

Review of Pacific Ocean earthworms updated from Easton (1984) and Lee (1981)

by R.J. Blakemore **March, 2006**

COE fellow, Soil Ecology Group, Yokohama National University, Japan.

Summary

This review is based on Easton (1984) and Lee (1981) with updates from the References cited below. In the current checklist, Acanthodrilidae, Octochaetidae and Megascolecidae are all given separate family status after Blakemore (2000). The species list is provisional and may be incomplete for the whole Pacific region; also species names should be checked for current status. Hawaiian species are not included here. Of note is that *Amyntas solomonis* (Beddard, 1899) is sometimes misspelt “*A. salomonis*”.

Introduction

Several surveys of Pacific island earthworms have been published (eg. Lee, 1969, 1981; Easton, 1984). Lee (1969) summarized records from previous collections and reported on new material from the Royal Society Expedition of 1965, to the then British Solomon Islands Protectorate; he also discussed the biogeography of the earthworm fauna; he listed a total of 17 species, all believed to be introduced, although six species were known only from the Solomons (Blakemore, 1997; 2005).

[Fig. 1.](#) West Pacific Isles (political, 1998).

[Fig. 2.](#) Oceania.

[Maps courtesy of The University of Texas Libraries, at Austin, TX - <http://www.lib.utexas.edu/maps/australia.html>].

Taxonomic Results

Table of Earthworm Species from Pacific Islands (excluding Hawaii)

Family Moniligastridae

1. *Drawida barwelli*

- ① Fiji
- ② Samoa
- ③ Tonga

Family Ocnerodrilidae

- ① *Eukerria saltensis*
 - ① Easter Island
 - ② Iles San Fernandez: Robinson Crusoe, Santa Clara, and Alexander Selkirk Islands
- ② *Ocnerodrilus occidentalis*
 - ① Vanuatu (formerly New Hebrides)
 - ② Various Pacific Isles

Family Acanthodrilidae sensu Blakemore (2000)

- ③ *Acanthodrilus canalanus*
 - ① New Caledonia
- ④ *Acanthodrilus chabaudi*
 - ① New Caledonia
- ⑤ *Acanthodrilus chevalieri*
 - ① New Caledonia
- ⑥ *Acanthodrilus coneensis*
 - ① New Caledonia
- ⑦ *Acanthodrilus cavaticus*
 - ① New Caledonia
- ⑧ *Acanthodrilus fabresi*
 - ① New Caledonia
- ⑨ *Acanthodrilus foanus*
 - ① New Caledonia
- ⑩ *Acanthodrilus humboldti*
 - ① New Caledonia
- ⑪ *Acanthodrilus kermadecensis*
 - ① Kermadec
- ⑫ *Acanthodrilus koghis*
 - ① New Caledonia
- ⑬ *Acanthodrilus lacuum*
 - ① New Caledonia
- ⑭ *Acanthodrilus longicystis*
 - ① New Caledonia
- ⑮ *Acanthodrilus natalicius*

- ① New Caledonia
- ①⑥ *Acanthodrilus oubatcheanus*
 - ① New Caledonia
- ①⑦ *Acanthodrilus paniensis*
 - ① New Caledonia
- ①⑧ *Acanthodrilus paripapillatus*
 - ① New Caledonia
- ①⑨ *Acanthodrilus perrieri*
 - ① New Caledonia
- ②⑩ *Acanthodrilus ruber*
 - ① New Caledonia
- 21 *Acanthodrilus silvester*
 - ① New Caledonia
- 22 *Acanthodrilus yateensis*
 - ① New Caledonia
- 23 *Eudiplotrema culminis*
 - ① New Caledonia
- 24 *Eudiplotrema ignambii*
 - ① New Caledonia
- 25 *Eudiplotrema modestus*
 - ① New Caledonia
- 26 *Eudiplotrema ? pygmaeus*
 - ① New Caledonia
- 27 *Eudiplotrema rouxi*
 - ① New Caledonia
- 28 *Eudiplotrema sarasini*
 - ① New Caledonia
- 29 *Rhododrilus kermadecensis*
 - ① Kermadec
 - ② (Tasmania)

Family Octochaetidae *sensu* Blakemore (2000)

- 30 *Dichogaster (Diplothecodrilus) affinis*
 - ① Fiji
 - ② Samoa

- ③ Various Pacific Isles
- 31 *Dichogaster (Diplotheodrillus) bolau*
 - ① Vanuatu
 - ② Samoa
 - ③ Tonga
 - ④ Various Pacific Isles
- 32 *Dichogaster (Dichogaster) damonis*
 - ① Fiji
- 33 *Dichogaster (Diplotheodrillus) gatesi*
 - ① St Helena
- 34 *Dichogaster (Dichogaster) reincke*
 - ① Samoa

Family Megascolecidae sensu Blakemore (2000)

- ① *Amyntas aeruginosus*
 - ① Guam (Marianas)
 - ② Vanuatu
 - ③ Solomons
 - ④ Cook
 - ⑤ Fiji
 - ⑥ Samoa
 - ⑦ Carolines
 - ⑧ Widespread other islands
- ② *Amyntas bifidus*
 - ① Solomons
- ③ *Amyntas brevicinctus*
 - ① Guadalcanal, Solomons
- ④ *Amyntas corticis*
 - ① Samoa
 - ② Kermadec
 - ③ New Caledonia (eg. Beddard, 1890b)
 - ④ Fiji (eg. as *P. subquandrangula* Grube, 1877)
 - ⑤ Widespread other islands
- ⑤ *Amyntas copulatus*

- ① Solomons
- ⑥ *Amyntas esafatae*
 - ① Vanuatu
 - ② Solomons
 - ③ Santa Cruz
 - ④ Cook
 - ⑤ Fiji
 - ⑥ Samoa
 - ⑦ Marianas
 - ⑧ Carolines
 - ⑨ Marquesas
 - ⑩ Widespread other islands
- ⑦ *Amyntas gracilis*
 - ① Cook*
 - ② Fiji
 - ③ Samoa
 - ④ Tonga
 - ⑤ Kermadec
 - ⑥ Widespread other islands
- ⑧ *Amyntas hendersonianus hendersonianus*
 - ① Hederson Island in Pitcairns
 - ② (Other subspecies New Guinea)
- ⑨ *Amyntas lavanguanus*
 - ① Solomons
- ⑩ *Amyntas minimus*
 - ① Cook*
 - ② Samoa
 - ③ Widespread other islands
- ⑪ *Amyntas rennellanus*
 - ① Solomons
- ⑫ *Amyntas rechingeri*
 - ① Samoa (and Hawaii)
- ⑬ *Amyntas rodericensis*
 - ① Samoa

- ② Widespread other islands
- ⑭ *Amyntas sladeni*
 - ① Vanuatu
- ⑮ *Amyntas solomonis*
 - ① Solomons, Narowol (?Narovo = Simbo Island), Rubiana, New Georgia; name sometimes misspelt “salomonis”
- ⑯ *Amyntas taitensis* (inc. *grubei*, *upoluensis* and *recta*)
 - ① ?Vanuatu,
 - ② Cook
 - ③ Fiji
 - ④ Tahiti
 - ⑤ Samoa
 - ⑥ Tonga
 - ⑦ Marquesas
 - ⑧ New Caledonia
- ⑰ *Amyntas upoluensis* (possibly a synonym of *A. taitensis*)
 - ① Samoa
 - ② Vanuatu
 - ③ Solomons
 - ④ Cooks
 - ⑤ Fiji
 - ⑥ Marshalls
- ⑱ *Anisochaeta ? novaecaledonicae*
 - ① New Caledonia
- ⑲ *Anisochaeta tenax*
 - ① Marquesas de Mendoza
- ⑳ *Metapheretima agathis*
 - ① Vanuatu
- 21 *Metapheretima apunae*
 - ① Vanuatu
- 22 *Metapheretima buckerfieldi*
 - ① Vanuatu
- 23 *Metapheretima erromangae*
 - ① Vanuatu

24 *Metapheretima loriae*

- ① Guadalcanal, Solomons
- ② Aneityum Is., VanuaTu
- ③ New Guinea
- ④ ?Widespread other islands

25 *Metapheretima pickfordi*

- ① Rennell and Guadalcanal, Solomons
- ② Espiritu Santo, Malekula and Efate Isls., VanuaTu

26 *Metapheretima queribunda*

- ① Russel and Guadalcanal, Solomons

27 *Metapheretima sergei*

- ① Tonga

28 *Metapheretima speiseri*

- ① New Caledonia
- ② Tonga
- ③ Vanuatu (W. Santo Island)

29 *Metaphire californica*

- ① Cook*
- ② Samoa
- ③ Tonga
- ④ Widespread other islands

30 *Metaphire houlleti*

- ① Fiji
- ② Widespread other islands

31 *Perionyx excavatus*

- ① Fiji
- ② Samoa
- ③ Cook
- ④ Widespread other islands

32 *Pheretima darnleiensis*

- ① Fiji
- ② Carolines

33 *Pheretima montana*

- ① Vanuatu
- ② Solomons

- ③ Fiji
 - ④ Samoa
 - ⑤ Tahiti
 - ⑥ Marquesas
 - ⑦ New Caledonia
 - ⑧ Tonga
 - ⑨ Niue
 - ⑩ Henderson Island in Pitcairns (Cognetti, 1914)
 - ⑪ New Britain
- 34 *Pheretima sangirensis*
- ① Samoa
- 35 *Pheretima unicystis* (possibly a synonym of *P. montana*)
- ① Vanuatus
- 36 *Pithemera bicincta*
- ① Cook*
 - ② Vanuatu
 - ③ Fiji
 - ④ Samoa
 - ⑤ Widespread other islands
- 37 *Pithemera godeffroyi*
- ① Fiji
 - ② Samoa
 - ③ ?Widespread other islands
- 38 *Pithemera pacifica*
- ① Samoa
 - ② New Britain
- 39 *Pithemera liangi*
- ① ?
- 40 *Pithemera sedgwicki ablata*
- ① Vanuatu
 - ② Samoa
 - ③ Tonga
- 41 *Pithemera sedgwicki sedgwicki*
- ① Vanuatu

- ② Fiji
- 42 *Pithemera violacea*
 - ① Cook*
- 43 *Polypheretima brevis*
 - ① Tonga
- 44 *Polypheretima elongata*
 - ① Cook
 - ② Samoa
 - ③ Carolines
 - ④ New Caledonia
- 35 *Polypheretima fida*
 - ① New Caledonia
- 45 *Polypheretima neglecta*
 - ① Fiji
- 46 *Polypheretima taprobanae*
 - ① Cook*
 - ② Fiji
 - ③ Widespread other islands
- 47 *Polypheretima voeltzkowi*
 - ① Vanuatu
- 48 *Pontodrilus litoralis*
 - ① Cook*
 - ② Tonga
 - ③ Carolines
 - ④ New Caledonia
 - ⑤ Chatham Is.
 - ⑥ Line Is. (Fanning Island) in the Republic of Kiribati

Family Lumbricidae

- ① *Aporrectodea caliginosa*
 - ① Tonga
 - ② Kermadec
- ② *Aporrectodea longa*
 - ① Kermadec

③ *Dendrodrilus rubidus*

① Kermadec

④ *Eisenia fetida*

① Kermadec

Family Glossoscolecidae

① *Pontoscolex corethrurus*

① Vanuatu

② Fiji

③ Samoa

④ Tonga

⑤ Niue

⑥ Widespread other islands

Family Eudrilidae

① *Eudrilus eugeniae* (Kinberg, 1867)

① St Helena

* New record from author's (RJB) studies.

Species dubius

Lumbricus tahitanus Kinberg, 1867.

Lumbricus tongaensis Grube, 1877 (types lost).

References

Blakemore, R.J. (1997). Two earthworms (Megascolecidae: Oligochaeta) from Rennell, Solomon Islands. *Journal of Natural History*, 1997. **31**: 17-25.

Blakemore, R.J. (2000). Tasmanian Earthworms. CD-ROM Monograph with Review of World Families. VermEcology, Kippax 2615. Canberra, December, 2000, pp. 800 including 222 figures.

Blakemore, R.J. (2002). Cosmopolitan Earthworms – an Eco-Taxonomic Guide to the Peregrine Species of the World. VermEcology, PO BOX 414 Kippax, ACT 2615, Australia, pp. 506 including 80 figs.

Blakemore, R.J. (2004). Checklist of New Zealand Earthworms updated from Lee (1959). In: Moreno, A. G. and Borges, S. (eds.) "Avances en taxonomia de lombrices de tierra/Advances in earthworm taxonomy (Annelida: Oligochaeta)". Editorial Complutense, Universidad

Complutense, Madrid, Spain. Pp. 175-185. [Published July, 2004 in English with some Spanish translation].

Blakemore, R.J. (2005). *A Series of Searchable Texts on Earthworm Biodiversity, Ecology and Systematics from Various Regions of the World*. Eds.: N. Kaneko & M.T. Ito. COE Soil Ecology Research Group, Yokohama National University, Japan. CD-ROM. [Online here <http://bio-eco.eis.ynu.ac.jp/eng/database/earthworm/>].

Easton, E.G. (1984). Earthworms (Oligochaeta) from islands of the south-western Pacific, and a note on two species from Papua New Guinea. *New Zealand Journal of Zoology*. **11**: 111-128.

James, S.W. (2004). An illustrated key to the earthworms of the Samoan Archipelago (Oligochaeta: Glossoscolecidae, Megascolecidae, Moniligastridae). *Micronesica* **47(1)**: 1-13.

Lee, K.E. (1953). A note on the Earthworm Fauna of the Kermadec Islands. *Transactions of the Royal Society of New Zealand*. **81(1)**: 49-51.

Lee, K.E. (1959). *The Earthworm Fauna of New Zealand*. New Zealand Department of Scientific and Industrial Research, Wellington. Bulletin 130. Pp 486.

Lee, K.E. (1969). Earthworms of the British Solomons Protectorate, *Philosophical Transactions of the Royal Society London, Series B, Biological Science*, **255**, 345-354.

Lee, K. E. (1981). Earthworms (Annelida : Oligochaeta) of Vanua Tu (New Hebrides Islands). *Australian Journal of Zoology*. **29**: 535-72.

Michaelsen, W. (1899). Oligochäten von der Inseln des Pacific, nebst Erörterungen zur Systematik der Megascoleciden. (Ergebnisse einer Reise nach dem Pacific, Schauinsland 1896-97). *Zool. Jahrb., Syst.* **12**: 211-246.

Michaelsen, W. (1900). Das Tierreich: 10: Vermes. Berlin: R. Friedländer und Sohn. Pp. xxix + 575. [In German].

Michaelsen, W. (1913). Die Oligochäten von Neu-Caledonien und den beachbarten Inselgruppen. *Nova Caledonia*. **1**: 173-280.

[End of Pacific Islands species checklist].

OCEANIA

