한국동물분류학회지 제16권 제2호
The Korean Journal of Systematic Zoology
Vol. 16, No. 2: 147-157 (October 2000)

Millipede fauna (Diplopoda) of South Korea

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ABSTRACT

Cawjeekelia iksana sp. n. is described from South Korea. The family Haplodesmidae, the genus *Rhipidopeltis* Miyosi, the species *Rhipidopeltis sinuata* Miyosi, and *Hyleoglomeris emarginata* Golovatch are recorded in Korea for the first time. The genus *Megalotyla* Golovatch as well as the species *Cawjeekelia pyongana* Mikhaljova and Kim, *Tokyosoma ronkayi* (Shear) and *Yamasinaium koreanum* Golovatch, are new to the fauna of South Korea.

Key words: Diplopoda, taxonomy, new species, South Korea

INTRODUCTION

The millipede fauna of South Korea is poorly known, with only a few taxonomic/faunitsic papers during the last decade (Lim *et al.*, 1992; Kim and Lim, 1993, 1995a, 1995b; Korsos, 1994). The present contribution is the results of a study of a considerable collection of South Korean Diplopoda kept at the Chonbuk National University, Jeonju, South Korea (ChNU). A few duplicates have been shared with the collections of the Zoological Museum of the State University of Moscow (ZMUM) and of the Institute of Biology and Soil Science, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok (IBSV), as indicated hereafter.

SYSTEMATIC ACCOUNT

Order Glomerida

Family Glomeridae

***Hyleoglomeris koreana* Golovatch, 1978**

Material examined. 2♂♂, 1♀ (ChNU), Gyeongi-do, Yeonchon-gun, Jeongok, 17 May 1991; leg. K.Y. Lim.

Remarks. Originally described from Kannyn, South Korea (Golovatch, 1978). This species appears to be widespread all over Korea (Golovatch, 1981; Mikhaljova and Kim, 1993; Kim and Lim, 1995a, b; Mikhaljova *et al.*, 2000). The species somewhat varies in coloration and certain details of structure of the male leg-pairs 17 and 19, but it is readily recognizible from any congeners by the shape of medial lamina.

***Hyleoglomeris emarginata* Golovatch, 1981**

Material examined. 3♂♂, 1♀ (ChNU), Jeollabuk-do, Buan-gun, 18 May 1991; leg. K.Y. Lim.

Remarks. Science originally described from Kiangsu, China (Golovatch, 1981), this is the second record of this species. It is new to the Korea.

Order Julida

Family Nemasomatidae

***Antrokoreana gracilipes* Verhoeff, 1938**

Material examined. 1♂, 3♀♀, Gangwon-do, Biryong cave, 17 June 1966; 2♂♂, 5♀♀, 2 juv., 2 fragments, Gangcheonseon cave, 7 Aug. 1975; 1♀, Yeoryang-cave, 2 June 1991; all (ChNU), leg. J. NamGeung.

Remarks. This troglobitic species appears endemic to Korea.

Family Mongoliulidae

***Skleroprotopus hakui* Takakuwa, 1940**

Material examined. 2♂♂, 1♀, 1 juv., Gyeonggi-do, Yeongjong-gun, Jangsu-myeon, 28 Oct. 1990; 3♂♂, 2♀♀, 1 juv., Gangwon-do, Mt. Odae, Werjerng temple, 12 Oct. 1992; 1♂, 5♀♀, Jeollabuk-do, Jinan-gun, Baekun-myeon, 10 April 1992; 2♂♂, 3♀♀, Jeollanam-do, Guangyang-eup, 31 May 1991; 12♂♂, Gyeongsangbuk-do, Goryeong-gun, Goryeong-eup, Geumsanjae, 25 Nov. 1990; 2♂♂, 4♀♀, Chanyong-gun, Jinjeon-myeon, 31 May 1991; 3♂♂, 1♀, Gyeongsangnam-do, Goserg-gun, Maam-myeon, 31 May 1991; all (ChNU), leg K.Y. Lim.

Remarks. Originally described from Southeastern Korea (Takakuwa, 1940), and this species is closely related to *S. coreanus* (Pocock, 1895). They might even as more material is available for a further study.

***Skleroprotopus coreanus* (Pocock, 1895)**

Material examined. 1♂, 1 juv. (ChNU), Gangwon-do, Inje-gun, Mt. Seolak, 1 Oct. 1990; leg.

K.Y. Lim.

Remarks. Originally described from southeastern part of Korea (Pocock, 1895, 1903). This species appears widespread not only throughout Korea but also quite common in the southern parts of Khabarovsk and Maritime provinces, Far East of Russia (cf. Mikhaljova, 1982, 1998a).

***Skleroprotopus laticoxalis laticoxalis* Takakuwa, 1942**

Material examined. 1♂, 1 fragment, Gyeongsangbuk-do, Goryeong-gun, Goryeong-eup, Geumsanjae, 25 Nov. 1990; 7♂♂, 2♀♀, 1 juv. Gyeongsangnam-do, Hamyang-gun, Anui-myeon, 27 April 1990; all (ChNU), leg. K.Y. Lim.

Remarks. This subspecies, described from North Korea and northeastern China (Takakuwa, 1942), differs from the sole other subspecies, *S. laticoxalis longus* Murakami and Paik, 1968, confined to several caves in South Korea (Murakami & Paik, 1968), by the absence of a long, slender, mesal process of the posterior gonopods.

Order Platydesmida

Family Andrognathidae

***Yamasinaium koreanum* Golovatch, 1981**

Material examined. 22♂♂, 23♀♀, 2juv., Jeollabuk-do, Muju-gun, Muju-resort, 28 April 1991; 3♂♂, 2♀, 1juv., Namwon-gun, Mt. Jiri, 12 May 1991; 1♀, Seonyu-fall, 30 June 1991; 1♂, Muju-gun, Mt. Deokyu, 10 June 1991; 1♀, Jinan-gun, Unilam, 6 Aug. 1993; all (ChNU), leg. K.Y. Lim.

Remarks. This species has hitherto been reported only from North Korea, its terra typica (Golovatch, 1981; Mikhaljova *et al.*, 2000). It is new to the fauna of South Korea.

Order Chordeumatida

Family Megalotylidae

***Megalotyla* sp.**

Material examined. 1♀, Gangwon-do, Myeongju-gun, Seongsan-myeon, 1 Oct. 1990; 1juv., Jeollabuk-do, Iksan-si, Geumma-myeon, 1 July 1990; all (ChNU), leg. K.Y. Lim.

Remarks. This genus currently comprises two species in North Korea and the Russian Far East (Mikhaljova *et al.*, 2000). A more exact identification is impossible pending the discovery of male material. The genus is the first record of *Megalotyla* Golovatch, 1978 in South Korea.

Family Diplomaragnidae

***Pterygostegia* sp.**

Material examined. 2♀♀ (ChNU), Gangwon-do, Sern cave, 22 Jan. 1973; leg. J. NamGeung.

Remarks. This genus includes five species, of which only one has been recorded from North Korea, the others being confined to caves in Japan. This Korean species was originally described as *Diplomaragna korsosi* Shear, 1990 from the North Pyongyang Province (Shear, 1990), but it has been transfered to *Pterygostegia* (cf. Mikhaljova, 2000). This is the only species of *Pterygostegia* that dwells in forest litter, while all others, including yet another unidentified species recorded in a South Korean cave (cf. Murakami and Paik, 1968), are troglobites.

***Tokyosoma ronkayi* (Shear, 1990)**

Material examined. 1♂, Gangwon-do, Cheongseon-gun, Cheongseon-myeon, 18 Nov. 1990; 2♂♂, 3♀♀, Chungchengbuk-do, Jincheon-gun, Ochang, 18 Nov. 1990; 2♂♂, Jeollabuk-do, Iksan-si, Yeosan-myeon, 21 March 1990; 1♂, 2♀♀, 3juv., Namwon-si, Mt. Jiri, Jeongryangchi, 23 April 1990; 3♂♂, 2♀, Mt. Jiri, Manbokdae, 12 May 1991; 1♂, 1♀, 3 juv., Gyeongsangnam-do, Yangsan-gun, Tongdo temple, 18 Nov. 1990; 2♀♀, Hamyang-gun, Anui-myeon, 27 Oct. 1990; 5♂♂, Hadong-gun, Hadong-eup, 4 Nov. 1990; 1♂, 1♀, Uiryeong-eup, 18 Nov. 1990; 1♂, 1♀, 3juv., Ulju-gun, 24 Nov. 1990; 1♂, 1♀, Geoje-gun, Sadeug-myeon, Cheonggok, 31 March 1991; 4♂♂, 4♀♀, Hapcheon-gun, Myosan-myeon, 30 April 1991; 25♂♂, 24♀♀, Jeju-do, Mt. Halla, Seongpanak, 25 Oct. 1991; 4♀♀, Yeongsil, 25 Oct. 1991; 3♂♂, Jocheon-eup, 25 Oct. 1991; 2♂♂, 4♀♀, Sangumburi, 25 Oct. 1991; 8♀♀, Eeoseungsaeng, 26 Oct. 1991; 1♂, Sillye l-ri, 26 Oct. 1991; all (ChNU), leg K.Y. Lim.

Remarks. This species has originally been described as *Diplomaragna ronkayi* from the Kangwan Province, North Korea (Shear, 1990) and has recently been transfered to *Tokyosoma* (Mikhaljova, 2000). This is the first record of *T. ronkayi* in South Korea.

Interestingly, the body of new adult samples at hand is composed of 29 segments, not 32 as described from the single hitherto known holotype male of this species. Odd segment counts among Chordeumatida occur but very seldom, e.g., in the *Hyrcanian Persedicus* Mauries, 1982 (cf. Mauries, 1982), apparently being never more than infraspecific variation.

The record of the Japanese *Diplomaragna gracilipes* (Verhoeff, 1914) in South Korea (cf. Paik, 1958; Lim, 1988; Kim and Lim, 1995a, b) is likely to be a misidentification. Among the relatively abundant material of South Korean Diplomaragnidae housed in ChNU, no *D. gracilipes* material has been found. Superficially, most of the Diplomaragnidae species are rather uniform in habitus and gonopod configuration.

Order Polydesmida

Family Paradoxosomatidae

***Orthomorphella pekuensis* (Karsch, 1881)**

Material examined. 3♂♂, 2♀♀, Chungcheongbuk-do, Daejeon-si, Biram temple, 24 Sep. 1986; 7♂♂, 14♀♀, Cheongwon-gun, Buki-myeon, 29 Sep. 1990; 1♂, 2♀♀, Cheongwon-gun, 20 Oct. 1990; 3♂♂, 6♀♀, Ochang, 1 May 1994; 4♂♂, Jeollabuk-do, Iksan-si, Mt. Geumma, 10 July 1986; 15♂♂, 5♀♀, same locality, 15 Dec. 1986; 2♂♂, Samgi-myeon, 11 Nov. 1986; 7♀♀, Mt. Palbong, 2 Oct. 1987; 9♂♂, 8♀♀, Dongsan-dong, 24 May 1991; 2♂♂, 4♀♀, Jeonju-si, Chonbuk Univ., 28 Sep. 1990; 10♂♂, 3♀♀, Wanju-gun, Bibong-myeon, 22 July 1999; 1♀, Namwon-si, Mt. Jiri, 23 April 2000; 4♀♀, Jeollanam-do, Yeosu-si, Geomun Island, 21 July 1987; 12♂♂, 32♀♀, Chungcheongnam-do, Boryeong-gun, Jusan-myeon, 23 Sep. 1990; 1♂, 1♀, Jeju-do, Jocheon-eup, Gyorye, 25 Oct. 1991; 1♂, same locality, 3 April 1992; 1♂, 1♀, Jongdal, 26 Oct. 1991; 3♂♂, 3♀♀, Jeju-si, 1 May 1992 ; all (ChNU), leg K.Y. Lim.-3♂♂, 3♀♀ (IBSV), Gyeonggi-do, Suwon-si, Mt. Yogisan, 26 July 1997; leg. A.B. Egorov.

Remarks. This species is abundant and widespread all over the Korean peninsula and adjacent parts in China, also introduced to Japan through human agency (cf. Mikhaljova *et al.*, 2000).

***Oxidus gracilis* (C. L. Koch, 1847)**

Material examined. 7♂♂, 30♀♀, 46juv., Gangwon-do, Chuncheon-si, 1 June 1991; 5♂♂, 1♀, Chungcheongbuk-do, Danyang-gun, Guin temple, 24 Aug. 1993; 1♂, Chungcheongnam-do, Hongseong, 2 Sep. 1990; 1♀, Cheongwon-gun, Ungok-myeon, 2 Sep. 1990; 1♂, 1♀, Buki-myeon, 29 Sep. 1990; 1♂, 1♀, 3juv., Seosan-gun, 23 Sep. 1991; 3♂♂, 7♀♀, 4juv., Jeollabuk-do, Iksan-si, Ma-dong, 6 Sep. 1986; 3♂♂, 4♀♀, same locality, 10 July 1987; 1juv., Ungpo-myeon, 16 June 1990; 2♂♂, Geumma-myeon, 1 July 1990; 5♂♂, 4♀♀, Gunsan-si, Yeon Island, 18 Aug. 1987; 1♂, 1♀, 2juv., Seongsan-myeon, 2 Sep. 1990; 1♂, 1♀, 1juv., Buan-gun, Sangseo-myeon, 11 Nov. 1990; 5♂♂, 3♀♀, Jinan-gun, Jucheon-myeon, 6 Aug. 1993; 11♂♂, 6♀♀, Unilam, 6 Aug. 1993; 5♂♂, 8♀♀, Jeonju-si, Seohak-dong, 15 Aug. 1998; 67♂♂, 49♀♀, Chonbuk Univ., 25 Aug. 1998; 8♂♂, 7♀♀, Seosin-dong, 15 Aug. 1998; 1♂, 4♀♀, Jeollanam-do, Yeosu-si, Geomun Island, 21 July 1987; 3♂♂, 1♀, Sinan-gun, Heuksan Island, 3 Aug. 1991; 2♂♂, 3♀♀, Gyeongsangbuk-do, Sangju-gun, 25 July 1998; 1♂, Gyeongsangnam-do, Jinyang-gun, Jisu-myeon, 18 Nov. 1990; 4♂♂, 5♀♀, 11juv., Sacheon-gun, Jeongdong-myeon, 18 Nov. 1990; 17♂♂, 11♀♀, Geochang-gun, Anui valley, 20 July 1991; 1♂, Jeju-do, Mt. Halla., Seongpanak, 25 Oct. 1991; all (ChNU), leg K.Y. Lim.

Remarks. This subcosmopolitan species appears to be widespread both in Korean peninsula and the adjacent islands. East Asia seems to be the centre of origin for this species (cf. Mikhaljova, 1998a).

***Sichotanus eurygaster* Attems, 1898**

Material examined. 1♂, Gangwon-do, Inje-gun, Jinburyeong, 1 Oct. 1990; 1♂, Pyeongchang-gun, Soam-myeon, 1 Oct. 1990; 1♂, 1♀, Goseong-gun, 1 Oct. 1990; all (ChNU), leg K. Y. Lim. 1♂ (ChNU), Sang cave, 31 Oct. 1990; leg. J. NamGeung. 4♂♂, 5♀, Jeollabuk-do, Namwon-si, Mt. Jiri, 12 May 1991; 7♂♂, 12♀♀, Muju-gun, Muju-resort, 18 Sep. 1994; all (ChNU), leg. K.Y. Lim.

Remarks. Of the four species of the genus *Sichotanus* Attems, 1898 described to date, two have long been shown to represent junior subjective synonyms of *S. eurygaster* (cf. Mikhaljova, 1982). Apparently based on this, Jeekel (1988) suggested that the fourth formal congener, *S. longipes* Verhoeff, 1936, described from Korea (Verhoeff, 1936), be synonymized with *S. eurygaster* as well. This was why Mikhaljova (1998a) also treated *Sichotanus* as monospecific. However, it seems best to draw such conclusions based on a further study of type material only.

***Cawjeekelia pyongana* Mikhaljova and Kim, 1993**

Material examined. 1♂, Gyeonggi-do, Yangpyeong-gun, Gyaegun-myeon, 18 May 1991; 19♂♂, 8♀♀, Gangwon-do, Wernju-si, 1 Oct. 1990; 10juv., Inje-gun, Seoraksaengsu, 1 Oct. 1990; 2♂♂, 2♀♀, Chungcheongbuk-do, Yeongdong-gun, 28 Oct. 1990; 1♂, Jeollabuk-do, Iksan-si, Geumma-myeon, 23 May 1990; 1♀, same locality, 4 Dec. 1990; 9♂♂, 17♀♀, Gyeongsangbuk-do, Andong-gun, 28 Oct. 1990; 2♀♀, Yeongheung-gun, Jangsu-myeon, 28 Oct. 1990; all (ChNU), leg. K.Y. Lim.

Remarks. This species has hitherto been known only from the Northern Pyongan Province, North Korea (Mikhaljova and Kim, 1993). It is new to the fauna of South Korea. Two other Korean

species, *C. gloriosa* Golovatch, 1980 and *C. koreana* (Golovatch, 1980), are widely distributed in North Korea. And the latter also occurs in the southern part of the Russian Far East (cf. Mikhaljova, 1998a).

***Cawjeekelia iksana*, sp. nov.** 익산노래기(신칭) **(Fig. 1)**

Types. Holotype: 1♂ (ChNU), Jeollabuk-do, Iksan-si, 23 May 1990; leg. K.Y. Lim. Paratypes: 2♀♀ (ChNU), same locality, with holotype: 1♂ (ZMUM), 1♀ (IBSV), Jeollabuk-do, Namwon-si, Mt. Jiri, 12 May 1991; 1♂ (ChNU), Jeollanam-do, Yeochon-gun, 31 March 1991; 3♂♂ (ChNU), 1♂ (IBSV), Gyeongsangnam-do, Geoje-gun, Geoje Island, 31 March 1991; all leg. K.Y. Lim.

Material examined. 10juv., Gangwon-do, Inje-gun, Seoraksyaesu, 1 Oct. 1990; 2juv., Chuncheon-si, 1 June 1991; 7juv., Jeollabuk-do, Iksan-si, Ma-dong, 6 Nov. 1986; 4juv., Yeosan-myeon, Munsu temple, 3 Oct. 1987; 1♂, 3♀♀, Geumma-myeon, 10 April 1990; 3♂♂, Hwangdeong-myeon, 6 May 1990;1♂, Gunsan-si, Okgu, 18 Aug. 1987; 3juv., Jeongeup-si, Mt. Nyaejang, 27 Aug. 1987; 1♂, Namwon-si, Mt. Jiri, Jeongryeongchi, 10 Sep. 1990; 1♂, 1♀, same locality, 12 May 1991; 1♀, Jangsu-gun, Gyenae-myeon, 27 Oct. 1990; 1♂, Buan-gun, Sangseo-myeon, 11 Nov. 1990; 1♂, Jeollanam-do, Yeongam-gun, 11 Nov. 1991; 1♂, Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, 18 Nov. 1990; 2♂♂, 23♀♀, Geoje-gun, Cheongguk-myeon, 31 March 1991; 4♂♂, Geoje Island, 31 July 1991; 1♂, Jeju-do, Jeju-si, Eoseongsaeng, 26 May 1991; 1♂, 3♀♀, Jeju-si, 1 May 1992; 4♂♂, 1♀, Pyoseon-ri, 26 Oct. 1991; 2♂♂, Seogwipo-si, Beopseong-dong, 26 Oct. 1991; 1♂, Namjeju-si, Namwon, 26 Oct. 1991; all (ChNU), leg. K.Y. Lim.

Diagnosis. The species seems to be particularly closely related to *C. gloriosa* Golovatch, 1980, from North Korea, but differs in the larger body size, in shape of the gonopod tibiotarsus, presence of two outgrowths on solenophore.

Description. Male. Length 24-25 mm, width of midbody pro-and metazona 1.4 and 1.9 mm, respectively. Coloration generally brown, fore body portion and distal podomeres darker dorsally, venter somewhat light. Distal part of antenna dark brown.

Head sparsely setose on frons, subequal in width to somite 2. Somites 3 and 4 a bit narrower than both head and collum. Body broadest and parallel-sided on somites 6-16, onward very gently and gradually tapering. Antennae relatively short and stout, in situ reaching the midway of somite 3. Midbody paraterga moderately well-developed, yet set relatively high like in other congeners, bordered dorsally only. Paraterga of somite 2 below those of collum. Paraterga gradually rounded anteriorly, less so posteriorly, neither protruding caudad beyond hind tergal contour nor pointed beak-like. Pore-bearing paraterga equal to poreless ones, ozopores round and positioned well in front of paratergal caudal corner. Surface generally smooth, polished, mostly very delicately shagreened, considerably more coarsely shagreened to microgranulate only below paraterga. Axial suture untraceable. Metaterga with sparse medium-sized setae at anterior margin. Suture dividing pro-and metazona shallow, smooth. Tranverse metatergal sulcus starting already from somite 5, fully developed on somites 5-18, not reaching the bases of paraterga, missing on somite 19. Pleurosternal carinae strongly developed on somites 2-7. Epiproct relatively long, distinctly flattened dorsoventrally, apically slightly concave. Subanal scale semi-circular, with a pair of small,

setigerous, paramedian knobs at caudal margin. Sternites moderately densely setose, without modifications; setose lamina between coxae 4 large, broadly rounded, densely setose (Fig. 1, A).

Legs long, obviously incrassate; tarsal brushes present almost throughout, missing only on one last leg-pair.

Gonopods (Fig. 1, B-E) rather complex. Coxite setose distally, prefemora densely setose throughout. Femorite without evidence of torsion, considerably enlarged distally, with an oblique sulcus modestly demarcating postfemoral portion and with process b somewhat smaller in Jeonllabuk-do specimen (Fig. 1, F) than in Gyeongsangnam-do sample (Fig. 1, D). Solenophore slender, in situ directed laterad, somewhat coiled, distally serrate, with a long, slender, distally pointed lateral process (d) and two mesal outgrowths (i). Solenomerite moderately long, mostly sheathed by solenophore, distally with delicate setiform structures. Apex curved or coiled (Fig. 1, D, G).

Female. Length 25-26 mm, width of midbody pro- and metazona 1.6 and 2.0 mm, respectively. Legs without tarsal brushes. Pleurosternal carinae strongly developed on somites 1-3 only. Other nonsexual characters as in male.

Etymology. The specific epithet refers to the locus typicus.

Family Polydesmidae

***Epanerchodus kimi* Murakami and Paik, 1968**

Material examined. 2♂♂, 1♀ (ChNU), Chungcheongbuk-do, Danyang-gun, Gosu Cave, 20 Sep. 1975; leg. J. NamGeung.

Remarks. This endemic troglobitic species is widely distributed in caves of South Korea (Murakami and Paik, 1968).

***Epanerchodus bifidus* Takakuwa, 1954**

Material examined. 3♀♀, Gyeonggi-do, Hwacheon-gun, 30 Sep. 1990; 2♂♂, 9♀♀, Namyang-myeon, 21 April 1991; 1♂, 11♀♀, Paju-gun, Jeokseong-myeon, 17 May 1991; 9♂♂, 7♀♀, 2juv., Hoeam temple, 17 May 1991; 12♂♂, 1♀, Pocheon-gun, 17 May 1991; 2♂♂, Yangpyeong-gun, Yangpyeong-eup, 18 May 1991; 2♂♂, 22♀♀, Namyangju-gun, Hwaeun-myeon, 18 May 1991; 3♂♂, 10♀♀, Anseong-gun, Iljuk-myeon, 18 May 1991; 2♂♂, 4juv., Gapyeong-gun, Mt. Unjeok, 18 May 1991; 1♂, 12♀♀, Incheon-si, Ganghwa-gun, Jeondeung temple, 21 April 1991; 8♀♀, Gangwon-do, Hwacheon-gun, 1 Sep. 1990; 1♂, 3♀♀, Yeongwol-gun, Buk-myeon, 3 July 1990; 2♂♂, 5♀♀, Nam-myeon, 3 Nov. 1990; 1♂, 11♀♀, Wonju-si, 1 Oct. 1990; 1juv., Yangyang-gun, Naksan temple, 1 Oct. 1990; 5♂♂, 2♀♀, Samcheok-gun, Wondeok-eup, 3 Nov. 1990; 1♂, Goseong-gun, Goseong-eup, 1 Oct. 1990; 5♂♂, 10♀♀, 2juv., Inje-gun, Seoraksaengsu, 1 Oct. 1990; 7♂♂, 11♀♀, Chungcheongbuk-do, Boeun-gun, Mt. Songri, 11 Aug. 1990; 2♂♂, 11♀♀, Yeongdong-gun, Geumgang-resting place, 28 April 1991; 18♂♂, 4♀♀, Eumseong-gun, 29 Sep. 1990; 5♂♂, 4♀♀, same locality, 31 May 1991; 1♂, Jungwon-gun, Sancheok-myeon, 30 Sep. 1990; 10♂♂, 6♀♀, Sotae-myeon, 30 Sep. 1990; 3♂♂, Chungcheongnam-do, Yeongdong-gun, Oeun-myeon, 28 Oct. 1990; 1♂, 2♀♀, Jeollabuk-do, Iksan-si, Yeosan-myeon, Mt. Cheonho, 1 Sep. 1986; 6♂♂, same locality, 19 Sep. 1986; 1♀, same locality, Munsu temple, 3 Oct. 1987; 16♀♀, Geum-

ma-myeon, Mt. Yonghwa, 10 July 1987; 1juv., Geumma-myeon, Mt. Geumma, 1 June 1991; 1 ♂, 6♀♀, Jeonju-si, Mt. Moak, Daewon temple, 9 Oct. 1986; 2♂♂, Jinan-gun, Bugwi-myeon, 27 Oct. 1990; 1♂, 1♀, 1juv., Jinan-eup, cheon-ri, 27 Oct. 1990; 1♂, 1♀, Namwon-si, Mt. Jiri, 12 May 1991; 1♂, 1♀, Seonyu-fall, 30 June 1991; 1♂, Jeollanam-do, Wando-gun, Wando Island, 29 April 2000; 1♂, 2♀♀, 3juv., Gyeongsangbuk-do, Sangju-gun, 28 Oct. 1990; 8♂♂, 20♀♀, Cheongri-myeon, 28 Oct. 1990; 5♂♂, 1juv., Mungyeong, 28 Oct. 1990; 8♂♂, 15♀♀, 6juv., Geumreung-gun, 28 Oct. 1990; 6♂♂, 14♀♀, Imo-myeon, 28 Oct. 1990; 1♂, 3♀♀, Gyeongsangnam-do, Hamyang-gun, Anui-myeon, 27 Oct. 1990; 6♂♂, 8♀♀, Jeju-do, Jocheon, 25 Oct. 1991; 1♂, 1♀, Sinrye, 26 Oct. 1991; all (ChNU), leg. K.Y. Lim. -2♀♀, Gyorye, 3 April 1992; 6♀♀, Jeju-si, Mt. Halla, 26 April 1992; 2♂♂, 16♀♀, Jeju-si, 1 May 1992; all (ChNU), leg. J. C. Baek.

Remarks. This species is widespread all over Korea as well as in the adjacent parts of South Japan and Maritime Province, Far East of Russia. In Russia, some populations display colour dimorphism, i.e. not only the typical brightly pinkish form with characteristic spots and bands on the metazonites but also a pinkish beige form lacking any markings on the metaterga (cf. Mikhaljova, 1998b). Among the fresh Korean samples at hand, males have been spotted which are smaller in size than usual, only 15-17 mm long, with the coloration varying from grey-brown with characteristic but indistinct spots on the metazona to pink-brown with a distinct dorsal pattern. Gonopod structure appears to display certain variation as well, i.e., in width of the postfemoral process and in length of the additional branch. The subanal scale varies from rounded to

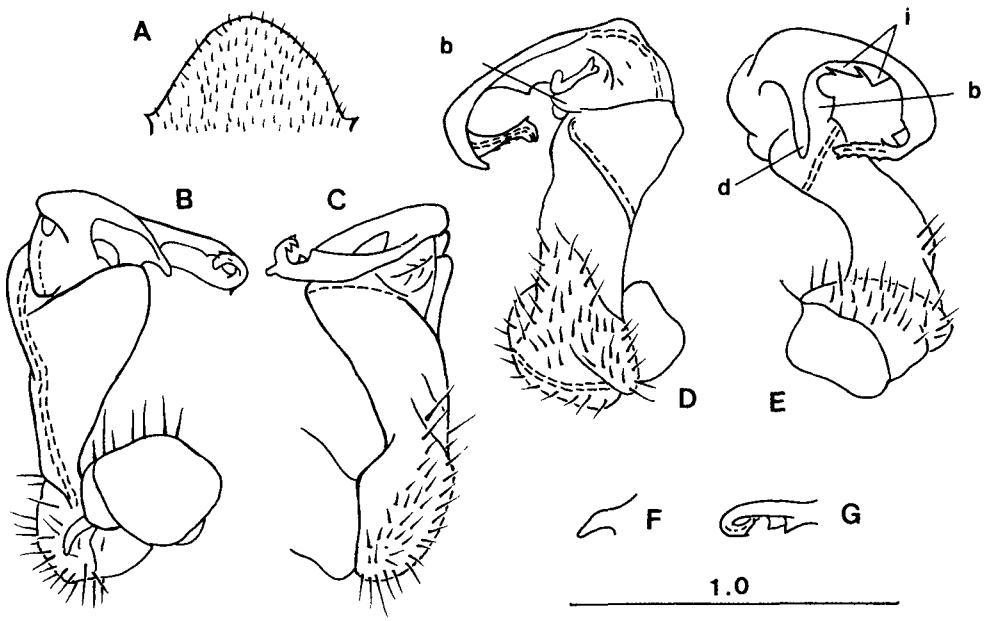

Fig. 1. *Cawjeekelia iksana* sp. n. (♂ paratypes). A, sternal lamina between coxae 4 (caudal view); B-E, gonopod: B, caudomesal view; C, lateral view; D, front view; E, subventral view); F, gonopod process b of i Jeonllabuk-do sample (front view); G, distal part of gonopod tibiotarsus of a Jeonllabuk-do sample (front view). Scale in mm.

subquadrate caudally. In other words, inclinations to morphism long noted in some *Epanerchodus* Attems, 1901 in general (cf. Mikhaljova, 1998a), find support in *E. bifidus* as well.

Family Haplodesmidae

***Rhipidopeltis sinuata* Miyosi, 1958**

Material examined. 1♂, Gangwon-do, Hangyeryeong, 6 April 1991; 1♀, Jeollabuk-do, Jerngeup-si, 27 April 1991; 1 juv., Buan-eup, 17 Aug. 1991; ♀, 1 fragment, Jeollanam-do, Yerngam-gun, Yerngam-eup, 21 July 1991; 1 juv., Sinan-gun, Heuksan Island, 3 Aug. 1991; 2 ♀♀, Jeju-do, Yerngsil, 28 May 1992; all (ChNU), leg. K.Y. Lim.

Remarks. Both the genus *Rhipidopeltis* Miyosi, 1958 and its sole, and type, species *R. sinuata* have hitherto been known only from the type locality in Japan (Miyosi, 1958). The family Haplodesmidae are recorded in Korea for the first time.

ACKNOWLEDGEMENTS

We are very much obliged to Dr. S. I. Golovatch (Moscow) for his critical review of the manuscript.

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RECEIVED: 14 August 2000
ACCEPTED: 20 September 2000

남한의 노래기상(노래기강)

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요 약

남한의 노래기류 *Cawjeekelia iksana* sp. nov.을 신종으로 기재하고, *Rhipidopeltis sinuata* (Haplodesmidae)와 *Hyleoglomeris emarginata*를 한국 미기록종으로, *Megalotyla*속과 *Cawjeekelia pyongana*, *Tokyosoma ronkayi* 그리고 *Yamasinaium koreanum*을 남한 미기록종으로 보고한다.