

## **Checklist of New Guinea Earthworms (Oligochaeta : Clitellata)**

by

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### **Summary**

Terrestrial megadrile earthworms variously reported from New Guinea (and adjacent islands) number approximately 113 taxa with 18 of these (ca. 17%) non-natives with Lumbricidae of holarctic origin rare, only one doubtful identification. Nakamura (1992) listed 42 species from Papua New Guinea but only 24 were identified with names, an additional 17 unnamed species, if confirmed as new, would bring the total well above 100 species. For the relative size and remoteness of New Guinea, a much higher diversity can be expected. A preliminary checklist is provided here with occasional notes.

Keywords: Taxonomy, Biodiversity, Megascolecidae, Paupan earthworms.

### **Introduction**

The term "New Guinea" is here taken to include the main island - Papua New Guinea (PNG) and the western half that became "Irian Jaya" or "West Irian" after 1973; and "West Papua" after 2000 (although all name persists and are used interchangeably here), and adjacent smaller islands. This region is called "Papuasia" by botanists. Irrespective of political boundaries, the biota of this island group is often shared with the Solomon Islands and northern Australia (via the Torres Straits).

There is a chronology of earthworm surveys distributed throughout a wide literature, however, perhaps the most recent are those reported by Sims & Easton (1972), Easton (1979), and Nakamura (1992). Other sources of records are sourced from various references in Blakemore (2002; 2004).

### **Methods**

The list of names is compiled from sources mentioned in the Introduction, synonymies

and as cited in the References below. Nomenclature follows the most recent revisions of pheretimoid taxa by Blakemore (2004, 2005) and the present taxonomy complies with recommendations, articles, and ethics of ICZN (1999).

### **Results: Checklist of New Guinea earthworm Taxa**

FAMILIES after Blakemore (2000b, 2002); remarks and synonyms (syn.) in brackets marked with "?" where there is some uncertainty. Codes: \* = exotic/introduced, - = probably native/endemic, # = uncertain affinities. For common exotics not all synonyms are given here as these may be readily found elsewhere (eg. Sims and Gerard 1999; Blakemore 2002, 2004).

#### **Family MONILIGASTRIDAE**

[1.\* *Drawida parva* (Bourne, 1894). From South India, claimed from the Moluccan Aru Island west of Irian Jaya (Gates, 1972: 244) who classes it as "*sp. dub.*"; possibly a junior synonym of *D. barwelli*].

#### **Family OCTOCHAETIDAE Michaelsen, 1900** [sensu Blakemore (2000b: 37), subfamily Benhamiinae Michaelsen, 1897 sensu Csuzdi (2000)].

2.\* *Dichogaster (Diplotheodrilus) bolau* (Michaelsen, 1891: 9). [Recorded by Csuzdi (1997: 38) and Stephenson (1931: 38,64) obtained two specimens from the Australian Institute of Tropical Medicine from Kavieng, New Ireland, "washed out of the vagina of a native woman"; many synonyms - see Csuzdi (2000: 60); Blakemore (2002)].

3.\* *Dichogaster (Dichogaster) corticis* (Michaelsen, 1899: 80) [syn. *Dichogaster tamiana* Cognetti, 1911: 6 from Humboldt Bay, north coast West Papua].

4.\* *Dichogaster (Diplotheodrilus) modiglianii* (Rosa, 1896). [Many synonyms - see Csuzdi (2000: 60); Blakemore (2002)].

#### **Family MEGASCOLECIDAE sensu Blakemore, 2000**

5.\* *Pontodrilus litoralis* (Grube, 1855). [Widespread - see Blakemore (2002); from Long Island, Lake Wisdom beach shore, New Guinea (Gates, 1975) and Aru Island].

6.- *Amyntas collini* (Ude, 1924).

7.- *Amyntas colossus* (Cognetti, 1911: 6).

8.\* *Amyntas corticis* (Kinberg, 1867). [Peregrine species with many synonymy - see Blakemore

- (2002); Sims & Easton (1972: 257) report it from Papua New Guinea for the first time].
- 9.- *Amyntas doormani* (Michaelsen, 1924: 20)
  - 10.- *Amyntas ? forbesi* (Beddard, 1890). [Type locality New Guinea].
  - 11.- *Amyntas heurni* (Michaelsen, 1924: 23)
  - 12.- *Amyntas freesei* (Ude, 1924).
  - [13.\* *Amyntas ? godeffroyi* (Michaelsen, 1899). Reported as *Pithemera godeffroyi* from New Britain, and other Pacific Isles in Easton (1984: 119); Lee (1981: 564) rejected synonymy of *Pheretima sedgwicki ablata* Ude, 1905 in *godeffroyi*].
  14. ? *Amyntas hendersonianus coelogaster* (Cognetti, 1914b: 352).
  - 15.\* *Amyntas gracilis* (Kinberg, 1867). [Peregrine species with several synonyms - see Blakemore (2002)].
  - 16.- *Amyntas hirudinarius* (Gates, 1958).
  - 17.- *Amyntas ? kaironkensis* (Gates, 1970).
  - 18.- *Amyntas ? martiorum* (Michaelsen, 1938). [From Papua New Guinea, possibly belongs in *Planapheretima*].
  - 19.- *Amyntas maximus* (Cognetti, 1915). [From Irian Jaya].
  - 20.\* *Amyntas minimus* (Horst, 1893). [Peregrine species with several synonyms - see Blakemore (2002)].
  - 21.- *Amyntas misellus* (Cognetti, 1913: 291).
  - 22.- *Amyntas miserus* (Cognetti, 1913: 292).
  - 23.- *Amyntas novaebritannicae* (Benham, 1897: 199) [From New Britain].
  - 24.- *Amyntas omtrekensis* (Cognetti, 1911: 3) (syn. *Amyntas homoeotrochus* Cognetti, 1912: 546 (invalid emendation) sometimes spelt "homeotrocha").
  - 25.- *Amyntas ? papuus* (Rosa, 1898).
  - 26.- *Amyntas schraderi* (Gates, 1970). [From New Guinea; non *schaedleri* Michaelsen, 1922].
  - 27.# *Amyntas taitensis* (Grube, 1866: 180) (syn. *grubei*, *upoluensis*, *recta*).
  - 28.- *Amyntas versteegi* (Michaelsen, 1938). [From West Irian].
  - 29.- *Amyntas vialis* (Michaelsen, 1924). [From West Irian].
  
  - 30.- *Begemius ? cyclops* (Cognetti, 1911).
  - 31.- *Begemius ? monoperus* (Cognetti, 1911).
  - 32.- *Begemius ? spectabilis* (Rosa, 1898: 60) [syns. *Pheretima spectabilis* (Rosa, 1898) comb. nov. pro *Perichaeta neoguineensis spectabilis* Rosa, 1898 by Michaelsen (1900: 304); Sims & Easton (1972: 237 footnote) as they transferred it to an *Amyntas versteegi*-group where it may belong].
  - 33.# *Metapheretima arensi* (Ude, 1932: 168). [From Mejin Bay, New Britain and Tu Island, New Britain, PNG].

- 34.- *Metapheretima andurili* Easton, 1979: 109. [From PNG].
- 35.- *Metapheretima bulmeri* (Gates, 1970: 386).
- 36.- *Metapheretima deirdrae* Easton, 1979: 1102.
- 37.- *Metapheretima dorii* Easton, 1979: 108.
- 38.- *Metapheretima durendali* Easton, 1979: 105.
- 39.- *Metapheretima elrondi* Easton, 1979.
- 40.- *Metapheretima exaliberi* Easton, 1979: 104.
- 41.- *Metapheretima glamdringi* Easton, 1979: 113.
- 42.# *Metapheretima jocchana* (Cognetti, 1911: 5) [syns. *Pheretima kampeni* Cognetti, 1914: 356; *Pheretima tumulifaciens* Lee, 1967: 59 - this taxon placed in *Archipheretima* in Sims & Easton (1972: 232); and in synonymy by Easton (1979: 113)].
43. - *Metapheretima kilii* Easton, 1979: 107.
44. - *Metapheretima lindiae* Easton, 1979: 89.
- 45.# *Metapheretima loriae* (Rosa, 1898: 61). [Type locality "Hughibagu" - Rosa, although the locality may be Hughes Bay, Fergusson Islands according to Easton (1979: 100)].
- 46.# *Metapheretima myriochaeta* (Cognetti, 1911: 4) [syns. *Pheretima myritchasta* Cognetti, 1911: 4 (laps. pro *myriochaeta* according to Cognetti, 1912: 549); *Pheretima sentanensis* Cognetti, 1911: 5 [some authors (e.g. Easton, 1979: 88) have this as senior synonym, but page priority precludes this although I did see one citation of date and page as "1911: 41" that is possibly wrong]; *Pheretima arditia* Cognetti, 1914: 353 (sometimes misdated "1911", put in synonymy of *sentanensis* by Easton, 1979: 88); *Pheretima tamiensis* Ude, 1924: 84 that was erroneously described originally with only 4 pairs of spermathecae. [Non *Pheretima myriosetosa* Chen and Zhifang, 1977]. Several of these taxa at one time in genus *Ephemitra* Sims & Easton, 1972 that, after Easton (1979), is now in synonymy of *Metapheretima* (cf. *Polypheretima sibogae*)].
- 47.- *Metapheretima neoguinensis* (Michaelsen, 1892: 229) [syn. *Pheretima helvola* Ude, 1905: 473 (non Michaelsen, 1934: 520 (= *Metaphire honbaensis* Gates, 1941 sometimes misspelt "hobaensis"))].
- 48.- *Metapheretima oinakensis* (Cognetti, 1914: 355).
- 49.- *Metapheretima orcrista* Easton, 1979: 112.
- 50.- *Metapheretima pallens* (Ude, 1924: 170).
- 51.- *Metapheretima parmata* (Ude, 1924: 80) [sometimes misspelt "paramata"].
- 52- *Metapheretima quinquereimis* Easton, 1979: 85.
- 53.- *Metapheretima septoca* Easton, 1979: 103.
- 54.- *Metapheretima simsi* Easton, 1979: 87.
- 55.- *Metapheretima sola* Easton, 1979: 93.
- 56.- *Metapheretima stingi* Easton, 1979: 109.

- 57.- *Metapheretima sucklingensis* Easton, 1979: 102. [From PNG].
- 58.- *Metapheretima tawarinensis* (Cognetti, 1911: 2). [Originally spelt "*tavvarinensis*" (i.e. with two "v"s) but type locality is given as Tawarin River].
- 59.- *Metapheretima triciae* Easton, 1979: 94.
- 60.- *Metaphire baliemensis* (Gates, 1948: 144). [Non *Amyntas baliensis* (Michaelsen (1932)).
- 61.\* *Metaphire houlleti* (Perrier, 1872). [Peregrine species with several synonyms - see Blakemore (2002)].
- 62.- *Metaphire isselii* (Cognetti, 1908).
- 63.- *Metaphire ferion* (Cognetti, 1913: 298).
64. - *Metaphire gjellerupi* (Cognetti, 1914: 358).
- [65.? *Metaphire saonekana* (Cognetti, 1913). From Ceram (Moluccas) or Waigeu Isl. (West of New Guinea)].
- [66.? *Metaphire weberi* (Cognetti, 1913). From Ceram (Moluccas) or Waigeu Isl. (West of New Guinea)].
- 67.- *Pheretima ? flabellifera* Cognetti, 1911: 2. [From West Papua and PNG].
- 68.- *Pheretima (Parapheretima) aberrans* (Cognetti, 1911) from New Guinea. [Note: An Australian Museum registration, W.197360, for *P. aberrans* from "Bulli, NSW", is actually from Bulli, Papua New Guinea (pers. obs.)].
- 69.- *Pheretima (Parapheretima) alkmaarica* Cognetti, 1913: 298. [New Guinea; Gate's (1948) account suggests that these species names may be close or synonymous with *alkmaarica: utakwana* Cognetti, 1915 (sometimes spelt "utekwana"); *pluviosa* Cognetti, 1913; *sermowaiana* Cognetti, 1914; *turneri* Ude, 1924; *wendessiana* Cognetti, 1911 (priority!); *buentei* Ude, 1924 (sometimes misspelt "buntei"); *hellwigiana* Cognetti, 1913 and its synonym *barbara* Cognetti, 1913].
- 70.- *Pheretima (Parapheretima) barbigua* Blakemore, 2004. [Replacement name for *Pheretima (Parapheretima) barbara ambigua* Cognetti, 1913: 302 [non Cognetti, 1906]; misspelt "*barbar ambigua*" in Reynolds & Cook, 1976: 68. The name *P. barabara* Cognetti, 1913: 302 is held in synonymy with *P. hellwigiana* Cognetti, 1913: 300 that may itself be in synonymy with *P. alkmaarica* Cognetti, 1913].
- 71.- *Pheretima (Parapheretima) beaufortii apotrema* Cognetti, 1912/3.
- 72.- *Pheretima (Parapheretima) beaufortii beaufortii* Cognetti, 1911.
- 73.- *Pheretima (Parapheretima) buentei* (Ude, 1924: 82) [in this genus, rather than in *Pithemera*, by Sims & Easton (1972: 203) despite intestinal caeca claimed in "23"; cf. *P. alkmaarica* Cognetti, 1913].
- 74.- *Pheretima (Parapheretima) bernhardi* (Gates, 1948: 149).
- 75.- *Pheretima (Parapheretima) hellwigiana* Cognetti, 1913.

76. - *Pheretima (Pheretima) hahli* Ude, 1905: 437 [from Ralum, Neu Pommern (= New Britain)].
- 77.- *Pheretima (Parapheretima) pluviosa* Cognetti, 1913: 300.
- 78.- *Pheretima (Parapheretima) rufa* Gates, 1948.
- 79.- *Pheretima (Parapheretima) schultzei* Ude, 1924.
80. - *Pheretima (Parapheretima) sermowaiana* Cognetti, 1914: 360 [cf. *P. alkmaarica* Cognetti, 1913].
- 81.- *Pheretima (Parapheretima) turneri* Ude, 1924.
- 82.- *Pheretima (Parapheretima) utakwana* Cognetti, 1915. [From Irian Jaya].
- 83.- *Pheretima (Parapheretima) wendessiana* Cognetti, 1911 (cf. *alkmaarica*).
- [84.# *Pheretima (Pheretima) darnleiensis* (Fletcher, 1887). Recorded from Kei Islands in the Arafura Sea just west of Irian Jaya (by Michaelsen, 1910 as cited by Sims & Easton, 1972: 263)].
- 85.- *Pheretima (Pheretima) habbemana* Gates, 1948.
- 86.- *Pheretima (Pheretima) hahli* Ude, 1905.
- 87.- *Pheretima (Pheretima) montana* Kinberg, 1867. [From New Guinea and New Britain. An Australian Museum registration, W.197352, of *P. montana* from "Bulli, NSW" is actually from Bulli, Papua New Guinea, as was W.197360, for *P.(P.) aberrans* - R.J.B. pers. obs.].
- [88.? *Pheretima (Pheretima) tosariana* Cognetti, 1913: 38. From Ceram (Moluccas) or Waigeu Isl. (West of New Guinea)].
- 89.\* *Pithemera bicincta* (Perrier, 1875) [?syns. *Perichaeta violacea* Beddard, 1895; *Pheretima aimerikiensis* Ohfuchi, 1941].
- 90.- *Pithemera dahli* (Ude, 1905: 443) [from Ralum, Neu Pommern (= New Britain)].
- 91.- *Pithemera eldoni* (Gates, 1975).
- 92.\* *Pithemera pacifica* (Beddard, 1899) [from New Britain in same sample as *Me. arensi*].
- 93.- *Pithemera sedgwickii cognettii* (Ude, 1932) [from New Britain].
- 94.\* *Pithemera sedgwickii sedgwickii* (Benham, 1897) [from Fiji, New Guinea, Vanuatu; cf. *Pithemera sedgwickii cognettii* from New Britain].
- 95.- *Planapheretima rufomaculata* (Gates, 1948: 162).
- 96.# *Polypheretima annulata* (Horst, 1883) [syns. *fakfakensis tetratheca*, *kochi* Cognetti, 1913, *invisa*, Cognetti, 1913; *Pheretima schaedleri* Michaelsen, 1922); part of an "*Polypheretima annulata* species-complex" of Easton (1979: 34). From Sunda Island, the Malay Peninsula and West Papua].
- 97.# *Polypheretima bifaria* (Michaelsen, 1924: 18) [syns. ?*Pheretima polytheca aruensis* Michaelsen, 1910: 252; *Pheretima bifaria wirzi* Michaelsen, 1938: 171 (name sometimes misspelt "wizzi" e.g. by Reynolds & Cook, 1976: 190); *Pheretima (Polypheretima) bifaria typica* Michaelsen, 1938 (1924: 18?). These synonyms from Easton (1979: 41, 49)].
- [98.? *Polypheretima brevis* (Rosa, 1898: 283). Recorded from Christmas Islands near Java and from Tonga was believed by Easton (1979: 41) to originate from New Guinea].

- 99.- *Polypheretima coplandi* Easton, 1979: 62.
- 100.\* *Polypheretima elongata* (Perrier, 1872). [Widespread peregrine with several synonymy - see Blakemore (2002), Sims & Easton (1972: 256) report it first from Papua New Guinea].
- 101.- *Polypheretima fakfakensis* (Cognetti, 1908). [From Western New Guinea].
- 102.- *Polypheretima gatesi* Easton, 1979: 44. [From New Guinea].
- 103.- *Polypheretima grata* (Cognetti, 1914: 362).
- 104- *Polypheretima huonensis* Easton, 1979: 63.
- 105.- *Polypheretima kershawae* Easton, 1979: 62.
- 106.- *Polypheretima panarana* (Michaelsen, 1938).
- 107.- *Polypheretima patae* Easton, 1979: 61.
- 108.- *Polypheretima sepikensis* (Ude, 1924).
- 109.- *Polypheretima tamarae* Easton, 1984.
- 110.\* *Polypheretima taprobanae* (Beddard, 1892). [Widespread peregrine with several synonymy - see Blakemore (2002). Homeland in south-east Asia (Easton, 1979: 46) or tropics of Papua New Guinea (Gates, 1972: 221)].
- [111. ? *Polypheretima voeltzkowi* (Michaelsen, 1907). Easton (1979: 47) thought this species was introduced to Comoros, possibly from New Guinea].

#### Family GLOSSOSCOLECIDAE

- 112.\* *Pontoscolex corethrurus* (Müller, 1856: 113) [*Pontoscolex arenicola* (part.) Schmarda, 1861: 11 (residue = *Diachaeta littoralis* Beddard, 1892); *Urochaeta dubia* Horst, 1885: 7; *Urochaeta australiensis* Beddard, 1891: 278; *Pontoscolex hawaiiensis* Beddard, 1895: 660; *Pontoscolex corethrurus mexicana* Eisen, 1896: 8; *Urochaeta hystrix* Perrier, 1872: 142].

#### Family LUMBRICIDAE

- [113.\*? *Bimastos parvus* (Eisen, 1874: 46). Nakamura (1982: 24) lists a "*Bimastos sp.*, possibly *B. parvus* that is the most common exotic of this genus].

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[End of New Guinea Checklist].