

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

Compiled 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 other sources. In the current checklist, Acanthodrilidae, Octochaetidae and Megascolecidae are all given separate family status after Blakemore (2000). Although the current species list appears to be the most comprehensive that is currently available, it is provisional and may be incomplete for the whole Pacific region. Species names should be checked for authority, synonymy, and current status (from other chapters in the current Series) and Hawaiian species are provided separately as: “Tables of Hawaiian and Puerto Rican earthworm species”. Full synonymies and distributions of cosmopolitan species, including their generic types, are provided by Blakemore (2002, 2006).

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

Introduction

Several surveys of Pacific island earthworms have been published (e.g. 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 (see Blakemore, 1997; 2005).

The Samoan survey results published by James (2004) were reviewed and corrected by the current author (8th April, 2001). Despite supporting a defunct systematic system that was replaced by Blakemore (2000), James (2004) briefly described 17 Samoan species and provided some simple illustrations (cf. 14 Samoan species mentioned, figured, and keyed by Easton, 1984). However, James’ key was incomplete as research show that there are at least three other species known from Samoa, giving a total of 20 or more species. *Pheretima (Pheretima) montana* Kinberg, 1867 and *Dichogaster* sp. are additions from Easton (1984), and *Amyntas upoluensis* (Beddard, 1887) is missing from both lists (see Blakemore, 1997). Furthermore, there is the possibility of *Pontodrilus litoralis* (Grube, 1855) as mentioned by Easton (1984).

Other surveys are noted in the References below.

Maps

[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: List of Earthworm Families and Species from Pacific Islands (excl. Hawaii)

Family Moniligastridae

Drawida barwelli

Fiji

Samoa

Tonga

Family Ocneroдрilidae

Eukerria saltensis

Easter Island

Iles San Fernandez: Robinson Crusoe, Santa Clara, and Alexander Selkirk Islands

Ocneroдрilus occidentalis

Vanuatu (formerly New Hebrides)

Various Pacific Isles

Family Acanthodrilidae *sensu* Blakemore (2000)

Acanthodrilus canalanus

New Caledonia

Acanthodrilus chabaudi

New Caledonia

Acanthodrilus chevalieri

New Caledonia

Acanthodrilus coneensis

New Caledonia

Acanthodrilus cavaticus

New Caledonia

Acanthodrilus fabresi

New Caledonia

Acanthodrilus foanus

New Caledonia

Acanthodrilus humboldti

New Caledonia

Acanthodrilus kermadecensis

Kermadec

Acanthodrilus koghis

New Caledonia

Acanthodrilus lacuum

New Caledonia

Acanthodrilus longicystis

New Caledonia

Acanthodrilus natalicius

New Caledonia

Acanthodrilus oubatcheanus

New Caledonia

Acanthodrilus paniensis

New Caledonia

Acanthodrilus paripapillatus

New Caledonia

Acanthodrilus perrieri

New Caledonia

Acanthodrilus ruber

New Caledonia

Acanthodrilus silvester

New Caledonia

Acanthodrilus yateensis

New Caledonia

Eudiplostrema culminis

New Caledonia

Eudiplostrema ignambii

New Caledonia

Eudiplostrema modestus

New Caledonia

Eudiplostrema ? pygmaeus

New Caledonia

Eudiplostrema rouxi

New Caledonia

Eudiplostrema sarasini

New Caledonia

Rhododrilus kermadecensis

Kermadec

(Also in Tasmania)

Family Octochaetidae sensu Blakemore (2000)

Dichogaster (Diplotheodrilus) affinis

Fiji

Samoa

Various Pacific Isles

Dichogaster (Diplotheodrilus) bolau

Vanuatu

Samoa

Tonga

Various Pacific Isles

Dichogaster (Dichogaster) damonis

Fiji

Dichogaster (Diplotheodrilus) gatesi

St Helena

Dichogaster (Dichogaster) reincke

Samoa

Family Megascolecidae sensu Blakemore (2000) [note: many *Amyntas* spp. previously in *Pheretima*].

Amyntas aeruginosus

Guam (Marianas)

Vanuatu

Solomons

Cook

Fiji

Samoa

Carolines

Cosmopolitan widespread on other islands

Amyntas bifidus

Solomons

Amyntas brevicinctus

Guadalcanal, Solomons

Amyntas corticis [name sometimes misspelt “*Amyntas coriticis*”]

Samoa

Kermadec

New Caledonia (eg. Beddard, 1890b)

Fiji (eg. as *P. subquadrangula* Grube, 1877)

Cosmopolitan widespread on other islands

Amyntas copulatus

Solomons

Amyntas esafatae

Vanuatu

Solomons

Santa Cruz

Cook

Fiji

Samoa

Marianas

Carolines

Marquesas

Cosmopolitan widespread on other islands

Amyntas gracilis

Cook*

Fiji

Samoa

Tonga

Kermadec

Cosmopolitan widespread on other islands

Amyntas hendersonianus hendersonianus

Hederson Island in Pitcairns

(Other subspecies in New Guinea)

Amyntas lavanguanus

Solomons

Amyntas minimus

Cook*

Samoa

Cosmopolitan species widespread on other islands

Amyntas rennellanus

Solomons

Amyntas rechingeri

Samoa (and Hawaii)

Amyntas rodericensis

Samoa

Cosmopolitan species widespread on other islands

Amyntas sladeni

Vanuatu

Amyntas solomonis [name sometimes misspelt “*salomonis*”].

Solomons, Narowol (?Narovo = Simbo Island), Rubiana, New Georgia

Amyntas taitensis (inc. *grubei*, ?*upoluensis* and *recta*)

?Vanuatu,

Cook

Fiji

Taihiti

Samoa

Tonga

Marquesas

New Caledonia

Amyntas upoluensis (possibly a synonym of *A. taitensis*)

Samoa

Vanuatu

Solomons

Cooks

Fiji

Marshalls

Anisochaeta ? novaecaledonicae

New Caledonia

Anisochaeta tenax

Marquesas de Mendoza

Metapheretima agathis

Vanuatu

Metapheretima apunae

Vanuatu

Metapheretima buckerfieldi

Vanuatu

Metapheretima erromangae

Vanuatu

Metapheretima loriae

Guadalcanal, Solomons

Aneityum Is., VanuaTu

New Guinea

?Cosmopolitan widespread on other islands

Metapheretima pickfordi

Rennell and Guadalcanal, Solomons

Espiritu Santo, Malekula and Efate Isls., VanuaTu

Metapheretima queribunda

Russel and Guadalcanal, Solomons

Metapheretima sergei

Tonga

Metapheretima speiseri

New Caledonia

Tonga

Vanuatu (W. Santo Island)

Metaphire californica

Cook*

Samoa

Tonga

Cosmopolitan widespread on other islands

Metaphire houlleti

Fiji

Cosmopolitan widespread on other islands

Perionyx excavatus

Fiji

Samoa

Cook

Cosmopolitan widespread on other islands

Pheretima darnleiensis

Fiji

Carolines

Pheretima montana

Vanuatu

Solomons

Fiji

Samoa

Tahiti

Marquesas

New Caledonia

Tonga

Niue

Henderson Island in Pitcairns (Cognetti, 1914)

New Britain

Pheretima sangirensis

Samoa

Pheretima unicystis (possibly a synonym of *P. montana*)

Vanuatu

Pithemera bicincta

Cook*

Vanuatu

Fiji

Samoa

Cosmopolitan widespread on other islands

Pithemera godeffroyi

Fiji

Samoa

?Cosmopolitan widespread on other islands

Pithemera pacifica

Samoa

New Britain

Pithemera liangi

?Pacific

Pithemera sedgwicki ablata

Vanuatu

Samoa

Tonga

Pithemera sedgwicki sedgwicki

Vanuatu

Fiji

Pithemera violacea

Cook*

Polypheretima brevis

Tonga

Polypheretima elongata

Cook

Samoa

Carolines

New Caledonia

Polypheretima fida

New Caledonia

Polypheretima neglecta

Fiji

Polypheretima taprobanae

Cook*

Fiji

Cosmopolitan widespread on other islands

Polypheretima voeltzkowi

Vanuatu

Pontodrilus litoralis

Cook*

Tonga

Carolines

New Caledonia

Chatham Is.

Line Is. (Fanning Island) in the Republic of Kiribati

Family Lumbricidae

Aporrectodea caliginosa

Tonga

Kermadec

Aporrectodea longa

Kermadec

Dendrodrilus rubidus

Kermadec

Eisenia fetida

Kermadec

Family Glossoscolecidae

Pontoscolex corethrurus

Vanuatu

Fiji

Samoa

Tonga

Niue

Cosmopolitan widespread on other islands

Family Eudrilidae

Eudrilus eugeniae (Kinberg, 1867)

St Helena

Species dubius

Lumbricus tahitanus Kinberg, 1867.

Lumbricus tongaensis Grube, 1877 (types lost).

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

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 incl. 222 figures.

Blakemore, R.J. (2002). Cosmopolitan Earthworms – an Eco-Taxonomic Guide to the Peregrine Species of the World. VermEcology, Kippax, ACT 2615, Australia. Pp. 506 + 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/Spanish].

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/>].

- Blakemore, R.J. (2006). *Cosmopolitan Earthworms – an Eco-Taxonomic Guide to the Peregrine Species of the World*. Second edition. VermEcology, Yokohama, Japan. Pp. 666 + 150 figs.
- 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. [Note: Easton's table has several errors that require correction as attempted in the current list].
- 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 & Sohn. Pp. xxix + 575.
- Michaelsen, W. (1913). Die Oligochäten von Neu-Caledonien und den beachbarten Inselgruppen. *Nova Caledonia*. **1**: 173-280.

[End of Pacific Islands species' checklist].