

ヒメミミズ科の1999年以降の種の追録

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Mana NOZAKI* and Yoshio NAKAMURA* : Additional list of Enchytraeidae species
(Annelida : Oligochaeta) since 1999

Abstract

Enchytraeid worms (microdrilids) are designated as potworms which belong to the group of the soil pedosphere together with earthworms (megadrilids). Recently, their contribution to three functions (decomposition, production and self-purification) of the soil pedosphere is clarified. Since the checklist of Enchytraeidae of the world was published in 2000, many species were described throughout the world. We listed them in this report.

キーワード：ヒメミミズ科，種，記載

1 はじめに

ヒメミミズ科は環形動物門貧毛類に属し，“エンキ”と称される。貧毛類（ミミズ類）はこのヒメミミズ科などの小型ミミズ群と、ツリミミズ科やフトミミズ科などの大型ミミズ群に分けられる。

Darwin (1904) がミミズに関する書籍を刊行以来、大型ミミズ群に関する情報が多く出され、土壌圏の有する3機能（分解，調整，生産）における重要な役割が指摘されている (Edwards and Lofty, 1972 ; 中村, 1998)。それに比べてヒメミミズ科に関する情報（分類・生態とも）は少なく、とくに日本の情報は少ない。

ヒメミミズ科の生息場は氷河・タイガから熱帯雨林、湿地・海浜・海中（海綿寄生）と多岐にわたり (Nielsen and Christensen, 1959 ; O'Connor, 1967)，陸生種と水（淡水・海水）生種がある。このうち陸生種は体長1-20ミリほどで細長く、乳白から淡黄色である。センチウと混同されたり、腐敗した作物や樹木の根から見つかることから農業上害動物とされる (Kurir, 1964 ; Hewit, 1908)。しかし、ヒメミミズ科に関する情報がしだいに集積するとともに、土壌圏の機能への寄与が明らかにされ、その内容は大型ミミズ群と同じあるいは固有のことがらもある (Dash, 1983 ; 中村, 1993a)。モダー腐植の生成には欠かせない生物で (中村, 1980 ; Toutain, 1987 ; Yli-Olli and Huhta,

2000)，極地 (Swift *et al.*, 1998)，凍土や標高3000m以上 (Block and Christensen, 1985) の土壌生成にも重要な役割を果たす。環境指標生物、とくに重金属や薬剤の急性・慢性判定生物 (Didden and Römbke, 2001) として、さらに碎片分離種 (例：*Enchytraeus japonensis* NAKAMURA, 1990) は再生 (茗原, 1999)，発光種 (例：*Fridericia heliota* ZALESKAJA, 1990) は系統発生 (Rota *et al.*, 2003) の実験動物に供される。

畑地生態系では土壌構造の形成や物質循環に寄与する (Kasprzack, 1982)。今後の大きな課題は、土壌動物とともに土壌圏のエダホン (Edaphon : Francé, 1920 ; 土壌生物) を構成する土壌微生物、とくに作物病原性微生物との関連を明らかにすることにある (中村, 1993a ; Nakamura, 2000)。大型ミミズ群が生息・活動し難い農法においては、大型ミミズ群に替わる土壌環境形成動物 (Lavelle *et al.*, 1998) としての可能性は高い (中村, 1991 ; Topoliantz *et al.*, 2000)。例えば大型ミミズ群に致命的打撃を与える耕起が不可欠な農法、あるいは大型ミミズ群を捕食するモグラの根食害や土壌攪乱などの被害を避けるために、大型ミミズ群を増殖させない農法においてとくに有効と想定される (Nakamura *et al.*, 2003)。水田生態系にも水生類とともに多数生息し (中村, 1993b ; 横田, 2002)，とくに水生類が生息・活動し難い落水から次の植え付け期間では、水生類に替わる土壌環境形成動物としての可能性は高い (中村, 1988)。

生ゴミなどの有機物の堆肥化においても、大型ミミズ群の堆肥ミミズ (シマミミズ：*Eisenia fetida*) とともに重要な役割を果たし (中村, 1998)，また小魚 (ト

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ゲウオ、ヒメハヤ)の生き餌とされる (Wu *et al.*, 2003).

わが国におけるヒメミミズ科の分類の情報は少なく、著者らの知る限りでは、記録は15種にすぎない(中村, 2000). 2000年にそれまでヒメミミズ科として世界から記載された32属594種が収録された(中村, 2000). 本報告ではその後に記載された種を収録した.

2 目録 (1999年以降に種として記載された; なお一部に前報収録後の同〈1998〉年に記載された種を含む)

前報(中村, 2000)に準じて次の順序で記載した:

○属名, 命名者, 記載年 属和名(命名者, 記載年)
〈属内の群分けのための基準〉

種名, 命名者, 記載年

種名, 命名者, 記載年, 誌名, 巻, 頁, 図番号
なお和名は日本産に与えられている.

○**Achaeta VEJDOVSKY, 1877**

ケナシヒメミミズ属(中村, 1999)

〈付属小球(follicle)無し〉

Achaeta gigantea DÓZSA-FARKAS, 2000

Achaeta gigantea DÓZSA-FARKAS, 2000, Opusc. Zool. Budapest, 32, p. 82, figs. 1-2.

Achaeta macrocyta CHRISTENSEN et DÓZSA-FARKAS, 1999

Achaeta macrocyta CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 28, fig. 20.

○**Bryodrilus UDE, 1892**

タケヒメミミズ属(中村, 1999)

Bryodrilus longifistulatus XIE, LIANG et WANG, 2000

Bryodrilus longifistulatus XIE, LIANG et WANG, 2000c, Species Diversity, 5, p. 96, fig. 2.

Bryodrilus macrotheca XIE, LIANG et WANG, 2000

Bryodrilus macrotheca XIE, LIANG et WANG, 2000c, Species Diversity, 5, p. 98, fig. 3.

Bryodrilus tunicatus DÓZSA-FARKAS et CHRISTENSEN, 2002

Bryodrilus tunicatus DÓZSA-FARKAS et CHRISTENSEN, 2002, Natura Jutlandica (Occasional papers), 2, p. 69, fig. 1.

○**Cognettia NIELSEN et CHRISTENSEN, 1959**

アミヒメミミズ属(中村, 1999)

Cognettia bisetosa CHRISTENSEN et DÓZSA-FARKAS, 1999

Cognettia bisetosa CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 14, fig. 8, table II.

Cognettia hayachinensis NAKAMURA, 2001

Cognettia hayachinensis NAKAMURA, 2001, Edaphologia, 68, p. 15, fig. 1a-d.

Cognettia piperi CHRISTENSEN et DÓZSA-FARKAS, 1999

Cognettia piperi CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 16, fig. 10, table II.

Cognettia quadrossetosa CHRISTENSEN et DÓZSA-FARKAS, 1999

Cognettia quadrossetosa CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 15, fig. 9, table II.

○**Enchytraeus HENLE, 1837**

ヒメミミズ属(中村, 1987)

〈貯精囊(spermathecae)無し〉

Enchytraeus athecathus WANG, XIE et LIANG, 1999

Enchytraeus athecathus WANG, XIE et LIANG, 1999, Hydrobiologia, 406, p. 62, fig. 5B-D, table 2.

〈貯精囊(spermathecae)有り〉

Enchytraeus chaoyangensis XIE, LIANG et WANG, 2000

Enchytraeus chaoyangensis XIE, LIANG et WANG, 2000d, Acta Hydrobiol., 42, p. 69, fig. 1.

Enchytraeus luxuriosus SCHMELZ et COLLADO, 1999

Enchytraeus luxuriosus SCHMELZ et COLLADO, 1999, Carolina, 57, p. 93, figs. 1-2.

Enchytraeus syracussus (DASH et MITCHELL, 1981)

所属変更

Fridericia syracussa DASH et MITCHELL, 1981, Rev. Ecol. Sol., 18, p. 259, figs. 1-4.

Enchytraeus syracussus: SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 394, fig. 73S, T.

○**Fridericia MICHAELSEN, 1889**

ハタケヒメミミズ属(中村, 1987)

〈貯精囊(spermatheca)膨大部(ampula)無し〉

Fridericia armenica : SCHMELZ, 2003

Fridericia armenica SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 104, figs. 13E-H, 14A-E.

Fridericia benti SCHMELZ, 2002

Fridericia benti SCHMELZ, 2002, Natura Jutlandica (Occasional papers), 2, p. 78, fig. 2a.

Fridericia composti SCHMELZ, 2003

Fridericia composti SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 158, fig. 21B-D.

Fridericia cusanica SCHMELZ, 2003

Fridericia cusanica SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 170, figs. 2A, 28J-M.

Fridericia loretensis SCHMELZ, 2003

Fridericia loretensis SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 225, fig. 43A-C.

Fridericia parathalassia SCHMELZ, 2002

Fridericia parathalassia SCHMELZ, 2002, Natura Jutlandica (Occasional papers), 2, p. 79, fig. 2g-i.

Fridericia paraunistosa XIE, LIANG et WANG, 2000

Fridericia paraunistosa XIE, LIANG et WANG, 2000b, Species Diversity, 5, p. 55, fig. 2.

Fridericia unisetosa XIE, LIANG et WANG, 2000

Fridericia unisetosa XIE, LIANG et WANG, 2000b, Species Diversity, 5, p. 54, fig. 1.

〈貯精囊 (spermatheca) 膨大部 (ampula) 2 個有り〉

Fridericia argillae SCHMELZ, 2003

Fridericia argillae SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 102, figs. 12A-D, 13A-D.

Fridericia auritoides SCHMELZ, 2003

Fridericia auritoides SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 109, figs. 1A, 16A-G.

Fridericia chongqingensis XIE, LIANG et WANG, 1999

Fridericia chongqingensis XIE, LIANG et WANG, 1999, Acta Hydrobiol. Sinica, 23 (suppl.), p.158, fig. 1A-E, table 1.

Fridericia christiani BAUER, 1998

Fridericia christiani BAUER, 1998, Linzer Biol. Beitr., 30, p. 5, figs. 1-2.

Fridericia christiani : 中村, 2000, 東北農試研究資料, 24, p. 52. 〈未検討種 not seen〉

Fridericia dozsae SCHMELZ, 2003

Fridericia dozsae SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 183, figs. 6B, 32J-M.

Fridericia granosa SCHMELZ, 2003

Fridericia granosa SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 202, fig. 37A-F.

Fridericia healyae SCHMELZ, 2003

Fridericia healyae SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 205, figs. 38A-G.

Fridericia heliota ZALESSKAJA, 1990

Fridericia heliota ZALESSKAJA, 1990, in Zaleskaja, Petushkov & Rodionova, 1990, Dokl. Akad. Nauk SSSR (Biol.), 310, p. 496, fig. 1.

Fridericia heliota : ROTA, ZALESSKAJA, RODIONOVA & PETUSHKOV, 2003, J. Zool. Lond., 260, p. 292, figs. 1-3.

Fridericia humicola BRETCHER, 1900

Fridericia humicola BRETCHER, 1900, Rev. Suisse Zool., 8, p. 30.

Fridericia humicola : 中村, 2000, 東北農試研究資料, 24, p. 52. 〈未確定種 species dubiae〉

Fridericia humicola : SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 214, figs. 1A, 39A-C.

Fridericia lenta SCHMELZ, 2003

Fridericia lenta SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 221, figs. 1B, 41A-J, 42A-H.

Fridericia multisegmentata WANG, XIE et LIANG, 1999

Fridericia multisegmentata WANG, XIE et LIANG, 1999, Hydrobiologia, 406, p. 62, fig. 4B-D, table 1.

Fridericia nanningensis XIE, LIANG et WANG, 2001

Fridericia nanningensis XIE, LIANG et WANG, 2001, Proceedings Biol. Soc. Washington, 114, p. 276, fig. 4 A-E, table 1.

Fridericia sardorum COGNETTI, 1901

Fridericia sardorum COGNETTI, 1901, Boll. Mus. Zool. Anat. Torino, 16 (404), p. 7, figs. 5-6.

Fridericia sardorum : 中村, 2000, 東北農試研究資料, 24, p. 52. 〈未確定種 species dubiae〉

Fridericia sardorum : SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 313, fig. 60I-L.

Fridericia sohlenii ROTA, HEALY et ERSÉUS, 1998

Fridericia sohlenii ROTA, HEALY et ERSÉUS, 1998, Zool. Anz., 237, p. 161, fig. 2A-D.

Fridericia viridula ISSEL, 1905

Fridericia viridula ISSEL, 1905, Ann. Mus. Stor. Nat. Genova, (3), 2, p. 34, figs. 9-11.

Fridericia viridula : 中村, 2000, 東北農試研究資料, 24, p. 52. 〈未確定種 species dubiae〉

Fridericia viridula : SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 344, fig. 67A-I.

〈貯精囊 (spermatheca) 膨大部 (ampula) 3 個あるいはそれ以上有り〉

Fridericia glandifera FRIEND, 1911

Fridericia glandifera FRIEND, 1911, Nott. Trans. Nat. Soc., 59, p. 40.

Fridericia glandifera : 中村, 2000, 東北農試研究資料, 24, p. 52. 〈未確定種 species dubiae〉

Fridericia glandifera : SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 196, figs. 34F-K, 35A-E.

〈貯精囊 (spermatheca) 膨大部 (ampula) 片側膨らみ〉

Fridericia dissimilis DUMNICKA, 1998

Fridericia dissimilis DUMNICKA, 1998, Anns Limnol., 34, p. 155, figs. 1-2, table 1.

Fridericia dissimilis : 中村, 2000, 東北農試研究資料,

- 24, p. 52. <未検討種 not seen>
- Fridericia monopera** COGNETTI, 1903
Fridericia monopera COGNETTI, 1903, Boll. Mus. Zool. Anat. Torino, 18 (454), p. 2.
Fridericia monopera : 中村, 2000, 東北農試研究資料, 24, p. 52. <未確定種 species dubiae>
Fridericia monopera : SCHMELZ, 2003, Abh. Naturw. Ver. Hamburg, 38, p. 248, table 4.
- Grania** SOUTHERN, 1913
- Grania aquitana** ROTA et ERSÉUS, 2003
Grania aquitana ROTA et ERSÉUS, 2003, Sarsia, 88, p. 226, fig. 7, table 1.
- Grania canaria** ROTA et ERSÉUS, 2003
Grania canaria ROTA et ERSÉUS, 2003, Sarsia, 88, p. 213, fig.1, table 1.
- Grania dolichura** ROTA et ERSÉUS, 2000
Grania dolichura ROTA et ERSÉUS, 2000, N. Z. J. Zool., 27, p. 249, fig. 3.
- Grania fortunata** ROTA et ERSÉUS, 2003
Grania fortunata ROTA et ERSÉUS, 2003, Sarsia, 88, p. 215, fig. 2, table 1.
- Grania mauretanicus** ROTA et ERSÉUS, 2003
Grania mauretanicus ROTA et ERSÉUS, 2003, Sarsia, 88, p. 224, fig. 6, table 1.
- Grania papillinus** ROTA et ERSÉUS, 2003
Grania papillinus ROTA et ERSÉUS, 2003, Sarsia, 88, p. 239, fig. 13.
- Grania tasmaniae** ROTA et ERSÉUS, 2000
Grania tasmaniae ROTA et ERSÉUS, 2000, N. Z. J. Zool., 27, p. 247, fig. 2.
- Grania torosa** ROTA et ERSÉUS, 2003
Grania torosa ROTA et ERSÉUS, 2003, Sarsia, 88, p. 237, fig. 12.
- Grania vikinga** ROTA et ERSÉUS, 2003
Grania vikinga ROTA et ERSÉUS, 2003, Sarsia, 88, p. 222, fig. 5.
- Hemienchytraeus** CERNOSVITOV, 1934
 ハンヒメミミズ属 (中村, 1999)
- Hemienchytraeus brachytheucus** XIE, WANG et LIANG, 1999.
Hemienchytraeus brachytheucus XIE, WANG et LIANG, 1999. Acta Hydrobiol. Sinica, 23, p. 355, fig. 2A-J, table 2.
- Hemienchytraeus planisetosus** XIE, WANG et LIANG, 1999.
Hemienchytraeus planisetosus XIE, WANG et LIANG, 1999. Acta Hydrobiol. Sinica, 23, p. 353, fig. 1A-I, table 1.
- Henlea** MICHAELSEN, 1889b
 コブヒメミミズ属 (新川, 1987)
 <腸付属物 (intestinal diverticula) 無し>
- Henlea adiverticulata** CHRISTENSEN et DÓZSA-FARKAS, 1999
Henlea adiverticulata CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 18, fig. 11, table III.
 <腸付属物 (intestinal diverticula) は大きくかたまり状>
- Henlea conchifera** CHRISTENSEN et DÓZSA-FARKAS, 1999
Henlea conchifera CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 19, fig. 12, table III.
- Marionina** MICHAELSEN, 1889b
 ミズヒメミミズ属 (中村, 1999)
 <剛毛 (setae) は直線状 (straight) で, 貯精囊 (spermathecae) は腸 (intestine) と連結しない (free)>
- Marionina righiana** XIE et ROTA, 2001
Marionina righiana XIE et ROTA, 2001, J. Natural Hist., 35, p. 1425, fig. 4A-D.
 <剛毛 (setae) は直線状 (straight) で, 貯精囊 (spermathecae) は腸 (intestine) と連結 (connect)>
- Marionina nordica** CHRISTENSEN et DÓZSA-FARKAS, 1999
Marionina nordica CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 29, fig. 21A-F, table VI.
- Marionina sacculata** XIE et ROTA, 2001
Marionina sacculata XIE et ROTA, 2001, J. Natural Hist., 35, p. 1421, fig. 2A-E.
- Marionina seminuda** XIE et ROTA, 2001
Marionina seminuda XIE et ROTA, 2001, J. Natural Hist., 35, p. 1423, fig. 3A-F.
- Marionina sexdiverticulata** DÓZSA-FARKAS, 2002
Marionina sexdiverticulata DÓZSA-FARKAS, 2002a, The fauna of the Fertő-Hanság National Park., Hungarian Natural History Museum, Budapest, p. 159, figs. 2-4.
- Marionina sinica** XIE et ROTA, 2001
Marionina sinica XIE et ROTA, 2001, J. Natural Hist., 35, p. 1419, fig. 1A-C.
- Marionina spongicola** ROTA et MANCONI, 2004
Marionina spongicola ROTA et MANCONI, 2004, Internat. Rev. Hydrobiol., 89, p. 59, fig. 1.

○*Mesenchytraeus* EISEN, 1877 (1979)

ナカヒメミミズ属 (中村, 1999)

〈貯精囊 (spermathecae) の付属腺 (diverticula) が無く, 腸 (intestine) と連結しない (free)〉

Mesenchytraeus rhithralis HEALY et FEND, 2002

Mesenchytraeus rhithralis HEALY et FEND, 2002, J. Natural Hist., 36, p. 17, fig. 1.

Mesenchytraeus sveni CHRISTENSEN et DÓZSA-FARKAS, 1999

Mesenchytraeus sveni CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 8, fig. 4, table I.

〈貯精囊 (spermathecae) の付属腺 (diverticula) が1個有り, 腸 (intestine) と連結 (connect)〉

Mesenchytraeus kuril HEALY et TIMM, 2000

Mesenchytraeus kuril HEALY et TIMM, 2000, Species Diversity, 5, p. 178, fig. 1.

Mesenchytraeus torbeni CHRISTENSEN et DÓZSA-FARKAS, 1999

Mesenchytraeus torbeni CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 7, fig. 3, table I.

〈貯精囊 (spermathecae) の付属腺 (diverticula) が2個有り, 腸 (intestine) と連結しない (free)〉

Mesenchytraeus antaeus ROTA et BRINKHURST, 2000

Mesenchytraeus antaeus ROTA et BRINKHURST, 2000, J. Zool. Lond., 252, p. 29, figs. 1-9.

Mesenchytraeus melanocephalus CHRISTENSEN et DÓZSA-FARKAS, 1999

Mesenchytraeus melanocephalus CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 6, fig. 2, table I.

○*Oconnorella* ROTA, 2000*Oconnorella changbaishanensis* (XIE, LIANG et WANG, 2000)

Marionina changbaishanensis XIE, LIANG et WANG, 2000a, Acta Zootaxonomica Sinica, 25, p. 143, figs. 1-7.

Oconnorella changbaishanensis: DÓZSA-FARKAS, 2002b, Natura Jutlandica (Occasional papers), 2, p. 88, table 1.

Oconnorella macrobulbi (CHRISTENSEN et DÓZSA-FARKAS, 1999)

Marionina macrobulbi CHRISTENSEN et DÓZSA-FARKAS, 1999, Biol. Skrift., 52, p. 30, fig. 22, table VI.

Oconnorella macrobulbi: DÓZSA-FARKAS, 2002b, Natura Jutlandica (Occasional papers), 2, p. 88, table 1.

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