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First record *Acrobeles ciliatus* (Rhabditida) and *Plectus parietinus* (Plectida) from South Korea

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Acrobeles ciliatus (von Linstow, 1877) and *Plectus parietinus* (Bastian, 1865) are newly collected from Korea. *Acrobeles* is similar to those nematode belongs to Rhabditidae and Panagrolaimidae by having terminal bulb without medium bulb but different by having complex, vines shaped labial attachment. *A. ciliatus* differed from other *Acrobeles* species by lateral fields with two incisures, primary axils U-shaped, and secondary axils V-shaped. Head region set off with the neck, three high labial probolae present, each having 5 tines at inner margins and 5-7 at outer margins, and two elongate apical tines. Also, it differs from the longer female body. *Plectus parietinus* is distinguished from all other species of *Plectus* by the prominent hypodermal glands, the relatively small amphid, the distinct and well set-off lips and by the subdorsal distal caudal seta on the left side of the tail. Stoma without stylet. Oesophagus about 1/4 of total body length with terminal bulb. Anus ca. 100 μm from posterior extremity. Vulva is at middle of body. Have spinneret on tail tip.

Keywords: *Acrobeles ciliatus*, *Plectus parietinus*, South Korea

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Introduction

During the nematode survey in Korea in 2015, two unrecorded species of nematodes belonging to the genus of *Acrobeles* and *Plectus* were found from soybean field and paddy field, Miryangsi, Gyeongsangnamdo, Korea, respectively. *Acrobeles* is readily recognized by the funnel shaped stoma and the complex, vine- shaped labial attachment. Identification of *Acrobeles* species is usually based on measurement of female, head shape, three labial probolae, and tines. *Plectus* is easily recognised by having large papillae and easily visible amphid on head. *P. antarcticus*, *P. cirratus* subsp. *parietinus*, *P. fusiformis*, *P. hawaiiensis*, *P. intermedius*, *P. naticochensis*, *P. ornatus*, *P. parietinus* subsp. *australis*, *P. patagonicus*, *P. pusteri*, and *P. velox* is synonym of *P. parietinus* (Bastian, 1865).

Materials and Methods

Soil samples were collected from paddy field and soybean field Miryangsi, Gyeongsangnamdo, Korea. Nematodes were extracted from soil by modified Baermann's funnel method. Extracted nematodes were fixed with hot F:G 4-1, transferred to glycerin according to the Seinhorst's rapid method (1959), and permanently mounted using paraffin ring method on glass slides. Nematodes were measured and photographed with an Olympus BX53 microscope equipped with an Olympus DP73 digital camera. Raw photographs were edited using Adobe Photoshop software. Morphometrics included de Man's indics.

Results and Discussion

Acrobeles ciliatus von Linstow, 1887 (Figs. 1, 2)
긴사슴뿔선충(신칭)

Order Rhabditida Chitwood, 1933 간선충목
Family Cephalobidae Filipjev, 1934 뿔선충과(신칭)
Genus *Acrobeles* von Linstow, 1887
사슴뿔선충속(신칭)

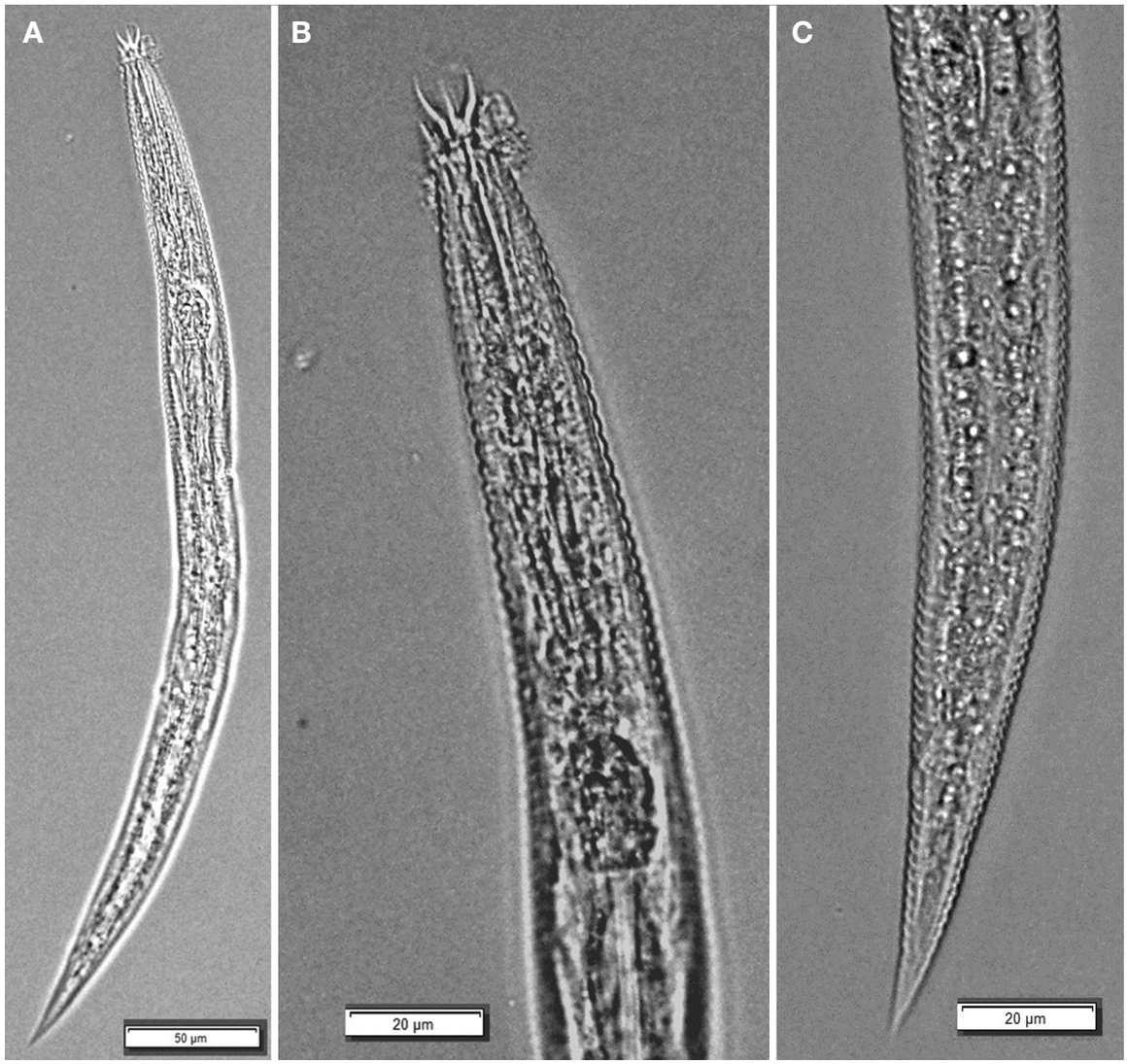

Fig. 1. *Acrobeles ciliatus* von Linstow, 1887. A. overall view; B. Anterior part; C. Posterior part of female; A = 50 μm; B, C = 20 μm.

SYNONYM

Acrobeles maeneeneus Yeates, 1967
Acrobeles sinensis Kreis, 1930
Acrobeles singulus Heyns, 1969
Cephalobus ciliatus (Linstow, 1877) de Man, 1884

Measurements

Diagnosis: original description: female L = 0.42 mm, a = 17.1, b = 3.3, c = 8.1, c′ = 3.4, V = 61.
Korea population: L = 0.42 mm, a = 15.6-16.9, b = 3.4-3.6, c = 7.0-9.5, c′ = 3.6-5.7, V = 63.6-64.0.

Diagnosis: Body almost cylindrical, ventrally curved after fixation. Cuticle single. Lateral fields with two incisures. Head region set off with the neck, three high labial probolae present, each having 5 tines at inner margins and 5-7 at outer margins, and two elongate apical tines which adopt V shape under light microscope. Reproductive system monodelphic-prodelphic. Vulva not protruding. Rectum 0.9-1.6 times of anal body diameter. Tail conical. Phasmids at 48% of tail length.
Male. Not found.

Remarks: *Acrobeles ciliatus* is similar to *Acrobeles andalusicus* (Abolafia and Pena-Santiago, 2004). However, it differs from this species by lateral fields with two incisures, and number of tines. *Acrobeles ciliatus* head region set off with the neck, three high labial probolae present, each having 5 tines at inner margins and 5-7 at outer margins. Furthermore, it differs from the female body length.

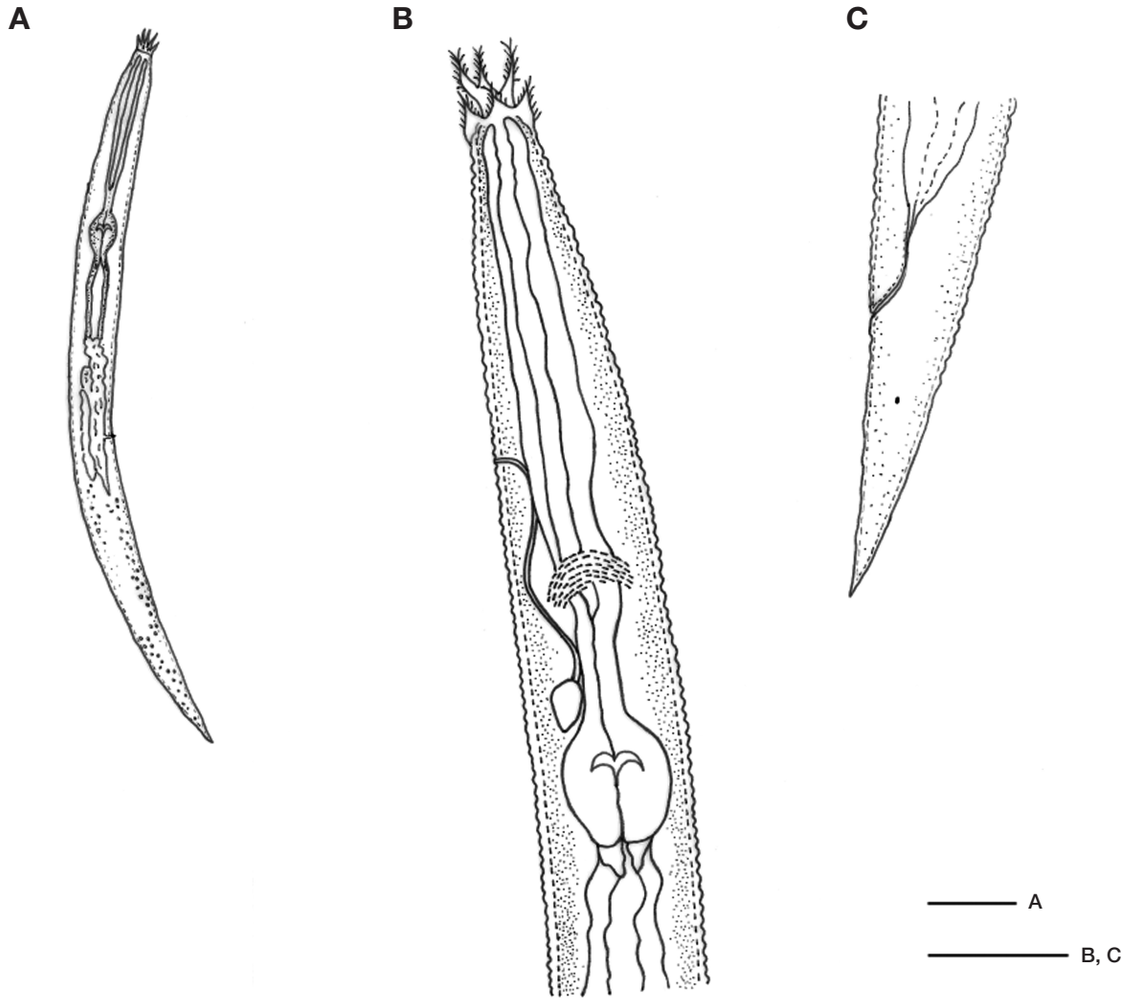

Fig. 2. *Acrobeles ciliatus* von Linstow, 1887. A. overall view; B. Anterior part; C. Female posterior end; A = 50 μm; B, C = 20 μm.

Habitat: This species collected from Miryang, Gyeongsangnamdo, South Korea on soil of soybean field.
World distribution: Worldwide, Europe, Asia, South America, USA, Northeastern Iran, Korea.
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Plectus parietinus Bastian, 1865 (Figs. 3, 4)
가는꼬리감공선충(신칭)

Class Chromadorea Inglis, 1983
Order Plectida Malakhov *et al*., 1982 감공선충목(신칭)
Family Plectidae Oerley, 1880 감공선충과(신칭)
Genus *Plectus* Bastian, 1865 감공선충속(신칭)

SYNONYM
Plectus antarcticus de Man, 1904 (T. Goodey, 1951)
Plectus cirratus subsp. *parietinus* Bastian, 1865 (Micoletzky, 1922)
Plectus fusiformis Bastian, 1865
Plectus hawaiiensis Cobb, 1906
Plectus intermedius Cobb, 1893
Plectus naticochensis Steiner, 1920
Plectus ornatus Bütschli, 1873
Plectus parietinus subsp. *australis* Cobb, 1898
Plectus patagonicus de Man, 1904 (T. Goodey, 1951)
Plectus pusteri Fuchs, 1930
Plectus velox Bastian, 1865

Measurements
Diagnosis: original description: L = 1.05-1.2 mm, a = 16-18, b = 4.5-4.7, c = 13-15, V = 47-49.
Korea population: Female: L = 0.9-1.7 mm, a = 12.8-25.5, b = 3.2-5.2, c = 8.0-15.5, V = 45-52, Stoma =



Fig. 3. *Plectus parietinus* Bastian, 1965. A. overall view; B. Anterior part; C. Posterior part of female; A = 100 µm; B, C = 20 µm.

20-34 µm.

Diagnosis: Body plump, spindle shaped, tapering more posteriorly than anteriorly. Cuticle distinctly marked by transverse striae. Hypodermal glands prominent from cervical region to tail. Lip region rounded, well set off from neck by constriction. Four cephalic setae, large and well developed. Cheilostom distinct. Excretory pore 55.5% (49-60%) of esophagus length. Nerve ring about one-half body diameter anterior to excretory pore. Vulva usually equatorial, 50% (45-52%) of body length. Tail length 3.3 (3-4) anal body diameters, uniformly conoid, ventrally arcuate, terminus blunt.

Remarks: *Plectus parietinus* is distinguished from all other species of *Plectus* by the prominent hypodermal glands, the relatively small amphid, the distinct and well set-off lips and by the subdorsal distal caudal seta on the left side of the tail.

Habitat: This species collected from Miryang, Gyeongsangnamdo, South Korea on soil of paddy field.

World distribution: Worldwide, USA, Antarctic, Australia, Canada, England, Ireland, Netherlands, Korea.

Deposition: NIBR No. NIBRIV0000325757-NIBRIV 0000325758.

Identifiers: Don G. Kim.

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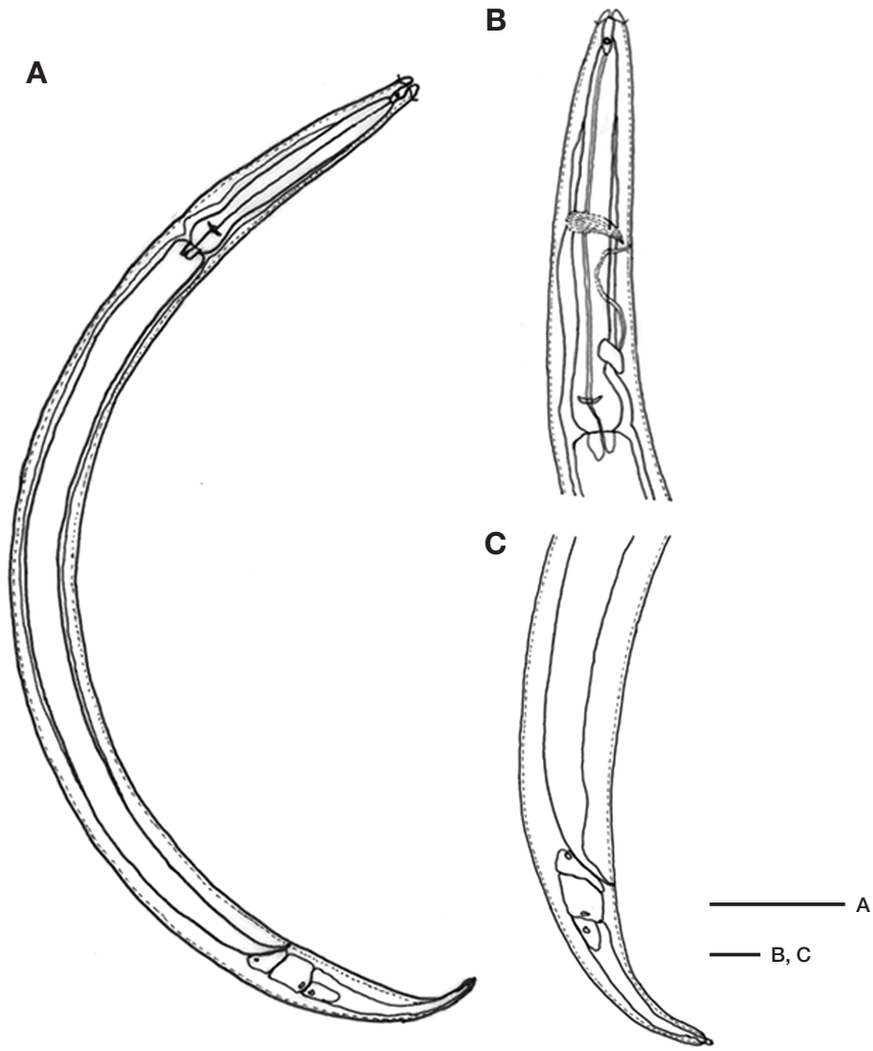

Fig. 4. *Plectus parietinus* Bastian, 1965. A. overall view; B. Anterior part; C. Posterior part of female; A = 100 μm; B, C = 20 μm.

fairs (MAFRA) (315023-3).

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