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A REVIEW OF THE KOREAN SCIOMYZIDAE (DIPTERA) WITH TAXONOMIC AND DISTRIBUTIONAL NOTES

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The Sciomyzidae recently collected in South Korea and some other East Palaearctic countries preserved in several institutions were examined. All literature records concerning the known Korean Sciomyzidae were critically evaluated. *Sepedon oriens* STEYSKAL, 1980 is shown to be a synonym of *S. noteoi* STEYSKAL, 1980 and is compared with the valid Oriental *S. neanias* HENDEL, 1913. The female of *Tetanocera chosenica* STEYSKAL, 1951 is described and distinguished from related species, its variation is discussed and reliable localities from China are given for the first time. *Colobaea eos* ROZKOŠNÝ & ELBERG, 1991, *Sepedon noteoi* STEYSKAL, 1980, and *Tetanocera elata* (FABRICIUS, 1781) are recorded from South Korea for the first time. Distribution maps of *Colobaea eos* and *Tetanocera chosenica* are presented.

Key words: Sciomyzidae, East Palaearctic, new synonym, distribution

INTRODUCTION

A small but valuable collection of Sciomyzidae obtained recently during a collecting trip by B. M. in South Korea inspired us to summarize data on Korean species from material examined and to evaluate critically records scattered in the literature. A list of the Sciomyzidae of both Korean states, as a result of this effort, was completed on the basis of the extensive records of Sciomyzidae deposited in world dipterological collections gradually built up by L.K. during the last 50 years. This file also served as a source of important information for the preparation of a compendium on the world Sciomyzidae (KNUTSON & VALA 2010).

The first records of sciomyzids from Korea were published by STEYSKAL (1951, 1956) who described *Tetanocera chosenica* from Seoul and *Pherbellia ditoma* from Andong (both in South Korea). A record of *Sepedon sphegea* (FABRICIUS, 1775) from South Korea (PARK 1967) actually refers to *S. aenescens* WIEDEMANN, 1830, the occurrence of which in South Korea was definitively confirmed by KNUTSON & ORTH (1984). KNUTSON (1977) mentioned *Pherbellia nana reticulata* (THOMSON, 1869) without precise data. ROZKOŠNÝ and KOZÁNEK (1989) recorded from North Korea a new *Pherbellia*, *P. koreana*, but their record of *Sepedon spinipes* (SCOPOLI, 1763) actually refers to *S. noteoi* STEYSKAL, 1980.

MATERIAL AND METHODS

This study is based on specimens recently collected by B. M. with some local entomologists in South Korea and those identified by L. K. while studying the East Palaearctic Sciomyzidae from 10 museums and other institutions, including one private collection. Altogether, 66 specimens of Sciomyzidae from Eastern Russia, South Korea, China and Japan were examined. As part of this study, we also clarify the identity of three little known Palaearctic and Oriental species of *Sepedon* through examination of type specimens of *S. neanias*, *S. noteoi* and *S. oriens*.

The following acronyms are used for the institutions where the examined specimens are deposited: BPBM – Bernice P. Bishop Museum, Honolulu, Hawaii, USA; CAS – Department of Entomology, California Academy of Sciences, San Francisco, California, USA; CU – Department of Entomology, Cornell University, Ithaca, New York, USA; KDG – KUMAR G. GHORPADE collection, Dharwar, India; MHNG – Muséum d´Histoire Naturelle, Genève, Switzerland; MCZ – Department of Entomology, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA; MNHNP – Laboratoire d´Entomologie, Muséum national d'Histoire Naturelle, Paris, France; SDEI – Senckenberg – Deutsches entomologisches Institut, Münchenberg, Germany; USNM – United States National Museum, Entomology Department, Smithsonian Institution, Washington, D.C., USA; YSUW – Yonsei University, Department o Life Science, Maeji-ri, Weonju-si, Gangweon-do, Korea (H-Y. HAN & K-E. RO); ZFMK – Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany; ZMAN – Zoologisch Museum, Instituut voor Taxonomische Zoologie, Universiteit van Amsterdam, Amsterdam, The Netherlands.

Morphological terms are used in accordance with the Contributions to a manual of Palaearctic Diptera, Vol. 1 (PAPP & DARVAS 2000). The 3rd antennal segment including the arista is designated as postpedicel here.

RESULTS

Colobaea eos ROZKOŠNÝ et ELBERG, 1991

Differing from the second East Palaearctic species of the genus, *Colobaea flavipleura* ROZKOŠNÝ et ELBERG, 1991, by the long anterior orbital seta, presence of the presutural seta, the predominantly dark pleura and the species-specific shape of the male terminalia.

Distribution (Fig. 1): Described from East Russia (Kamenushka, Ussuriysk env., Kedrovaya Pad' Nature Reserve and Kunashir Island) and later recorded in Japan (SUEYOSHI 2001). The first record from South Korea.

Material examined: South Korea: Hongcheon-gun, Mt. Gachilbong, 37°52.0´ N, 128°28.0´E, 750–900 m, forest, 17.vi.2005, 3 ♂, 4 ♀, MERZ, CHOI, LEE & HWANG leg. Gangwon-do, Hoengseon-gun, Mt. Cheongtaesan, 37°30.4´N, 128°18.0´E, 900–1200 m, forest, near peak, 18.vi.2005, 1 ♂, MERZ, CHOI, LEE & HWANG leg.; Gangwon-do, Hoengseon-gun, N valley of Mt. Gyebangsan, 37°44.5´N, 128°26.2´E, 770–900 m, riverbed & ruderal, 23.vi.2005, 2 ♂, 1 ♀, MERZ & LEE leg. All R. ROZKOŠNÝ det., in MHNG and YSUW.

Pherbellia ditoma STEYSKAL, 1956

This species differs from other Palaearctic *Pherbellia* species by a conspicuous apomorphic character – two (rarely three) stump veins below on the distal section of M_{1+2} and by the species-specific male terminalia (see STEYSKAL 1956). Other important characters are: midfrontal stripe short; orbito-antennal spot very light brownish; fore basitarsus white except extreme apex, strongly contrasting with distal four blackish tarsomeres; anepisternum bare; anepimeron with a group of 3 or 4 strong setae.

The specimens that we examined agree well with STEYSKAL's (1956) description except in our specimens all femora and tibiae are yellowish suffused with grey (not "blackish"), the fore femur and tibia darkest. Also, the female from Minjujisan has a medially slightly incomplete posterior crossvein (in both wings) in the cell above the last stump vein on vein M_{1+2}. The pin obliterated the prescutellar dorsocentral area of the scutum in STEYSKAL's specimens including the holotype. SUEYOSHI (2001) noted two acrostichal setae but all of our specimens have only one pair of prescutellar acrostichals. STEYSKAL (1956) described the wing as "hyaline, with brownish clouding on the crossveins and the two stump veins". In our specimens, the anterior margin of the wing, as well as crossveins, are distinctly infumated greyish.

In STEYSKAL's description, reference to the anterior and posterior surstyli is inverted; it is the anterior surstylus that has a strong preapical tooth on the posterior margin.

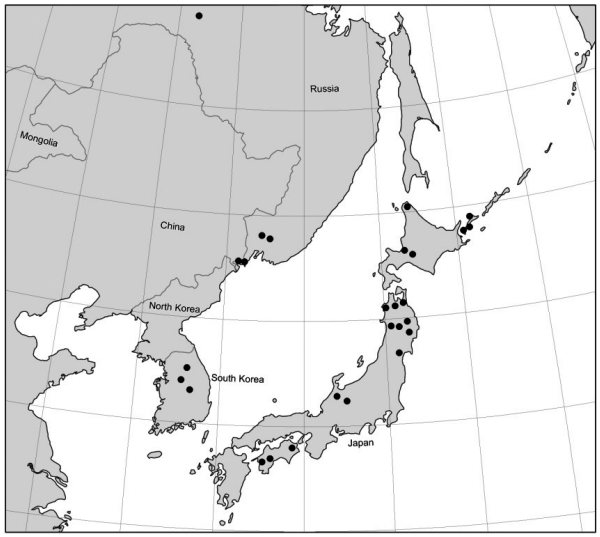


Fig. 1. Distribution of *Colobaea eos*

Distribution: South Korea: Andong (STEYSKAL 1956) and material examined; Japan (SUEYOSHI 2001, 2010).

Material examined: South Korea: Minjujisan, between Kimeh'on and Yangdang, 15.x.1997, with net above stream, 1 ♂, 1 ♀; Posok-sa (Keumsan), 10.–14.ix.1998, 1 ♀, in MNHNP; same locality, 18.–21.ix.1928, 1 ♂; 19.–21.ix.1928, 1 ♀, in USNM; all Malaise trap, all P. TRIPOTIN leg. and L. KNUTSON det.

Pherbellia koreana ROZKOŠNÝ et KOZÁNEK, 1989

This species is based on the male holotype and the female paratype from North Korea, Ryongaksan Mts, 10 km W of Pyongyang. It belongs to the *P. scutellaris* species group, which has the midfrontal stripe reaching only to the middle of the frons, a bare anepisternum and the wings uniformly slightly brownish infuscated. The shape of the male surstyli is species-specific, resembling *P. scutellaris* (ROSER, 1840) and *P. silana* RIVOSECCHI, 1989, but the anterior surstylus is unusually enlarged in relation to the posterior surstylus. The proximal part of the ejaculatory apodeme is without a ridge and is rod-like.

Distribution: No additional specimens have been recorded.

Pherbellia nana reticulata THOMSON, 1869

Pherbellia nana nana (FALLÉN, 1820) is characterised by its small size, dark apical rings on femora and tibiae, and typical pattern on wings. *P. nana reticulata* differs from the typical form by the more extensive wing pattern.

Distribution: The species is Holarctic, ranging throughout the Palaearctic Region. In the East Palaearctic the subspecies *reticulata* is known to occur in Russian southern Siberia and Maritime Territory, Mongolia, China and Japan (ROZKOŠNÝ & ELBERG 1984, SUEYOSHI 2001) and penetrates to some parts of the Oriental region (see Nepal in KNUTSON 1977) as well. Our female represents the first reliable record from South Korea which is documented in a note by KNUTSON (1977) as "Korea".

Material examined: Russia: Buryatia, Ulan Ude, 28.vii.1971, 2 ♂, 1 ♀, K. ELBERG leg. et det., in USNM. China: Charbin [=Harbin], 10.viii.1938, 1 ♂, M. A. WOMARO leg., in USNM; June 1952, 1 ♂, 3 ♀, V. ALIN leg., in ZFMK; Shanghai, 20.iv.1937, 1 ♂, 1 ♀, collector unknown, in ZFMK. South Korea: near Seol /= Soeul/, vi 1955, 1 ♀, light trap, collector unknown, in USNM; Japan: Okinawa, Shimabuku, 20.v.–1.vi.1945, 1 ♂, C. T. PARSONS & F. W. WERNER leg., in MCZ; except for Russian specimens all L. KNUTSON det.

Sepedon aenescens WIEDEMANN, 1830

A species with the bluish black head and thorax as in *Sepedon sphegea* (FABRICIUS) but the scape of the antenna is yellowish to pale brown, not blackish as in *S. sphegea*. The male genitalia were examined in detail by KNUTSON & ORTH (1984).

Distribution: A widely distributed Oriental species (Pakistan, India, Nepal, Thailand, China /Hong Kong/, Taiwan, Japan /Ryukyus/, Philippines – KNUTSON & ORTH 1984) penetrating to some parts of the Palaearctic (Afghanistan, Russian Far East and Kunashir Island, China, South Korea, Japan – KNUTSON & ORTH 1984, SUEYOSHI 2001). Introduced into the Hawaiian Is. in 1966 and confirmed as established the following year (DAVIS & CHONG 1968, YANO 1978, STEYSKAL 1980). It was also introduced into southern California in 1975, but it is not known to be established (KNUTSON & ORTH 1984). From South Korea (Sangiuk-Dong, Taegu city) this species was misidentified as *S. sphegea* by PARK (1967) and from North Korea (Ryongaksan Mts, Pyongyang env. and Suyangsang Mts, Haeju env.) it was recorded by ROZKOŠNÝ & KOZÁNEK (1989, sub misprinted name *S. senescens*). From Tongnae near Seoul (South Korea), as noted by KNUTSON & ORTH (1984).

Material examined: South Korea: Seoul, 1.v.1953, 1 ♀, P. W. OMAN leg., in USNM. Nangdon, 2 km of Taejón, 19.iv.1997, 1 ♀; Majon, Keumsan, end of April, 1 ♂, 2 ♀; 20.viii.1997, 1 ♀; beginning of September 1997, 1 ♀; Posok-sa, 8.–10.ix.1998, 1 ♀; all in MNHNP; Jirisan, Hamyang-gun, Macheon-Myeon, Samjeong-li, 700 m, 35°20–93' N, 127°38–50' E, Malaise trap on small stream, 11.iv.–8.v.2004, 1 ♀, in USNM; all P. TRIPOTIN leg. and L. KNUTSON det.

Sepedon noteoi STEYSKAL, 1980

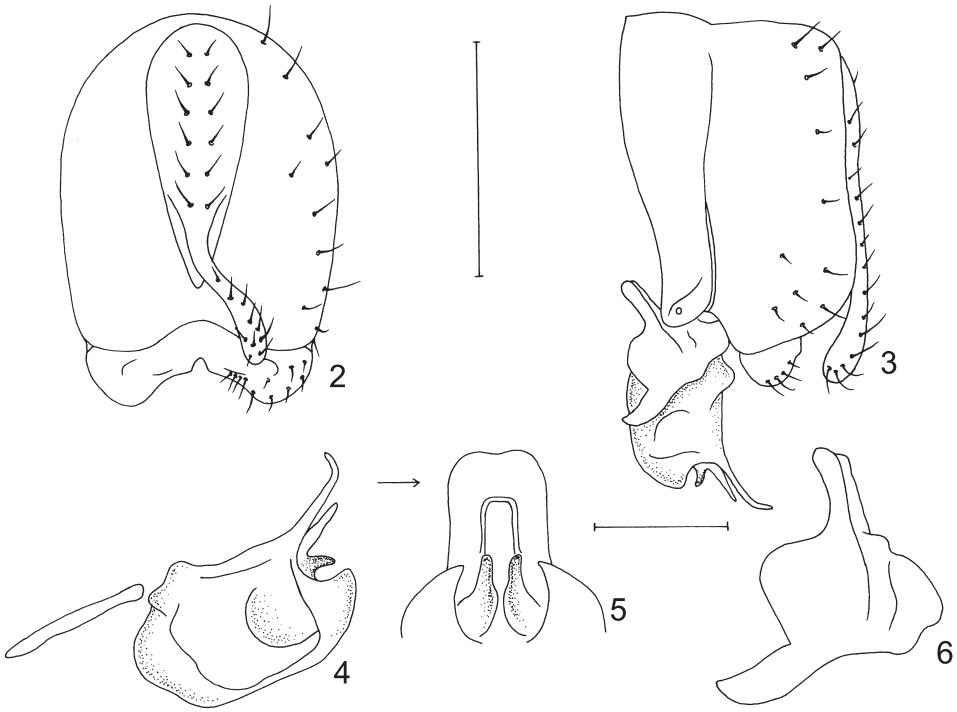
Sepedon noteoi STEYSKAL, 1980: 117
Sepedon oriens STEYSKAL, 1980: 119, **syn. n.**

This is a small brownish species, somewhat similar to *Sepedon spinipes* (SCOPOLI) in habitus. Distinguishing features of *S. noteoi*, in contrast to those of *S. spinipes* (cf. characters in parentheses) are as follows: face in lateral view very strongly concave (only slightly and evenly concave), lower fourth of mid face with a broad band of strong, irregularly arranged setulae (lower mid face bare), face only slightly microtrichose in dorsal half, shiny below the strong mid facial angle (face strongly silvery-white microtrichose almost to oral margin), black orbital spots slightly tapered posteriorly (not tapered posteriorly), arista inserted at basal

third of postpedicel (at middle), posterior crossvein essentially straight (distinctly bowed outward), and abdomen with a slight trace of blue (entirely brown).

The structures of the male postabdomen figured by STEYSKAL (1980) for *S. noteoi* and by ELBERG *et al.* (2009) for *S. spinipes* are clearly distinct; notably the fused surstyli of *S. noteoi* forming a low transverse plate in ventral view, whereas each of the separate surstyli of *S. spinipes* is a rather large, suboval plate. The specimen from South Korea compares well on external characters with two males of *S. noteoi* (postabdomen of one examined) from Pe-kaho, China (in MNHNP).

STEYSKAL (1980) described *Sepedon noteoi* from three specimens from China (Kwangtung and Chekiang) and *S. oriens* was described from the holotype, allotype and 500 paratypes from China (Szechuan), Japan (Aichi and Yamagata Prefectures) and the Philippines (Luzon). STEYSKAL noted in the same paper that both species differ "in very little else than postabdominal characters either in size, coloration, or structure". We compared male paratypes of both species and did not

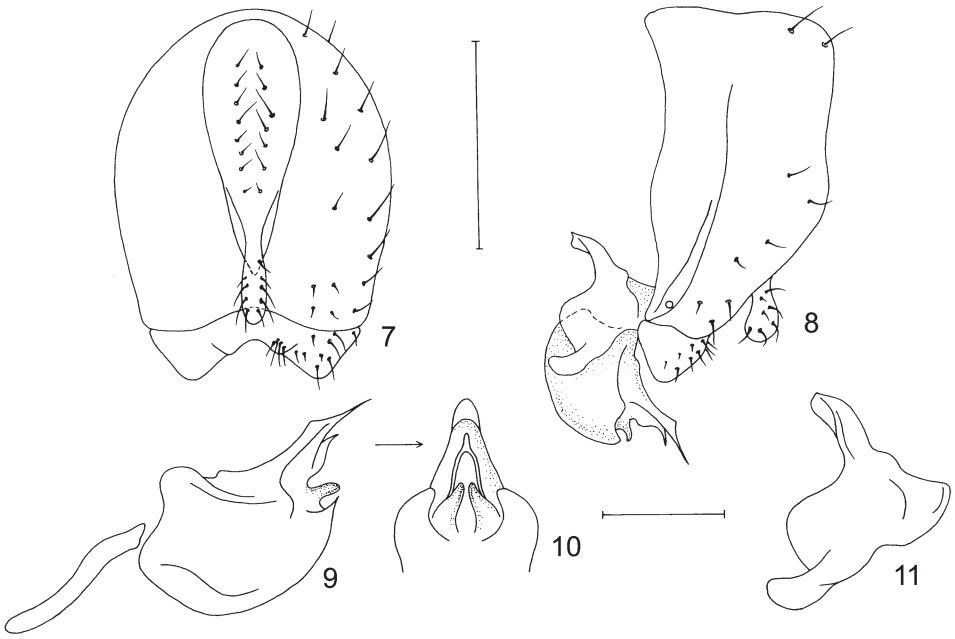


Figs 2–6. *Sepedon noteoi*, male terminalia: 2 = epandrium and surstyli in caudal view, 3 = male terminalia in lateral view, 4 = aedeagal complex in lateral view, 5 = epiphallus in anteroventral view, 6 = hypandrium in lateral view. Scales: 0.5 mm (Figs 2–3), 0.3 mm (Figs 4–6)

find any reliable differences in the structures of the male terminalia (see Figs 2–6). Moreover, this fact is also documented in STEYSKAL's detailed original figures of the male terminalia of both "species". Also external characters mentioned by STEYSKAL (posteroventral setae on the fore femur, dark bands on the hind tibia) appeared as highly variable and without any species-specific value.

There is no doubt that *S. noteoi* is closely related to *S. neanias* HENDEL, 1913, based on the holotype from Taiwan.

This species had not been subsequently recorded and its holotype was never re-examined. Our study of the holotype confirmed that both species under discussion belong to the same species group characterized by the compact epandrium below cerci and a unified transverse plate replacing a pair of separate surstyli present in all the other species groups of *Sepedon*. Differences between both species are to be found almost exclusively in the discrete structures of the hypandrium and the aedeagal complex, namely in the shape of the epiphallus in lateral and ventral view (cf. Figs 7–11). STEYSKAL (1980), when describing *S. noteoi*, mentioned also a female from Taiwan (Urai) although he did not include it into the type series. It is



Figs 7–11. *Sepedon neanias*, male terminalia: 7 = epandrium and surstyli in caudal view, 8 = male terminalia in lateral view, 9 = aedeagal complex in lateral view, 10 = epiphallus in anteroventral view, 11 = hypandrium in lateral view. Scales: 0.5 mm (Figs 7–8), 0.3 mm (Figs 9–11)

possible that this female actually belongs to *S. neanias* because the distinguishing characters between the females of *S. noteoi* and *S. neanias* are not known and both species are closely related.

Distribution: Described from China, Kwantung [= Guangdong Prov.] and Chekiang [=Zhejiang Prov.]; a remark on a distribution in Taiwan (STEYSKAL, 1980) needs to be confirmed (see above). Under *S. oriens* recorded by STEYSKAL (1980) from the Philippines (Abatan and Luzon), Japan (Ajime near Nagoya and Sakata), China (Suifu and Kuanshien); additional Japanese records (several Prefectures on Honshu) are to be found in SUEYOSHI (2001, 2005, 2010). From North Korea (Suyangsang Mts., Haeju env.) recorded by ROZKOŠNÝ and KOZÁNEK (1989) under *S. spinipes* (SCOPOLI, 1763). Individuals from Ajime, Japan were introduced into Hawaii, USA, for control of liver fluke snails in 1972 but it is not known to be established (STEYSKAL 1980).

Material examined: Male paratype of *S. noteoi*: "Hangchow, China, 20.vi.1934", "No. 82", "Paratype of *Sepedon noteoi* Steyskal" (handwriting on blue label), in USNM. Male paratype of *S. oriens*: "Philippines, Mountain Prov., Abatan, Buguias, 60 km S of Bontoc, 1800–2000 m, 2.–4.v.1964", "H.M. Torrevillas Collector, Bishop", "PARATYPE *Sepedon oriens* Steyskal" (printed on blue label), in USNM.

Additional material of *S. noteoi*: South Korea: Majon Keumsan, Malaise trap, 16.iv. (no year given), 1 ♀; China: Pei-kaho, 7.ix.1914, 2 ♂, LICENT leg., L. KNUTSON det., in MNHNP.

Male holotype of *S. neanias* (for a comparison): "Tainan, Formosa, Sauter, ii. 07–09," "*Sepedon neanias* H., det. Hendel", "HOLOTYPUS" (printed on red label), in SDEI.

Tetanocera chosenica STEYSKAL, 1951

Tetanocera chosenica was described from one male from Pusan, South Korea, by STEYSKAL (1951). We have recently seen significant additional material which confirms its occurrence in South Korea, Japan, and also in China. We can thus describe the female and variation of some characters.

Tetanocera chosenica differs from the other Palaearctic species by the following combination of characters: frons lacking glossy area but with distinct midfrontal stripe, parafacials without any dark spots (in male), aristal plumosity consisting of long setulae, mid femur with 1–3 (rarely without) posterior preapical setae, hind femur with 3 anterodorsal setae, surstylus unusually long and flat in distal part (cf. original description and STEYSKAL's figure).

Description of the female. Length: body 9.0–10.6 mm, wing 8.0–9.0 mm. Head yellowish brown in ground colour, frons dull, midfrontal stripe and orbits shiny, midfrontal stripe in middle about as broad as one orbit, somewhat dilated towards anterior margin. Orbits relatively short, ending at insertion of anterior orbital seta. Distance between orbital setae much shorter than that between up-

per orbital seta and medial vertical seta. Postocellar setae longer than lateral verticals. Upper orbital seta at level of anterior ocellus. A subtriangular brownish parafacial spot distinct between insertion of antenna and eye on each side. Antenna relatively short, pedicel distinctly longer than half length of postpedicel. Postpedicel subtriangular, arista inserted at basal third, longest aristal setulae reaching maximum width of antenna.

Thorax yellowish brown with darkened areas on scutum and pleura. A pair of blackish, broadly separated lines on scutum distinct. Upper parts of anepimeron and katepimeron as well as greater part of anepisternum more brown. Chaetotaxy as in other species of *Tetanocera*, no setulae on prosternum.

Wing yellowish brown, more or less infuscated along anterior margin in distal half and markedly infumated along both crossveins. Cross vein DM-Cu distinctly sinuate.

Legs ochre yellow, fore coxa with 3 anterior setae, (though middle one relatively short), mid femur with 1 anterior seta in middle and 2–3 posterior preapical setae, ventral setae absent. Hind femur with 3 anterodorsals, 1 anteroventral beyond middle and an almost complete row of 7 posteroventrals, 3 of them in middle third being longest.

Abdomen yellowish brown but somewhat paler than thorax. Tergites 3–5 each with a large, wedge-shaped, dark, mid-dorsal mark. Stronger dorsolateral setae developed only at posterior margin of tergites 5 and 6. Sternites 6–8 broadly separated by membrane. Sternites 7 and 8 unusual for the genus: sternite 7 very narrow, sternite 8 barely sclerotized, long and setose, with rounded posterior margin. Female terminalia: Hypoproct similar in shape to sternite 8, heavily setose. Two spherical spermathecae with smooth surface, flat base, no apical process and a very short, sclerotised stem.

Variation: The female is usually somewhat larger than the male, reaching the length of 9.0–10.6 mm (male 8.0–9.0 mm). The male has apparently no or only a barely distinct parafacial spot between the antenna and the eye margin. The middorsal stripe on the abdomen seems to be slightly broader and more diffuse in the male. SUEYOSHI (2001) when comparing his 6 males from Japan with the original description stated that there are 3 anterior setae on the fore coxa and three dark dorsal stripes may be developed on the scutum. However, the scutal stripes are not mentioned by STEYSKAL (1951) and not distinct in the examined male from South Korea and only two narrow lines are visible on the associated females. The examined specimens compare well with the original description except that all have 1–3 posterior preapical setae on the mid femur. STEYSKAL stressed the fact that no posterior preapical setae on the mid femur were present in his male (and this situation was confirmed by study of the holotype by L. K.). But at least one stronger although not very long such seta is present in the additional examined male from South Korea, 2 such setae are distinct in the females from the same country and 2–3 are present in other specimens examined. There is also considerable variation in the number of setae on the outer margin of the fore coxa (1–3) and number of anterodorsal (2–4) and posteroventral setae on the hind femur.

Identification: The male may be unambiguously identified by its male terminalia (see STEYSKAL 1951). But if the posterior preapical setae on the mid femur are regularly developed at least in the females, then the female is similar to two West Palaearctic species: *T. latifibula* FREY, 1924 and *T. punctifrons* RONDANI, 1868 (cf. ROZKOŠNÝ 1987). However, from the former species it can be distinguished by the much longer aristal hairs and presence of parafacial spots, and from the latter usually by 3 anterodorsal setae on the hind femur.

Distribution (Fig. 12): *T. chosenica* was described from Fusan [= Pusan] in South Korea and recently recorded by SUEYOSHI (2001) from four localities in Ja-

pan (see his Fig. 9b). In the same study a record in China was mentioned although without a precise locality. According to the examined specimens from several institutions this species is definitively confirmed in China from 11 localities, two additional localities from Japan and two additional localities from South Korea.

Material examined: S Korea: HOLOTYPE, Fusan [=Pusan], 11.v. (?), 1 ♂, G.C. STEYSKAL det., in CAS. Posok-sa, Reumsan, Malaise trap under woods, 8.–10.vi.1998, 1 ♀; 18.vi.1998, 1 ♀ both P. TRIPOTIN leg., L. KNUTSON det., in MNHNP. Gangwon-do, Wonju-si, Mt. Baegunsan, 37°15.0´N, 127°57.5´E, 750–1087 m, forest, near peak, 14.vi.2005, 1 ♂, 1 ♀ MERZ, HAN, LEE & HWANG leg., R. ROZKOŠNÝ det., in MHNG and YSUW. China: Kiang-Si [= Jiangxi Prov.], Kou-ling [= Ling Kou Lu], 29°40´ N, 115°52´ E, 1000 m, 15.vii.1919, 1 ♂, in MNHNP. Chekiang [= Zhejiang Prov.], Hangchow [= Hangzhou], 23.x.1928, 1 ♀ Szechwan [= Sichuan Prov.], Suifu [= Yibin], 2 ♂, 1 ♀; all in USNM. [Sichuan Prov.], Chungking [= Chongqing], 1000–2000 ft, 6.–27.v.1930, 1 ♀ [Sichuan Prov.], Kuanshien [= Guanxian] 8.–28.v.1930, 1♀, 1.–14.vi.1930, 1 ♀ [Sichuan Prov.], Chengtu [= Chengdu], 1933, 1 ♀, all D.C. GRAHAM leg., in USNM. Fukien [=Fujian Prov.), Kuatun, 27°40´N, 117°40´E, 2300 m, 7.iv.1938, 1 ♀ KLAPPERICH leg., in ZFMK. [Fujian Prov.], Shaowu, Aotou, 3.x.1941, 1 ♀; Shaowu, Tachulan, 1000 m, 16.–18.v.1941, 1 ♀; 25–30.iv.1943, 1 ♂; 6.–10.v.1943, 1 ♂ in KDG and 1 ♂ in USNM; 26.–29.v.1943, 1 ♂, T.C. MAA leg., all (except as noted) in BPBM. Yunnan Prov., 9 km S Kunming, 1 km S Bamboo Temple, wet meadow in deciduous forest, 1300–2200 m, ii.-ix. 1985, 1 ♂, P. OOSTERBROEK leg., in ZMAN. Japan: Kyoto, May 1953, 3 ♀, P. W. OMAN & W. C. BENTINCK leg., 1 ♀ in CU and 2 ♀ in USNM. Tharaki, Tsuchiuca, 36°05´N, 140°12´E, marsh, Malaise trap, 16.–27.x.1989, 1 ♂, 1 ♀ M. J. SHARKEY leg., in USNM. All specimens except those in MHNG were identified or revised by L. KNUTSON.

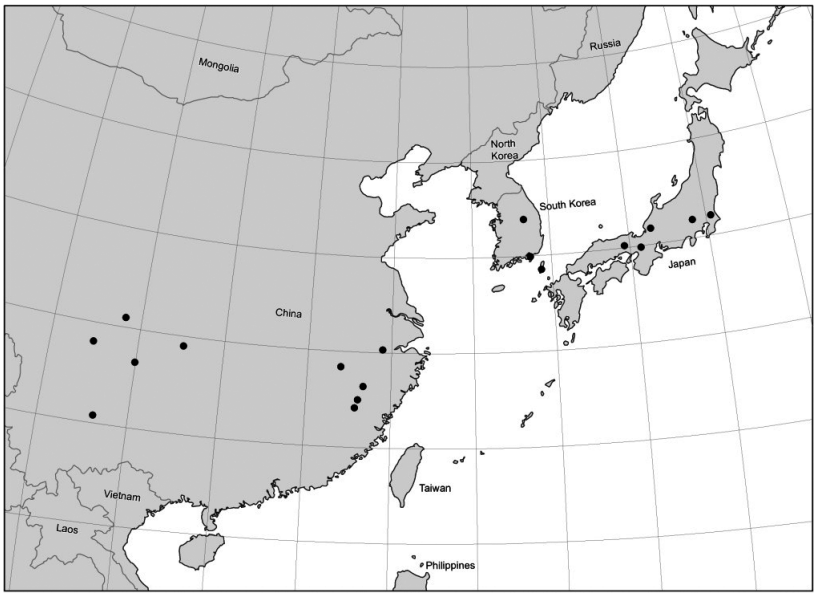


Fig. 12. Distribution of *Tetanocera chosenica*

Tetanocera elata (FABRICIUS, 1781)

Tetanocera elata belongs to the species group with an intensively darkened costal margin of the wing. It is distiguished from the related *T. phyllophora* MELANDER, 1920, by the whitish occipital spot being broadly interrupted by a brown central area and the structures of the male terminalia (see ROZKOŠNÝ 1987).

Distribution: It is widely distributed from Europe to Japan. These are the first records for South Korea.

Material examined: South Korea: Gangwon-do, Hongcheon-gun, Unduryeong (Pass), 37° 42.3′N, 128°26.4′E, 1100 m, grassland, 17.vi.2005, 1 ♂, MERZ, CHOI, LEE & HWANG leg.; Gangwon-do, Hoengseon-gun, Mt. Cheongtaesan, 37°30.4′N, 128°18.0′E, 900–1200 m, forest, hilltop, 18.vi.2005, 1 ♂, MERZ, HAN, CHOI, LEE & HWANG leg.; Gangwon-do, Hoengseon-gun, N valley of Mt. Gyebangsan, 37°44.5′N, 128°26.2′E, 770–900 m, riverbed & ruderal, 23.vi.2005, 2 ♂, MERZ & LEE leg. All R. ROZKOŠNÝ det., in MHNG and YSUW.

DISCUSSION

Although three additional species are noted here, the current list of Korean Sciomyzidae is still incomplete and further species, at least of *Pherbellia*, *Dichetophora*, *Limnia*, *Sepedon*, and *Tetanocera* may be expected. The known species assemblage consists of widely distributed species in the Palaearctic (*Pherbellia nana*, *Tetanocera elata*), Palaearctic–Oriental species (*Sepedon aenescens*, *S. noteoi*) and East Palaearctic endemics (*Colobaea eos*, *Pherbellia ditoma*, *P. koreana*, and *T. chosenica*).

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