Allolobophora micella*].
- Z. (Z.) zhongi* Qiu & Bouché, 1998.

Nomina nuda, species incertae sedis and nomina dubiae Lumbricidarum

From Michaelsen, 1900: 517-521, Gates, 1972, Qiu & Bouché, 1998a: 192; 1998: 199, Csuzdi, 2003, and various other sources. Note: *nomina nuda*, and infra-subspecific and varietal names are outside of ICZN nomenclature and may therefore be made available by subsequent authors for the same or different concepts. Because of this, the validity, status, date and authorship of several of Bouché's (1970; 1972) varietal or "ecological races" names remain uncertain (see ICZN, 1999: Arts. 45.6).

Allolobophora muldali var. *pickfordi* Bouché, 1972 illegitimate varietal name; listed thus in Reynolds & Cook (1976: 155); not found, or overlooked, in Qiu & Bouché (1998); (unofficially?) listed in Csuzdi (2003) as *Allolobophora muldadi pickfordi* (sic); its position relative to genus *Murchieona* is unknown.

Aporrectodea jassyensis sotschiensis (Michaelsen, 1910) *nomen dubium* [mentioned in Kvavadze (1985: 206) and Qiu & Bouché (1998: 187) but probably a *lapsus* for *M. sotschiensis* (Michaelsen, 1902)].

Dendrobaena semitica virgo Omodeo & Rota, 1989 [name cited by Colosimo, Rota & Omodeo, 1991: 64 in *Cabios* 7(1): 63-69; a *nomen nudum* according to Cs. Csuzdi (pers. comm.) and Dr Emilio Rota (pers. comm. 5th March, 2004)].

Eiseniella tetraedra var. *ochridana* f. *stankovici* Cernosvitov, 1931 (an invalid infrasubspecific name) even if the invalid "ochridana" morph is validated. .

Eophila zarandensis (Cognetti, 1904) (non Pop, 1978).

Eminia equatorialis Benham, 1891: 163 (et *Eminodrilus* Benham, 1891: 558; corr. "aequatorialis"; *genus dubium*).

Enterion brevicolle Fitzinger, 1833: 552 [misspelt "brevicollis" in Dugès (1837)] from Austria.

Enterion cinctum Fitzinger, 1833 from Austria.

Enterion fimetorum Fitzinger, 1833 from Austria..

Enterion vaporariorum Fitzinger, 1833 from Austria.

Helodrilus (Eophila) alzonai Cognetti, 1904.

Hormogaster samnitica lirapora magna Bouché, 1970: 248 invalid "var. nov." variety.

Hormogaster samnitica lirapora typica Bouché, 1970: 247 invalid "variétés".

Hormogaster samnitica cognetti 1914 (sic) Bouché, 1970: 247. **Nomen nudum or lapsus.**

Hormogaster samnitica corsicana Bouché, 1970: 247. **Nomen nudum or lapsus.**

Hypogaeon atys Kinberg, 1867 from Argentina (Buenos Aires).

Hypogaeon hirtum Savigny, 1820 from Pennsylvania (Philadelphia).

Lumbricus apii Kinberg, 1867 from California (San Francisco).

Lumbricus argentinus Weyenbergh, 1879 (nomen dubium, misid. of *O. tyrtaeum*).

Lumbricus armatus Kinberg, 1867 from Argentina (Buenos Aires).

Lumbricus blainvilleus Dugès, 1837 from France.

Lumbricus brevispinus Gerstfeldt, 1858 from Siberia (Amur, Irkutsk).

Lumbricu caeruleus Risso, 1826 from South France.

Lumbricus castaneus Risso, 1826 [non *Enterion castaneus* Savigny, 1826] from South France.

Lumbricus clitellinus Risso, 1826 from South France.

Lumbricus corduvensis Weyenbergh, 1879 (*nomen dubium*, misid. of a glossoscolecid) from Argentina.

Lumbricus dissidens Weyenbergh, 1879 (*nomen dubium*, misid. of *Microscolex dubius*) from Argentina.

Lumbricus dubius Dugès, 1837 [non *dubius* Michaelsen, 1890] from France.

Lumbricus giganteus Risso, 1826 from South France.

Lumbricus freyeri Ehrenberg, 1862 in freshwater from Adelsberg.

Lumbricus isidorus Dugès, 1837 from France.

Lumbricus iuloides Chiaje, 1841 from Naples.

Lumbricus juliformis Baird, 1873.

Lumbricus kani Williams, 1858: 102 (also "kanii" and "kauii" *laps.*) from England.

Lumbricus kwangtangensis Author? ***Species inquirenda*** (quoted in a paper by Zhang, F.-X. *et al.*, 1993/4).

Lumbricus leptozonius Hagenbach, 1823 from Switzerland.

Lumbricus maximus robinsoni Michaelsen, 1905 [name from Reynolds & Cook (1996: 164; 1992: 27) with syntype in Humbolt Museum, Berlin: MNHU 4040 is acutally a *Lumbricillus* or *Pachydriilus* enchytraeid].

Lumbricus matutinus Weyenbergh, 1879 (nomen dubium, misid. of *A. trapezoides*).

Lumbricus terrestris minor Pennant, 1766: 33 from Britain.

Lumbricus mollis Dugès, 1837 [non *mollis* Friend, 1911] from France.

Lumbricus pampicola Kinberg, 1867 from Uruguay (Montivideo).

Lumbricus roseus Risso, 1826 [non *roseum* Savigny, 1826].

Lumbricus tahitanus Kinberg, 1867 from Tahiti.

Lumbricus tellus Kinberg, 1867 from Argentina (Buenos Aires).

Lumbricus vineti Kinberg, 1867 from Madeira.

Nicodrilus caliginosus meridionalis var. *pseudolongus* Bouché, 1972: 335 (invalid varietal name cited by Reynolds & Cook, 1976: 159 but omitted from Qiu & Bouché, 1998).

Nicodrilus longus longus ambiguus Bouché, 1972 (invalid varietal name).

Nicodrilus longus longus amplisellus Bouché, 1972 (invalid varietal name).

Nicodrilus longus ripicola viridis Bouché, 1972 (invalid varietal name).

Nicodrilus nocturnus var. *cistercianus* Bouché, 1972: 338 (invalid varietal name cited by Reynolds & Cook (1976: 88); not cited in Qiu & Bouché, 1998).

Nicodrilus terrestris terrestris var. *eudensis* Bouché, 1972: 317 [cited but unpublished by Csuzdi (2003); overlooked or ignored by Qiu & Bouché (1998)].

Nicodrilus terrestris terrestris var. *lemovicus* Bouché, 1972: 317 (invalid varietal name cited by Reynolds & Cook, 1976: 127; overlooked or ignored by Qiu & Bouché, 1998).

Scherotheca dugesi dugesi albinica Bouché, 1972 (invalid varietal name).

Scherotheca gigas rhodana gallissiani Bouché, 1972 (invalid varietal name).

Scherotheca navarrensis Lainez & Jordana, 1983 (name sometimes miscited as "Lainé et Jorand").

Scherotheca (Opothedrilus) savignyi var. *hygrophila* Bouché, 1972: 302 [invalid varietal name cited by Reynolds & Cook (1976: 115); "savignyi savignyi hygrophila" according to Csuzdi (2003); overlooked or ignored by Qiu & Bouché (1998)].

Scherotheca savignyi savignyi var. *oligotheca* Bouché, 1972 (invalid varietal name).

Wasawoia Reynolds, 1973: 108 (*nomen nudum* from Proc. 1st Soil Micro. Conf.).

Appendix-1

Lumbricus lineatus Müller, 1774 now accepted as *Lumbricillus lineatus* (Müller, 1774).

Lumbricus tubifex Müller, 1774 now accepted as *Tubifex tubifex* (Müller, 1774).

Lumbricus arenarius Müller, 1776 now accepted as *Clitellio arenarius* (Müller, 1776).

Lumbricus minutus Müller, 1776 now accepted as *Lumbricillus minutus* (Müller, 1776).

Lumbricus litoralis Grube, 1855 now accepted as *Pontodrilus litoralis* (Grube, 1855).

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***Appendix-2** Sims' (1980: 108) reasons for synonymy of Komarekionidae in Ailoscolecidae, presented by him in a footnote:

"The similarities between *Ailoscolex* Bouche, 1969 and *Komarekiona* Gates, 1974 have not been recognized previously, possibly because of a printing error in Bouche's monograph (1972). In this work, the diagnosis of the family Ailoscolecidae included the statement "Glande de Morren presente" (p. 197), whereas in the account of the anatomy of *A. lacteospumousus* there is the conflicting statement "Glande de Morren absente" (p. 199). The absence of calciferous glands however, was previously established in the original descriptions of the family and species (Bouché, 1969: 526, 529 & 530)."

[End of Checklist].