

FRAGMENTA FAUNISTICA

Fragm. faun.	Warszawa, 15.12.1998	41	12	167-182
--------------	----------------------	----	----	---------

Regina BAŃKOWSKA

Syrphid flies (*Syrphidae*, *Diptera*) from North Korea collected by Polish expeditions. Part I (*Milesiinae*, *Microdontinae*)

Abstract: This paper deals with *Syrphidae* material collected in North Korea by 6 expeditions of researchers from the Institute of Zoology, PAS, Warsaw, Poland from 1959 to 1990. The subfamilies *Milesiinae* and *Microdontinae* were analysed. 37 species of syrphid flies were identified, only 9 of which had been previously known from Korea. Among the species were several very rare forms, often known only from original descriptions: *Volucella inanoides* HERVÉ-BAZIN, *Sphagina melancholica* STACK., *Asiosphagina nitidifrons* STACK., *Lathyrophthalmus viridis* (COQ.), *Spilomyia parjilovi* ZIMINA and *Xylota frontalis* (SHIRAKI & EDASHIGB).

Key words: *Syrphidae*, *Diptera*, North Korea

Authors' address: Museum and Institute of Zoology PAS, ul. Wilcza 64, 00-679 Warszawa, POLAND

INTRODUCTION

The following paper is concerned with syrphid flies collected by researchers from the Institute of Zoology in Warsaw during 6 expeditions to North Korea taking place between 1959 and 1990. Detailed descriptions of these expeditions can be found in MROCKOWSKI (1972) and BAŃKOWSKA & STERZYŃSKA (1997). This paper deals with 2 subfamilies of *Syrphidae*, namely *Milesiinae* and *Microdontinae*. The subfamily *Syrphinae* will be presented in Part II of the paper, which will be published later.

The material of *Syrphidae* is not too abundant, with about 1000 specimens, half of which were collected during the latest expedition in 1990, in which the author also took part. The specimens were collected with a sweeping net or a scoop with the last two expeditions using also Moericke's yellow traps placed on the grass and in brushwood.

The material is quite diversified and interesting. Specimens of the two subfamilies under study can be divided into 37 species belonging to 21 genera and including only 9 species previously known from the Korean Peninsula.

A number of rare species of *Syrphidae* have been identified in the material. They were most often known only from original descriptions and not reported from other localities. Information on these species has been supplemented with descriptions and figures showing distinctive characters to resolve possible doubts. The following rare species were identified: *Volucella inanoides* HERVÉ-BAZIN, *Sphegina melancholica* STACK., *Asiosphegina nitidifrons* STACK., *Lathyrphthalmus viridis* (COQ.), *Spilomyia panfilovi* ZIMINA and *Xylota frontalis* (SHIRAKI & EDASHIGE).

The syrphid fauna of various parts of the eastern Asian continent has not been studied equally well. Oriental fauna has been investigated by such dipterologists as WALKER (1861), BRUNETTI (1908, 1915, 1923), KERTÉSZ (1899, 1913a, 1913b), BEZZI (1928), DE MEJERE (1908), SÉGUY (1935, 1948), SACK (1913, 1922, 1926, 1927), CURRAN (1927, 1928, 1931, 1942), HERVÉ-BAZIN (1923A), HULL (1929, 1937), SHIRAKI (1963), ÔHARA & KUSIGEMATI (1985). Later, a catalogue of *Syrphidae* of the Oriental region was published (KNUTSON & THOMPSON & VOCKEROTH 1975).

In the Palaearctic, the fauna of Japan has probably been described most extensively, e.g. in papers by MATSUMURA (1905, 1911, 1916), LOEW (1858), HERVÉ-BAZIN (1914) and numerous works by SHIRAKI (1930, 1949, 1952, 1954, 1956, 1968).

The *Syrphidae* fauna of China is very poorly known, which can be partly explained by the large area that this country occupies, considerable climatic diversity and difficult access to the area. Earlier works on Chinese *Syrphidae* include the more important papers by HERVÉ-BAZIN (1923b, 1929a, 1929b, 1930) and SACK (1933, 1938, 1941).

Recent publications on this topic include papers by HE JILONG (1992, 1993), LI QINGXI & HE JILONG (1993, 1994) and CHU XIPING & HE JILONG (1992, 1996).

Many more data are available on syrphid flies of eastern Russia, from Vladivostok to the Kamchatka Peninsula. Numerous research expeditions, organised mainly by zoologists from Moscow and St. Petersburg, have made it possible for dipterologists there to collect and analyse new materials and write a number of papers about *Syrphidae* genera of a Palaearctic distribution, including many works by STACKELBERG (1950, 1953, 1956, 1958, 1961), ZIMINA (1961) and VILOVICH (1974, 1978, 1979a, 1979b, 1980). Faunistical and taxonomical papers concerned with the *Syrphidae* of eastern Russia have also been published, including works of STACKELBERG (1930, 1952, 1963), ZIMINA (1952, 1964, 1968, 1972, 1976, 1981) and BARKALOV (1980, 1981, 1982). A special place in the research on *Syrphidae* is occupied by the Russian dipterologist N. A. VILOVICH, who lived for many years on the Sakhalin Island and then in the town of Novosibirsk and devoted his life to studying the *Syrphidae* of Siberia and the Far East. His many papers deal with syrphid flies from the Kamchatka area, the Kuril

Islands, Sakhalin and the Primorski province (1955, 1956a, 1956b, 1960a, 1960b) as well as the whole of Siberia (1964, 1966, 1971, 1973, 1975, 1976, 1980a, 1980b). His research work was crowned with a vast monograph – “Siberian *Syrphidae*” – published in 1983.

As far as the Korean Peninsula is concerned, infrequent mentions on the *Syrphidae* fauna of this region can be found in Japanese papers, particularly in works by SHIRAKI (1930, 1953, 1968) and SHIRAKI & EDASHIGE (1953), which are, however, chiefly concerned with the fauna of the Japanese islands. Certain data can also be found in papers by STACKELBERG (1961) and ZIMINA (1972). A new species of *Syrphidae* has recently been described from North Korea (CLAUSSEN, 1990). There have been no faunistical papers concerned with this family of dipterans in Korea and the fragmentary data scattered among different papers do not provide an adequate picture of this interesting fauna.

While the Korean Peninsula is traditionally considered part of the Palaearctic realm, the syrphid fauna of this region contains a number of Siberian-Manchurian elements and typically Oriental forms. A zoogeographical analysis will be carried out when the entire study material has been processed.

The systematic arrangement of the present paper follows that provided by Peck (1988).

SPECIES COMPOSITION

Subfamily M I L E S I I N A E

Tribe P i p i z i n i

Pipiza FALLÉN, 1810

1. *Pipiza festiva* MEIGEN, 1822

Material examined: Korea: Hangwon prov., Wonsan, 1.09.1966, 1 female.

Distribution: Europe, Siberia, Far east (Sakhalin, Khabarovsk, Primorye).

Trichopsomyia WILLISTON, 1888

2. *Trichopsomyia flavitarsis* (MEIGEN, 1822)

Material examined: Korea: Kangwon prov., Kumgang Mts., 28.08.1959, 1 male.

Distribution: Europe, Siberia, Far East.

Tribe C h e i l o s i i n i

Cheilosia MEIGEN, 1822

3. *Cheilosia grossa* (FALLÉN, 1817)

Material examined: Korea: N. Hamgyong prov., Puryong, Musu-ri, 1.09.1966, 1 male.

Distribution: Europe, Siberia, Oriental Region.

4. *Cheilosia nasutula* (BECKER, 1894)

Material examined: Korea: N. Hamgyong prov., Kyongsong, Maehyang-ri, 4.06.1965, 1 female.

Distribution: Europe, Siberia.

5. *Cheilosia nigripes* (MEIGEN, 1822)

Material examined: Korea: N. Hamgyong prov., Musan Ridge, 2.06.1965, 1 male.

Distribution: Europe, Siberia, Mongolia, Far East (Primorye).

6. *Cheilosia proxima* (ZETTERSTEDT, 1843)

Material examined: Korea: S. Pyongan prov., Tomb of King Tongman near Pyongyang, 27.06.1990, 1 female.

Distribution: Europe, Syberia, Far East, Kamchatka (VILOVITSH 1983).

7. *Cheilosia scutellata* (FALLÉN, 1817)

Material examined: Korea: S. Pyongan prov., Taesongsan near Pyongyang, 29.08.1970, 1 male.

Distribution: Europe, Siberia, Mongolia, Far East, Japan.

Rhingia SCOPOLI, 17638. *Rhingia laevigata* LOEW, 1858

Material examined: Korea: N. Hamgyong prov., near Chongjin, 5.06.1965 1 male, 3 females.

Distribution: Asia: Far East (Sakhalin, Kunashir, Shikotan, Khabarovsk, Primorye) and Japan (Hokkaido, Honshu).

Tribe Volucellini

Volucella GEOFFROY, 17629. *Volucella inanoides* HERVÉ-BAZIN, 1923

Bull. Mus. nat. Hist., Paris, 29(3): 256. Type-locality: Sechuan (China).

Material examined: Korea: Kangwon prov., Kungang Mts., Onjong-ri., 22.06.1990, 1 male.

Distribution: Asia: China. Now it has been established also in Korea.

Male. Head orange-yellow. Face yellow, distinctly widened below, with a large central knob (Fig. 1). Pubescence yellowish. Eyes well separated (Fig. 2), with brownish pubescence. Antennae yellow, third segment with conspicuous curved tip (Fig. 1). Arista long with long blackish rays. Frons and occiput orange-yellow with yellowish pubescence.

Mesonotum shining black, with two very conspicuous yellowish longitudinal stripes, which extend from just insides the humeral calli to the hind margin. Humeral calli pale-yellow. Mesonotum with pale-yellow hairs. Scutellum orange-yellowish with a distinct black hairs on the side margin. Pleura brownish with a large yellow patch. Pubescence long and yellowish. There are many long blackish bristles at the back of mesopleura and above the bases of wings.

Legs yellow, the hind femora at the basis more darkened. Pubescence long and yellowish.

Wings light yellowish, slightly brownish about the veins in the middle and before the tip. Halteres and squamae pale yellow.

Abdomen yellow with a narrow blackish stripes on the margin sides of the segments. Genitalia yellowish.

Length of body: 17 mm.

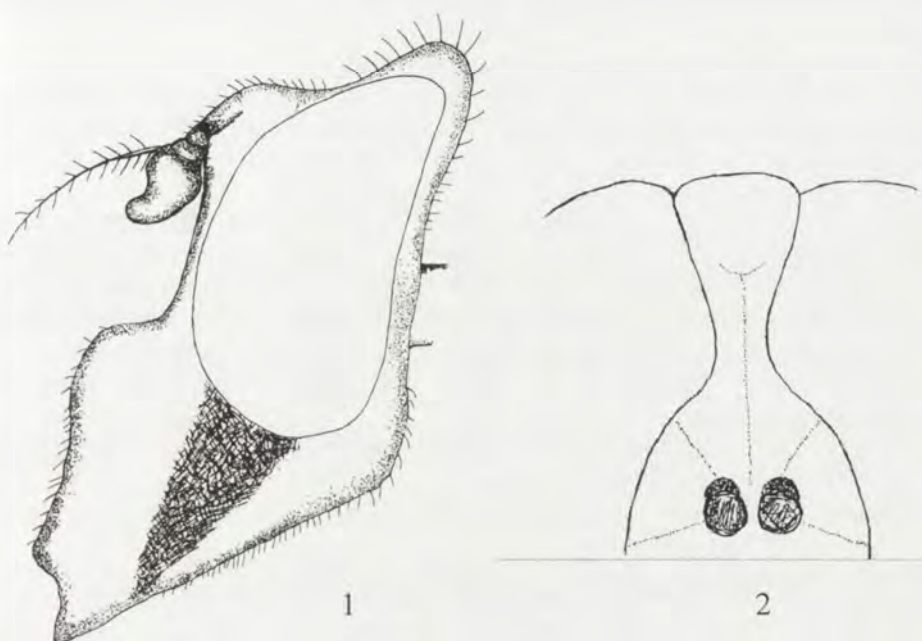


Fig. 1-2. *Volucella inanoides* HERVÉ-BAZIN. 1 – Head of male in profile, 2 – frons of male.

10. *Volucella nigricans* COQUILLET, 1898

Material examined: Korea: S. Pyongan prov., Myohyang Mts., near Myohyangsan Hotel, 11.06.1990, 1 male, Moram near Pyongyang, 29.05.1965, 1 male.
Distribution: Japan, Taiwan, Korea (SHIRAKI 1930).

11. *Volucella pellucens tabanoides* MOTSCHULSKY, 1859

Material examined: Korea: N. Hamgyong prov., Kyongson, Onpo-ri, 11.09.1966, 2 females.

Distribution: Korea, Japan (Hokkaido, Honshu, Shikoku) (SHIRAKI 1953) and Siberia, Mongolia, China, Sakhalin (PECK 1988).

Tribe *C h r y s o g a s t e r i n i*

Orthonevra MACQUART, 1829

12. *Orthonevra karumaniensis* (MATSUMURA, 1916)

Material examined: Korea: N. Hwanghae prov., Kaesong, 29-30.06.1990, 11 female, 1 male.

Distribution: Far East of Russia (Primorye and Khabarovsk, Japan (Honshu) and Korea.

Sphegina MEIGEN, 1822

13. *Sphegina melancholica* STACKELBERG, 1956

Ent. Obozr., 35: 939. Type-locality: Sakhalin (Ilmenskoe).

Material examined: Korea: N. Hamgyong prov., Kyongsong, Maehyang-ri, 4.06.1965, 1 male.

Distribution: Far East (Sakhalin, Khabarovsk)

Head. Vertex, occiput, and frons black, greyish pubescent and black haired. Antennae black, third antennal segment oval with greyish pubescent. Face black, greyish pollinose, distinctly concave. Arista thickened at the base, blackish, with short hairs.

Thorax black. Mesonotum shining black, humeral calli with a grey, dusted pubescent. Hairs of mesonotum dark, greyish-black. Meso- and pteropleura with a long white hairs. Legs black, only basal tip of tibiae brownish yellow. Fore tarsi with a first segment short (Fig. 3). Hind legs with a distinctly larged first segment of the tarsi. Wings hyaline, faintly yellowish at the base.

Calypteres and halteres orange yellow. Scutellum black, with a few long hairs on the hind margin.

Abdomen mostly elongated black greyish pollinose. Border of the first and second tergites with a long white hairs.

Lenght of body: 7 mm.

Subgenus *Asiosphegina* STACKELBERG, 1953

14. *Asiosphegina nitidifrons* STACKELBERG, 1956

Ent. Obozr., 35: 937. Type-locality: Kunashir.

Material examined: Korea: N. Hwanghoe prov., Kaesong, canyon at Puyon-Falls, 30.06.1990, 1 male.

Distribution: Asia: Far East (Kuril Is, Sakhalin) and Japan (Honshu).

Head. Frons shinig black, covered with pale hairs. Face in profile well concave black slightly greyish pollinose. Antennae reddish, third segment great, elliptical. Arista long, yellowish, slightly thickened basally.

Thorax shining black. Pleurae with greyish pollinose. Mesonotum and scutellum shining black, with short, pale yellowish hairs. Wings hyaline, pterostigma yellowish. Squamulae and halteres yellow.

Legs. The fore and middle legs pale yellowish, except the black fifth segment of tarsi. Hind legs reddish-brown. Second and third segments of the hind tarsi – pale reddish.

Abdomen long and narrowed basally, black. Third tergite with a large yellow stripe. Fourth sternite with a yellow bristles on the hind margin. Abdomen with a very long, white hairs at the borders of the first tergite.

Lenght of body: 5 mm.

Tribe *Eumerini*

Eumerus MEIGEN, 1822

15. *Eumerus japonicus* MATSUMURA, 1916

Material examined: Korea: N. Hamgyong prov., Kyongsong, Sangonpo-ri, 17.06.1998, 1 male.

Pyeongyang prov., Myohyang Mts., Myohyangsan, 11.06.1990, 1 female, 1 male.

Distribution: Far east of Rossia (Primorye, Sakhalin), Japan (Honshu, Shikoku) and Korea (STACKELBERG 1961).

16. *Eumerus flavitarsis* ZETTERSTEDT, 1843

Material examined: Korea: S. Pyongan prov., Myohyang Mts., Munsu-tong Vall., 18.06.1965, 1 female.

Distribution: Europa, Syberia, Far East (Khabarovsk and Primorye).

Tribe Eristalini

Eristalinus RONDANI, 184517. *Eristalinus sepulchralis* (LINNAEUS, 1758)

Material examined: Korea: S. Pyongan prov., Pyongyang, 14.06.1965, 1 male.

Distribution: this widely distributed species known in all Europe, Asia, North Africa and Oriental Region. Known in Syberia, China, Primorye, Kamchatka and Japan. In Korea not mentioned.

Lathyrrophthalmus MIK, 189718. *Lathyrrophthalmus aeneus* (SCOPOLI, 1763)

Material examined: Korea: N. Hamgyong prov., Chongjin, 10.09.1970, 17 male and 11 female.

Distribution: Palaearctic, Nearctic, Afrotropical and Oriental Regions and Australia. Known in Mongolia, China and Far East of Russia (Primorye).

19. *Lathyrrophthalmus tarsalis* (MACQUART, 1855)

Material examined: Korea: N. Hamgyong prov., Thomak-tong 20 km N ad Chongjin, 8.09.1970, 1 female; S. Hamgyong prov., Macon 20 km NE ad Hamhung, 26.09.1970, 1 female; s. Pyongan prov., Daebong ad Pyongyang, 7.06.1990, 2 females; N. Hwanghae prov., Kaesong, 28.06.1990, 1 male, Canyon ad Puyon-Falls, 30.06.1990, 1 female.

Distribution: Korea, Japan, Taiwan (SHIRAKI 1968) and China, India and Nepal.

20. *Lathyrrophthalmus viridis* (COQUILLET, 1898)

Proc. U. S. Nat. Mus., 21:326. Type-locality: Japan.

Material examined: Korea: S. Pyongan prov., Pyongyang, near Tomb of King Tongman, 27.06.1990, 1 male.

Distribution: China, Japan (Honshu, Shikoku, Kyushu). Rare species, has not been previously recorded from Korea.

Head. Eyes little spotted with white scarcely pubescence on the upper frontal part. Vertical triangle blackish with black hairs. Frons greyish pubescent, with a longitudinal shining black greenish stripe. Lunula reddish yellow. Face covered with greyish tomentum, except the central, longitudinal knob - shining green black. Frons end face clothed with white, dense pubescence. Antennae reddish yellow, third segment a little longer than the two basal segments together. Arista long, brownish, slightly thickened in the basal half.

Thorax black, pale haired. Mesonotum shining golden green with velvety black longitudinal stripes. Median stripes short, reaching before the broad transverse of the mesonotum. Wings hyaline with a pale yellowish pterostigma. Squamae large, white yellowish with white fringes. Halteres fine, yellowish.

Legs black with pale hairs. The extreme tip of femora and basal half of tibiae reddish brown.

Abdomen large, shining gold-black with very characteristic velvety black spots on the second, third and fourth tergites (Fig. 4). Hypopygium shining gold-black. Length of body 12 mm.

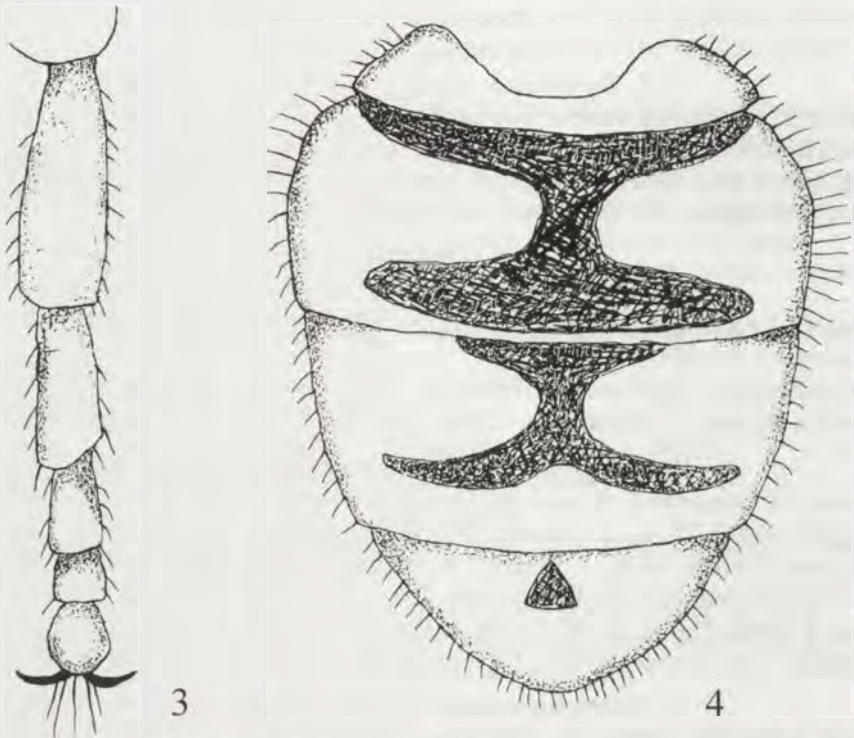


Fig. 3-4. 3 - *Sphegina melancholica* STACK., front tarsi of male, 4 - *Lathyrphthalmus viridis* (COQ.), abdomen of male from above.

Eristalis LATREILLE, 1804

21. *Eristalis abusiva* COLLIN, 1931

Material examined: Korea: S. Pyongan prov., Pyongyang, Taesongsan Park, 6.06.1990, 1 male.

Distribution: Palaearctic Region. Known for Far East of Russia (Khabarovsk and Primorye).

22. *Eristalis arbustorum* (LINNAEUS, 1758)

Material examined: Korea: N. Hamgyong prov., 20 km N ad Chongjin, 8.09.1970, 2 males, Chongjin, 10.09.1970, 3 males, 3 females, Kyongsong, 11.09.1966, 4 females, 17.06.1990, 1 male; S. Hamgyong prov., Hamhung, 7.06.1965, 13 males, 8 females, Hynganam ad Hamhung, 11.06.1965, 6 males, 3 females, Macon ad Hamhung, 26.09.1970, 1 female; S. Pyongan prov., Myohyang Mts., 23.09.1966, 1 male, 1 female, Pyongyang, 14.06.1965, 1 female, Daebong ad Pyongyang, 7.06.1990, 5 males, 7 females, Tomb of

King Tongman near Pyongyang, 27.06.1990, 1 female; Kangwong prov., Kumgang Mts., Onjong-ri, 22-23.06.1990, 8 males, 3 females; N. Hwanghae prov., Kaesong, Pagyon Falls, 28.06.1990, 2 males, 4 females.

Widely distributed species: Palaearctic, Nearctic and Oriental Regions. Known in Far East of Russia: Sakhalin and Primorye (ZIMINA 1972).

23. *Eristalis cerealis* FABRICIUS, 1805

Material examined: Korea: N. Hamgyong prov., Chongjin, 10.09.1970, 2 males, Thomak-tong 20 km N ad Chongjin, 8.09.1970, 3 females, Onpho-ri ad Kyongsong, 10-11.09.1966, 1 male, 1 female; S. Hamgyong prov., Hungnam, 11.06.1965, 1 male, 1 female, Majon ad Hamhung, 26.09.1970, 1 male, 3 females; N. Pyongan prov., Myohyang Mts., Hyangam ad Hyangsan, 16.06.1965, 1 female, Sangvon ad Hyangsan, 23.09.1966, 1 male, 2 females; S. Pyongan prov. Myohyang Mts., Myohyangsan Hotel, 11.06.1990, 11 males, 7 females, Pyongyang, 24-25.06.1965, 2 males, 1 females, Taesongsan Park ad Pyongyang, 6.06.1990, 2 males, 6 females, Daebong ad Pyongyang, 7.06.1990, 5 males, 6 females, Tomb of King Tongman ad Pyongyang, 27.06.1990, 1 male, 5 females; Kangwong prov., Kumgang Mts., near Kumgangsang, 22.06.1990, 6 males, 11 females; N. Hwanghae prov., Kaesong-City, 22.06.1990, 2 males, 3 females.

Distribution: Asia and Oriental Region. Known in China, Far East of Russia, Japan and Korea (SHIRAKI 1968).

24. *Eristalis tenax* (LINNAEUS, 1758)

Material examined: Korea: N. Hamgyong prov., Chongjin, 4-10.09.1970, 6 males, 7 females, Kyongsong, Onpho-ri, 10-11.09.1970, 11 males, 7 females; S. Hamgyong prov., Majon 20 km ad Hamhung, 26.09.1970, 3 females; N. Pyongan prov., Myohyang Mts., Sangvon ad Hyangsan, 23.09.1966, 2 males, 1 female; S. Pyongan prov., Pyongyang, 14.06.1965, 1 female; Kangwon prov., Kumgang Mts., near Kumgangsang Hotel, 22.06.1990, 8 males, 6 females; N. Hwanghae prov., Kaesong, 28.06.1990, 1 female.

Cosmopolitan species, widely distributed in Korea.

Phytomia GUÉRIN-MÉNEVILLE, 1834

25. *Phytomia zonata* (FABRICIUS, 1787)

Material examined: Korea: S. Pyongan prov., Taesongsan ad Pyongyang, 28.08.1970, 1 male.

Distribution: Far East of Russia, China, Korea, Japan, Oriental Region (PECK 1988).

Helophilus MEIGEN, 1822

26. *Helophilus sapporoensis* MATSUMURA, 1911

Material examined: Korea: Kangwon prov., Kumgang Mts., Onjong-ri, 22.06.1990, 1 male, 1 female.

Distribution: Far east of Russia (Sakhalin, Kuril Is, Khabarovsk and Primorye) and Japan (Hokkaido). In Korea not mentioned.

Mallota MEIGEN, 182227. *Mallota bicolor* SACK, 1910

Material examined: Korea: N. Hamgyong prov., Onpho ad Chongjin, 18.08.1959, 1 male; Myohyang Mts., 8.08.1959, 1 male.

Distribution: Far East of Russia (Khabarovsk, Kuril Is, Sakhalin and Primorye), China. In Korea up to the present not mentioned.

Tribe Milesiini

Blera BILLBERG, 182028. *Blera japonica* (SHIRAKI, 1930)

Material examined: Korea: N. Hamgyong prov., Onpho-ri ad Kyongsong, 3.06.1965, 1 female.

Distribution: Far East of Russia (Skhalin, Kuril Is, Primorye), Japan (Hokkaido, Honshu) and Korea (PECK 1988).

Spilomyia MEIGEN, 180329. *Spilomyia panfilovi* ZIMINA, 1952

Ent. Obozr., 32: 329. Type-locality: Primorye (Sudzukhinsky Res.).

Material examined: Korea: N. Pyongan prov., Josan-ri ad Kujang, 21.06.1965, 1 male.

Distribution: Far East of Russia (S. Primorye). Now it has been established also in Korea.

Male. Frons and face pale yellow shining. Dark median stripe on the face long, reaching the antennae. Lunula large shining brown. Antennae yellow brown, third segment broad, short and darkened.

Thorax black with many citron-yellow spots on the mesonotum and pleurae. Hypopleurae entirely pale yellow. Scutellum black with pal yellow hind margin. Prescutum with very short, dark hairs. Squamae white with whitish ciliae. Halteres white. Wings hyaline slightly darkened.

Legs brownish yellow. Coxae yellow. Tarsi and tip of tibiae darkened. Hind femora slightly thickened, with very distinct tooth on the ventral part (Fig. 5). Hind femora covered with very short, black bristles.

Abdomen black with very narrow citron yellow bands. Lateral margin of the abdomen yellow. Genitalia large yellowish brown.

Length of body: 16 mm.

Syritta LE PELETIÉR et SERVILLE, 182830. *Syritta pipiens* (LINNAEUS, 1758)

Material examined: Korea: N. Hamgyong prov., Chongjin, 15.06.1990, 1 female, 1 male; S. Pyongan prov., Myohyang Mts., Kungan Cave, 19-22.08.1987, 2 males, 2 females, 10-11.06.1990, 2 males; Michon Lake ad Pyongyang, 31.08.1987, 1 male, Tomb of King Tongman near Pyongyang, 27.06.1990, 1 male, 1 female.

Distribution: Palaearctic, Nearctic and Oriental Regions. Common species, known in China and Far East of Russia.

Tribe Xylotini

Chalcosyrphus CURRAN, 192531. *Chalcosyrphus sapporoensis* (SHIRAKI, 1930)

Material examined: Korea: S. Pyongan prov., Ryongak Mts. ad Pyongyang, 24.05.1965, 1 male; Kangwong prov., Kumgang Mts., Okryn Valley, 22.06.1990, 1 female.

Distribution: Far East of Russia (Khabarovsk, Primorye and Kuril Is), Korea and Japan (Hokkaido), (ZIMINA 1972).

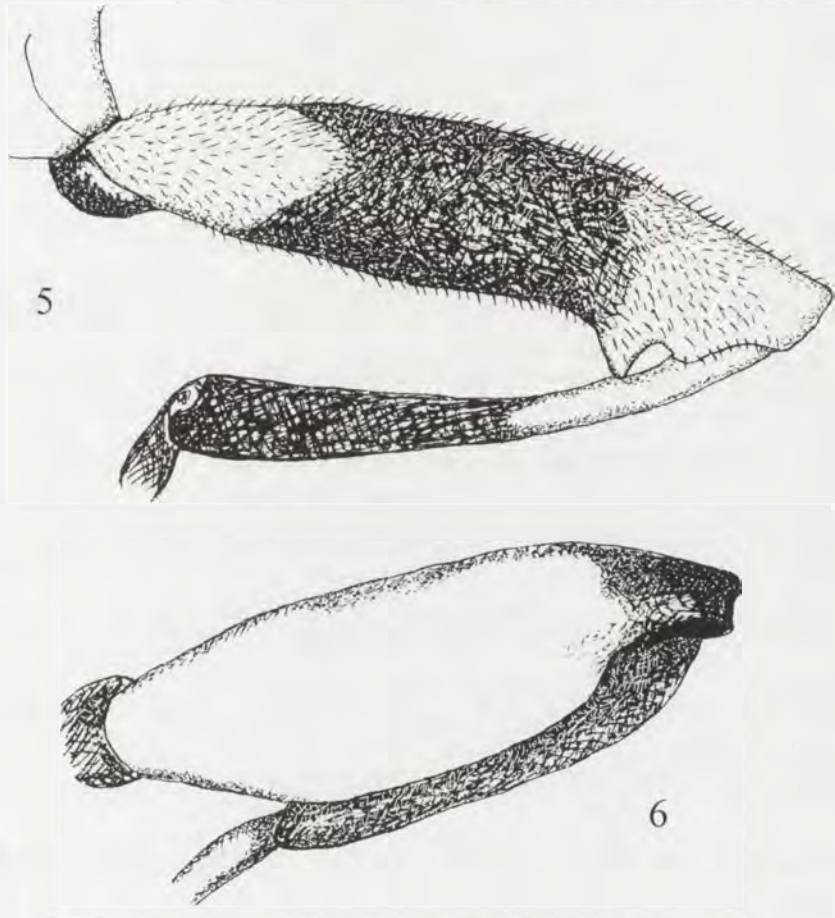


Fig. 5-6. 5 - *Spilomyia panfilovi* ZIM., hind femora of male, 6 - *Xylota frontalis* (SHIRAKI & EDASHIGE), hind femora of female.

Xylota MEIGEN, 182232. *Xylota frontalis* (SHIRAKI et EDASHIGE, 1953)

Trans Shikoku ent. Soc., 3: 116. Type-locality: "Omogo Valley, Ehime Pref." Japan (Shikoku).

Material examined: Korea: Kangwong prov., Kumgang Mts., Onjong-ri, 22.06.1990, 1 female.

Distribution: Japan. Now also known in Korea.

Female. Frons large black with short yellowish pubescence. Antennal prominence great, brownish-black. Face yellowish with white pubescence. Antennae blackish-brown, third segment slightly paler. Arista brown, yellow at the base.

Thorax and scutellum black, more or less covered with a short pale hairs. Fore and middle legs rather strong, all yellowish. Hind femora thickened yellow on apical one-fifth black (Fig. 6). Hind tibiae black with a very short apical spine. Wings long very slightly infuscated with a brownish-yellow pterostigma. Squamae yellowish, halteres white with yellowish knob.

Abdomen black with three pairs of yellow lateral spots more broad separated smaller and narrower than those in the male. Last tergite small, triangular and shining black. Genitalia brownish-yellow.

Length of body: 12 mm.

33. *Xylota coquilletti* HERVÉ-BAZIN, 1914

Material examined: Korea: N. Hamgyong prov., Kyongsong, Hamgyong: Mehyang-ri., 4.06.1965, 1 male; S. Pyongan prov., Myohyang Mts., near Kumgang cave, 10.06.1990, 1 female.

Distribution: W. Siberia (Altai, Sayan, Tuva), Far East (Sakhalin, Khabarovsk, Kuril Is), Japan (Hokkaido, Honshu) and Oriental Region.

Subfamily MICRODONTINAE

Microdon MEIGEN, 1803

34. *Microdon auricomus* COQUILLET, 1898

Material examined: Korea: N. Hamgyong prov., Chongjin, Deaso-ri., 15.06.1990, 1 male.

Distribution: Japan and Korea (SHIRAKI 1968).

35. *Microdon eggeri* MIK, 1897

Material examined: Korea: Kangwon prov., Kumgang Mts., Onjong-ri., 23.06.1990, 1 male.

Distribution: Europe, Siberia, Mongolia and Far East.

36. *Microdon mutabilis* (LINNAEUS, 1758)

Material examined: Korea: S. Pyongan prov., Ryongack Mts., Daebong at Pongyong, 7.06.1990, 1 female.

Distribution: Europe, Siberia, Far East (Primorye).

37. *Microdon simplex* SHIRAKI, 1930

Material examined: Korea: N. Hwanghae prov., Kaesong-City, Canyon of Puyon-Falls, 30.06.1990, 1 male and 1 female

Distribution: Asia: Japan and Oriental Region.

REFERENCES

- BAŃKOWSKA R., STERZYŃSKA M. 1997. Faunistic investigations conducted in North Korea by researchers from Institute of Zoology Polish Academy of Sciences from 1959 to 1990. *Fragm. faun.*, Warszawa, 40: 247-253.
- BARKALOV A. V. 1980. New species *Cheilosia ussuriana* sp. n. (Diptera, Syrphidae) from Southern Primorye. In: "Novye i maloizvestnye vidy fauny Sibiri". Novosibirsk, 14: 132-134.
- BARKALOV A. V. 1981. New and little-known species of the genus *Cheilosia* Meig. (Diptera, Syrphidae) from Altai and Southern Primorye. *Ibidem*, 15: 79-84.
- BARKALOV A. V. 1982. Description of new palaeartic species of the genus *Cheilosia* Meigen, 1822. *Ibidem*, 16: 65-67.
- BEZZI M. 1928. *Diptera Brachycera* and *Athericera* of the Fiji Islands. *Brit. Mus. Nat. Hist., London*, 424 pp.
- BRUNETTI E. 1908. Notes on oriental *Syrphidae* with descriptions of new species. I. *Rec. Indian Mus.*, 2: 49-96.
- BRUNETTI E. 1915. Notes on oriental *Syrphidae* with descriptions of new species. II. *Rec. Indian Mus.*, 11: 201-256.
- BRUNETTI E. 1923. *Pipunculidae, Syrphidae, Conopidae, Oestridae*. In: "The fauna of British India" Diptera III. London, 424 pp.
- CHU XIPING, HE JILONG. 1992. Notes on the genus *Myolepta* Newman with descriptions of new species (Diptera: Syrphidae). *J. of Shanghai Agricult. College*, 10: 77-84.
- CHU XIPING, HE JILONG. 1996. Description of a new species of the genus *Syrphus* (Diptera: Syrphidae) from China. *Entomotaxonomia*, 3: 312-316.
- CLAUSSEN C. 1990. Ein neuer *Triglyphus* aus Nordkorea (Diptera, Syrphidae). *Ent. Z.*, 14: 267-270.
- CURRAN C. H. 1927. New Neotropical and Oriental *Diptera* in the American Museum of Natural History. *Amer. Mus. Novit.*, 245: 1-9.
- CURRAN C. H. 1928. The *Syrphidae* of the Malay Peninsula. *J. fed. Malay St. Mus.*, 14: 141-324.
- CURRAN C. H. 1931. Additional records and descriptions of *Syrphidae* from the Malay Peninsula. *J. fed. Malay St. Mus.*, 16: 23-45.
- CURRAN C. H. 1942. *Syrphidae* from Sarawak and the Malay Peninsula (Diptera). *Amer. Mus. Nov.*, 1216: 1-8.
- DE MEJERE J. C. H. 1908. Studien über Südostasiatische Dipteren, 3. *Tijdschr. Ent.*, 51: 191-332.
- HE JILONG. 1992. Studies on syrphids from Shanghai, China (Diptera: Syrphidae). *J. of Shanghai Agric. Coll.*, 10: 57-62.
- HE JILONG. 1993. Three new species of the genus *Eupeodes* from Heilongjiang Province, China (Diptera: Syrphidae). *Acta Zootax. Sinica*, 18: 87-92.
- HERVÉ-BAZIN J. 1914. Syrphides recueillis au Japon par M. Edme Gallois (Diptera). *Annals Soc. ent. Fr.*, 83: 398-416.
- HERVÉ-BAZIN J. 1923a. Études sur les "Lathrophthalmus" (Diptera, Syrphidae) d'Extrême-Orient. *Ann. Sci. nat. Zool.*, 6: 125-152.
- HERVÉ-BAZIN J. 1923b. Première note sur le *Syrphides* (Diptera) de la Collection du Muséum National de Paris. Les genres *Megaspis* et *Volucella* en Asie. *Bull. Mus. Hist. nat., Paris*, 29: 252-259.
- HERVÉ-BAZIN J. 1929a. *Syrphidae* de Chine. Description de quatre *Chilosia* nouveaux. *Encycl. ent. (B II) Dipt.*, 5: 93-99.
- HERVÉ-BAZIN J. 1929b. Un nouveau *Lampetia* (Merodon) de Chine (Dipt. Syrphidae). *Bull. Soc. ent. Fr.*, 6: 111-115.
- HERVÉ-BAZIN J. 1930. Deuxième note sur le genre *Chilosia* (Dipt. Syrphidae) de Chine, et description de trois espèces nouvelles. *Bull. Soc. ent. Fr.*, 1930: 44-47.
- HULL F. M. 1929. Insect of Samoa. Part 6. *Diptera, Syrphidae*. British Museum (Nat. Hist.), London, p. 191-198.
- HULL F. M. 1937. Some neotropical and oriental Syrphid flies in the United States National Museum. *J. Wash. Acad. Sci.*, 27: 165-176.
- HUANG CHUNMEI, CHENG XINYUE. 1959. A Study of *Graptomyza* Wiedemann (Diptera: Syrphidae) from China. *Entomotaxonomia*, 17: 91-99.
- KERTÉSZ K. 1899. Verzeichniss einiger, von L. Birö in Neu-Guinea und am Malayischen Archipel gesammelten Dipteren. *Természetr. Füz.*, 22: 173-195.

- KERTÉSZ K. 1913a. H. Sauter's Formosa Ausbeute. *Syrphidae* (Dipt.). Ann. hist.-nat. Mus. hung., 11: 273-285.
- KERTÉSZ K. 1913b. Three new species of the genus *Ceritoides* from the Oriental region. Ann. hist.-nat. Mus. hung., 11: 404-408.
- KNUTSON L., THOMPSON F. C., VOCKEROTH J. R. 1975. Family *Syrphidae*. In: Delfinado and Hardy (eds.). A catalog of the *Diptera* of the Oriental Region. Vol. 2., Honolulu, 459pp.
- LI QINGXI, HE JILONG. 1993. A new species of genus *Paragus* Letre. (*Diptera, Syrphidae*) from China. Entomotaxonomia, 15: 62-64.
- LI QINGXI, HE JILONG. 1994. The description of a new species of the genus *Chrysotoxum* Meigen (*Diptera, Syrphidae*). Entomotaxonomia, 16: 150-152.
- LOEW H. 1858. Beschreibung einiger japanischen Dipteren. Wien. ent. Mschr., 2: 100-112.
- MATSUMURAS. 1904. Thousand Insects of Japan. I. Tokyo, 114 pp.
- MATSUMURA S. 1918. New species of the economic *Syrphidae* of Japan. J. Coll. Agric., Sapporo, 1: 1-31.
- MATSUMURAS. 1931. 6000 illustrated Insects of Japan-Empire. Tokyo, 1548 pp.
- MROCKZKOWSKI M. Field Investigations in the Democratic People's Republic of Korea by staff members of the Institute of Zoology of the Polish Academy of Sciences. Fragm. faun., Warszawa, 18: 313-344.
- OHARA K., KUSIGEMATI K. 1985. *Syrphidae* of Salomon Islands and Fiji (*Insecta, Diptera*). Kagoshima Univ. Res. Center S. Pac., 5: 81-86.
- PECK L. V. 1988. *Syrphidae*. In: A. Soós (ed.) Catalogue of Palaearctic *Diptera*. 8. Budapest, 363 pp.
- SACK P. 1913. H. Sauter's Formosa-Ausbeute. Syrphiden I. (Dipteren.). Ent. Mitt., 2: 1-10.
- SACK P. 1922. H. Sauter's Formosa-Ausbeute: Syrphiden II (Dipteren). Arch. Naturg., 87: 258-276.
- SACK P. 1927. H. Sauter's Formosa-Ausbeute: *Syrphidae* III (Dipt.). Stett. ent. Ztg., 88: 305-320.
- SACK P. 1933. *Syrphidae*. In: Schwedisch-chinesische wissenschaftliche Expedition nach den nordwestlichen Provinzen Chinas, unter Leitung von Dr. Sven Heidin und Prof. Su Ping-chang. Ark. Zool., 26A, 6: 1-9.
- SACK P. 1938. *Diptera*. Von Dir. Kjell Kolthoff in China gesammelte Syrphiden. In: Srøstedt Y. Insecten aus China im Naturhistorischen Reichsmuseum zu Stockholm. Ark. Zool., 30: 1-19.
- SACK P. 1941. Neue Syrphiden aus Mandschukuo. Arb. morphol. taxon. Ent., 8: 186-192.
- SHIRAKI T. 1930. Die Syrphiden des Japanischen Kaiserreichs, mit Berücksichtigung benachbarter Gebiete. Mem. Fac. Agric. Taihoku imp. Univ., 1: 1-446.
- SHIRAKI T. 1949. A new genus of *Syrphidae*, *Matsumyia*. Insecta matsum., 17: 1-3.
- SHIRAKI T. 1952. Studies on the *Syrphidae*. 2. Some new species from Japan, with an interesting *Trypetidae*. Mushi, 23: 1-15.
- SHIRAKI T. 1954. Studies on the *Syrphidae*. 4. Japanese *Graptomyzinae*. Insecta matsum., 18: 54-60.
- SHIRAKI T. 1956. Studies on the *Syrphidae*. 5. Two new Japanese species, presented by Dr. C. Okawa. Insecta matsum., 20: 1-5.
- SHIRAKI T. 1968. *Syrphidae* (*Insecta: Diptera*). In Fauna Japonica. Tokyo, 2: 243, 3: 272.
- SHIRAKI T. and EDASHIGE T. 1953. The insect fauna of Mt. Ischizuchi and Omogo Valley, Iyo, Japan. The *Syrphidae* (*Diptera*). Trans. Shikoku ent. Soc., 3: 84-125.
- STACKELBERG A. A. 1930. Beiträge zur kenntnis der palaarktischen Syrphiden. Konowia. 9: 223-234.
- STACKELBERG A. A. 1950. Palaearctic species of the genus *Mallota* Mg. (*Diptera, Syrphidae*). Ent. Obozr., 31: 285-296.
- STACKELBERG A. A. 1952. Novye *Syrphidae* (*Diptera*) palaarkticheskoy fauny. Trudy zool. Inst., Leningrad, 13: 350-404.
- STACKELBERG A. A. 1953. Palaearctic species of the genus *Orthoneura* Macq. (*Diptera, Syrphidae*). Ent. Obozr., 33: 342-357.
- STACKELBERG A. A. 1956. Neue angaben über die systematik der palaarktische Sphegina-Arten (*Diptera, Syrphidae*) I, II. Ent. Obozr., 35: 706-715, 935-943.
- STACKELBERG A. A. 1958. The palaearctic species of the genus *Spilomyia* Mg. (*Diptera, Syrphidae*). Entom. Obozr., 37: 759-768.
- STACKELBERG A. A. 1961. Palaearctic species of the genus *Eumerus* Mg. (*Diptera, Syrphidae*). Trudy vsesojuz. ent. Ob., 48: 181-229.
- STACKELBERG A. A. 1963. Neue palaarktische Syrphiden-Arten (*Diptera*). Stuttg. Beitr. Naturk., 113: 1-7.

- VILOVITSH N. A. 1955. Novye i maloizvestnye mukhi-zhurchalki (*Diptera*, *Syrphidae*) s ostrova Kunashir. Ent. Obozr., 34: 350-359.
- VILOVITSH N. A. 1956a. Novye vidy roda *Syrphus* Fabr. (*Diptera*, *Syrphidae*) s Dalnego Vostoka. Zool. Zh., 35: 741-745.
- VILOVITSH N. A. 1956b. Neue Syrphiden (*Diptera*, *Syrphidae*) aus Sachalin-Gebiet. Ent. Obozr., 35: 462-473.
- VILOVITSH N. A. 1960a. New palaeartic species of *Syrphidae* (*Diptera*) from Far East. Ent. Obozr., 39: 205-209.
- VILOVITSH N. A. 1960b. A contribution to the knowledge of the Hover Flies fauna (*Diptera*, *Syrphidae*) of Sachalin and the Kuril Isles. Trudy vsesojuz. ent. Ob., 47: 217-272.
- VILOVITSH N. A. 1973. New species of Hover Flies of the genus *Chrysotoxum* Mg. (*Diptera*, *Syrphidae*) from Palaearctic. Ent. Obozr., 52: 924-934.
- VILOVITSH N. A. 1974. A review of the palaeartic species of the genus *Chrysotoxum* Mg. (*Diptera*, *Syrphidae*). Ent. Obozr., 53: 196-217.
- VILOVITSH N. A. 1975. Some new species of hover-flies (*Diptera*, *Syrphidae*) from the fauna of the USSR. Taksonomia i ekologija zhivotnykh Sibiri, Novosibirsk, 9: 73-89.
- VILOVITSH N. A. 1976. Some new palaeartic species of hover flies (*Diptera*, *Syrphidae*) from the fauna of Siberia and adjoining regions. Novosti fauny Sibiri, Novosibirsk, 10: 118-129.
- VILOVITSH N. A. 1978. Redescription of the genus *Mallota* Meigen, 1822 (*Diptera*, *Syrphidae*) in the Siberian fauna. Taksonomia i ekologija clenistonogich Sibiri, Novosibirsk, 12: 163-171.
- VILOVITSH N. A. 1979a. Obzor sibirskikh vidov roda *Orthoneura* Macquart, 1829 (*Diptera*, *Syrphidae*). Clenistonogie i helminty, Novosibirsk, 13: 48-63.
- VILOVITSH N. A. 1979b. Obzor palearkticeskich vidov roda *Helophilus* Meigen, 1822 (*Diptera*, *Syrphidae*). Clenistonogie i helminty, Novosibirsk, 13: 64-86.
- VILOVITSH N. A. 1980a. New palaeartic species of the genus *Psilota* Meigen, 1822 (*Dipt.*, *Syrphidae*) from the Siberian fauna. Izv. sib. otd. AN. SSSR., 1: 47-51.
- VILOVITSH N. A. 1980b. Review of Siberian species of the genus *Sphegina* Mg., 1822 (*Diptera*, *Syrphidae*). Sistematika i ekologija zhivotnykh, Novosibirsk, 14: 105-123.
- VILOVITSH N. A. 1983. Sirfidy Sibiri (*Diptera*, *Syrphidae*). Izd. "Nauka", Novosibirsk, 242 pp.
- WALKER F. 1861. Catalogue of the dipterous insects collected in the New Guinea. Proc. linn. Soc. Zool. 5: 239-266.
- ZIMINA L. V. 1952. Novyi vid *Spilomyia* (*Diptera*, *Syrphidae*) s Dalnego Vostoka. Ent. Obozr., 32: 329-331.
- ZIMINA L. V. 1961. Kratkij obzor palearkticeskich vidov roda *Volucella* Geoffr. (*Diptera*, *Syrphidae*). Sborn. Trud. zool. Muz. MGU, 8: 139-149.
- ZIMINA L. V. 1964. Certain *Diptera* from the family *Conopidae* and *Syrphidae* (*Diptera*) from the Far East. Ent. Obozr., 43: 461-465.
- ZIMINA L. V. 1968. To diptero fauna of the East Siberia. *Syrphidae* and *Conopidae*. Sborn. Trud. zool. Muz. MGU, 11: 57-78.
- ZIMINA L. V. 1972. K faunie Sirfid (*Diptera*, *Syrphidae*) zapovednika "Kiedrovaja Pad". Trudy Biologo-poc. Inst., 7: 172-175.
- ZIMINA L. V. 1976. Redkie i interesnye *Syrphidae* (*Diptera*) v kolekcii Zoologicheskogo muzeya MGU. 1. Sborn. Trud. zool. Muz. MGU, 15: 136-148.
- ZIMINA L. V. 1981. Redkie i interesnye *Syrphidae* (*Diptera*) v kolekcii Zoologicheskogo muzeya MGU. 2. Sborn. Trud. zool. Muz. MGU, 19: 150-170.

STRESZCZENIE

[Tytuł: *Syrphidae* (*Diptera*) Korei Północnej zebrane przez polskie ekspedycje. Cz. I. *Milesiinae*, *Microdontinae*]

Opracowany materiał muchówek z rodziny *Syrphidae* został zebrany podczas 6 ekspedycji do Korei Północnej przez pracowników Instytutu Zoologii PAN w Warszawie na przestrzeni lat: 1959-1990. Muchówki były zbierane

głównie siatką entomologiczną lub czerpakiem, jedynie w dwu ostatnich wyprawach zastosowano również pułapki Moerick'a. Zgromadzony materiał *Syrphidae* liczy niewiele ponad 1000 okazów muchówek, jest on jednak dość zróżnicowany i interesujący. W obrębie dwu opracowanych podrodzin znaleziono 37 gatunków z 21 rodzajów *Syrphidae*, z czego zaledwie 9 gatunków było dotychczas wymienianych z Półwyspu Koreańskiego.

W opracowanym materiale wyodrębniono bardzo rzadkie gatunki *Syrphidae*, najczęściej znane jedynie z pierwotnego opisu i nie wymieniane dotąd z innych obszarów. Są to: *Volucella inanoides* HERVÉ-BAZIN, *Sphagina melancholica* STACK., *Asiosphagina nitidifrons* STACK., *Lathyrphthalmus viridis* (COQ.), *Spilomyia parfilovi* ZIMINA i *Xylota frontalis* (SHIRAKI & EDASHIGE). Do tych wyżej wymienionych gatunków podano szczegółowe opisy i rysunki charakterystycznych cech.

W pracy omówiono także obecny stan poznania fauny *Syrphidae* Dalekiego Wschodu oraz podano obszerny wykaz piśmiennictwa dotyczącego badanych muchówek z tej części kontynentu.
