TRANSACTIONS
OF THE
ROYAL SOCIETY OF NEW ZEALAND

ZOOLOGY

VOL. 2 NO. 20 NOVEMBER 9, 1962

New Zealand Earthworms in the Collections of the British Museum (Natural History)*

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(Soil Bureau Publication No. 269.)

[*Received by the Editor, May 23, 1962.*]

Abstract

NEW ZEALAND earthworms in the collections of the British Museum (Natural History) have been re-examined. The results, presented here, are supplementary to the author's monograph of New Zealand earthworms.

A small collection of New Zealand earthworms is held by the British Museum (Nat. Hist.). Most of the specimens were deposited in the Museum by F. E. Beddard who, between 1885 and 1896, described five new genera and fifteen new species of earthworms from specimens sent to him by W. W. Smith and Professor T. J. Parker. Type specimens of twelve of Beddard's species are included in the collection, together with types of species described by Baird and Cognetti de Martiis and a number of specimens of other species, mainly from Beddard's collections.

The author, in 1959, published a monograph of New Zealand earthworms. It was not possible to examine the British Museum collection before the monograph was published. As some of the species in the collection have not been recorded since the original description was published, descriptions in the monograph were copied from the published descriptions. It has now been possible tc examine type specimens, and to amend and amplify the descriptions where necessary. This paper may therefore be regarded as a supplement to the monograph.

The following is a list of the specimens contained in the Museum collections, with comments and amendments to descriptions where necessary.

Family MEGASCOLECIDAE

Subfamily ACANTHODRILINAE

Genus EODRILUS Michaelsen emend. Pickford

Eodrilus annectens (Beddard) Fig. 1.

Syn. *Acanthodrilus annectens* Beddard, 1888: Quart. J. Micr. Sci., 29: 102.

* This work was done during the tenure of a Nuffield Foundation Dominion Travelling Fellowship in the Natural Sciences.

Published by the Royal Society of New Zealand, c/o Victoria University of Wellington, P.O. Box 196, Wellington.

MATERIAL. B.M. 1904:10:5:811; Types; 2 specimens, 1 entire, 1 dissected; New Zealand; Beddard Collection. B.M. 1904:10:20:3/13, 1113/1119; slides; serial TS and LS, whole mount of spermathecae.

The description in Lee (1959, p. 62) was derived from Beddard (1888) with additional information from a named specimen in the Otago Museum (Benham Collection). The British Museum specimens agree with the description in Lee (1959) except that septa vii/viii to xii/xiii (not xi/xii) have muscular thickening. Beddard illustrated a spermatheca, arrangement of testes and ovaries and structure of the male duct. The ventral aspect of xiii–xxi is illustrated in Fig. 1.

Eodrilus pallidus Lee, 1959

Lee, 1959: N.Z. Dept. Sci. Indust. Res. Bull. 130: 67–8.

MATERIAL. B.M. 1924:3:1:208; 1 clitellate specimen; New Zealand; 2 labels in inner tube, *Microscolex modestus* Rosa, New Zealand, introduced from South America, W. W. Smith Esq., 2.vii.95.

The specimen is *Eodrilus pallidus* as described in Lee (1959). Smith (1893) recorded *M. modestus* (now included in *M. dubius*) from gardens at Ashburton, and it has not been recorded again from New Zealand. The British Museum specimen is the only specimen bearing this name attributed to New Zealand. Since the specimen is actually *Eodrilus pallidus*, it must be regarded as doubtful whether *M. dubius* does occur in New Zealand.

Genus MICROSCOLEX Rosa emend. Pickford

Microscolex macquariensis (Beddard)

Syn. *Acanthodrilus macquariensis* Beddard, 1896: Proc. Zool. Soc. Lond., 1896: 208.

MATERIAL. B.M. 1904:10:5:873/6; Types?; 4 specimens, 1 clitellate, 3 aclitellate, fragment of 1 specimen; Beddard Collection. B.M. 1903:3:10:1–4; 8 specimens, 5 clitellate, 3 aclitellate; from moss and earth, Macquarie Id.; Nov. 22, 1901; Royal Soc. and Royal Geog. Soc.

The specimens were too brittle to be dissected. In external characters they agreed with the description in Lee (1959).

Genus RHODODRILUS Beddard

Rhododrilus minutus Beddard (Figs. 2, 3)

Beddard, 1889: Proc. Zool. Soc., Lond., 1889: 381.

MATERIAL. B.M. 1904:10:5:1194; Type?; 1 specimen, opened along dorsal midline; Beddard Collection. B.M. 1904:10:5:938/40; 5 clitellate specimens; Beddard Collection. Not numbered; 2 specimens (duplicates).

The description in Lee (1959, p. 167) was based on Beddard's (1889) description, with additions from new material. The specimens agree with the description in Lee (1959), except in details of the form of penial chaetae. The tip of the penial chaeta is spatulate, not bifid, and the small teeth on the shaft are irregularly arranged, not in transverse rows (Fig. 2). The form of the spermatheca is illustrated in Fig. 3.

Rhododrilus monticola (Beddard) (Figs. 4, 5)

Syn. *Microscolex monticola* Beddard, 1895: Monogr. Oligochaeta, p. 467.

MATERIAL. B.M. 1904:10:5:501; Type?; 1 specimen, opened along dorsal midline; Beddard Collection.

This species is listed in Lee (1959, p. 255) as a *species incertae sedis*, as it was insufficiently described to be recognisable. The following description has been compiled from the British Museum specimen.

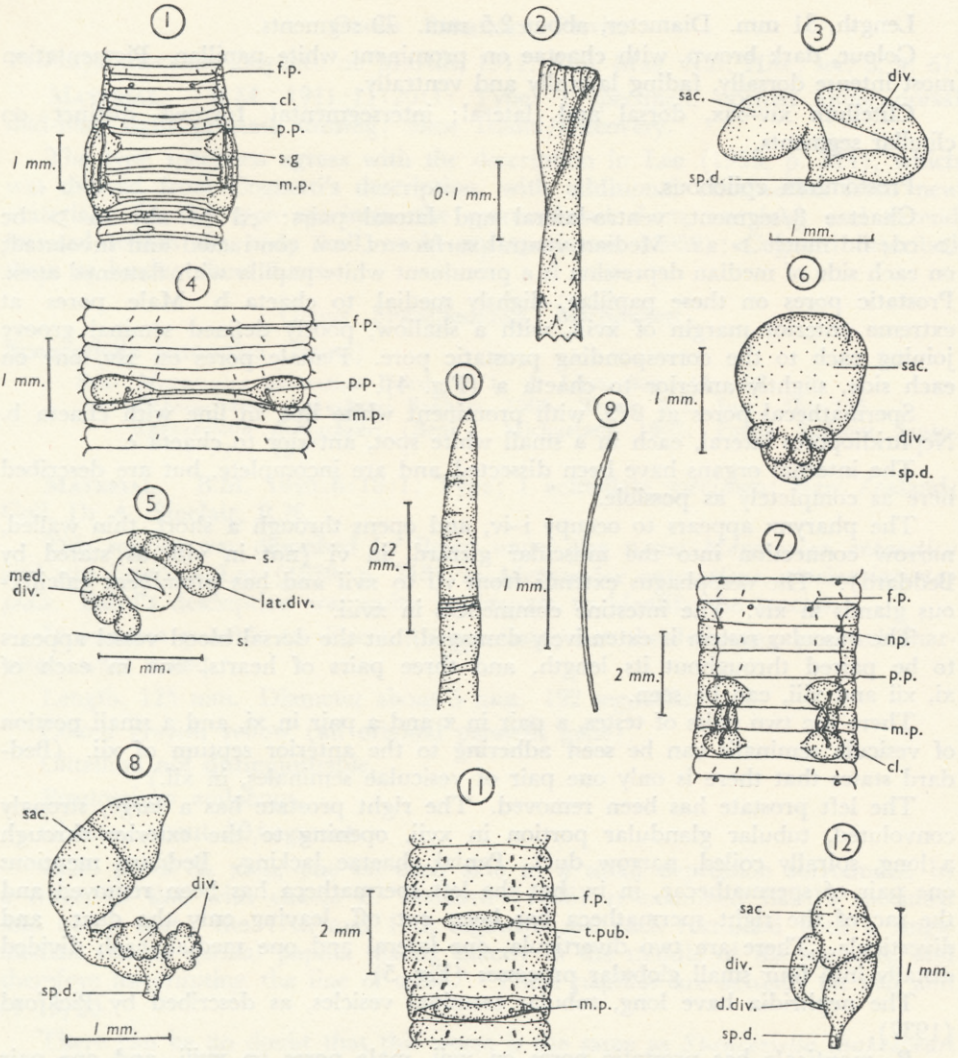

FIG. 1.—*Eodrilus annectens.* Ventral aspect, xiii–xxi.
FIG. 2.—*Rhododrilus minutus.* Tip of penial chaeta.
FIG. 3.—*R. minutus.* Left spermatheca of ix, anterior aspect.
FIG. 4.—*Rhododrilus monticola.* Ventral aspect, xiii–xix.
FIG. 5.—*R. monticola.* Right spermatheca, from above. The sac has been removed, leaving the duct and diverticula only.
FIG. 6.—*Octochaetus huttoni.* Right spermatheca of viii, anterior aspect.
FIG. 7.—*Maoridrilus parkeri.* Ventral aspect, xiii–xx.
FIG. 8.—*M. parkeri.* Right spermatheca of viii, anterior aspect.
FIG. 9.—*M. parkeri.* Penial chaeta.
FIG. 10.—*M. parkeri.* Tip of penial chaeta.
FIG. 11.—*Megascolides orthostichon.* Ventral aspect, xii–xix.
FIG. 12.—*M. orthostichon.* Right spermatheca of ix, medial aspect.

ABBREVIATIONS

cl., clitellum; d.div., duct of spermathecal diverticulum; div., spermathecal diverticulum; f.p., female pore; lat.div., lateral diverticulum; med.div., medial diverticulum; m.p., male pore; np., nephridiopore; p.p., prostatic pore; s., intersegmental septum; sac, spermathecal sac; s.g., seminal groove; sp.d., spermathecal duct; t.pub., tuberculum pubertatis.

Length, 31 mm. Diameter, about 2.5 mm. 79 segments.

Colour, dark brown, with chaetae on prominent white papillae. Pigmentation most intense dorsally, fading laterally and ventrally.

Clitellum xiv–xix, dorsal and lateral; intersegmental furrows distinct on clitellar segments.

Prostomium epilobous.

Chaetae 8/segment, ventro-lateral and lateral pairs: cd > ab; aa > bc > cd; dd much > aa. Median ventral surface of xvii contracted and involuted; on each side of median depression is a prominent white papilla with flattened apex. Prostatic pores on these papillae, slightly medial to chaeta b. Male pores at extreme anterior margin of xviii, with a shallow, poorly defined seminal groove joining each to the corresponding prostatic pore. Female pores on xiv, one on each side, slightly anterior to chaeta a (Fig. 4).

Spermathecal pores at 8/9, with prominent white lips, in line with chaeta b. Nephridiopores lateral, each in a small white spot, anterior to chaeta c.

The internal organs have been dissected and are incomplete, but are described here as completely as possible.

The pharynx appears to occupy i–iv, and opens through a short, thin walled, narrow connection into the muscular gizzard, in vi (not in viii, as stated by Beddard). The oesophagus extends from vii to xvii and has prominent calciferous glands in xiv. The intestine commences in xviii.

The vascular system is extensively damaged, but the dorsal blood vessel appears to be paired throughout its length, and three pairs of hearts, one in each of xi, xii and xiii, can be seen.

There are two pairs of testes, a pair in x and a pair in xi, and a small portion of vesicula seminalis can be seen adhering to the anterior septum of xii. (Beddard states that there is only one pair of vesiculae seminales, in xii.)

The left prostate has been removed. The right prostate has a large, strongly convoluted, tubular glandular portion in xvii, opening to the exterior through a long, spirally coiled, narrow duct. Penial chaetae lacking. Beddard mentions one pair of spermathecae, in ix, but the left spermatheca has been removed and the sac of the right spermatheca has been cut off, leaving only the duct and diverticula. There are two diverticula, one lateral and one medial, each divided distally into four small globular processes (Fig. 5).

The nephridia have long, tubular terminal vesicles, as described by Pickford (1937).

R. monticola has prostatic pores on xvii, male pores on xviii, and one pair of spermathecal pores, at 8/9. These characters are shared with *R. agathis, R. besti, R. ravus* and *R. rosae*. *R. monticola* may be readily distinguished from these four species by the number and form of the spermathecal diverticula, as follows:

	Spermathecal Diverticula		
Species	No.	Form	Position
agathis	5	pyriform	2 anterior, 2 posterior
besti	1	long, tubular	lateral
monticola	2	distally divided into four	1 medial, 1 lateral
ravus	2	1 cylindrical, 1 pyriform	1 medial, 1 lateral
rosae	5	reniform	surround spermathecal duct

R. monticola is not synonymous with any other species of *Rhododrilus* and may now be included in the genus as described in Lee (1959), bringing the total number of species to 31.

Genus OCTOCHAETUS Beddard

Octochaetus antarcticus (Beddard)

Syn. *Acanthodrilus antarcticus* Beddard, 1889: Proc. Zool. Soc., Lond., 1889: 378.

MATERIAL. B.M. 1904:10:20:14; 1 slide; series TS of oesophageal gland.

This series of sections is, apparently, all that remains of the type material. The sections are stained with haematoxylin/eosin, but are faded and in poor condition. The species has not been collected since the original record.

Octochaetus huttoni Beddard (Fig. 6)

Beddard, 1892: Proc. Zool. Soc., Lond., 1892: 674.

MATERIAL. B.M. 1904:10:5:238/9; Type?; 3 specimens, 2 entire, one opened along dorsal mid-line. Not numbered; 1 clitellate specimen.

The description in Lee (1959, p. 112) is incomplete, and the following additional information has been taken from the type specimens.

The female pores are on xiv, slightly anterior to chaeta a.

Chaeta a appears to be absent on xvii, xviii and xix. Prostatic and male pores lie in the line of chaeta a.

Vesiculae seminales in xi, xii, racemose.

Spermathecal sac disc shaped, flattened in antero-posterior direction; duct short and not sharply differentiated from sac; cluster of four small, ovoidal diverticula approximately at junction of sac and duct, on anterior aspect (Fig. 6).

Octochaetus multiporus (Beddard)

Syn. *Acanthodrilus multiporus* Beddard, 1885: Proc. Zool. Soc., Lond., 1885: 813.

MATERIAL. B.M. 1904:10:5:877; Type?; 1 specimen; New Zealand; Beddard Collection. B.M. 1904:10:5:243–6; 5 specimens, all dissected; Beddard Coll. B.M. 1904:10:5:860–70; about 30 small specimens with large number of cocoons; Beddard Coll. B.M. 1904:10:5:1137–1147; large number of cocoons with few small specimens; Beddard Coll. 2 jars marked "*O. multiporus* (Duplicates)"; 6 specimens. B.M. 1904:10:20:47/55, 58/60, 64/109; slides; serial TS and LS.

The specimens are *O. multiporus* as recognised in New Zealand and described in Lee (1959).

Octochaetus thomasi Beddard, 1892: Proc. Zool. Soc., Lond., 1892: 671.

MATERIAL. B.M. 1904:10:5:1136; Type?; 2 clitellate specimens; New Zealand; Beddard Coll. B.M. 1904:10:5:241; 1 aclitellate specimen; New Zealand; Beddard Coll.

This species closely resembles *O. multiporus*, but is distinguished on the following grounds:

1. The spermathecal duct has no diverticula. In *O. multiporus* there is a ring of small diverticula around the duct.
2. The dorsal blood vessel is paired, as in *O. multiporus*, but there is a small commissural vessel in each segment, connecting the two dorsal vessels. The commissural vessels are lacking in *O. multiporus*.
3. The gizzard is confined to vi. In *O. multiporus* it occupies v–vi.

These differences have been confirmed from the British Museum specimens.

Genus Maoridrilus Michaelsen

Maoridrilus dissimilis (Beddard)

Syn. *Acanthodrilus dissimilis* Beddard, 1885: Proc. Zool. Soc., Lond., 1885: 813.

Material. B.M. 1904:10:5:834/7; Types?; 5 specimens, 4 entire, 1 opened along dorsal mid-line; Beddard Coll. 1904:10:20:18/20; slides; serial LS of spermatheca, serial LS posterior segments.

Beddard's description (1885) was incomplete, and the species was redescribed in Lee (1959, p. 200) from new material. Beddard's description agrees with my (1959) description, except that

1. The prostatic papillae are not so prominent as described for my specimens.
2. The oesophageal glands are in xiv, xv, not in xvi, xvii (Lee) nor xv, xvi (Beddard). The intestine commences in xviii (Lee), not in xx (Beddard).

Maoridrilus parkeri (Beddard) (Figs. 7-10)

Syn. *Acanthodrilus parkeri* Beddard, 1895: Monogr. Olig., p. 534.

Material. B.M. 1904:10:5:1014/15; Types?; 3 specimens, 2 entire, 1 opened along dorsal mid-line; New Zealand; Beddard Coll.

The following additional description has been derived from the British Museum specimens (see also Figs. 7–10).

Female pores on xiv, antero-medial to chaeta a.

Spermathecal pores at 7/8, 8/9, in line with chaeta b.

Nephridiopores alternately in line with chaetae b and c, posterior to ix.

Proventriculus short, same width as gizzard but thin walled, in v.

Penial chaetae curved, with ridges around shaft (like nodes on grass stalks) near tip (Figs. 9, 10).

Nephridia have small ovoidal vesicles, the same for dorsal and ventral series.

The clitellum was not well developed in any of the specimens; at the most it extended over ½xiv–½xix (5 segments). (Beddard says xiii-xix (7 segments) in his description.)

Maoridrilus smithi (Beddard)

Syn. *Acanthodrilus smithi* Beddard, 1892: Proc. Zool. Soc., Lond., 1892: 675.

Material. B.M. 1904:10:5:894/900; Types?; 5 specimens, slightly macerated; Beddard Coll. B.M. 1904:10:20:144/52, 154/157; slides; series LS and TS; Beddard Coll.

Beddard has adequately described and figured this species and the specimens agree with his description.

Maoridrilus uliginosus (Hutton)

Syn. *Lumbricus uliginosus* Hutton, 1877: Trans. N.Z. Inst., 9: 351.
Acanthodrilus uliginosus Hutton, 1883: N.Z. J. Sci., 1: 585.
Acanthodrilus novae zelandiae Beddard, 1886: Proc. Zool. Soc., Lond., 1886: 169.
Acanthodrilus rosae Beddard, 1890: Quart. J. Micr. Sci., 30: 434.
Maoridrilus novaezelandiae Michaelsen, 1900: Tierreich, 10: 123.
Maoridrilus rosae Michaelsen, 1900: Tierreich, 10: 124.

Material. B.M. 86:11:18:28; 1 clitellate specimen; from Otago Museum. B.M. 1904:10:5:878–80; 2 clitellate specimens; Beddard Coll. 1904:10:20: 131/136, 138/141; slides; LS oesophageal glands, TS spermatheca, penial chaetae; Beddard Coll.

This species was described in detail by Henham (1901), and the specimens agree with his description.

Genus NEODRILUS Beddard

Neodrilus campestris (Hutton)

Syn. *Lumbricus campestris* (part) Hutton, 1877: Trans. N.Z. Inst., 9: 351.
Neodrilus monocystis Beddard, 1887: Proc. Roy. Soc. Edinb., 14: 158.

MATERIAL. B.M. 1904:10:5:881/2; 2 specimens, 1 entire, 1 opened along dorsal mid-line; Beddard Coll.

The specimens agree with the description given in Lee (1959, p. 242).

Genus PLAGIOCHAETA Benham

Plagiochaeta lineata (Hutton)

Syn. *Megasolex lineatus* Hutton, 1877: Trans. N.Z. Inst., 9: 352.

MATERIAL. B.M. 1886:11:18:26; Type?; 1 clitellate specimen, opened along dorsal mid-line, macerated; Queenstown, Otago; from Otago Univ. Mus.

This is not the holotype, as Hutton's types are in the Otago Museum (No. A56.22). It could be a paratype or a topotype as the locality is as for the type material, and it may well have been collected at the same time.

Plagiochaeta sylvestris (Hutton)

Syn. *Megasolex sylvestris* Hutton, 1877: Trans. N.Z. Inst., 9: 352.
Plagiochaeta punctata Beddard, 1895: Monogr. Olig., p. 558.

MATERIAL. B.M. 1886:11:18:43; Type?; 1 aclitellate specimen, macerated, in 2 pieces; Dunedin, New Zealand. B.M. 92:3:10:4; 1 aclitellate specimen; Dr Benham; New Zealand.

Hutton's type material of the species is in the Otago Museum (No. A56.23), but, as with *P. lineata*, this specimen could be a paratype or a topotype.

Subfamily MEGASCOLECINAE

Genus DIPOROCHAETA Beddard emend. Michaelsen

Diporochaeta intermedia (Beddard)

Syn. *Perichaeta intermedia* Beddard, 1888: Ann. Mag. Nat. Hist., ser. 6, 2: 434.

MATERIAL. B.M. 1904:10:5:261; Type?; 1 clitellate specimen, opened along dorsal mid-line; Beddard Coll. B.M. 1904:10:20:704, 707/8; slides; TS region of spermathecae and prostates; Beddard Coll.

The description in Lee (1959, p. 273) was based on Beddard's description, with additions from new material. Beddard states that there are four pairs of vesiculae seminales, in ix, x, xi, xii; in my specimens there were two pairs, in ix, xii, with loose sperms in x, xi. The type specimen agrees with my description. Beddard noted thickening of the anterior septa; this was not noticeable in my specimens. The septa are thickened in the type specimen.

Genus MEGASCOLIDES McCoy

Megascolides orthostichon (Schmarda) (Figs. 11, 12)

Syn. *Hypogaeon orthostichon* Schmarda, 1861: Neue Wirbell. Thiere, 1 (2): 12.

MATERIAL. B.M. 1904:10:5:488/490; 2 clitellate, 3 aclitellate specimens; Beddard Coll.

This species was listed in Lee (1959) as a *species incertae sedis,* as Schmarda's description was insufficient for recognition. Beddard re-examined Schmarda's type specimen, but added little to the description. He noted (1895, p. 496) . . . "I had only the type of Schmarda, which it was necessary to respect." The British Museum specimens cannot be Schmarda's types, and there is no indication of where they came from. Beddard gave the length as 180 mm, Schmarda (1861) as 80 mm, which is more like the length of the Museum specimens.

The following description is based on two clitellate specimens, one entire, one opened along the dorsal mid-line.

Length, about 36 mm. Diameter, about 3.5 mm. 1 specimen with 66 segments, 1 with 64.

Colour, dark brown; Schmarda and Beddard say dark red, which may have been the colour of living specimens.

Clitellum ½xiii or xiv–xvii, complete.

Prostomium tanylobous.

Chaetae 8/segment: dd > cd; bc = cd > aa; aa > ab.

On xviii there is a slightly raised, white, tumid band, extending transversely across the ventral mid-line from chaeta b on one side to chaeta b on the other side. The male pores are on this band, one on each side, in the position of chaeta a, which is absent on xviii. An elliptical tuberculum pubertatis covers the inter-segmental furrow 14/15, and is as wide as aa (Fig. 11).

The spermathecal pores are not in intersegmental furrows, but close to the anterior margins of viii and ix.

There is no muscular thickening of the anterior septa.

Pharynx in i–iv. Gizzard in v, short and thick walled. Oesophageal glands in xiii. Intestine commences in xvi.

Dorsal blood vessels unpaired. Hearts from dorsal blood vessel in x, xi, xii.

Testes in x, xi. Ovaries in xiii. Vesiculae seminales in xi, xii, racemose. Prostates commence in xviii; left prostate extends back to xix, crosses beneath intestine and forward to xvi, then back to xviii on the right side; right prostrate extends straight back to xxvi, lying close to the ventral nerve cord. Spermathecae in viii, ix; irregular pyriform sac with slender duct; small, slender, pyriform diverticulum opening by narrow duct into anterior aspect of spermathecal duct (Fig. 12).

Micronephridial; tubules very numerous, on ventro-lateral and lateral aspects of the body wall.

Remarks. There has always been doubt as to whether Schmarda's specimens of this species were actually collected in New Zealand. In the original description, the locality given was "Mt Wellington, New Zealand". The present specimens do not help, as there is no indication of locality.

The specimens here described most closely resemble *Megascolides kirki* (Benham), a New Zealand species originally recorded from Ohaeawai, in North Auckland. The following differences from *M. kirki* are noted:

	M. orthostichon	*M. kirki*
Clitellum	complete	dorsal and lateral
Male pores	one each end of transverse band	each on a separate square papilla
Oesophageal glands	in xiii	in xiv

There are a number of other small differences, but the two species are similar and are apparently closely related. Their close relationship is probably as good evidence as is available that *M. orthostichon* is a New Zealand species.

Genus PERIONYX Perrier

Perionyx shoeanus Cognetti de Martiis, 1912: Ann. Mag. Nat. Hist., ser. 8, 9: 67.

MATERIAL. B.M. 1911:11:20:1; Type; 1 specimen, opened along dorsal mid-line, right prostate missing; Shoe Island/Discovery.

The type specimen agrees with the description in Lee (1959, p. 324), which was derived from Cognetti's description, with additional information from new material. In the type specimen the spermathecal ducts are long and extend forward within the body wall, as in my specimens (1959); Cognetti described them as having short ducts.

Genus SPENCERIELLA Michaelsen

Spenceriella antarctica (Baird)

Syn. *Megascolex antarctica* Baird, 1871: J. Linn. Soc., 11: 96.
Diporochaeta shakespeari Benham, 1906: Trans. N.Z. Inst., 38: 255.
Spenceriella shakespeari (Benh.) Michaelsen, 1907: Fauna Sudwest Austr., 1 (2): 161.

MATERIAL. B.M. 1845:6:18:1; Type; 1 aclitellate specimen; New Zealand; Coll. Dr A. Sinclair, R.N.

This species was described by Baird under the name *Megascolex antarctica* and was listed in Lee (1959, p. 348) as *Megascolex antarcticus*, species *incertae sedis*. Baird's description was quite inadequate to identify the species.

It was not possible to dissect the specimen, but the following external characters were noted.

Length, 125 mm. Diameter about 5 mm. 192 segments.

Colour greyish yellow (all original pigment gone).

Clitellum not distinguishable.

Prostomium epilobous.

Chaetae about 50/segment.

Male pores on xviii, one on each side in a small depression surrounded by a ridge, in line with chaeta c. Beddard (1886) re-examined Baird's specimen and noted that "the 17th and 19th segments are each furnished with a single median ventral genital papilla placed exactly in the middle of the segment, and therefore interrupting the line of setae." These papillae are actually on xvii and at 19/20.

There can be no doubt that this worm is the same as *Spenceriella shakespeari* (Benham). The specimen therefore becomes the type of *Spenceriella antarctica* (Baird), and Benham's *S. shakespeari* must be regarded as synonymous with *S. antarctica* (Baird). Benham's type material (6 specimens) of *S. shakespeari* is in the Otago Museum collection (No. A43.48).

Genus DIDYMOGASTER Fletcher

Didymogaster sylvatica Fletcher, 1886: Proc. Linn. Soc. N.S.W., ser. 2, 1: 554.

D. sylvatica is an Australian species, but there is a rather doubtful record from New Zealand (see Lee, 1959, p. 261). A short description, based on the work of Stephenson (1932), was included in Lee (1959). Stephenson's specimens (B.M. 1932:5:5:5) and a number of other specimens in the Museum collections have been examined, and the following differences from Stephenson's description were noted.

1. Chaetae a and b are present on xviii, close to the posterior margin of the segment, with chaeta b in line with the male pores; Stephenson stated that these chaetae were absent.

2. The intestine is a spiral tube, as described by Fletcher (1886) and Ude (1893), with whom Stephenson disagreed.
3. The dorsal blood vessel is paired in each segment posterior to vi, but the vessels fuse at each septum; Stephenson described the dorsal vessel as unpaired.
4. Stephenson described seven pairs of hearts, a pair in each of vii–xiii; the hearts of x, xi, xii, xiii arise from a supra-oesophageal vessel, separate from the dorsal blood vessels, while those of vii, viii and ix are smaller than the others and arise from the dorsal vessels. I should not regard the latter three pairs as hearts, but as segmental commissural vessels.
5. The spermathecae are in viii, ix, and x, not in vii, viii and ix, as described by Stephenson.

Family LUMBRICIDAE

Genus ALLOLOBOPHORA Eisen

Allolobophora caliginosa (Savigny)

Syn. *Lumbricus levis* (part) Hutton, 1877: Trans. N.Z. Inst., 9: 351.

MATERIAL. B.M. 86:11:18:27; 1 aclitellate specimen; Hampden, Otago.

This specimen is labelled "*Eudrilus levis* Hutton". Hutton (1877), under the name *Lumbricus levis*, described a species from specimens that Benham (1899) subsequently found to comprise a mixture of specimens of *Allolobophora caliginosa* and a species that Benham named *Octochaetus levis* (Hutton). The type of *Octochaetus levis* is in the Otago Museum (No. A56.21). The British Museum specimen is *Allolobophora caliginosa*; it was probably sent to Beddard by Hutton.

Genus EISENIA Malm

Eisenia foetida (Savigny)

Syn. *Lumbricus annulatus* Hutton, 1877: Trans. N.Z. Inst., 9: 352.

MATERIAL. B.M. 1886:11:18:14; 1 specimen; Dunedin.

Genus LUMBRICUS Linnaeus

Lumbricus rubellus Hoffmeister

Syn. *Eudrilus campestris* (part) Smith, 1887: Trans. N.Z. Inst., 19: 137.

MATERIAL. B.M. 86:11:18:13; 1 clitellate specimen; Dunedin. B.M. 1904: 10:5:560–62; 3 specimens; New Zealand.

APPENDIX

The following miscellaneous material, attributed to New Zealand, but of little or no significance, was examined.

B.M. 1904:10:20:307–334; slides; series TS anterior region of body, labelled *Deinodrilus* sp.

B.M. 1904:10:20:1120/1122; slides; series LS anterior 20 segments, labelled *Acanthodrilus paludosus* (= *Eodrilus paludosus* (Beddard)). This is probably all that remains of the type material, but there is no proof that it is from the types, and the sections are in poor condition.

B.M. 1933:2:23:278; slides; whole mounts of two spermathecae, labelled "*Maoridrilus* ?, Toowoomba, Queensland, ix.14; J. H. A."

Maoridrilus is not known to occur in Australia. The species concerned is not identifiable from the spermathecae alone. If it is *Maoridrilus* sp., it would almost cetrainly have come from New Zealand.

B.M. 1904:10:20:1124/1127; slides; series L.S. anterior 21 segments, labelled *Rhododrilus parkeri.*

There is no species *R. parkeri*, and this must have been a mistake by Beddard, possibly a confusion with *Maoridrilus parkeri.* The specimen sectioned is *Rhododrilus* sp., probably *R. minutus* Beddard.

B.M. 1904:10:20:1128/1135; slides; series LS anterior portion (about 20 segments), labelled *Rhododrilus* sp. The sections are in poor condition.

B.M. 40:5:27–9; several severely macerated, fragmented specimens, labelled "*Lumbricus* ? sp. ?, Bay of Islands, New Zealand; Antarctic Exped. the Admiralty". These are *Megascolides* sp.

B.M. 1904:10:20:698, 710, 711; slides; body wall and T.S. prostate, labelled "*Perichaeta smithi*" and "*Pheretima smithi*", New Zealand.

The specimen was meganephric, so it was not *Pheretima* sp. It could be *Perionyx* sp.

SUMMARY

As a result of re-examination of New Zealand earthworms in the collections of the British Museum (Natural History), the following nomenclatural changes have been made.

Rhododrilus monticola (Beddard) and *Megascolides orthostichon* (Schmarda), listed in Lee (1959) as *species incertae sedis,* have been redescribed and are now recognised as valid species.

The type specimen of a species described by Baird (1873) under the name *Megascolex antarctica*, listed in Lee (1959) as *Megascolex antarcticus, species incertae sedis*, has been recognised as identical with *Spenceriella shakespeari* (Benham, 1906). Baird's specimen therefore becomes the type of *Spenceriella antarctica* (Baird) and *S. shakespeari* (Benham) is regarded as a synonym of *S. antarctica.*

In addition to nomenclatural changes, the following points are noted.

Microscolex dubius (Fletcher), included in the New Zealand list by Lee (1959) as an introduced species on the authority of Smith (1893), is regarded as a doubtful record. A specimen labelled *Microscolex modestus* (= *M. dubius*) sent by Smith to the Museum, has been identified as *Eodrilus pallidus* Lee, and there is no other record of *M. dubius* from New Zealand.

Amendments and additions to descriptions in Lee (1959) are given for the following species: *Eodrilus annectens* (Beddard), *Rhododrilus minutus* Beddard, *Octochaetus antarcticus* (Beddard), *O. huttoni* Beddard, *O. thomasi* Beddard, *Maoridrilus dissimilis* (Beddard), *M. parkeri* (Beddard), *Plagiochaeta lineata* (Hutton), *P. sylvestris* (Hutton), *Diporochaeta intermedia* (Beddard), *Perionyx shoeanus* Cognetti de Martiis, *Didymogaster sylvatica* Fletcher.

ACKNOWLEDGMENTS

The author is grateful to the Trustees of the Nuffield Foundation, whose financial support made his visit to the United Kingdom possible, and to the Trustees of the British Museum (Natural History) for providing facilities at the Museum and access to the collections while the work was carried out. Mr R. W. Sims, officer in charge of the Annelida section of the Museum, and his assistant, Miss J. M. Rosling, were most helpful during the author's stay in the Museum.

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