

Some Ground Beetles (Coleoptera, Carabidae) from Korea (16)

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韓國產 먼지벌레 (16)

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ABSTRACT

Herein, 20 species of the ground beetles are reported from Korea. Of these, 5 species, *Bembidion serorum* (Netolitzky, 1934), *Bembidion gebleri nakanei* (Jedlička 1965), *Mastax thermarum egorovi* (Lafer 1973), *Pterostichus jankowskyi* (Tschischérine 1897) and *Pterostichus longinquus* Bates, 1873 are listed for the first time from the Korean Peninsula. *Bembidion shimoyamai* reported by Paik (1998) and *Microlestes imaii* reported by Paik and Jung (2003) are misidentifications of *Bembidion grapii* and *M. schroederi* Holdhaus, respectively.

Key words : Coleoptera, Carabidae, fauna, new record, misidentification, South Korea

In this paper 20 species of the carabid beetles from South Korea are reported with some additional collection data. Of these, 5 species are the first reports for the Korean Peninsula.

Materials collected by the authors were examined and the specimens are deposited in Department of Agricultural Biology, Suncheon National University (SCNAE). Also we included some examined specimens from the Department of Sericulture and Entomology Resources, Sangju National University, Sangju (SJNAE) and School of Bioscience & Biotechnology, Chungnam National University, Daejeon City (CNNBE). The area codes of China are after Löbl & Smetana (2003).

We thank Dr. G. Sh. Lafer (Vladivostok) and Dr. S. Morita (Japan) who provided the specimens for comparison. We are also grateful to Dr. Ahn, Kee-Jeong, Chungnam National University and Dr. Park, Jong-Kyun, Sangju National University for their help. They also offered the valuable specimens.

RESULTS

(01) *Bembidion (Asioperyphus) serorum* Netolitzky, 1934

초생강변먼지벌레 (신칭)

Bembidion serorum Netolitzky, 1934, Koleopt. Rundsch., 20 (1/2): 68 (China: Kansu).

Bembidion (Peryphus) semilunium Netolitzky: Paik, 1997, Korean J. Soil Zool., 2(1): 20 (Korea). Misidentification.

Bembidion (Peryphus) semilunium muchei Jedlička: Kwon & Lee, 1986, Ins. Koreae, 6: 22 (Korea). Misidentification.

Bembidion (Peryphus) semilunium serorum Netolitzky: Netolitzky, 1943, Koleopt. Rdsch., 29(1/3): 33.

Bembidion (Asioperyphus) semilunium serorum Netolitzky: Marggi *et al.* in Löbl & Smetana, 2003, Cat. Pal. Coleopt., 1: 244.

Materials examined. 1 ♂, 1 ♀, 31-V-2004, Dopari, Sutong-ri, Buri-myeon, Geumsan-gun, CN (SCNAE); 1 ♂, 3 ♀, 20-V-2005, Gumi-ri, Yeongdeok-eup, Yeongdeok-gun, GB (SCNAE); 3 ex., 23-V-1981, Mt. Suri-san, near Suweon, GG

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(SCNAE); 5 ex., 26-V-2001, Gwangpyeong-ri, Hadong-eup, Hadong-gun, GN (SCNAE); 1 ♂, 1 ♀, 14-VI-2004, Suhang, Suhang-ri, Jinbu-myeon, Pyeongchang-gun, GW (SCNAE); 1 ♂, 1 ♀, 15-VI-2004, Meonnaegol, Yuchon-ri, Gandong-myeon, Hwacheon-gun, GW (SCNAE); 1 ♀, 12-V-2005, Masan, Sasan-ri, Jeoksang-myeon, Muju-gun, JB (SCNAE); 1 ♀, 12-V-2005, Hadong, Donghwa-ri, Beonam-myeon, Jangsu-gun, JB (SCNAE); 2 ex., 26-V-2004, Gajeong-naru, Songjeong-ri, Ogok-myeon, Gokseong-gun, JN (SCNAE); 1 ex., 19-IX-2004, Aprok, Aprok-ri, Ogok-myeon, Gokseong-gun, JN (SCNAE); 1 ♀, 20-VI-2002, Gurye-eup, Gurye-gun, JN (SCNAE).

Distribution. Korea (North, Central, South), China (FUJ, GAN), Russian Far East.

Notes. New to South Korea. Listed from Korea by Kwon & Lee (1986) as *B. semilunium muchei* Jedlička, but their material has been a misidentification of *B. serorum*. Several specimens have been deposited in Kyungpuk National University under the name of *B. semilunium muchei*. The 1st author visited Sangju National University (2004) to verify *B. (Peryphus) semilunium semilunium* from Mt. Changbaishan, China, listed by Park *et al.* (2001, *Insecta Koreana*, 18(2): 205) but their material was also a misidentification of this species.

Jedlička (1961) notes that the *B. semilunium* Netolitzky (1914, *Ent. Mitteil.*, 3: 170, from Japan) occurs in Korea (Gensan vor., now North Korea), but his material is probably identical to *B. serorum*. Also, Marggi *et al.* (in Löbl & Smetana 2003) notes that the subspecies *muchei* Jedlička (1961, *Acta Ent. Mus. Nat. Prag.*, 34: 157, from Amur) occurs in the North Korea, but could not yet trace the origin. This record is probably an error of *B. serorum*.

Body 6.10-6.30 mm in length, head and thorax black with greenish lustre. Elytron black with lunula patch. Maxillary palpus, 1st-3rd segments of antenna, and legs yellow or light brownish yellow. Femur of Japanese *B. semilunium* dark brown and likely not to occur in Korea. Adults are found at river beds or water sides of valley from May. Widely distributed from South Korea except Jeju (Jeju Island), but not common.

Bembidion serorum is morphologically very similar to the Japanese *B. semilunium* and *B. bandotaro* Morita. This species has been considered as a subspecies of *B. semilunium* by several authors. For more information, see Morita (1991). A new revision of the East Asian species of the genus *Bembidion* is highly desirable. Several South Korean species await description.

(02) *Bembidion (Plataphus) gebleri nakanei* Jedlička, 1965
남작강변면지벌레 (신칭)

Bembidion (Plataphus) nakanei Jedlička, 1965, *Ent. Abh.*, 32 (7): 113 (Japan).

Bembidion (Plataphus) gebleri persuasum natio *edai* Fassati, 1954, *Acta. Soc. ent. Cech.*, 50: 83, fig. 7 (Japan: Kamikochi).

Bembidion (Plataphus) persuasum edai Fassati: Nakane, 1963, *Icon. Ins. Japon. Col. nat. ed.*, 2, p. 28, pl. 14, fig. 23; Jedlička, 1965, *Ent. Abh.*, 32: 113.

Bembidion (Plataphus) gebleri edai Fassati: Morita, 1989, *Elytra*, Tokyo, 17(1): 25.

Bembidion (Plataphus) gebleri nakanei Jedlička: Marggi *et al.* in Löble & Smetana, 2003, *Cat. Pal. Coleopt.*, 1: 265.

Materials examined. 1 ♂, 1 ♀, 14-VI-2004, Baekcheon, Daehyeon-ri, Seokpo-myeon, Bonghwa-gun, GW (SCNAE); 1 ex., 12-VIII-2001, Mt. Cheong-ok-san, Daehyeon-ri, Seokpo-myeon, Bonghwa-gun, GB (SCNAE); 1 ex., 23-VII-2001, Eusin, Mt. Jirisan, Hadong-gun, GN (SCNAE); 4 ex., 12-VIII-2001, Jungsan-ri, Mt. Jirisan, Sancheong-gun, GN (SCNAE); 2 ex., 23-VIII-1997, Baekmudong, Mt. Jirisan, Hamyang-gun, GN (SCNAE); 3 ♂, 3 ♀, 18-VIII-2005, Eusin, Mt. Jirisan, Hwagye-myeon, Hadong-gun, JN; 1 ♀, 2-VIII-2005, Misan-ri, Sangnam-myeon, Inje-gun, GW (SCNAE); 2 ♂, 2 ♀, 3-VIII-2005, Myeongae-ri, Nae-myeon, Hongcheon-gun, GW (SCNAE); 1 ♀, 1 ♂, 25-V-2002, Sogeumgan, Mt. Odaesan, Jinbu-myeon, Pyeongchang-gun, GW (SCNAE); 1 ♀, 12-V-2005, Tookdong, Yang-ak-ri, Gyebuk-myeon, Jangsu-gun, JB (SCNAE); 3 ♀, 3 ♂, 14-V-2004, Samgong-ri, Seolcheon-myeon, Muju-gun, JB (SCNAE); 1 ex., 18-VI-2002, Cheongso-ri, Suncheon-si, JN (SCNAE); 1 ex., 1-VIII-2002, Nonsil, Mt. Baek-un-san, Gwangyang-gun, JN (SCNAE); 10 ex., 26-V-2001, Eochi, Mt. Baek-un-san, Gwangyang-gun, JN (SCNAE); 10 ex., 27-VII-2001; 5 ex., 7-IX-2001, Piagol, Mt. Jirisan, Gurye-gun, JN (SCNAE); 2 ex., 30-VII-1997, Mt. Jirisan (SCNAE).

Distribution. Korea (Central, South), Japan (Honshu).

Notes. New to South Korea. First record for the Korean Peninsula by Kirschenhofer (1997, *Annls hist.-nat. Mus. natn. hung.*, 89: 104) as *B. gebleri* Gebler from North Korea but not clear as far as subspecies is concerned.

This subspecies is widely distributed in South Korea. Occurs under stones on the stream or water sides of mountain valleys. The other subspecies, *gebleri* (Gebler) occurs in North Korea (Marggi *et al.* in Löble & Smetana 2003). Comparing with

Ussurian and Japanese species, the South Korean specimens differ from Ussurian subspecies *persuasum* Netolitzky (1938, Proc. R. ent. Soc. London, (B), 7: 38, from Wladiwostok). It fits to the description of Japanese subspecies *nakanei* (= *edai* Fassati, sensu Morita, 1989). Body 4.0 mm in length, black with strong blue lustre and this characteristic separates the subspecies from others.

Dr. G. Sh. Lafer (Vladivostok) kindly compared with the Ussurian subspecies *persuasum* Netolitzky. Also, thank to Dr. Morita, Japan who offered the Japanese specimens for comparing.

The following simple key is rather easily distinguishable each other. Refer to Morita (1989) for more detail.

- 1 (2) Elytral striae relatively deep; body black with blue tinge; elytra oblong-oval, maximum width of elytron behind middle. *B. gebleri gebleri* Gebler
- 2 (1) Elytral striae relatively fine.
- 3 (4) Body black with weakly bluish tinge, elytra often with faint reddish brown to reddish; maximum width of elytron behind middle. *B. gebleri persuasum* Netolitzky
- 4 (3) Body blackish blue, with strong blue lustre, shiny; maximum width of elytra at middle.
..... *B. gebleri nakanei* Jedlička (= *edai* Fassati)

(03) *Bembidion* (sg. ?) *grapii* Gyllenhal, 1827

참강변면지벌레

Bembidium grapii Gyllenhal, 1827, Ins. Suec. (1), 4: 403 (Lapponia).

Metallina planicollis Motschulsky, 1860 in Schrenck's Reisen Amurl., 2: 91 (Kamtschatka). Treated as junior synonym of *grapii* by Csiki, 1928: 98. Other synonyms omitted.

Bembidion shimoyamai Habu: Paik, 1998, Korean J. Soil Zool., 3(1): 2 (S. Korea). Misidentification.

Bembidion grapei Gyllenhal: Csiki, 1928, Coleopt. Cat., 97: 98 (unjustified emendation); Lindroth, 1963, Opusc. Ent., Suppl., 24: 319.

Bembidion grapei var. *planicolle* Motschulsky: Yano, 1941, Nippon no Kochu, 4(1): 25 (Korea).

Bembidion (Peryphus) grapei planicollis Ménétries: Kwon & Lee, 1986, Ins. Koreana, 6: 21 (Korea).

Bembidion (Peryphus) grapei Gyllenhal: Lindroth, 1940, Noturae Ent., 19 [1939]: 77; Netolitzky, 1943, Koleopt. Rundsch., 29(1/3): 39; Jedlička, 1965, Ent. Abh., 32(7): 137; Lindroth, 1986, Fauna Scand., 15(1): 188.

Bembidion (Ocydromus) grapei Gyllenhal: Kryzhanovskij et al., 1995, Checklist of the Ground beetles of Russia., p. 89.

Bembidion (Ocydromus s. l.) *grapii* Gyllenhal: Lorenz, 2005, Nomina Carabidarum, 2nd ed., p. 478.

Bembidion (sg. ?) *grapii* Gyllenhal: Marggi et al. in Löbl & Smetana, 2003, Cat. Pal. Coleopt., 1: 271 (Korea).

Materials examined. 1 ♀ (teneral), 25-VII-1990, Mt. Halla, JJ (SCNAE); 1 ♂, 1 ♀, 30-VII-1997, Eumjeong, Mt. Jirisan, Hamyang-gun, GN (SCNAE); 1 ♀, 20-VII-2001, Mt. Pal-yeongsan, Goheung-gun, JN (SCNAE); 1 ♀, 14-VII-1995, Mt. Baekunsan, Jinsang-myeon, Gwangyang-si, JN (SCNAE); 1 ♀, 4-VI-1995, Suncheon-si, JN (SCNAE).

Distribution. Korea (North, Central, South), Russia (Siberia, Far East), Kazakhstan, Europe, North America.

Notes. The subgeneric position of this species is unclear. Most authors treated it as subgenus *Peryphus* Dejean (1821, Catalogue des Coléoptères, p. 17).

Record for the Korean Peninsula by Yano (1941) as *B. grapei* var. *planicolle* Motschulsky. The distribution of this species in southern part of the Korean Peninsula (including Jeju Island) confirmed. Widely distributed including Jeju Island but rarely found.

Later, Paik (1998) recorded *B. shimoyamai* Habu from South Korea, however, a misidentification of this species when compared with Ussurian species, *B. grapii*. Thank to Dr. G. Sh. Lafer, Vladivostok offered Ussurian specimens for comparing.

(04) *Chlaenius* (*Lissauchenius*) *rufifemoratus lynx*

Chaudoir, 1856 애쌍점무늬면지벌레

Chlaenius lynx Chaudoir, 1856, Bull. Soc. Nat. Mosc., 29(3): 199 (China); Chaudoir, 1876, Ann. Mus. Civ. Genov., 8: 52; Kolbe, 1886, Archiv f. Naturg., 52: 173 (Korea); Kano, 1924, Ins. world (Konchusekai), 28(326): 349 (Korea); Yano, 1941, Nippon no Kôchû, 4(1): 35 (Korea).

Chlaenius (Chlaenius) lynx Chaudoir: Csiki, 1931, Col. Cat., 115: 961 (Korea); Wu, 1937, Cat. Ins. Sinensium, 3: 142 (Korea).

Chlaenius bimaculatus var. *lynx* Chaudoir: Andrewes, 1923, Trans. Ent. R. ent. Soc. London, p. 462-463; Andrewes, 1924, Ann. Mag. Nat. Hist., (9), 13: 468.

Chlaenius bimaculatus lynx Chaudoir: Habu, 1982, Ent. Rev. Japan, 37(1): 1-5 (Korea).

Chlaenius (Ilaenus) bimaculatus lynx Chaudoir: Kwon & Lee, 1986, Ins. Koreana, 6: 45 (Korea); Nakane, 1986, Nature & Insects, 21(2): 23.

Chlaenius (Lissauchenius) rufifemoratus lynx Chaudoir: Man-

dl, 1978, Entomologica Basiliensia, 3: 277 (*rofemoratus*); Mandl, 1992, Ann. Naturhist. Mus. Wien, 93(B): 69; Kirschenhofer in Löbl & Smetana, 2003, Cat. Pal. Coleopt., 1: 353.

Chlaenius (Lissauchenius) bimaculatus lynx Chaudoir: Lorenz, 2005, Nomina Carabidarum (2nd. ed.), p. 610; Lorenz, 2005, Systematic List of Ground Beetles (2nd. ed.), p. 329.

Materials examined. 1 ♀, 23-VIII-1998, Sosari, Ye-ri, Is. Heuksando, JN (SCNAE); 1 ♂, 7-VI-1993, Suncheon-si, JN (SCNAE); 1 ♂, 9-X-1989, Suncheon-si, JN (SCNAE); 1 ♀, 27-VI-1988, Suncheon-si, JN (SCNAE); 1 ♂, 2-VII-1988, Suncheon-si, JN (SCNAE); 1 ♀, 20-IX-1987, Suncheon-si, JN (SCNAE); 1 ♀, 10-IX-1987, Suncheon-si, JN (SCNAE).

Distribution. Korea (South), Japan (Ryukyus), China (FUJ, HUB, SCH, YUN), Taiwan.

Notes. First record for the Korean Peninsula by Kolbe (1886) as *C. lynx*. The distribution of this species confirmed from southern part of the Korean Peninsula for the first time.

Body 11-12 mm in length, head and pronotum green with purple lustre. Elytron black with a tint of metallic blue. Frons, labial palpus, and legs yellowish brown. Head slightly flat. Last segment of labial palpus in male swollen. Similar to *C. posticalis* (노랑무늬먼지벌레), but *C. posticalis* has no hair on the pronotum. In *C. rufifemoratus lynx*, punctures on the prothorax are small and sparse resulting in smooth appearance except at the base.

Belongs to subgenus *Lissauchenius* MacLeay, 1825, but Habu (1987) treated as *bimaculatus*-species group (= *Ocybatoides* Jeannel, 1949) by the shape of female genitalia. He did not divide into the subgenera of this very diverse genus *Chlaenius*. The Korean species of this genus highly awaits further study.

The original spelling of species is *rufifemoratus*, later Csiki (1931: 936) unnecessary emended to *rufofemoratus*.

On the other hand, Kwon & Lee (1986, Ins. Koreana, 6: 45) reported *C. bioculatus* Chaudoir (1856, Bull. Soc. Nat. Mosc., 29: 198) from Korea for the first time. This species, however, probably has been a misidentification of this species or *C. posticalis*. The first author could not find any specimens of *C. bioculatus* among large collections which are deposited in the Kyungpuk National University.

(05) *Diplous (Diplous) sibiricus* (Motschulsky, 1844)

애개천먼지벌레

Patrobus sibiricus Motschulsky, 1844, Mém. Acad. Sci. St.-

Petersb., 5: 128 (Siberia).

Diplous caligatus Bates, 1873, Trans. R. ent. Soc. Lond., p. 294 (Japan); Jedlička, 1932, Časopis. Čsl. Spol. Ent., 29(1): 42; Kühnelt, 1941, Ann. Naturh. Mus. Wien, 51: 157; Habu, 1951, Kontyû, 19(2): 69-70. Reduced to subspecies of *D. sibiricus* Motschulsky by Lafer (1989: 129).

Diplous caligatus f. *atratus* Habu, 1951, Kontyû, 19(2): 70 (Japan). Treated as a subspecies of *D. sibiricus* by Lafer, 1989: 129.

Diplous caligatus f. *yezoensis* Habu, 1941, Entomol. World [Konchukai], 9(91): 654 (Japan: Tokyo). Treated as a subspecies of *D. sibiricus* by Zhamotajlov, 1996: 118.

Diplous tesari Jedlička, 1951, Acta Ent. Mus. Nat. Pragae, 27: 209 (Japan). Synonymized of *D. sibiricus caligatus* Bates by Zhamotajlov, 1996: 118.

Diplous sibiricus (Motschulsky): Jedlička, 1932, Časopis. Čsl. Spol. Ent., 29(1): 42; Kühnelt, 1941, Ann. Naturh. Mus. Wien, 51: 157; Zhamotajlov, 1996, Zoosyst. Rossica, 5(1): 118; Kirschenhofer, 1997, Annl. hist.-nat. Mus. natn. hung., 89: 107 (N. Korea).

Diplous sibiricus sibiricus Motschulsky: Lafer, 1989, Key Ins. Russian Far East, (3), 1: 129 (N. China); Zhamotajlov & Sciaky, 1996, Coleoptera (Schwanfelder Coleopt. Mitt.), 20: 39; Zhamotajlov, 1996, Zoosyst. Rossica, 5(1): 123.

Materials examined. 1 ♂, 1 ♀, 13-V-2005, Sangdong-ri, Namil-myeon, Geumsan-gun, CN (SCNAE); 1 ♂, 1 ♀, 31-V-2004, Sutong-ri, Buri-myeon, Geumsan-gun, CN (SCNAE); 1 ♂, 1 ♀, 21-V-2005, Samgeun-ri, Seo-myeon, Uljin-gun, GB (SCNAE); 1 ♂, 1 ♀, 21-V-2005, Deokgu-ri, Buk-myeon, Uljin-gun, GB (SCNAE); 1 ♂, 1 ♀, 21-V-2005, Bulyeong valley, Uljin-eup, Uljin-gun, GB (SCNAE); 1 ♂, 1 ♀, 21-V-2005, Suha-ri, Subi-myeon, Yeongyang-gun, GB (SCNAE); 1 ♂, 1 ♀, 20-V-2005, Sinan-ri, Jipung-myeon, Yeongdeok-gun, GB (SCNAE); 1 ♂, 1 ♀, 20-V-2005, Gumi-ri, Yeongdeok-eup, Yeongdeok-gun, GB (SCNAE); 1 ♂, 1 ♀, 20-V-2005, Samgye-ri, Changsu-myeon, Yeongdeok-gun, GB (SCNAE); 1 ♂, 1 ♀, 14-VI-2004, Daehyon-ri, Seokpo-myeon, Bonghwa-gun, GB (SCNAE); 1 ♂, 1 ♀, 26-V-2002, Mt. Cheonryangsan, Bonghwa-gun, GB (SCNAE); 3 ex., 24-IX-1998, Jungsan-ri, Mt. Jiri-san, Sancheong-gun, GN (SCNAE); 2 ex., 12-IX-1998, Daeseong-ri, Mt. Jiri-san, Hadong-gun, GN (SCNAE); 1 ♂, 1 ♀, 22-V-2005, Imgye-ri, Imgye-myeon, Jeongseon-gun, GW (SCNAE); 1 ♂, 1 ♀, 14-VI-2004, Yucheon-ri, Buk-myeon, Jeongseon-gun, GW (SCNAE); 1 ♂, 1 ♀, 14-VI-2004, Deoksong-ri, Jeongseon-eup, Jeongseon-gun, GW (SCNAE); 1 ♂, 1 ♀, 14-VI-2004, Sukam-ri, Bukpyeong-myeon, Jeong-

seon-gun, GW (SCNAE); 1 ♂, 1 ♀, 14-VI-2004, Suhang-ri, Jinbu-myeon, Pyeongchang-gun, GW (SCNAE); 1 ♂, 1 ♀, 13-V-2005, Sangsami-ri, Hajang-myeon, Samcheok-si, GW (SCNAE); 1 ♂, 1 ♀, 12-V-2005, Jangbaek-ri, Muju-eup, Muju-gun, JB (SCNAE); 1 ♂, 1 ♀, 12-V-2005, Donghwa-ri, Beonam-myeon, Jangsu-gun, JB (SCNAE); 1 ♂, 1 ♀, 26-V-2004, Songjeong-ri, Ogok-myeon, Gokseong-gun, JN (SCNAE); 1 ♂, 1 ♀, 26-V-2004, Chimgok-ri, Ogok-myeon, Gokseong-gun, JN (SCNAE); 1 ♂, 1 ♀, 22-V-2004, Uncheon-ri, Ganjeon-myeon, Gurye-gun, JN (SCNAE); 1 ♂, 1 ♀, 22-V-2004, Jukma-ri, Muncheok-myeon, Gurye-gun, JN (SCNAE); 1 ♂, 1 ♀, 10-IV-2004, Woeljeon-ri, Muncheok-myeon, Gurye-gun, JN (SCNAE); 1 ♂, 1 ♀, 10-IV-2004, Sinweol-ri, Gurye-eup, Gurye-gun, JN (SCNAE).

Distribution. Korea (North, Central, South), Japan, China (GAN, JIL), Russia (East Siberia, Far East), Mongolia.

Notes. First record for North Korea by Kirschenhofer (1997) as *D. sibiricus* (Motshulsky). The subspecies *caligatus* listed from Korea, but it has been a misidentification of nominotypical subspecies by the Korean reporters. Divided into several forms (Lafer 1989, Zamotajlov 1996). The nominotypical subspecies occurs widely distributed in South Korea except Jeju (Jeju Island). Occurs along the margin of streams, often infested with numerous mites. For more detail of this genus and separation of subspecies, see Zamotajlov (1996).

Body 11-14 mm in length, flat, and black. The 3rd antennal segment about 1.2 times longer than 4th. Pronotum slightly elongated and the edges end with almost right angles. Newly eclosed adults seen often from April at moist flat land or low hills and watersides of river and valleys.

The species distributed in South Korea with light brown legs is considered to be subspecies *sibiricus* s. str. The subspecies *caligatus* Bates (1873, Trans. R. ent. Soc. Lond., p. 294) has dark brown or black tibia. The subspecies *atratus* Habu (1951, Kontyû, 19: 70) has legs entirely black and has been reported from Hokkaido, Japan. The first author saw some specimens of *D. sibiricus caligatus* from China (2 ex., 29-VIII-2006, Changbaishan, 1,800 m; 1 ♀, 29-VIII-2006, Erdao-Baihe, Jilin). Both populations from South Korea and adjoining region of China (Changbaishan) agree with the main features of this subspecies. This subspecies must be distributed in the high mountain of northern part of the Korean Peninsula.

In the mean time, the specimen deposited at the Jeju Folklore and Natural History Museum and Jeju University and reported by W.-T. Kim (1984) and Y.I. Lee *et al.* (1985) was very small bodied *Archipatrobus flavipes* (Motschulsky, 1864)

instead of this species.

(06) *Dyschirius (Dyschiriodes) aeneus ovicollis* Putzeys, 1873
알가슴먼지벌레

Dyschirius ovicollis Putzeys, 1873, Ann. Soc. ent. Belg., 16: 14. (China: Shanghai); Paik & Jung, 2004, Korean J. Soil Zool., 9(1/2): 34 (Jeju).

Materials examined. 1 ex., 24-V-1997, Songjeong-ri, Yanghwa-myeon, Buyeo-gun, CN (SCNAE); 1 ex., 24-VII-1984, Mt. Gyeryongsan, Daejeon City (SCNAE); 2 ex., 6-VI-2000, Is. Ulleungdo, GB (SCNAE); 2 ex., 12-IX-2002, Suncheon-si, JN (at light) (SCNAE); 1 ex., 5-VIII-1995, Eochi, Jinsang-myeon, Gwangyang-si, JN (SCNAE); 1 ex., 16-VIII-1975, Is. Heuksando, JN (SCNAE).

Distribution. Korea (North, Central, South), Japan (Honshu, Shikoku, Kyushu), China (FUJ, HEI, HUB, SHG), Russia (Siberia, Far East), Europe.

Notes. The distribution of this species from mainland of the Korean Peninsula is confirmed. Occurs at water sides. This species occasionally attracted to light.

(07) *Elaphropus (Elaphropus) zouhari* (Jedlička, 1961)
북경동근(꼬마)강변먼지벌레

Tachys zouhari Jedlička, 1961, Acta Ent. Mus. Nat. Pragae, 34: 176 (China: Peking); Jedlička, 1965, Ent. Abh., 32(7): 176.

Tachys (Elaphropus) zouhari Jedlička: Pawłowski, 1974, Acta zool. cracov., 19(9): 173 (N. Korea).

Elaphropus zouhari (Jedlička): Kwon & Lee, 1986, Ins. Koreana, 6: 20 (Korea); Kopecký in Löbl & Smetana, 2003, Cat. Pal. Coleopt., 1: 273 (N. Korea).

Elaphropus (Elaphropus) zouhari (Jedlička): Paik & Jung, 2004, Korean J. Soil Zool., 29(1/2): 37.

Materials examined. 1 ♀, 10-VIII-1983, Mt. Odaesan, Y.-J. Kwon leg. (SJNAE); 1 ♀, 23-V-1988, Mt. Daedunsan, Y.-B. Cho leg. (SJNAE).

Distribution. Korea (North, Central), China (BEI), Russia (Siberia, Far East).

Notes. First record for North Korea by Pawłowski (1974) as *T. zouhari*. The distribution of this species from South Korea confirmed for the first time. Seen under moist litters in hills from May. For other relatives, see Paik & Jung (2004: 37). Thank also to Dr. G. Sh. Lafer, Vladivostok, for his help and

gift of the Ussurian specimen for comparing. Thank to Dr. Park, J.-K. Sangju National University, who loaned the above specimens.

(08) *Lebia (Poecilothais) idae* Bates, 1873

하늘십자무늬먼지벌레

Lebia idae Bates, 1873, Trans. R. ent. Soc. Lond., p. 318 (Japan); Kano, 1930, Trans. Nat. Hist. Soc. Formosa, 20: 31 (Formosa); Jedlička, 1963, Ent. Abh., 28: 316, 333-334.

Lebia idae ab. *picea* Jedlička, 1935, Acta Soc. ent. Čsl., 32: 153 (Japan).

Lebia (Poecilothais) idae Bates: Habu, 1967, Fauna Japonica, Truncatipennes, p. 171, 176-177; Habu, 1983, Ent. Rev. Japan, 38(2): 110-112; Kwon & Lee, 1986, Ins. Koreana, 6: 52 (Korea).

Materials examined. 1 ♀, 24-VIII-2004, Harye-ri, Mt. Hallasan, JJ (SCNAE); 1 ♀, 21-VI-2002, Biseondae, Mt. Seolaksan, Sokcho-si, GW, (SCNAE).

Distribution. Korea (Central, Jeju-do), Japan (Honshu, Shikoku, Kyushu), Taiwan.

Notes. First record for Jeju-do, Korea by Kwon & Lee (1986). Body 6.5-8.5 mm in length, dark brown. Edges of pronotum, markings on elytral apex and edges yellowish brown. Elytral striae deep. Elytral intervals convex and with microsculptures. Often attracted to lights.

This species is rather easily distinguishable from other species by the elytral yellow patch, but the patch varies in size and form (see Habu 1967: 177, fig. 297). Above one specimen attracted to light and another from mushroom.

Thanks to Dr. K.-J. Ahn, Chungnam National University who offered above specimens. The first author also examined 3 specimens from Mt. Hikosan, Kyushu, Japan and the above Korean specimens did not differ from them. The distribution of this species from mainland in the Korean Peninsula is confirmed.

(09) *Mastax thermarum egorovi* Lafer, 1973

줄무늬폭탄먼지벌레 (신칭)

Mastax thermarum egorovi Lafer, 1973, Entom. Obozr., 70(4): 853 (Russian Far East).

Material examined. 1 ex., 8-V-2002, Campus of Chungnam Nat. Univ., Daejeon City (SCNAE).

Distribution. Korea (Central), Russian Far East.

Notes. New to Korea. Divided into two forms, the nominal subspecies distributed in Europe and Central Asia, the other one, ssp. *egorovi* in Russian Far East and the Korean Peninsula. This is a beautiful small carabid beetle, body about 3.5-4.0 mm in length. Occurs in mixed forest near water sides. Thanks to Dr. K.-J. Ahn, Chungnam National University, who offered the above specimen.

This genus is rather easily distinguished from other Korean brachine beetles by the shape of last segment of maxillary palpus (in other genera with a fusiform, but with a sharp small joint in *Mastax*). Lafer (1973) distinguished it two forms are as follow.

- 1 (2) Red-brown sutural band falling only slightly short of apex of elytra; thorax, basal abdominal sternites, epiplura as far as hind coxae and head, at least behind the eyes, red-brown. *M. thermarum thermarum*
 2 (1) Red-brown sutural band extending only to posterior pair of yellow spots or in general weakly expressed; abdomen, metathorax, epiplura and head above blackened.
 *M. thermarum egorovi*

(10) *Microlestes schroederi* Holdhaus, 1912

꼬마밀빠진먼지벌레

Microlestes schroederi Holdhaus, 1912, Denkschr. Akad. Wiss. Kl, 88: 514 (Austria; Hungary; Mongolei).

Microlestes imaii (nec Habu): Paik & Jung, 2003, Korea J. Soil Zoology, 8: 49 (Jeju-do). Misidentification.

Distribution. Korea (Jeju-do), East Siberia, Mongolia, Kazakhstan, Europe.

Notes. Paik & Jung (2003) reported *M. imaii* Habu from Jeju-do, Korea. However, it has been a misidentification of this species. Thanks to Dr. Yu. N. Sundukov, Russia, for identification of this species.

(11) *Orionella lewisii* (Bates, 1873) 솜털 (밀빠진)먼지벌레

Endynomena lewisii Bates, 1873, Trans. R. ent. Soc. Lond., p. 311-312 (Japan: Nagasaki).

Orionella obenbergeri Jedlička, 1963, Ent. Abh., 28: 308 (Japan: Mt. Minoo). Treated as a junior synonym of *lewisii* Bates by Habu, 1979: 65.

Endynomena lewisi [sic] Bates: Jakobson, 1908, Coleopt. Russ., 6: 403; Jedlička, 1963, Ent. Abh., 28: 309.

Endynomena lewisii Bates: Nakane, 1963, Icon. Ins. Jap., Colore natur. edit., 2: 52, pl. 26, fig. 21; Habu, 1967, Fauna

Japonica, Truncatipennes, p. 132, 133.

Orionella lewisii (Bates): Habu, 1979, Ent. Rev. Japan, 33: 65; Habu, 1982, Ent. Rev. Japan, 37(2): 104-105; Park *et al.*, 1998, Korean J. Ent., 28(4): 277-278 (Korea).

Materials examined. 1 ex., 1-VII-2000, Gabae-ri, Is. Geojedo, GN (SCNAE).

Distribution. Korea (Central, South), Japan (Honshu, Shikoku, Kyushu, Ryukyus).

Notes. First record for South Korea by Park *et al.* (1998) with one specimen. The species was previously known in South Korea from Mt. Cheonmasan, GG (Park *et al.*, 1998). However, this specimen has been destroyed by dermestid beetles (personal communication from Dr. J.-K. Park, 2004).

Thanks to Dr. K.-J. Ahn, Chungnam National University, who offered the above specimen. The above specimen was attracted to light.

(12) *Pentagonica angulosa* Bates, 1873 검정육모먼지벌레

Pentagonica angulosa Bates, 1873, Trans. R. ent. Soc. Lond., p. 286 (Japan); Paik & Jung, 2004, Korean J. Soil Zool., 9(1/2): 36 (Jejudo).

Material examined. 1 ♀, 17-VII-1984, Suweon, GG (SCNAE).

Distribution. Korea (South), Japan, Russian Far East (Kurul).

Notes. First record for Jejudo, South Korea by Paik & Jung (2004). The distribution of this species confirmed in mainland, Korea.

(13) *Perigona nigriceps* (Dejean, 1831) 어깨부늬먼지벌레

Bembidium nigriceps Dejean, 1831, Species Général Coléop., 5: 44 (N. America).

Perigona nigriceps (Dejean): Paik & Jung, 2004, Korean J. Soil Zool., 9(1/2): 36 (Jejudo).

Materials examined. 2 ex., 6-VII-2001, Mt. Baekhwasan, Taean-gun, CN; 3 ex., 1-VI-18-VI-2004, Dongweol, Mt. Gyeongsan; 1 ex., 16-19-VII-1992, Gwangneung, Soheul-eup, Pocheon-gun, GG (SCNAE); 1 ex., 2-VIII-2002, Gurye-eup, Gurye-gun, JN (SCNAE); 4 ex., 2-VI-2002, Jungsan-ri, Ganjeon-myon, Gurye-gun, JN (SCNAE).

Distribution. Korea (North, South, Jejudo), Japan, China, Worldwide.

Notes. Widely distributed including Jejudo, but seldom.

(14) *Poecilus fortipes* Chaudoir, 1850 왕금빛먼지벌레

Feronia (Poecilus) fortipes Chaudoir, 1850, Bull. Soc. Imp. Nat. Mosc., 23(3): 131 (Siberia); Paik & Jung, 2003, Korean J. Soil Zoology, 8(1/2): 50 (Jejudo).

Material examined. 3 ♂, 3 ♀, 13-VIII-2001, Mt. Unduryeong, Pyeongchang-gun, GW (SCNAE).

Distribution. Korea (incl. Jejudo), China (YUN), Mongolia, Russia (Transbaikalia, Far East).

Notes. Widely distributed including Jejudo, but seldom. Occurs in mixed forest.

(15) *Pterostichus (Feroferis) seungmoi* Park & Kwon, 1996

승모길쭉먼지벌레

Pterostichus (Feroferis) seungmoi Park & Kwon, 1996, Korean J. Appl. Entomol., 35(1): 2 (Korea).

Material examined. Holotype & one paratype (SJNAE); 13 ex., 1-VIII-2005, Mt. Baekunsan, Heungup-myeon, Weonju-si, GW (SCNAE).

Distribution. Korea (Central).

Notes. Belongs to subgenus *Feroferis* Lafer (1979, Zhu. Dal. Vos. Vosto. Sib., p. 5), but Kryzhanovskij *et al.* (1995: 106) treated it as a junior synonym of *Petrophilus* Chaudoir, 1838. However, Bousquet (in Löbl & Smetana 2003) considered as a full subgenus.

Compared with holotype and one paratype, the above specimens well agree with the types. It also has been recorded from Mt. Gyeongsan (=Kyebangsang) and Taebaeksan (Park & Kwon 1996). Four species are listed from the Korean Peninsula of which two species, *P. rasilis* and *pertinax* occur in North Korea. For more detail, see Park & Kwon (1996).

(16) *Pterostichus (Phonias) jankowskyi*

(Tschischérine, 1897) 진부길쭉먼지벌레 (신칭)

Feronia (Argutor) jankowskyi Tschitschérine, 1897, Horae Soc. Ent. Ross., 30: 346 (Amur).

Pterostichus (Argutor) helferi Jedlička, 1958, Acta Ent. Mus. Nat. Pragae, 32: 238 (Ussuri). Treated as a junior synonym of *Pt. jankowskyi* by Kryzhanovskij *et al.*, 1995: 100.

Pterostichus (Argutor) jankowskyi Tschitschérine: Csiki, 1930, Col. Cat., 112: 641.

Pterostichus (Phonias) jankowskyi (Tschitschérine): Kryzhanovskij *et al.*, 1995, A checklist of the ground beetles of Russia, p. 100; Lorenz, 1998, Systematic list of ground bee-

tes, p. 255.

Materials examined. 1 ♀, 25-V-2002, Jinbu, Hajinbu-ri, Jinbu-myeon, Pyeongchang-gun, GW (SCNAE).

Distribution. Korea (North, Central), Russian Far East.

Notes. New to South Korea. Thank to Dr. G. Sh. Lafer (Vladivostok) who offered Ussurian specimen for comparing and confirmed my identification. Belongs to subgenus *Phonias* des Gozis (1886, Recherche esp. typ., p. 8). This group are small (length of body 5-10 mm), hygrophilous, with most of the adults being found in moist to wet places.

A Holarctic group of more than 30 species has been known under the name *Argutor* Dejean and similar to *Cryobius* Chaudoir but differ by the absence of a medial seta (inner seta) on the hind coxa and by having the metepisternum elongate. The 5th tarsal segment of hind tarsi with hairs on ventral side, but *Pt. longinquus* Bates absent; the 3rd elytral interval with 3 or 4 setigerous punctures, but *Pt. longinquus* with 1 setigerous puncture. Korean common name comes from Jinbu, GW where it was collected.

Two species occur from South Korea. Besides these, *Pt. eobius* (Tschitschérine, 1899), *ripensis* Motschulsky, 1865, and *ussuriensis* (Motschulsky, 1897) might be expected to occur at central part to northern part of the Korean Peninsula, but have not yet been found there. (Lafer: Personal communication, 2002). Krischenhofer (1997, Linzer biol. Beitr., 29(2): 704) reported *Pt. eobius* from North Korea.

The following simple key rather easily distinguishes Korean species (based on Jedlička, 1962 & Ussurian specimens).

- 1 (2) 5th tarsal segment without hairs on ventral side; 3rd elytral interval with one setigerous puncture.
..... *Pt. (Phonias) longinquus* (가는길쪽먼지벌레: 신칭)
- 2 (1) 5th tarsal segment with hairs on ventral side; 3rd elytral interval with 3 setigerous punctures.
- 3 (6) Proepisternum punctate.
- 4 (5) Elytral striae nearly smooth to punctate to middle; intervals with isodiametric microsculpture meshes.
..... *Pt. (Phonias) jankowskii* (진부길쪽먼지벌레: 신칭)
- 5 (4) Elytral striae punctate; intervals smooth, almost without microsculpture.
..... *Pt. (Phonias) eobius* (삼지연길쪽먼지벌레: 신칭)
- 6 (3) Proepisternum smooth.
- 7 (8) Elytral striae distinctly punctate.
..... *Pt. (Phonias) ripensis* Motschulsky, 1866
- 8 (7) Elytral striae impunctate.
..... *Pt. (Phonias) ussuriensis* (Tschischérine, 1897)

(17) *Pterostichus (Phonias) longinquus* Bates, 1873

가는길쪽먼지벌레 (신칭)

Pterostichus (Argutor) longinquus Bates, 1873, Trans. R. ent. Soc. London, p. 286 (Japan: Hiogo, Nagasaki).

Feronia (Argutor) longinqua (Bates): Tschitschérine, 1897, Horae Soc. Ent. Ross., 30: 347.

Pterostichus (Argutor) longinquus Bates: Csiki, 1930, Col. Cat., 112: 641; Jedlička, 1962, Ent. Abh., 26(21): 225.

Pterostichus (Pledarus) longinquus Bates: Lorenz, 1998, Systematic list of ground beetles, p. 252.

Pterostichus (Phonias) longinquus Bates: Kryzhanovskij *et al.*, 1995, A checklist of the ground beetles of Russia, p. 100; Bousquet in Löbl & Smetana, 2003, Cat. Pal. Coleoptera, 1: 507.

Materials examined. 1 ♀, 20-IV-1998, Suncheon-si, JN (SCNAE).

Distribution. Korea (South), Japan (Hokkaido, Honshu, Kyushu), Russian Far East (Ussuri).

Notes. New to South Korea. Korean vernacular originates from the shape of long body. Adults found at moist area in field or valley.

Thanks to Dr. G. Sh. Lafer (Vladivostok) and K. Tanaka (Japan) who offered specimen for comparison. The above female specimen from Korea is conspecific with Ussurian and Japanese ones. Also the Korean specimen agrees well with the description of *Pt. lutschniki* Jedlička (1962, Ent. Abh., Dresden, 26(21): 203). *Pt. lutschniki* Jedlička may be conspecific with *Pt. longinquus* Bates, 1873.

This species is distinguishable from other related species by the long elytral scutellar stria and 3rd elytral interval with one setigerous pore; pronotum with two laterobasal impression on both sides and absence of ventral setae on 5th tarsal segment of hind tarsi.

(18) *Tachys quadrillum* Schaum, 1860 대륙애강변먼지벌레

Tachys quadrillum Schaum, 1860, Berl. Entomol. Zeit., 4: 201 (Celebes).

Tachys (s. str.) quadrillum Schaum: Pawłowski, 1974, Acta zool. cracov., 19(9): 166 (N. Korea).

Tachys quadrillum Schaum: Korean J. Soil Zool., 9(1/2): 38 (Jeju).

Material examined. 6 ex., 18-VII-2005, Pyoseon, Seogwipo-si, JJ (SCNAE); 2 ♀, 27-VIII-2004, Beolmal, Oji-ri,

Daesan-eup, Seosan-si, CN (SCNAE); 5 ♂, 5 ♀, 29-VIII-2004, Dumandong, Haman-ri, Cheonbuk-myeon, Boryeong-si, CN; 10 ♂, 10 ♀, 27-VIII-2004, Is. Daebudo, Ansan-si, GG (SCNAE).

Distribution. Korea (North, Central, Jeju), Japan (Tanegashima), S. China, Taiwan, Ceylon, India, New Guinea, Samoa, Philippines.

Notes. First record for North Korea by Pawłowski (1974) as *T. (s. str.) quadrillum* Schaum. Later Paik & Jung (2004) recorded from Jeju, South Korea. For more information of this species, see notes on this species by Paik & Jung (2004: 38).

(19) *Trechoblemus postilenatus* (Bates, 1873)

줄꼬마먼지벌레

Trechus postilenatus Bates, 1873, Trans. R. ent. Soc. Lond., p. 295 (Japan: Osaka).

Trechoblemus postilenatus (Bates): Jeannel, 1922, Ann. Soc. ent. France, 90: 297, 298; Jeannel, 1962, Rev. franç. d'Ent., 29: 198; Uéno, 1970, Bull. Nat. Sci. Mus. Tokyo, 13(4): 604; Uéno, 1985, Coleopt. Japan Col., Osaka, 2: 85, pl. 16, fig. 6 (Korea); Uéno & Lafer, 1994, Elytra, Tokyo, 22(2): 216-219.

Materials examined. 2 ex., 9-VI-1988, Seoul (SCNAE); 1 ♀, 26-IX-1974; 1 ♂, 14-VII-1975; 1 ♀, 4-VIII-1975; 1 ♂, 5-VIII-1976; 1 ♀, 22-VII-1976, Seoul, S.-M. Lee leg. (SJNAE).

Distribution. Korea (Central, South), Japan (Hokkaido, Honshu, Shikoku, Kyushu), Russian Far East.

Notes. Uéno (1985 in Uéno *et al.*) notes that this species occurs in Korea, but we cannot yet trace the origin. Body 4.2-5.3 mm in length, slender, and reddish brown. Compound eyes flattened and pronotum nearly square. Pronotum and elytra covered with minute hairs. Antennae and legs short. Found in moist area and often attracted to lights.

(20) *Ushijimaella pilosistriata* Uéno, 1980 새꼬마먼지벌레

Ushijimaella pilosistriata Uéno, 1980, Annot. zool. Jpn., 53 (2): 144-146 (Korea).

Materials examined. 2 ex., 1 ♂, 1 ♀, 8-9-V-1999, Cheondong Area, Mt. Sobaeksan, Danyang-gun, GB (SCNAE); 1 ♀, 2-5-VII-1998, Mt. Yongmunsan, Yangpyeong-gun, GG (SCNAE); 1 ex., 1 ♂, 2 ♀, 4-VI-2001, Temple Sangweonsa, Mt. Odaesan, Junbu-myeon, Pyeongchang-gun, GW (SCNAE);

1 ex., 8-V-2004; 1 ex., 25-V-2004; 13-VIII-2004, Sangweonsa, Mt. Odaesan, Jinbu-myeon, Pyeongchang-gun, GW (CNNBE); 1 ex. (teneral), 8-VII-1998, Mt. Odaesan, Pyeongchang-gun, GW (CNNBE).

Distribution. Korea (Central).

Notes. Described from Temple Weoljeongsa, Mt. Odaesan, GW from South Korea by Uéno (1980). Occurs under litters in forest. Body 3.6-4.1 mm in length and covered with many hairs unlike other species. Found under litters in forests.

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REFERENCES

- Andrewes, H.E. 1941. Papers on Oriental Carabidae, XXXVII. *Ann. Mag. Nat. Hist.* 7(11): 307-317.
- Bates, H.W. 1873. On the geodephagous Coleoptera of Japan. *Trans. R. ent. Soc. Lond.* pp. 219-322.
- Casale, A. and R. Laneyrie. 1982. Trechodinae et Trechinae du Monde: tableau des sous-familles, tribus, séries phylétiques, genres, et catalogue général des espèces. *Mémoires de Biospéologie* 9: 1-226.
- Chaudoir, M. 1876. Monographie des Chléniens. *Ann. Mus. Civ. Stor. Nat. Genova* 8: 5-315.
- Csiki, E. 1931. Carabidae: Harpalinae V. Pars 115, pp. 739-1022. In: Junk, W. & S. Schenkling (eds.), *Coleopterorum Catalogus*, Vol. II. Carabidae II. Berlin. W. Junk. pp. 1022.
- Fassati, M. 1953. Sur la Position systématique de l'espèce *Bembidion (Plataphus) persuasum* Net. *Acta Soc. Ent. Cechoslov.* 50: 78-84.
- Habu, A. 1941. Notes on some carabideous-beetles from Hokkaido. *Entomol. World* 9(91): 651-655. (in Japanese)
- Habu, A. 1951. On two Japanese species of the Genus *Diplous*. *Kontyû* 19(2): 35-37. (in Japanese)
- Habu, A. 1967. Fauna Japonica, Carabidae, Truncatipennes Group (Insecta, Coleoptera). Biogeographical Society of Japan. pp. 338.
- Habu, A. 1979. Notes on *Endynomena* Chaudoir and *Orionella* Jedlička (Coleoptera, Carabidae). *Ent. Rev. Japan* 33(1/2): 61-65.
- Habu, A. 1982. On *Chlaenius lynx* Chaudoir (Coleoptera, Carabidae). *Ent. Rev. Japan* 37(1): 1-6.
- Habu, A. 1982. Revised and supplementary notes on and descriptions of the Truncatipennes group of Japan, II. (Coleoptera, Carabidae). *Ent. Rev. Japan* 37: 83-118.
- Habu, A. 1983. Revised and supplementary notes on and descriptions of the Truncatipennes group of Japan, III. (Coleoptera, Carabidae). *Ent. Rev. Japan* 38(2): 105-146.
- Holdhaus, K. 1912. Monographie der Paläarktischen Arten der Coleopterengattung *Microlestes*. Denkschrift der Kaiserlichen Akademie der Wissenschaften in Wien. *Mathematische-naturwissenschaftliche Klasse* 88: 477-540.
- Jeannel, R. 1949. Coleopteres Carabiques de la Region Malgache (Troisième Partie). *Faune de l'empire Français* 11: 767-1146. <Chlaenius, Masoreni>
- Jedlička, A. 1932. Neue Carabiden aus süd-China (III. Teil). *Časopis Čsl. Spol. Entom.* 29(1): 38-48.
- Jedlička, A. 1935. Über neue japanische Lebiën (Col. Carab.). *Acta Soc. Ent. Csl.* 32: 153.

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- Jedlička, A. 1951. Les Carabiden nouveaux de la zone palaearctique (Col.). *Acta Ent. Mus. Nat. Pragae* **27** : 207-211.
- Jedlička, A. 1961. Neue Carabiden aus der palaearktischen Region (Coleoptera). *Acta Ent. Mus. Nat. Pragae, Praha* **34** : 155-166.
- Jedlička, A. 1962. Monographie des Tribus Pterostichini aus Ostasien (Pterostichi, Trigonotomi, Myadi) (Coleoptera, Carabidae). *Ent. Abh.* **26**(21) : 177-346.
- Jedlička, A. 1963. Monographie der Truncatipennen aus Ostasien. Lebiinae-Odacanthina-Brachyninae (Coleoptera, Carabidae). *Entomol. Abh. Dresden* **28** : 269-579.
- Jedlička, A. 1965. Monographie des Tribus Bembidiini aus Ostasien (Coleoptera, Carabidae). *Ent. Abh. Dresden* **32**(7) : 79-198.
- Kirschenhofer, E. 1997. Beitrag zur Faunistik und Taxonomie der Carabidae (Coleoptera) Koreas. *Annls Hist.-nat. Mus. Natn. Hung.* **89** : 103-122.
- Kryzhanovskij, O.L., I.A. Belousov, I.I. Kabak, B.M. Kataevb, K.V. Makarov and V.G. Shilenkov. 1995. A checklist of the ground beetles of Russia and adjacent lands (Insecta, Coleoptera, Carabidae). *Pensoft Series faunistica* **3** : 271. Pensoft Publishers, Sofia & Moscow.
- Kühnelt, W. 1941. Revision der Laufkäfergattungen *Patrobus* und *Dipulous*. *Ann. Naturh. Mus. Wien* **51** : 151-192.
- Kwon, Y.J. and S.M. Lee. 1986. Check list of superfamily Caraboidea from Korea (Coleoptera). *Insecta Koreana* **6** : 1-55.
- Lafer, G. Sh. 1973. On little-known ground-beetles (Coleoptera, Carabidae) of the Maritime Territory and their zoogeographic characteristics (in Russian). *Rev. Ent. URSS.* **52**(4) : 845-855. (in Russian)
- Lafer, G. Sh. 1979. "The ground beetles of the subgenus *Feroperis* nov. of the genus *Pterostichus* Bon. (Coleoptera, Carabidae)." In: Zhuki Dalnego Vostoka i Vostochnoi Sibiri (novye dannye po faune i sistematike), [The Beetles of Far East and East Siberia (New data on fauna and taxonomy)], Vladivostock, pp. 3-34. (in Russian)
- Lafer, G. Sh. 1989. Carabidae. pp. 71-222. In: Ler, P.A. (ed.) *Opredelitel nasekomykh Dalnego Vostoka SSSR. Volume 3. Zhestkokrylye, ili zhukii. Part 1.* pp. 572. (in Russian)
- Lindroth, C.H. 1963. the ground-beetles (Carabidae, excl. Cicindelinae) of Canada and Alaska. Part 3. *Opusc. Ent. Suppl.* **24** : 201-408.
- Löbl, L. and A. Smetana [Edited]. 2003. Catalogue of Palaearctic Coleoptera. Vol. 1, Archostemata-Myxophaga-Adephaga. pp. 819. Apollo Books.
- Lorenz, W. 2005. Systematic list of extant ground beetles of the world (Insecta Coleoptera "Geadephaga": Trachypachidae, and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). 2nd Edition. Published by author, Tutzing, Germany, pp. 530.
- Lorentz, W. 2005. Nomina Carabidarum. A directory of the scientific names of ground beetles (Insecta, Coleoptera "Geadephaga": Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). 2nd edition. Privately published, Tutzing (Germany). pp. 993.
- Mandl, K. 1978. Neue und wenig bekannte Formens der Subfamilie Callistinae (Col. Carabidae) aus dem Himalaya Gebiet und dem benachbarten chinesischen und indochinesischen Raum. *Entomologica Basiliensis* **3** : 263-279.
- Morita, S. 1989. *Bembidion gebleri* Gebler (Coleoptera, Carabidae) and its new relative. *Elytra, Tokyo* **17**(1) : 19-34.
- Morita, S. 1991. Notes on the Bembidiinae (Carabidae) of Japan III. *Bembidion semilunium* Netolitzky and its new relative. *Elytra, Tokyo* **19**(1) : 115-123.
- Motschulsky, V. 1844. Insectes de la Sibérie rapportés d'un Voyage fait en 1839 et 1840. *Mém. Acad. Sci. St.-Petersb.* **5** : 1-274.
- Netolitzky, F. 1934. Europäisch-asiatische Bembidion-Arten, unter besonderer Berücksichtigung der Typen von Solsky. *Koleopt. Rundsch.* **20**(1/2) : 63-74.
- Netolitzky, F. 1938. Beiträge zur Kenntnis der *Bembidion*-Arten des Fernen Ostens (Japan, Korea, Ost Sibirien) (Coleoptera) 1. Mitteilung. *Proc. R. Ent. Soc. London* (B), **7**(2) : 37-39.
- Netolitzky, F. 1943. Bestimmungs-Tabellen europäischer Käfer. (9. Stuck.). II. Fam. Carabidae. Subfam. Bembidiinae. 66. Gattung: *Bembidion* Latr. Bestimmungstabelle der *Bembidion*-Arten des paläarktischen Gebietes. (Mit Hinweisen auf holarktische, äthiopische und orientalische Arten.). *Koleopt. Rdsch., Wien* **29**(1/3) : 1-70.
- Paik, J.-C. 1997. Carabidae (Insecta, Coleoptera) of Korea. *Korean J. Soil Zool.* **2**(1) : 19-28. (in Korean)
- Paik, J.-C. 1998. Some ground-beetles (Coleoptera, Carabidae) from Korea. *Koeran J. Soil Zool.* **3**(1) : 1-9.
- Paik, J.-C. and S.-H. Jung. 2003. Some ground beetles (Coleoptera, Carabidae) from Jeju Island (V). *Korean J. Soil Zoology* **8**(1/2) : 46-53. <제주도 5>
- Paik, J.-C. and S.-H. Jung. 2004. Some ground beetles (Coleoptera, Carabidae) from Jeju Island (VI). *Korean Journal of Soil Zoology* **9**(1/2) : 32-43.
- Park, J.-K. and Y.-J. Kwon. 1996. Classification of the genus *Pterostichus* Bonelli from Korea (Coleoptera: Harpalidae) II. Three new species of the subgenus *Feroperis* Lafer. *Korean J. Appl. Entomol.* **35**(1) : 1-6.
- Park, J.-K., Y.-J. Kwon and T.-Y. Kwon. 1998. Korean species of the genus *Orionella* Jedlicka (Coleoptera, Harpalidae). *Korean J. Ent.* **28**(4) : 277-278.
- Uéno, S.-I. 1970. The fauna of the Insula Lava caves in west Japan. III. Trechinae (Coleoptera). *Bull. Nat. Sci. Mus., Tokyo* **13**(4) : 603-622.
- Uéno, S.-I. 1980. A new trechine beetle of the *Epaphiopsis* complex from Korea. *Annot. Zool. Japon.* **53**(2) : 140-146.
- Uéno, S.-I., Y. Kurosawa and M. Satō (eds.). 1985. The Coleoptera of Japan in Color. Vol. II. pp. 514. Hoikusa, Osaka. (In Japanese)