

# SOME NEW SPECIES OF FLOWER FLIES (DIPTERA, SYRPHIDAE) FROM TIAN-SHAN

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Ten new species of flower flies of the genera *Syrphus*, *Cheliosia* and *Eumerus* are described below, together with the previously unknown female of *Eumerus coeruleus* Beck.

Type-specimens. *Eumerus arkitensis* Peck, sp. n., *Cheliosia vtorovi* Peck, sp. n. and *Cheliosia zlotini* Peck, sp. n. - Zoological Museum of Moscow University; the rest - Institute of Zoology, USSR Academy of Sciences, Leningrad.

The drawings are original.

I take this opportunity of expressing my deep gratitude to A. A. Shtakelberg for his help in processing the material.

*Syrphus kirgizorum* Peck, sp. n., ♂♀.

Related to *S. macularis* Zett., from which it is distinguished by the absence of a black stripe on the face (in *S. macularis* the face has a very broad, black stripe medially), the strongly pollinose condition of the face and frons, the red-yellow hypopygium in the male (black in *S. macularis*) and the different coloration of the legs.

Male. Face reddish-yellow, with yellow pollen and black, erect hairs. Cheeks and mouth margin narrowly black. Frons black, but densely covered with yellowish pollen concealing the basic coloration of the frons, which therefore appears yellow; frons with long, erect, black hairs. Ocellar triangle black, with long, black, antrorse hairs. Ocelli arranged in an isosceles triangle, the anterior one further from the posterior ones than the latter are from each other. Frontal angle 90°. Eyes with relatively short, dense, yellowish hairs. Antennae and arista black. Head somewhat wider than thorax. Pronotum and sides of thorax black, with yellowish pollen and yellow, erect hairs. Scutellum brownish yellow, with sparse, long, black hairs. Postalar bristles yellow, halteres light yellow. Fore and middle femora black on basal 1/3, hind femora on basal 2/3. Tibiae yellow, except that the hind tibiae each have a narrow, black annulus medially. Tarsi black or black-brown, fore and middle tarsi yellowish on the underside. Fore and middle legs covered with yellow, recumbent hairs, apart from long, black ones on the posterior side of the femora. Hind femora and tibiae predominantly with short, black hairs, but with some long, yellowish ones on the posterior side; tarsi with yellowish hairs. Wings hyaline, with dark veins. Subcostal cell and base of wing brownish yellow. Abdomen oblong-oval (Fig. 1). Tergites II-IV black, with yellow markings. Tergite V reddish yellow, with a trapeziform black spot medially. Tergite II with two triangular spots at the sides, passing across the lateral margins of the tergite in the anterior part. Tergites III and IV with yellowish, semicircular spots at the sides, the anterior margins of which are slightly concave and the posterior margins rounded. Tergite IV with a relatively broad, yellow border along the posterior margin. Abdomen yellow underneath, with dark spots on sternites II-III and long, sparse, light yellow hairs.

Female. Frons broad, at the level of the base of the antennae equal to 1/3 of the width of the head, with a broad

stripe of golden-yellow pollen and black, erect hairs, arranged in an equilateral triangle (the anterior one nearest to the posterior ones than the latter are to one another). Femora black only at the very base. Tibiae yellow, hind tibia without a black annulus. Tarsi black. Yellow markings on tergites II-IV somewhat narrower than in the male. Sternites yellow. Otherwise like the male.

Body length 10-11 mm.

Holotype - male: Kirgizia, Tian-Shan, Koylyu Valley, 23 June 1965 (1 ♂, Peck); paratypes - Sary-Dzhaz Valley, 24 June 1965 (3 ♂♂, 1 ♀, Peck).

*Syrphus parvilunulatus*, Peck, sp. n., ♂♀.

Resembles *S. lunulatus* Meig. and *S. sublunulatus* but the body is smaller, the abdominal margins are relatively narrow and almost parallel and the structure of the male hypopygium is different.

Male. Face yellow, with a black median stripe not reaching the bases of the antennae, yellow pollen and yellow hairs. Cheeks yellow. Frons black, but densely covered with yellow-gray pollen which conceals the basic coloration of the frons. Frontal angle 90°. Ocellar triangle black, Ocelli arranged in an isosceles triangle (the anterior one further from the posterior ones than the posterior ones from each other). Frons and vertex with long, yellowish or brownish hairs. Eyes with relatively short, but densely yellowish hairs. Antennae black. Scutum black, with grayish pollen, yellow hairs and inconspicuous longitudinal stripes of grayish pollen. Sides of thorax densely covered with yellow-gray pollen and yellow hairs. Scutellum brownish, with light pollen and long, black, erect hairs. Postalar bristles yellow, with cilia of the same color. Halteres yellow. Bases of fore and middle femora black (almost the middle), hind femora each with a very wide, black band medially, (the femur is largely black, but the base and end are yellow). Fore and middle tibiae and tarsi yellow, except for the last segments of the tarsi, which are brownish. Hind tibia with a narrow black annulus medially, hind tibia brown above. Legs covered with yellow hairs. Wings hyaline, with black veins and brownish subcostal cell. Fore and middle legs relatively narrow, with almost parallel margins, hind legs with three pairs of yellow spots; these are oval on tergite II, and semicircular on III-IV; the spots do not pass across the lateral margins of the tergites. Tergites IV and V each with a narrow, yellow border along the posterior margin. Sternites yellow, with a black oval spot on II and black bands on the III-IV. Abdomen covered with yellow hairs.

Hypopygium relatively large, black, with yellow hairs. In the structure of the hypopygium this species differs rather sharply from *S. lunulatus* and *S. sublunulatus* (Fig. 2).

Female. Frons broad, black, shiny, with spots of yellow pollen at the sides. Ocelli arranged in an isosceles triangle, the anterior ocellus being nearer the posterior than the distance between the latter. Legs somewhat lighter than in male: fore and middle femora slightly brownish



Figs. 1-3.

1) *Syrphus kirgizorum*, sp. n., abdomen; 2) *S. parvulunulatus*, sp. n., ♂, hypopygium; 3) *S. latimacula*, sp. n., ♀, abdomen.

basally, but the hind femora each with a broad, black band in the apical half. Scutellum with yellowish hairs, which are sometimes mixed with black.

Body length 6.5-8 mm.

Holotype - male; Kirgizia, Alay Range, Kirgizata River, 5 June 1965 (1 ♂, Peck); paratypes - male and female; Kirgizia, Chatkal River valley (upper reaches) 27 July 1965 (1 ♀, Peck); Fergana Range, Salamalik Gorge, 29 May 1965 (1 ♂, Peck); Tian-shan, Koylyu Valley, 23 June 1965, Sary-Dzhaz Valley, 24 June 1965 (1 ♂ and 2 ♀♀, Peck).

*Syrphus latimacula* Peck, sp. n., ♂.

Resembles *S. corollae* F. and *S. luniger* Mg., but is distinguished from the former by its comparatively small hypopygium (*S. corollae* F. has a rather large hypopygium) and the semicircular shape of the spots on abdominal tergites II-IV; distinguished from *S. luniger* by the yellow hairs on the scutellum and hypopygium (in *S. luniger* these parts are covered mainly with black hairs), and by having the yellow spots on the abdominal tergites passing across the lateral margins of the tergites (in *S. luniger* the yellow spots do not pass across the lateral margins of the tergites and are differently shaped). In addition, *S. latimacula* is distinguished from both the comparison species by the structure of the hypopygium.

Male. Face yellow, with yellow hairs, but with black hairs above, laterad from the antennae. Facial tubercle and mouth margin nigrescent. Frons yellow, with black, rather long, erect hairs. Frontal angle 90°. Ocellar triangle black, with black hairs. Ocelli arranged in an isosceles triangle, (the anterior one further from the posterior ones than those are from each other). Occiput with grayish pollen and yellow hairs. Antennae brownish yellow, nigrescent above; 3rd segment oblong-oval, half as long again as wide and longer than the combined length of the two basal segments. Length of arista about equal to that of the antennae. Eyes bare. Head broader than scutum. Scutum black, shiny, with dense, relatively long, yellow hairs. Sides of thorax with yellowish pollen and dense, long, yellow hairs. Scutellum slightly brownish, with long, yellow, erect hairs. Postalar squamae yellowish, with yellow cilia. Halteres light yellow. Legs yellow, except the basal third of the femora, which is black, and the middle segments of the tarsi, which are brownish above. Fore and middle legs with yellow hairs, hind legs mainly with black hairs. Wings hyaline, with yellow veins and yellow subcostal cell. Abdomen oval, black, with three pairs of yellow spots: those on tergite II oval, those on tergites III-IV semicircular, with very strongly concave anterior margins (Fig. 3). The yellow abdominal spots pass across the lateral margins of the tergites. Anterior ends of the semicircular yellow spots reach the anterior margins of the corresponding tergites. Tergite IV with a

yellow border along the posterior margin. Tergite V yellow, with a black, trapeziform spot medially. Hypopygium yellow, with a large, black spot apically and yellow hairs.

Abdomen yellow underneath, with a black oval spot in the middle of sternites II-IV. The whole abdomen covered with yellow hairs.

Body length 11-11.5 mm.

Holotype (male) and paratypes (males): Kirgizia, Tian-Shan, Sary-Dzhaz Valley, 24 June 1965 (2 ♂♂, Peck; 2 ♂♂, Ibratmova).

*Cheilosia rufiventris* Peck, sp. n. ♀.

Distinguished from the other known species of the genus by the red abdomen of the female. In Sack's classification (Sack, 1932) this species would be assigned to group A (with bare eyes), related to *Ch. flavipes* Panz. We may assume that the male has hairy eyes.

Female. Head relatively broad, wider than the thorax. Eyes bare. Frons broad, at the level of the base of the antennae roughly 1/3 as wide as the head, black, shiny, with 3 longitudinal sulci and covered with golden hairs. Ocelli arranged in an equilateral triangle. Face shiny, black bare, with thin grayish pollen below the antennae. Antennae reddish yellow, 1st and 2nd segments darkened on the underside; 3rd antennal segment oval, rounded apically, one and one-half times as long as wide. Vertex and occiput with yellow hairs. Parafacials reddish. Scutum and scutellum shiny black, with abundant but small punctures and short, semi-recumbent hairs. At the anterior margin of the scutum there is a large spot of silvery-gray bloom laterad of the humeral tubercle. Postalar bristles whitish, with yellow cilia. Halteres reddish yellow. Sides of thorax with relatively long, golden hairs. Scutellum without bristles on the posterior margin. Legs red-yellow, with golden hairs; coxae brown, the last tarsal segments black. Basal segments of hind tarsi partly covered with long, blackish hairs. Tibiae and tarsi with short, black bristles underneath. Wing yellowish, with yellow veins and a yellow ocellus; vein m meets r<sub>4+5</sub> at right angles. Abdomen oblong-oval, red, except for the base of tergite I, which is black; tergite V with brown, longitudinal stripes on the sides. Abdomen with relatively short, yellowish, erect hairs.

Body length 10 mm.

Holotype (female) and paratype (female); Kirgizia, Talas River floodplain (Uzgor'ysh, 20 km north of Talas), 24 April, 1963 (2 ♀♀, Peck).

*Cheilosia vtorovi* Peck, sp. n., ♂♀.

Resembles *Ch. alpina* Zett. and *Ch. montana* Egg., but has darker legs, black-brown halteres, darker veins, a brown wing base and black abdominal hairs.

Male. Face relatively broad, widened below, with grayish pruinescence but without hairs. Median facial tubercle relatively broad, not strongly protruding. Mouth margins protrude less than the median facial tubercle. Face slightly concave below the antennae (Fig. 4). Parafacials moderately broad, with grayish pollen and short, brown hairs. Eyes with relatively long, dense, brown hairs. Frons black, with grayish pollen, a longitudinal sulcus and long, black hairs. Ocellar triangle black, with long, black hairs. Antennae black; 3rd segment small, apically rounded, with brownish pollen, almost as long as wide. Arista long, bare. Scutum and scutellum black, shiny, finely punctate, with long, black, retrorse hairs. Sides of thorax black, with grayish pruinescence and long, black, erect hairs. Postalar bristles brownish yellow, with black cilia on the upper one and yellow cilia on the lower one. Halteres brown. Legs black, except for the basal third of the tibiae, which is yellow; tarsi yellowish

on the underside. Fore and middle tibiae narrowly brown at the apices. Legs mainly with yellowish hairs, but a row of long, black hairs on the posterior side of the femur. Wing hyaline, brownish at the base, with black veins and a brown ocellus. On the basal trunk of the radius there is a row of black hairs. Abdomen short-oval, black, finely punctate, shiny, with relatively long, erect, black hairs.

Female. Frons broad, 1/3 as wide as the head, with 3 inconspicuous longitudinal sulci, abundant but small punctures and grayish pollen. Parafrontals and frons with long, yellowish hairs, vertex with yellowish hairs mixed with black. Ocelli arranged in an equilateral triangle. Mesonotum with black and yellowish hairs. Postalar bristles yellow, with yellow cilia.

Abdomen with yellowish hairs, longer at the sides of tergite II, and with grayish pollen on the underside.

Legs black, except for the underside of the tarsi, which are yellowish.

Body length 10-11.5 mm.

Holotype — male; Kirgizia, Tian-Shan, Akshiyarak Range, Pokrovskiy syrty\*, 21 July 1964 (1 ♂, Vtorov); paratypes (males and females) — same locality, 19 August 1964 (1 ♀ Zlotin); 16 July and 19 August 1964 (2 ♀♀, Zlotin), 3 August 1964 (1 ♀, Vtorov); upper reaches of the B. Naryn, 1 and 9 July 1965 (1 ♂, 1 ♀, Zlotin); middle reaches of the Koylyu, 16 July 1962 (2 ♂♂, Zlotin); Sary-Dzhaz Valley, 3000 m above sea level, 3 July 1966 (1 ♂, Peck).

*Cheilosia zlotini* Peck, sp. n., ♂♀.

Resembles *Ch. vtorovi* Peck, sp. n., from which it is distinguished by the more prorecc facial tubercle and by the face being more concave below the antennae, black, shiny and without pruinescence (Fig. 5).

Male. Face slightly widened below, black, shiny, without pruinescence, except for a little grayish pollen immediately below the antennae. Median facial tubercle protrudes forward; mouth margins protrude less than the median tubercle. Face concave below the antennae. Antennae black, the 3rd segment round. Parafrontals moderately broad, finely punctate, shiny, black, with sparse, brown hairs. Eyes with long, dense, brown hairs. Frons and ocellar triangle black, finely punctate, shiny, with long, black hairs. Scutum, sides of thorax and scutellum black, shiny, and with abundant but small punctures and black, erect hairs. Postalar bristles brownish, with brownish-yellow cilia. Halteres brown. Legs black, except for the tarsi, which are brownish underneath; legs covered mainly with black hairs, wings hyaline, except at the extreme bases, where they are brown, with black veins. Abdomen oval, black, shiny, with black, erect hairs.

Female. Frons relatively broad, roughly 1/4 as wide as the head, with 3 longitudinal sulci. Scutum, sides of the thorax and scutellum with abundant punctures, slightly shiny, and with black hairs. Postalar bristles brownish. Halteres brown. Abdomen with whitish, short, recumbent hairs, except sides of tergites I and II, which have longer, erect ones. Middle femora with a row of long, whitish hairs on the posterior sides in the basal half.

Body length 10 mm.

Holotype — male; Kirgizia, Tian-Shan, Akshiyarak Range, Pokrovskiy syrty\*, 10 August 1964 (1 ♂, Zlotin); paratypes

— female — same locality and date (1 ♀, Zlotin) and male — upper reaches of the B. Naryn — 1 July 1965 (1 ♂, Zlotin).

*Eumerus coeruleithorax* Peck, sp. n., ♂♀.

Resembles *E. tricolor* Mg., from which it is distinguished (in the male) by the broader frons, the size and shape of the 3rd antennal segment, the more delicate body punctation, the absence of longitudinal stripes of white pollen on the scutum, the brownish-red abdominal tergite IV (in *E. tricolor* the tergite IV is black), the black hairs on the femora, hind tibiae and tarsi (in *E. tricolor* the legs have light hairs).

Male. Eyes densely covered with whitish hairs; frons at its narrowest point 1/12 as wide as the head and approximately half as wide as the 3rd antennal segment. Face, frons and vertex black, shiny, with a blue tinge. Face and ocellar triangle with relatively long, but sparse, whitish hairs; frons with black hairs. Antennae black, with a large 3rd segment, which is broader than long, its distal angles poorly defined. Scutum, sides of thorax and scutellum black, with abundant but small punctures, shiny, with a blue tinge and white, protruding hairs. Scutum with no trace of longitudinal stripes of white pollen. Postalar bristles yellow, with whitish cilia. Halteres yellow. Legs black, with narrowly yellow knees. Hind femora moderately thickened their width medially being double the corresponding width of the tibia. All femora with black hairs. Fore and middle tibiae and tarsi with whitish hairs, hind tibiae and tarsi with mainly dark ones. Wings hyaline, with yellow veins and a yellow ocellus. Vein  $r_{4+5}$  is distinct above the first anal cell ( $R_5$ ), but not much curved. Abdomen red, except for the base and the medium stripe on tergite II, which are black. Tergite IV brownish red. Abdomen with light hairs, hypopygium with black ones. The three pairs of semicircular spots on the abdomen well developed.

Female. Frons relatively broad, 1/5 as wide as the head. Face and vertex with relatively long, whitish hairs, frons with black hairs. Antennae black, with a large 3rd segment, its distal angles poorly defined. Ocelli arranged in an isosceles triangle. Femora of all legs black. Fore and middle tibiae yellow basally and the basal third of the hind tibiae yellow. Fore tarsi yellowish underneath, brown above. Middle and hind tarsi black. Legs with light hairs. Wings hyaline, with brown veins and a brown ocellus. Abdomen red, with a black, longitudinal median spot. Tergite V black. Abdomen mainly with light hairs, except for the black parts of the tergites and tergite V. The three pairs of semicircular spots of white pollen on the abdomen well marked.

Body length 8.5-9 mm.

Holotype — male: South Kazakhstan, Mashat Valley, 30 May 1964 (1 ♂, Peck); paratype — female: Kirgizia, Sandalash Range, vicinity of Lake Ak-Kul', 19 June 1966 (1 ♀, K. Ibrahimova).

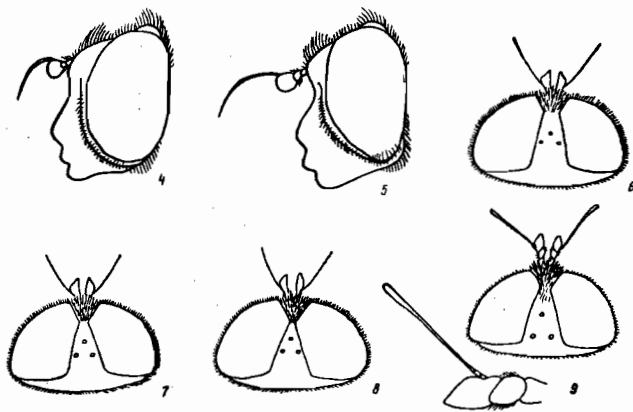
This species can be inserted into Shtakel'berg's key to Palearctic species of the genus *Eumerus* (Shtakel'berg, 1961, pp. 190 and 221) as follows:

#### Males

42(43). Scutum and scutellum with short hairs. All tarsi black.

42a(42b). Frons narrower, at the narrowest point approximately 1/3-1/4 as wide as the 3rd antennal segment, or the eyes almost contiguous at one point. Third antennal segment relatively small, distinctly longer than wide. Scutum and scutellum with coarse, abundant punctures, slightly shiny, with rudiments of white-pollinose longitudinal stripes at the anterior margin. Abdominal tergite IV black. Legs with yellowish hairs  
..... *E. tricolor* Mg.

\*Syrty — wide, shallow morainic depressions (Sofiano, Russian-English Geologic Dictionary, Moscow 1960) (Translator).



Figs. 4-9.

4-8) Head: 4) *Cheilostia vtorovi*, sp. n.; 5) *Ch. zlotini*, sp. n.; 6) *Eumerus arkitensis*, sp. n., ♂, head; 7) *E. alajensis* Peck., ♂, head; 8) *E. nigrifacies* Peck., ♂, head; 9) *E. aristatus*, sp. n., ♂, dorsum of head and antenna.

42b(42a). Frons broader, at the narrowest point 1/2 as wide as the 3rd antennal segment. Third antennal segment large, distinctly wider than long. Scutum and scutellum with abundant but small punctures, shiny, with a blue tinge and no traces of longitudinal stripes of white pollen at the anterior pronotal margin. Abdominal tergite IV brownish red. Hind legs and fore and middle femora with black hairs. - USSR: South Kazakhstan, Kirgizia . . . *E. coeruleithorax* Peck, sp. n.

Females

23(24). Hind femora long and slender, barely thickened, their maximum width in the basal part . . . . . *E. tadzhikorum* Stack.

24(23). Hind femora conspicuously thickened, their maximum width at the middle.

24a(24d). Vein  $r_{4+5}$  distinctly, but not strongly curved above cell  $R_5$ .

24b(24c). Frons approximately 1/4 as wide as the head. Frons and vertex with white hairs. Ocelli in an equilateral triangle. Brown, infusate wing spot distinct. Hind tibia black down to the base. 9.5 mm . . . . . *E. pamirorum* Stack.

24c(24b). Frons approximately 1/5 as wide as the head and with black hairs. Ocelli in an isosceles triangle. Wing hyaline without a brown infusate spot. Basal third of hind tibia yellow. 9 mm. . . . . *E. coeruleithorax* Peck, sp. n.

24d(24a). Vein  $r_{4+5}$  very strongly curved above cell  $R_5$ .

*Eumerus coeruleus* Beck., ♀ (nov.).

The species was described by Becker (1913) from males from Iranian Baluchistan. The female is described for the first time here.

Female. Frons relatively narrow, 1/6 as wide as the head, somewhat broader than the 3rd antennal segment. Black, shiny, with fine punctation, and with a little yellowish pollen at the sides. Face, frons and eyes densely covered with long, whitish, erect hairs. Antennae reddish yellow. Third antennal segment of moderate size, rather truncate at the distal end, with an obtuse upper and acute lower angle.

Scutum, sides of thorax and scutellum black, finely punctate, shiny, with rather long, erect, whitish hairs. Longitudinal stripes of white pollen on the scutum wanting. Postalar bristles white, with yellowish cilia. Halteres yellow.

Femora of all legs black, except at the apices, where they are narrowly yellow. Fore and middle tibiae yellow, each with a blackish annulus in the apical half. Basal third of hind tibia yellow. All tarsi yellow. Legs with rather long, yellowish, semirecumbent hairs. Hind femora moderately thickened, their width at the middle being roughly double the corresponding width of the tibia. Wing hyaline, with dark veins and a yellow ocellus; vein  $r_{4+5}$  strongly curved above cell  $R_5$ .

Abdomen largely yellowish red, with a median, black, longitudinal stripe. The whole abdomen densely covered with rather long, erect, whitish hairs.

Body length 11.5 mm.

Material. Kirgizia, Chatkal Valley (middle reaches), 29-31 July 1965 (3 ♂♂, 2 ♀♀, Peck); Kazakhstan, Talass Range, Aksu-Dzhabagly Reservation, 5 August 1965 (1 ♂, Peck).

Resembles *E. palaestinensis* Stack. and *E. sinuatus* Lw. Differs from the former in having long, dense pubescence over the whole body (in *E. palaestinensis* the body hairs are very short and recumbent), fine punctation over the whole body (in *E. palaestinensis* the body is coarsely punctate and slightly shiny), a black longitudinal stripe and well-developed semicircular spots of white pubescence on the abdomen (in *E. palaestinensis* the black stripe on the abdomen is wanting and the spots of white pubescence are poorly developed), a strong bend in vein  $r_{4+5}$  (in *E. palaestinensis* this vein is distinctly, but only slightly curved above  $R_5$ ), and yellow tarsi (in *E. palaestinensis* the tarsi are largely brown).

The female described here differs from *E. sinuatus* Lw. in having yellow antennae, in the shape and size of the 3rd antennal segment (in *E. sinuatus* the antennae are black and the 3rd segment is larger and circular) lateral stripes of white pollen on the frons, but no longitudinal stripes of white pollen on the scutum (in *E. sinuatus* these stripes are well developed), a lighter abdomen (in *E. sinuatus* tergite IV is mainly black, with lateral red spots and tergite V is entirely black, the black color of the abdominal hairs predominating) and a stronger bend in vein  $r_{4+5}$  (in *E. sinuatus* this vein is distinctly, but not strongly bent above  $R_5$ ).

Eumerus rufipilus Peck, sp. n., ♀.

Resembles E. coeruleus Beck., from which (in the female) it is distinguished by the bright yellow hairs over the whole body (in E. coeruleus Beck. the body has whitish hairs), the denser and evenly distributed hairs on the face and frons (in E. coeruleus Beck. the hairs are more densely arranged at the sides of the frons, but are sparse in the middle) and the presence of longitudinal stripes of white pollen on the scutum (in E. coeruleus Beck. these do not occur).

Female. Frons relatively narrow, 1/6 as wide as the head, wider than the 3rd antennal segment. Face and frons densely covered with long, rust-colored, erect hairs. Face with thin grayish-white pollen. Frons black, finely punctate, shiny, with white pollen at the sides. Frontal hairs evenly arranged. Eyes with rather long, dense, erect, yellow hairs. Ocelli arranged in an isosceles triangle. Antennae red, of moderate size. Third antennal segment with a well defined lower distal angle. Scutum, sides of thorax and scutellum black, finely punctate, shiny, with a bluish tinge and long, dense, erect, rust-colored hairs. Longitudinal stripes of white pruinescence on the mesonotum distinct, but falling short of the scutellum. Postalar bristles white, with yellow cilia. Halteres yellow. All femora black, except the extreme apices, which are narrowly yellow. Fore and middle tibiae black in the apical half, the hind tibiae black in the apical two-thirds. Tarsi yellow, except that the 1st segment of the hind tarsus has a black spot on the basal half. Hind femora moderately thickened, their width medially being roughly double the corresponding width of the hind tibiae. Legs densely covered with long, rust-colored hairs. Wing hyaline, with dark veins and a yellow ocellus; vein  $r_{4+5}$  strongly curved above cell  $R_5$ . Abdomen oval, apically rounded, reddish yellow, with a median, black, longitudinal stripe and long, dense, bright rust-colored erect hairs; hairs on the black parts of the tergites black. The semicircular spots of white pruinescence distinctly developed on abdominal tergites II-IV.

Body length 12 mm.

Holotype - female: Kirgizia, Gul'cha Valley (Alay), 10 km west of Gul'cha, 14 June 1963 (1 ♀, Peck).

This species can be inserted into Shtakelberg's key to the Palearctic species of Eumerus (Shtakel'berg, 1961, p. 222) as follows:

Females

38(37). Hind femora moderately thickened, their width medially approximately double the corresponding width of the tibiae.

38a(38b). Vein  $r_{4+5}$  with a distinct, but not strong bend above cell  $R_5$ . Abdomen entirely red, without black markings. Body with coarse, abundant punctures, slightly shiny, and with short, recumbent hairs. 10 mm. Israel (Jerusalem). Male unknown . . . . .  
. . . . . E. palaestinensis Stack., 1949

38b(38a). Vein  $r_{4+5}$  with a strong bend above cell  $R_5$ . Abdomen red, with a black median stripe. Body with abundant small punctures and long, dense, erect hairs.

38c(38d). Scutum without traces of longitudinal stripes of white pruinescence. The whole body covered with long, whitish hairs. Hairs dense at the sides of the frons and sparse in the middle of it. Femora black, with narrowly yellow apices. Fore and middle tibiae yellow, each with a black annulus in the apical half. Basal third of hind tibiae yellow. All tarsi yellow. Body length 11.5 mm. Soviet Central Asia, Iran . . . . .  
. . . . . E. coeruleus Beck.

38d(38c). Scutum with distinct longitudinal stripes of white pruinescence. The whole body covered with long, dense, rust-colored hairs. Frontal hairs evenly distributed. Femora black, with narrowly yellow apices. Apical half of fore and middle tibiae black. Basal third of hind tibiae yellow. Tarsi yellow, 1st segment of hind tarsus with a black spot on the basal half. Body length 12.5 mm - Soviet Central Asia (Kirgizia, Alay) . . . . .  
. . . . . E. rufipilus Peck, sp. n.

Eumerus arkitensis Peck, sp. n., ♂.

Resembles E. nigri-facies Beck. and E. alajensis Peck, from which it is distinguished by the following characters: frons and vertex broad (Figs. 6, 7, 8), the distance between the posterior angles of the eyes roughly equal to 1/5 of the head width (E. alajensis Peck, 1/7); frons at the narrowest point about 1/3 as wide as the distance between the posterior angles of the eyes (in E. nigri-facies Beck., 1/4); ocelli in an isosceles triangle, the anterior ocellus nearer to the posterior ones than these are to each other, (in E. nigri-facies Beck. and E. alajensis Peck the ocelli are in an equilateral triangle); abdomen oval (coniform in E. nigri-facies), with golden hairs (whitish in E. nigri-facies, black in E. alajensis); scutellum with a well-defined, broad border (in E. alajensis the scutellum has a narrow border along the posterior margin). Middle femur with a row of long, brownish-yellow hairs on the posterior side.

Male. Eyes separated by frons. Frons at its narrowest point about 1/3 as wide as the distance between the posterior angles of the eyes. Face, frons and vertex shiny, black-blue, with long, erect, black hairs. Distance between posterior angles of the eyes approximately 1/5 of the head width. Eyes covered with long, dense, brown hairs. Antennae relatively small, dark brown, the 3rd segment rather truncate at the distal end, with obtuse upper and acute lower angles; 3rd antennal segment approximately as wide as long. Scutum and scutellum black-blue, shiny, with small punctures and long, dense, black, erect hairs. Mesonotum with no trace of longitudinal stripes of white pruinescence. Postalar bristles yellowish, with cilia of the same color. Halteres yellow. Wing hyaline, with dark brown veins and a brown ocellus. Vein  $r_{4+5}$  with a deep bend above cell  $R_5$ . Legs black, except for the tarsi, which are yellowish on the underside. Leg hairs black, tarsal hairs yellow on the underside. Middle femur with a row of long, brownish-yellow hairs on the posterior side. Posterior femora distinctly, but not greatly thickened. Abdomen oval, apically rounded, red, with a large black triangular spot, broad on tergite I and gradually narrowing towards the posterior margin of tergite III. Abdomen with long, dense, erect, rust-colored hairs, but with black hairs on the black parts of the tergites. Hypopygium black, with black hairs.

Body length 13 mm.

Holotype - male: Kirgizia, Chatkal Range, Arkit, 1500 m above sea level, 10 June 1952 (1 ♂, Zhelokhovtsev); paratypes - male: Kirgizia, Fergana Range, upper reaches of the Yassa River, 2200 m above sea level, 11 June 1954 (2 ♂♂, Zhelokhovtsev).

This species can be inserted into Shtakelberg's key to the Palearctic species of Eumerus (1961, p. 189) as follows:

Males

38(39). Face covered with long, black hairs, scutum with long, dense, black, erect hairs.

38a(38b). Width of frons at its narrowest equal to 1/4 of the distance between the posterior angles of the eyes. Eyes covered with white hairs. Abdomen coniform, with whitish hairs, largely yellowish red, with a large, triangular, black spot, which is broad in the basal part of the abdomen (on tergite I) and gradually narrows

towards the posterior margin of tergite III, 10 mm.  
Soviet Central Asia (Turkmenia, Uzbekistan) . . . . .  
. . . . . E. nigrifacies Beck.

Holotype - male; Kirgizia, Gul'cha Valley (Alay), 3 June 1965 (1 ♂, Peck); paratypes - males and females: Kirgizia, Alay Range, Kirgizata Valley, 4 June 1965 (1 ♀, Peck), Gul'cha Valley, 12 May 1962 and 3 June 1965 (1 ♀, and 1 ♂, Peck); Kirgizata Valley, 4 June 1965 (1 ♂, Peck).

This species can be inserted into Shtakel'berg's key (1961, pp. 191 and 224) as follows:

Males

- 38b(38a). Width of frons at its narrowest part equal to not less than 1/3 of the distance between the posterior angles of the eyes. Abdomen oval, apically rounded.
- 38c(38d). Distance between posterior angles of the eyes equal to approximately 1/7 of the width of the head. Ocelli in an equilateral triangle. Abdomen for the most part dark red, with a large, triangular, black spot, abdominal tergite IV brownish red, with long, black, erect hairs. Middle femur with a row of long, black hairs on the posterior side. 12 mm. USSR: Kirgizia (Alay) . . . . . E. alajensis Peck.
- 38d(38c). Distance between posterior angles of the eyes equal to about 1/5 of the head width. Ocelli in an isosceles triangle (the anterior ocellus clearly nearer to the posterior ones than these are to each other). Abdomen red, including tergite IV, with a large, triangular, black spot medially and long, rust-colored, erect hairs. Middle femur with a row of long, brownish-yellow hairs on the posterior side. 13 mm. USSR: Kirgizia (Fergana and Chatkal Range) . . . E. arkitensis Peck, sp. n.
- 39(38). Face covered with white, grayish, yellowish or light brown hairs. Hairy integument of scutum not black.

Eumerus aristatus Peck, sp. n., ♂♀.

Resembles E. latitarsis Macq., from which it is distinguished by the noncontiguous eyes in the male, the not strongly thickened femora and the absence of arcuate incisions in tergites III and IV. Distinguished from all known species of the genus by the arista, which has a lanceolate dilation in the apical third, (Fig. 9).

Male. Eyes separated. Frons at its narrowest 1/2-1/3 as wide as the 3rd antennal segment. Face, frons and vertex black, shiny. Face and frons with white hairs, ocellar triangle with black hairs. Ocelli in an isosceles triangle, the anterior ocellus further from the posterior ones than these from each other. Antennae black-brown; 3rd antennal segment relatively small, almost as long as wide, the lower distal angle distinct. Arista lanceolate in the apical third. Eyes covered with short, white hairs. Scutum, sides of thorax and scutellum with abundant, but small-punctures, black, shiny, with a bluish tinge, and with short, white hairs. On the scutum are barely perceptible traces of lateral stripes of white pruinescence at the anterior margin. Legs black, only the knees narrowly yellow. Femora distinctly, but not greatly thickened. Legs with short, recumbent, white hairs. Postalar bristles white with yellowish cilia. Halteres light yellow. Wings hyaline, with dark veins; vein  $r_{4+5}$  slightly bent above cell  $R_5$ . Abdomen oblong-oval, black, shiny, with a bluish tinge and short, recumbent, white hairs and with distinctly developed semicircular spots of white pruinescence at the sides of tergites II-IV.

Female. Like the male. Frons 1/5 as wide as the head. Arista thickened in apical third. Bases of tibiae yellow.

Body length 6.5-8.5 mm.

50(49). Antennae of moderate length, the 2nd segment distinctly shorter than the 3rd.

50a(50b). Eyes separated by frons, which at its narrowest point is 1/3 as wide as the 3rd antennal segment. Arista with a lanceolate thickening in apical third. Face and frons with white hairs, ocellar triangle with black hairs. Body shiny, with a bluish tinge and short, white hairs. 7.5-8.5 mm. USSR, Kirgizia (Alay) . . . . . E. aristatus Peck, sp. n.

50b(50a). Eyes proximate at one point, almost contiguous. Arista simple. 8-9 mm. Canary Islands . . . . . E. latitarsis Macq.

Females

49(48). Antennae of usual structure, 2nd segment considerably shorter than 3rd.

49a(49b). Arista with a lanceolate thickening in apical third. Antennae black-brown, 3rd segment as long as wide and rounded apically. Face and frons with sparse, white hairs. Eyes with short, white hairs. Legs black, except the basal third of the tibiae, which is yellow, Vein  $r_{4+5}$  distinctly, but not strongly bent above cell  $R_5$ . Body with very short, whitish hairs. 6.5-7 mm. . . . . E. aristatus Peck, sp. n.

49b(49a). Arista simple.

SUMMARY

Ten new species of syrphids of the genera Syrphus, Cheilosia, and Eumerus, and also the previously unknown female of E. coeruleus Beck, are described.

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