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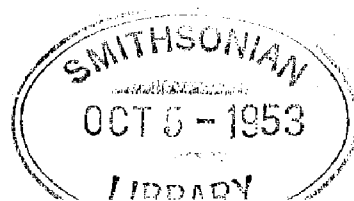
Pars 5-6

## THE INSECT FAUNA OF MT. ISHIZUCHI AND OMOGO VALLEY, IYO, JAPAN

specimens taken in this region  
with further materials being collected by Issiki a few years later.  
proportion of the species have been added since 1950. I am greatly indebted  
to all of my entomological friends and co-workers who have added so much  
to our knowledge of the Tipulidae of Omogo Valley and Mount Ishizuchi.

—( 71 )—

DIV. INS.  
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# THE INSECT FAUNA OF MT. ISHIZUCHI AND OMOGO VALLEY, IYO, JAPAN

## THE SYRPHIDAE (DIPTERA)

By Tokuichi Shiraki\* and Tadao Edashige†

The present study is largely based upon the flies preserved in the Entomological Laboratory of the Matsuyama Agricultural College, Matsuyama, and is the first study on the Syrphidae of Mt. Ishizuchi, Shikoku, Japan. We are indebted to Dr. T. Ishihara, Professor of the College, for calling our attention to the material of Syrphidae. Types are preserved in the Laboratory, some ones in the Shiraki's collection.

In order to keep the explanation of text-figures at a minimum, the figures pertaining to a given species are designated by a single number, and different illustrations of that species designated as in the following: **a**, Head seen from above; **b**, Face seen from lateral side; **c**, Antenna seen from inner side; **d**, Abdomen seen from above; **e**, Hind leg; **f**, Wing; **g**, Distal segments of abdomen.

### Subfamily CHEILOSINAE Shiraki (1949)

#### Genus *Pipizella* Rondani, 1856

#### 1. *Pipizella abdominalis* sp. nov. Fig. 1, 2.

♂. Frons black with a weak bluish lustre, slightly covered with a whitish dust, and densely furnished with blackish hairs. Vertical triangle black, about 1/9 as wide as head, slightly covered with a yellowish gray dust, furnished with brownish gray hairs which are blackish partially on the anterior part. Eyes densely with a short reddish black pubescence, which becomes grayish at the lower portion, touched in a distance, a little shorter than the length of vertical triangle (about 11/13). Face almost parallel-sided, about 10/27 as wide as head, almost straight in profile, black, with a weak lustre, covered with a whitish dust, the cheeks being bare and shining, furnished with dense blackish hairs which are whitish partially; back of the head black, sparsely covered with a whitish dust, furnished with brownish gray hairs, which are intermixed with blackish hairs near the vertex. Antennae brownish black, covered with a grayish dust, first segment a little shorter than a half length of the

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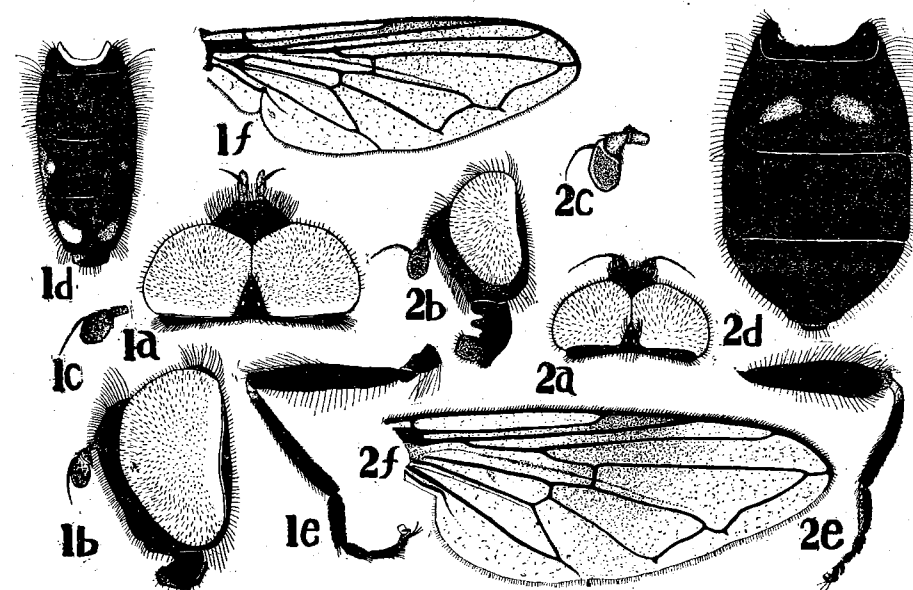


Fig. 1. 1 a-f, *Pipizella nitida* sp. nov.; 2 a-f, *Pipizella abdominalis* sp. nov.

third, the second a little longer than the first, the third about one and a half as long as the second, flat except the base where it is a little swollen; arista blackish brown, the base being lighter, a little shorter than the second and third antennal segments united. Rostrum black, becoming lighter at the apex. Thorax black, with a weak dull-brassy lustre; mesonotum and scutellum almost placed in a same surface; mesonotum furnished with brownish gray hairs except the lateral sides where they are blackish; pleura with grayish hairs except those on upper portions of mesopleura and pteropleura which are black; scutellum large, furnished with blackish hairs on the disk and rather long brownish gray hairs at the margin. Wings mostly infuscated, with the pterostigmatic portion dull brown; veins black, with the venation as figured. Abdomen oval, black with a weak dull brassy lustre, on the second tergite there is a pair of brownish yellow small spots; the hairs on the dorsum short and blackish, except those on the markings, some on the antero-lateral areas of the third segment and of medio-lateral margin of the fourth, which are all gray. Legs black, apices of femora, bases and apices of tibiae and first and second segments of tarsi all dull brown; hind coxae furnished with whitish hairs; hind femora shining black, a little thickened apically, furnished with blackish hairs which are mostly whitish at the basal half; hind tibiae moderately but distinctly curved at the basal half. Length: ca. 9 mm.

**Distribution:** Shikoku (Ehime).**Holotype**, ♂, Omogo Valley, Iyo, Ehime Prefecture, IX-7, 1952, T. Edashige leg.

Closely allied to *bimaculata* Meigen, but it is distinguished in the narrow vertical triangle, in the relatively long third antennal segment, and in other minute characters.

**2. Pipizella nitida sp. nov.** Fig. 1, 1.

♂. Frons shining black, strongly tumid, densely covered with blackish hairs, along the eye-margins there are sparse whitish hairs. Vertical triangle black, furnished with blackish hairs which are intermixed with yellowish gray ones. Eyes densely covered with a short blackish pubescence which is grayish at the lower portion, the distance touched each other is a little shorter than the length of vertical triangle (about 6/7). Face coloured like in frons, but less shining, slightly narrowed at the middle, densely covered with a blackish pubescence, eye-margins thinly covered with a whitish dust; face in profile slightly convex at the base of antennae; back of the head black, thinly covered with a whitish dust, densely furnished with a whitish pubescence which is black on the portion near vertex and also on the lower portion. Antennae blackish brown, covered with a whitish dust, first segment about 5/8 as long as the third, the second about as long as the first, the third with basal under surface brownish yellow; arista blackish brown, about as long as the second and third antennal segments united together. Rostrum blackish brown, with lighter apex. Mesonotum as well as pleura and scutellum black, with a weak lustre; mesonotum almost square, densely covered with a dull brownish pubescence; pleura furnished with brownish hairs which are grayish on the sternopleura; scutellum with dull brownish hairs. Wings mostly slightly infuscated, with the bases hyaline and the pterostigma dark brownish; veins black, the venation as in the figure. Abdomen elongate, black, with a metallic lustre, furnished with blackish hairs which are intermixed with paler ones at the lateral sides of the second tergite; the third and fourth with a pair of strongly shining elevated spots as in figure. Legs black with the apices of femora and the bases of tibiae dull brown, furnished with blackish hairs, along the inner sides of tibiae and of tarsi there are light-yellowish brown hairs; hind femora furnished with long hairs on the under surface, the lateral surface and the apical half of the upper surface. Length: ca. 6mm.

**Distr.:** Shikoku (Ehime).**Holotype**, ♂, Omogo Valley, Ehime Pref., IX-7, 1952, T. Edashige leg.

This is quite distinguishable from the species of *Pipizella* known to us in the abdomen as well as the legs practically black, but it may be the male of *inornata* Matsumura.

**Genus Cheilosia Meigen, 1822****3. Cheilosia chloris Meigen, 1822****Specimen examined:** 1 ♀, Omogo Valley, V-12, 1952, T. Ishihara leg.**Distr.:** Europe, Japan [Shikoku—*hab. nov.*].**4. Cheilosia opaca Shiraki, 1930****Spec. exam.:** 1 ♂, Mt. Ishizuchi, VII-27, 1951, M. Miyatake leg.**Distr.:** Hokkaido, Shikoku (*hab. nov.*).**5. Cheilosia luteipes Shiraki, 1930****Nom. Jap.:** *Yamakuro-hiratacchi***Spec. exam.:** 1 ♂, 3 ♂♂, Mt. Ishizuchi, VII-26, 1952, T. Edashige leg.**Distr.:** Hokkaido, Honshu, Shikoku (*hab. nov.*).**6. Cheilosia abbreviata Shiraki [sp. nov.] Pl. 3, 1.**

♂. Head about as wide as thorax, black. Eyes rather densely covered with brownish short pubescence, touched in a distance longer than twice the length of vertical triangle. Frons moderately inflated with a deep median sulcus. Face and frons shining cupreous black, the latter grayish-dusted along the eye-margins and sparsely black pilose, the former with pale brown but inconspicuous pubescence which does not obscure the shining ground colour. The facial tubercle low but very broad; the facial orbits very narrow, somewhat obscured by a reddish brown dust and sparsely furnished with whitish pile. Vertical triangle black, a little longer than width, about 1/10 as wide as head, very thinly blackish pilose. Back of head moderately hollowed, somewhat grayish-dusted, furnished with blackish pile which is whitish on the lower portion. Antennae reddish brown, with the first two segments quite dark; arista about four times as long as the third antennal segment, distinctly narrowed at the base where there are two distinct segments, black, microscopically pubescent. Mesonotum slightly longer than width, with a cupreous lustre, covered with rather long, erect, yellowish brown pile which becomes longer and blackish on the notopleura, at the lateral sides there are 5 distinct black bristly hairs, one of which is placed near the posterior corner of notopleura, two at the wing-base, and remaining two on the postalar callus. Scutellum coloured and pilose as on the mesonotum, but the marginal pile is conspicuously longer than elsewhere on the disc and is intermixed with four pairs of longer black hairs which could scarcely be called bristles on the margin; the under margin bearing rather dense, downwardly directed, somewhat thick, pale hairs. Halteres reddish yellow; squamae grayish white

Wings pale yellowish brown, infuscated about the apical one-third, the pterostigma yellow. Legs reddish yellow, dull shining, the front and hind tibiae with blackish median portion which is rather indistinct on the front, the tarsi of the first two pairs blackish on the apical two segments and the tip of third segment and the hind tarsi brownish and darkened apically. The pile mostly short and blackish, but on the extero-inferior portion of femora it is much longer and yellowish white. The hind femora furnished with some short, black, spine-like bristles on the lower apical one-third. Abdomen oval, the broadest part about as wide as thorax, relatively short, distinctly shorter than the head and thorax (including scutellum) united together, black with some purplish lustre, more or less dull on the second and third tergites. The pile is light yellowish brown, erect, or barely suberect in the middles of the second and third tergites. Genitalia not prominent, shining black, hardly obscured by a gray dust, bearing a sparse black pile. Length: ca. 10 mm.

**Distr.:** Honshu, Shikoku.

**Holotype**, ♂, Kamikōchi, Nagano Pref., VII, 1931, T. Iida leg.; 2 **paratypes**, 1 ♂, Omogo Valley, Ehime Pref., VI-26, 1951, H. Kusunoki leg.; 1 ♂, Mt. Ishizuchi, Ehime Pref., VII-27, 1951, M. Miyatake leg.

Related to *matsumurana* Shiraki, but distinguished by the colouration of legs, the shape of abdomen, the number of bristly hairs of the notopleura (in *matsumurana* more than two), the arrangement of spine-like blistles of hind femora, and others.

#### 7. *Cheilosia yanoi* Shiraki (sp. nov.) Pl. 3, 2-3.

Small, slender, shining black species, with some bluish lustre. ♂. Head hemispherical, distinctly wider than thorax. Eyes covered with sparse, short, blackish brown pile which becomes sparser and shorter below, touched in a distance about half as long as the vertical triangle. Frons moderately inflated with a deep median sulcus, yellowish gray dusted toward the eye-margins, furnished with blackish brown, sparse, long pile. Vertical triangle conspicuously longer than width, hardly 1/10 as wide as head. Face gradually but slightly widened below, very shallowly hollowed beneath the antennae, the tubercle moderate in size, the epistoma distinctly produced and strongly shining black, partially brownish gray, tomentose, near the orbits there is rather dense, short, erect, brownish pile; facial orbits not broad, quite obscured by a yellowish gray dust, bearing very sparse, blackish pile. Back of the head moderately hollowed, wholly but slightly whitish-dusty, the occipital hairs black, the pile of the lower portion whitish. Antennae brown, the ventral basal portion of the third segment yellowish; arista relatively short, slightly narrowed at base, black, microscopically pubescent. Mesonotum black with a bluish lustre, covered with a scarce grayish dust and with rather dense, erect, blackish brown pile which becomes longer and thicker on the lateral

sides, but there is no distinct bristly hair on the notopleura and the wing-bases, while on the postalar calli there are two very long conspicuous black bristly hairs. Pleura somewhat white-dusted, the pile almost wholly brownish. Scutellum somewhat triangular, coloured as in mesonotum, furnished with rather sparse, very long, erect, blackish brown pile, which on the margin is irregularly intermixed with some longer, thicker, black hairs, along the lower margin there is a sparse, long, downwardly directed, paler cilia. Halteres pale yellow, with relatively large reddish yellow apices. Squamae dull yellowish. Wings relatively narrow, more or less infuscated about the apical half, the upper basal cell dull yellowish and the pterostigma light yellow. Femora black, dull shining, the both ends being yellowish, the extero-inferior surface furnished with long, erect, sparse, whitish pile, the almost whole inner side of hind femora bearing many short bristles which are black on the apical portion. Tibiae yellowish with blackish median portion, the blackish area becoming conspicuously large on the hind tibiae. Tarsi yellowish, the upper surface brownish, particularly darker on the hind ones, the apical two segments and the tip of third segment black. Abdomen elongate, more or less parallel-sided, black with a bluish lustre, the pile rather sparse, erect, brownish; genitalia prominent, shining black, bearing sparse black hairs.

♀. Similar to the male. Frons very slightly widened below, about 1/4 as wide as head, shining bluish black, very scarcely white-dusted, furnished with black erect pile, the median sulcus fine and interrupted by an ill-defined transverse furrow, the lunula blackish brown. Vertex similar to the frons in colouration and pilosity, but there is less tomentum and longer pile, the ocellar triangle about as wide as long. Face parallel-sided, the facial orbits dull black, bearing whitish pile, below the facial tubercle less hollowed. Back of head well exposed behind the eye-margins. Antennae blackish brown, the second segment dull yellowish, the arista distinctly yellowish at the thickened basal portion. The black bristly hairs of mesonotum are five, one of which is placed at the posterior corner of notopleura, two shorter ones on the wing-bases and the remainings on the postalar calli. The marginal, black, bristly-hairs of scutellum are in three pairs, one of which is placed on the hind margin. Legs lighter in color, the femora with broad yellowish portion; the bristles on the under side of hind femora very few, restricted only about in the apical one-third. Abdomen slightly broadened about in the middle, the pile quite appressed and blackish on the discs of the second to fourth tergites, the fifth tergite furnished with short black pile which becomes suberect in the middle. Length: ca. 7 mm.

**Distr.:** Shikoku.

**Holotype**, ♂; **allotopotype**, ♀, Omogo Valley, Ehime Pref., IX-23, 1952, T. Yano leg.

Somewhat allied to *pulchripes* Loew, but it may be distinguished by many characters.

8. *Cheilisia fuscipennis* Shiraki [sp. nov.] Pl. 3, 4-5.

A large, shining black species with slightly brassy cast, and blackish brown tinge on the wings. Related to *melanura* Becker, but it differs in many characters.

♂. Head hemispherical, about as wide as thorax. Eyes touched in a distance about  $1\frac{1}{2}$  times as long as the vertical triangle, densely short brown pilose on almost whole surface. Frons moderately inflated and produced, with a moderate deep median sulcus, densely covered with long black pile, the eye-margins very narrowly gray dust. Vertical triangle a little longer than width, about  $\frac{1}{7}$  as wide as head, conspicuously elevated above the eye-margins, furnished with long black hairs. Face very slightly widened below, broader than  $\frac{1}{3}$  of head-width, scarcely grayish dusted but does not obscure the shining ground colour, the facial orbits moderate in width throughout, yellowish-tomentose and black-pilose; cheeks covered with a yellowish gray dust and with long pale yellowish pile, the latter is intermixed with some thicker blackish hairs. Antennae black, the third segment small, distinctly shorter than the two precedings united together, somewhat obscured by a yellowish gray dust, with yellowish brown tip; arista about twice as long as the antennae, deep black throughout, microscopically pubescent. Mesonotum about as long as width, strongly shining, covered with dense, long erect, black pile, which becomes moderately longer and thicker at the lateral sides, but there is no distinct bristly hair. The scuteller pile similar to that of mesonotum, but it is longer, particularly on the margin, there are many conspicuously long hairs; the cilia of the longer margin of scutellum black. Halteres brown, with yellowish head, which has a peculiarly and broadly inflated, whitish gray dusted, apical area, where it is black margined. Squamae dirty yellowish, the upper one with blackish margin. Wings moderate in size, yellowish brown, slightly palened toward the posterior margin, the pterostigmata rather darkened. Legs black, with the knees and the apices of tibiae somewhat brownish, the pile black; the under side of hind femora furnished with many short bristles which are intermixed with a few very long black hairs; front femora with an elongate golden pubescent spot on the intero-basal portion. Abdomen narrower than thorax, shorter than the head and thorax (including the scutellum) united together, very slightly broadened about in the middle, shining black with a strong brassy lustre, somewhat dull-broadly over the middle of the second and third tergites. The pile rather long, wholly erect, but suberect and shorter in the middles of the second and third tergites; the under sides black, moderately grayish-dusted, the pile sparser than that of above; genitalia moderately prominent, shining black, black-pilose.

♀. Similar to the male. Head very slightly broader than the thorax; frons distinctly widened below, densely covered with black short pile, with a very fine median sulcus reaching the apex of ocellar triangle, the frontal orbits distinct but very narrow, near their inner margins there is a faint

longitudinal furrow. Vertex about  $\frac{1}{6}$  as wide as head, bearing rather sparse black pile, with the ocellar triangle elongate. Back of the head rather narrowly expanded behind the eye-margins. The pile of facial orbits whitish. Mesonotum a little longer than width, the pile short and suberect, which becomes longer and erect at the lateral sides as usual; the pile of scutellum similar to that of mesonotum, but there is a pair of rather distinct longer hairs on the hind margin, the cilia of lower hind margin yellowish. Head of halteres lighter in color. Tibiae reddish brown about the basal one-third. Abdomen nearly as long as the head and thorax (including the scutellum) united together, gradually broadened towards the apex of third segment and then narrowed apically, the pile mostly very short, appressed, black, but on the lateral sides of the first two tergites and of the basal half of third tergite it is longer, erect, yellowish. Length: ♂ ca. 11 mm., ♀ ca. 12 mm.

Distr.: Hokkaido, Honshu (Nagano Pref.), Shikoku (Ehime Pref.).

Holotype, ♂, Nakayama Pass., Tochigi Pref., VIII-4, 1949, A. Aoki leg.; allotype, ♀, Nikko Nat. Park, VIII-18, 1949, A. Aoki leg.; 5 paratypes, 4♂♂, 1♀, Omogo Valley, Ehime Pref., V-11, 1952, T. Edashige leg.

9. *Cheilisia aokii* Shiraki [sp. nov.] Pl. 3, 6-7.

Elongate rather medium-sized, shining black species, with the bare eyes, the broad facial tubercle, the very narrow genae, the small dull black third antennal segment, and the moderately pubescent arista. Near to *josankeiana* Shiraki, but it differs in many minute characters.

♂. Head quite hemispherical, a little narrower than the thorax. Frons very small, hardly inflated, with a deep median sulcus, densely covered with a gray dust, left the relatively large, shining brown lunula, furnished with blackish brown, long, erect hairs. Vertical triangle very slightly elevated above the eye surface, conspicuously longer than width, about  $\frac{1}{9}$  as wide as the head, bare from dust, very sparsely covered with blackish brown, long pile. Eyes very large, bare, touched in a distance nearly twice as long as the vertical triangle. Face parallel-sided, about  $\frac{1}{4}$  as wide as the head, very sparsely, microscopically pubescent partially, facial tubercle very broad, rather low, very gently concave above and strongly hollowed below, the facial orbits moderate in width, bearing whitish sparse pile, cheeks very low, grayish-dusted, furnished with sparse, whitish pile. Back of the head quite hollowed, black, more or less obscured by a grayish white dust, the cilia of occiput blackish brown, the pile of lower portion whitish. Antennae black, with two basal segments more or less brownish, third segment somewhat obscured by a brownish yellow dust, with a distinct pit-like bare streak near the lower margin, arista brown, with yellowish basal one-fourth, distinctly but shortly pubescent. Mesonotum about as long as width, with a greenish lustre, covered with brownish, suberect pubescence which becomes longer and thicker on the

lateral sides, the notopleura more or less dusted, without bristly hairs, at the wing-bases there are about five long, black bristly hairs and on the postalar calli two distinct very long ones; the pile of scutellum similar to that of mesonotum, but along the margin there are many long hairs which are intermixed with about 6 pairs of conspicuous black bristly hairs; the under side of scutellum bears whitish, downwardly directed, long pile. Pleura shining black, almost bare from dust, the pile moderate in length. Halteres reddish yellow, with dark head. Squamae white, the upper one with brown margin and the lower one yellowish margin. Wings very slightly infuscated, the pterostigma being dull yellowish. Legs blackish; femora shining black with the yellowish extreme tip, covered with blackish, short pubescence which becomes longer and paler on the extero-inferior surface, the under side of hind femora bearing short, irregularly arranged, spine-like, black bristles; tibiae blackish brown, the basal one-third and extreme tip being yellowish; tarsi yellowish, the apical segment black, the hind metatarsi blackish brown. Abdomen quite elongate, distinctly narrower than the thorax, a little longer than the head and thorax (including the scutellum) united together, shining black, covered with short, appressed, blackish pubescence which becomes erect, longer and paler about the lateral sides of the first two tergites; genitalia prominent, more or less dusted, the pile rather short and sparse.

♀. Head distinctly wider than the front margin of mesonotum; frons a little broadened below, very shortly produced forward, shining black, distinctly and broadly grayish white-dusted just behind the shining castaneous brown lunula, with a very short median sulcus, the pile brownish, rather sparse; vertex about one-fifth as wide as the head, furnished with sparse, long, blackish hairs; face hardly broadened below, about one-third as wide as the head, partially dusted but not pubescent, well concave above the facial tubercle, but very shallowly hollowed beneath; facial orbits rather narrow, the pile shorter. Mesonotum longer than width, on the notopleura there are two distinct, black, bristly hairs; scutellum with one pair of long, black, bristly hairs on the hind margin and three pairs of very short ones on the lateral margins, the pile of the under side rather short. Abdomen widened posteriorly, the broadest part being about as wide as the thorax. Length: ca. 9 mm.

**Distr.:** Honshu, Shikoku.

**Holotype**, ♂, Kamikōchi, Nagano Pref., VII-31, 1931, T. Iida leg.; **allotype**, ♀, Fumikake, Nagano Pref., VII-20, 1949, A. Aoki leg.; 2 **paratypes**, 1 ♂, Omogo Valley, Ehime Pref., VI-6, 1952, T. Yano leg., 1 ♀, Mt. Ishizuchi, Ehime Pref., VII-27, 1951, M. Miyatake leg.

# 10. *Cheilosia omogensis* Shiraki [sp. nov.] Pl. 3, 8-9.

Small, shining black species, with bare eyes, the yellowish margined scutellum and the faint infuscated wings. Somewhat related to *scutellata* Fallén, but it differs in many characters.

♂. Head very slightly broader than the thorax, well-rounded forwards; frons short, moderately inflated, with deep, relatively broad, median sulcus, with a brassy lustre furnished with blackish, sparse, long pile; vertical triangle narrow, hardly twice as long as wide, nearly 1/10 as wide as the head, bearing very sparse, long, blackish brown pile. Face shining black, grayish dusted all over the surface, but it does not obscure the shining ground color, along the lower mouth edge there is an ill-defined reddish brown spot, moderately broadened below with the straight lateral margins, the facial tubercle very broad, low, and gently concave above and below; facial orbits narrow, covered with a dense, whitish dust, bearing a whitish cilia; genae black, more or less obscured by a grayish dust, furnished with sparse, long, yellowish white pile. Back of the head very slightly hollowed, black, quite obscured by a grayish white dust, the occipital row of bristly hairs distinct and blackish. Eyes bare, relatively large, touched in a distance hardly twice as long as the vertical triangle. Antennae (the third segment lacked) yellowish. Thorax shining black, with a cupreous lustre; mesonotum one and a half times as long as width, the humeral calli yellowish and whitish dusted, the pile brownish, erect, moderate in length, on the lateral sides there are many black, long, thick hairs, two of which on the notopleura, one at the wing-bases and two on the postalar calli are quite bristly; scutellum colored and pilose as in mesonotum, but the posterior margin is distinctly waxy yellow, the posterior half irregularly and transversely striated, bearing three pairs of black bristle-like marginal hairs; the downwardly directed cilia of lower hind margin of scutellum rather long, yellowish. Halteres yellowish white, with dark base. Squamae grayish white, the upper one brown-margined, the lower one yellowish-margined. Wings about as long as body, faintly infuscated, with very light yellowish pterostigma. Legs blackish, blackish brown pubescent; trochanters brownish yellow; femora black with yellow tip, the pile on the extero-inferior surface long, erect, somewhat yellowish, on the under side of hind femora there are some black bristles; tibiae yellow, the posterior half blackish brown except the apical one-fourth; hind tarsi blackish brown, darkened toward the apical segment, the front and middle tarsi yellow with three apical segments blackish. Abdomen coloured as in mesonotum, nearly as long as the head and thorax (including the scutellum) united together, narrower than the thorax; the pile blackish brown, mostly erect and long, but on the middle portions of the second to fourth tergites it becomes short and suberect; the under side more or less light in colour, grayish-dusted, furnished with rather long, erect, brownish hairs; genitalia prominent, shining black, covered with a scarce grayish dust, bearing very sparse, rather long, black pile.

♀. Greenish shining. Frons very slightly widened below, very shortly produced, with dark brownish lunula, the median sulcus very short, not extending to the ocellar triangle, along the eye-margins there is a pair of dusted spots just above the frontal process, the pile black all over to the

ocellar triangle; vertex  $2/9$  times as wide as the head, almost bare from pile, but on the ocellar triangle there is a few sloping one. Face rather broad, quite  $1/3$  time as wide as the head, slightly widened below, with straight sides, the facial tubercle more prominent, the reddish brown spot near the upper mouth-edge. Antennae reddish brown; the third segment relatively large, yellowish brown with the blackish upper margin, somewhat obscured by a grayish dust; arista blackish, with yellowish thickened basal portion, moderately pilose, with two distinct basal segments. The black bristly hairs at the lateral sides of mesonotum as well as those on the scutellar margin more conspicuous and might be called as bristles. Abdomen longer than the head and thorax (including the scutellum), elongate oval, distinctly broader than the thorax, the pile much shorter; the under side shining black, more or less grayish white dusted, the pile on the third to fifth suberect. Length: ♂ ca. 6 mm., ♀ ca. 7 mm.

**Distr.:** Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref., VII-7, 1951, M. Miyatake leg.; **allotopotype**, ♀, Omogo Valley, Ehime Pref., IX-23, 1951, T. Yano leg.

Subfamily SYRPHINAE Brues et Melander (1930)

Genus *Paragus* Latreille, 1804

11. *Paragus tibialis* Fellén, 1817      Nom. Jap.: *Kiashi-mame-hirataabu*

**Spec. exam.:** 1 ♂, Omogo Valley, VI-13, 1951, T. Edashige leg.; 1 ♂, Omogo Valley, VI-26, 1951, M. Miyatake leg.; 1 ♂, Omogo Valley, IX-7, 1952, T. Edashige leg.

**Distr.:** Cosmopolitan.

Genus *Melanostoma* Schiner, 1860

12. *Melanostoma scalare* (Fabricius, 1794)      Nom. Jap.: *Hoshi-tsuya-hirataabu*

**Spec. exam.:** 1 ♀, 3 ♂, Omogo Valley, V-10, 1952, T. Edashige leg.; 2 ♀, Mt. Ishizuchi, VII-27~28, 1952, T. Edashige leg.

**Distr.:** Honshu, Shikoku, Kyushu, Formosa, Europe.

13. *Melanostoma transversum* sp. nov. Fig. 2, 2-3.

♂. Head much broader than thorax. Frons short and tumid, black, with a purplish metallic lustre, coarsely covered with a grayish brown dust along the eye-margins, furnished with blackish hairs. Vertical triangle black, with a weak purplish metallic lustre, furnished with short blackish hairs, thinly covered with a grayish brown dust, about  $1/7$  as wide as head. Eyes

bare, the distance touched each other is a little longer than the vertical triangle (about  $5/4$ ). Face almost parallel-sided, about  $1/3$  as wide as the head, black with a purplish metallic lustre, coarsely covered with a grayish

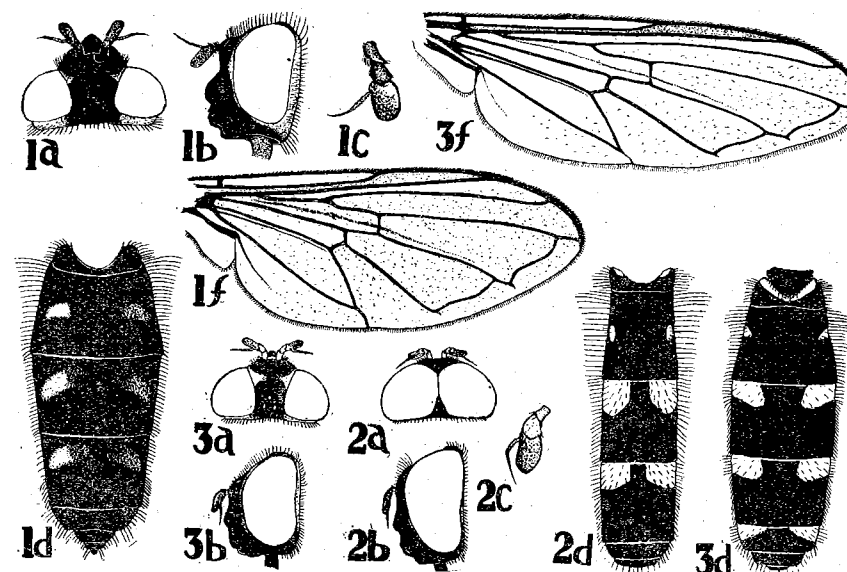


Fig. 2. 1a-f, *Melanostoma alpinum* sp. nov.; 2a-d, *Melanostoma transversum* sp. nov. ♂; 3a-f, *Melanostoma transversum* sp. nov. ♀.

brown dust except median callus and cheeks bare, furnished with a whitish pubescence; back of the head black, furnished with a grayish pubescence, on the portion near the vertex it is blackish. Antennae brown, with the third segment mostly blackish; first and second segments about one half as long as the third, the latter covered with a yellowish gray dust; arista dull brown with lighter base, microscopically pubescent, a little shorter than the second and third antennal segments united together. Thorax above black, with a purplish metallic lustre; mesonotum furnished with relatively long erect brownish gray hairs except the anterior area mostly bare, the humeral calli partially furnished with blackish hairs; pleura coarsely covered with a grayish dust, furnished with brownish gray hairs; scutellum with a brownish gray erect pubescence, on the posterior part there are blackish hairs partially. Wings infuscated, becoming paler towards the base, with dark brown pterostigma; veins blackish brown, the venation as in the figure. Abdomen almost parallel-sided, black with the orange yellow markings as in figure, furnished with yellowish gray subdepressed short hairs, which are blackish on the posterior portion of third tergite, and mostly the fourth and distal tergites,



the hairs becoming longer and more erect along the lateral margins, particularly toward the base; the margins of the second not reaching the lateral margins, while those of the third, the fourth and the fifth reaching the lateral margins respectively, the hind margin of the fourth and the apex with a purplish metallic lustre. Fore legs light-yellowish brown, furnished with whitish hairs. Mid leg: coxae dark brown, femora light-yellowish brown, furnished with whitish hairs, the outer surface and the both ends of the inner surface being furnished with blackish hairs, tibiae and tarsi brownish with the dark brown apex, furnished with blackish hairs on the outer surface and with light brownish hairs on the inner surface. Hind legs: coxae dark brown, furnished with whitish hairs, trochanters and femora yellowish brown, furnished with whitish hairs which are blackish at the femoral apex, tibiae and tarsi dark brown, the base and apex of femora yellowish brown. Length: ca. 8 mm.

♀. Distinguished from the male in the following points:—Frons a little divergent inferiorly, about  $1/3$  as wide as head in the middle, black, with a blackish lustre, about in the middle there is a pair of markings formed of a yellowish gray dust, furnished with a sparse blackish pubescence. Vertex quite similar to the frons in colouring and hairing, but there is no dusted portion, a little narrower than  $1/4$  of the width of head. Face almost parallel-sided, about  $2/5$  as wide head. Mesonotum as well as pleura and scutellum black, with a blackish lustre, the former furnished with light-yellowish brown hairs which become longer on the posterior area; pleura slightly covered with a grayish dust, furnished with a yellowish gray pubescence. Abdomen blackish brown, with a weak metallic lustre, the markings quite transverse and narrow, reaching the lateral margins. Length: ca. 8 mm.

Distr.: Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref., IX-7, 1952, T. Edashige leg., **allotopotype**, ♀, IX-7, 1952, T. Edashige leg.; 13 **paratopotypes**, 8 ♀♀, 5 ♂♂, IX-7, 1952, T. Edashige leg.

This new species resembles *Melanostoma scalare* Fabricius, but it is quite distinguishable from in the shape of abdominal spots, the vertical triangle of male distinctly shorter than the distance touched eyes, the color of legs, and others.

#### 14. *Melanostoma alpinum* sp. nov. Fig. 2, 1.

♀. Head much broader than thorax. Frons broad, conspicuously divergent inferiorly, shining black, furnished with blackish erect pubescence, with a pair of gray-dusted markings about in the middle, frontal process short and broad, shining black. Vertex broad, a little narrower than  $1/3$  of the width of head, shining black, almost not dusted, furnished with blackish erect hairs. Face almost parallel-sided, a little narrower than a half width of head, shining black, covered with a grayish dust, the lateral sides rather sparsely whitish-

dusted, the median callus large, strongly produced forward; back of the head black, covered with a grayish dust and grayish hairs which are intermixed with blackish ones near the vertex. Antennae blackish brown, the third segment lighter with yellowish under half; first segment about as long as the second and about  $2/3$  as long as the third; the third almost rectangular, with the basal portion brown; arista dark brown, moderately thickened basally, a little shorter than the second and third antennal segments united together. Thorax black, mesonotum with a purplish metallic lustre, furnished with short erect grayish hairs which become partially blackish on the anterior portion; pleura with a weak brassy lustre, furnished with grayish hairs; scutellum with a bluish metallic lustre, furnished with grayish hairs similar to those of mesonotum. Wings mostly light brownish with the bases hyaline, pterostigma dull brownish; veins black, the venation as in figure. Abdomen about as wide as thorax, narrowed apically, black, with a weak bluish metallic lustre, with a grayish dust but shining bluish spots as in figure, the spots not reaching the lateral margins, covered with somewhat depressed, short, blackish hairs, except on the lateral portions of the second, third and fourth tergites and on the markings, the hairs are grayish, the fifth almost without the dusted spot. Legs black, with the both ends of femora and the bases of tibiae brown or dark brown; the pubescence very short, almost brownish, on the femora it is rather long, particularly near the bases. Length: ca. 8 mm.

Distr.: Shikoku.

**Holotype**, ♀, Mt. Ishizuchi, Ehime Pref., VII-27, 1952, T. Edashige leg.; 7 **paratopotypes**, 3 ♀♀, VII-27, 1951, M. Miyatake leg., 3 ♀♀, VII 27~23, 1952, T. Edashige leg., 1 ♀, VII-23, 1952, T. Ishihara leg.

This species is allied to *bertrandi* Austen and *ambiguum* Fallén, but it apparently differs from the former in the large facial callus and from the latter in the broad frons.

Genus *Leucozona* Schiner, 1860

#### 15. *Leucozona lucorum* (Linné, 1758)

Nom. Jap.: *Tsumaguro-hanaabu*

Mt. Kamegamori, (Miyamoto, S. 1934)\*

Genus *Ischirosyrrhus* Bigot, 1882

#### 16. *Ischirosyrrhus laternarius* (Müller, 1776) Nom. Jap.: *Yokomon-hirataabu*

**Spec. exam.**: 1 ♀, 2 ♂♂, Mt. Ishizuchi, VII-23, 1952, T. Edashige leg. Common on the flowers of *Peucedanum saxicola* Makino [*Ishizuchi-bofu*].

\* Ent. World, Tokyo. 2 (9): 300.



**Distr.:** Hokkaido, Honshu, Shiooku (*hab. nov.*), Kyushu, Saghalien, Europe, N-America.

**17. Ischirosyrphus glaucius (Linné, 1758)** Nom. Jap.: *Ou-yokomon-hirataabu*

**Spec. exam.:** 2 ♀♀, 3 ♂♂, Mt. Ishizuchi, VII-27, 1952 T. Ishihara et T. Edashige leg.; 3 ♀♀, Mt. Ishizuchi, VIII-2, 1952, H. Kusunoki leg. Common on the flowers of *Angelica schischudo* Makino [*Shishido*] or *Peucedanum saxicola* Makino [*Ishizuchi-bofu*].

**Distr.:** Honshu, Shikoku (*hab. nov.*), Saghalien, Europe.

Genus *Didea* Macquart, 1834

**18. Didea alneti (Fallén, 1817)** Nom. Jap.: *Heri-hirataabu*

**Spec. exam.:** 1 ♀, 1 ♂, Mt. Ishizuchi, VII-27, 1951, M. Miyatake leg.

**Distr.:** Honshu, Shikoku (*hab. nov.*), Kyushu, Saghalien, Europe.

Genus *Dideoides* Brunetti 1908

**19. Dideoides lauta (Coquillett, 1898)** Nom. Jap.: *Tsumaki-hirataabu*

**Spec. exam.:** 1 ♂, Omogo Valley, V-11, 1952, T. Ishihara leg.

**Distr.:** Honshu, Shikoku (*hab. nov.*), Kyushu, Formosa.

**20. Dideoides lata (Coquillett, 1898)** Nom. Jap.: *Yokojima-ohirataabu*

**Spec. exam.:** 1 ♀, Omogo Valley, VI-26, 1951, M. Miyatake leg.; 1 ♂, Mt. Ishizuchi, VII-27, 1951, M. Miyatake leg.

**Distr.:** Honshu, Shikoku (*hab. nov.*), Kyushu.

Genus *Asarcina* Macquart, 1842

**21. Asarcina porcina (Coquillett, 1898)** Nom. Jap.: *Naga-hirataabu*

**Spec. exam.:** 1 ♀, 2 ♂♂, Jōjusha, VII-26, 1952, T. Edashige leg.; 2 ♀♀, Omogo Valley, IX-28, 1952, T. Vano leg.

**Distr.:** Honshu, Shikoku, Kyushu, Formosa, Manchuria, China, India.

Genus *Epistrophe* Walker, 1852

**22. Epistrophe balteatus balteatus (de Geer, 1776)** Nom. Jap.: *Hoso-hirataabu*

**Spec. exam.:** 1 ♀, Omogo Valley, VI-18, 1952, T. Edashige leg.

**Distr.:** Hokkaido, Honshu, Shikoku, Kyushu, Manchuria, Asia, Europe, N-Africa.

**23. Epistrophe balteatus alternans (Macquart, 1842)**

**Spec. exam.:** 1 ♂, Omogo Valley, V-II, 1952, T. Edashige leg.; 1 ♀, Omogo Valley, VI-26, 1951, M. Miyatake leg.; 1 ♂, Mt. Ishizuchi, VII-27, 1951, M. Miyatake leg.; 2 ♂♂, Omogo Valley, IX-7, 1952, T. Edashige leg.

**Distr.:** Japan (Shikoku—*hab. nov.*), Formosa, South Asia, Malaysia, Australia.

**24. Epistrophe aino (Matsumura, 1917)** Nom. Jap.: *Aino-obi-hirataabu*

**Spec. exam.:** 1 ♂, Omogo Valley, V-11, 1952, H. Kusunoki leg.

**Distr.:** Hokkaido, Honshu, Shikoku (*hab. nov.*), Kyushu.

**25. Epistrophe nigroepistomata sp. nov.** Fig. 3, 1.

♂. Frons black, densely covered with a grayish yellow dust leaving the apex, sparsely furnished with blackish erect hairs, conspicuously divergent anteriorly, with the lunula reddish brown. Vertical triangle black, thinly covered with a grayish yellow dust and with blackish hairs. Eyes bare, touched in a distance about equal to the length of vertical triangle. Face strongly divergent downward, reddish brown, with a median longitudinal black stripe, the epistoma distinctly blackish, the cheeks and the broad mouth edge covered with a grayish yellow dust and a sparse blackish pubescence, along the mouth edge there are some grayish hairs; median callus bare, with a metallic lustre. Back of the head black, covered with a grayish dust, furnished with yellowish gray hairs which are intermixed with black ones near the vertex. Antennae dull brown, covered with a grayish dust; first and second segments blackish brown, about same in length, a little shorter than a half length of the third; arista reddish brown, a little shorter than the three antennal segments united together, with the basal half slightly thickened. Rostrum blackish brown, lighter at apex.

Mesonotum blackish brassy, furnished with grayish yellow rather long and erect hairs, the lateral sides sparsely covered with a grayish yellow dust; pleura covered with a grayish yellow dust and long grayish yellow hairs, scutellum large waxy yellow, furnished with blackish long and erect hairs. Wings very slightly infuscated, with light blackish brown pterostigma; veins black, the venation as in the figure. Abdomen black, with the hind margin of fourth tergite pale reddish brown, the patterns as in figure light reddish brown and reaching the lateral margins, on the anterior area of each tergite

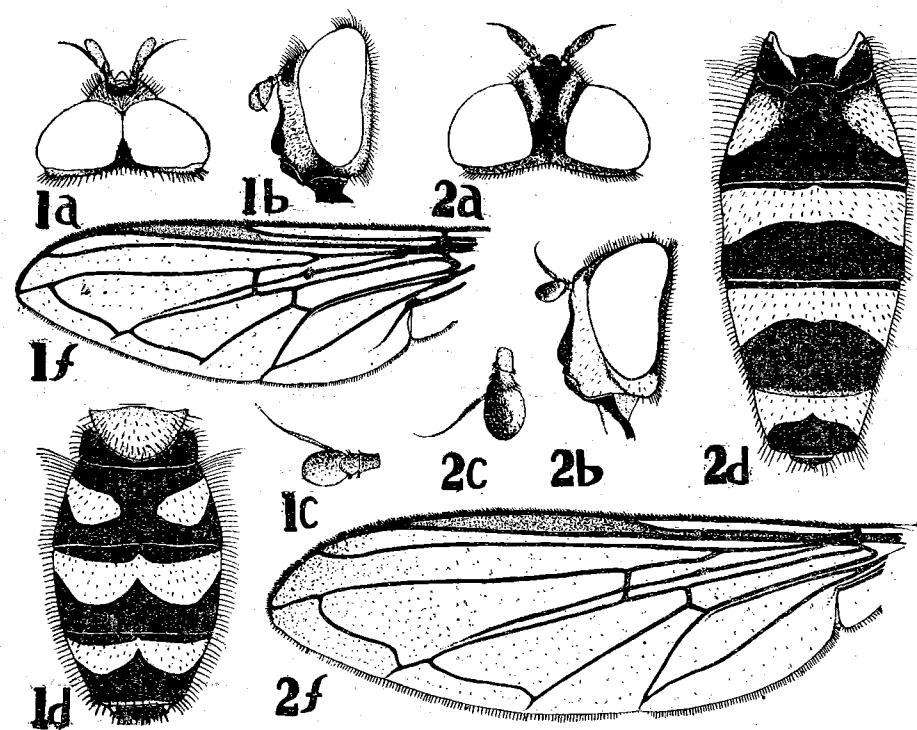


Fig. 3. 1a-f, *Epistrophe nigroepistomata* sp. nov.;  
2a-f, *Epistrophe Omogensis* sp. nov.

there are grayish yellow hairs and on the posterior area blackish hairs, but on the second tergite the hairs mostly grayish yellow, the blackish ones only in the hind margin; genitalia somewhat prominent, strongly shining, furnished with blackish long hairs. Fore and mid legs: coxae black, furnished with grayish hairs; femora black with the apices light reddish brown, furnished with blackish hairs except the bases where there are found light-brownish gray ones; tibiae reddish brown, with the middle portion blackish brown, the outer sides furnished with short blackish hairs and the inner sides with short light-yellowish ones; tarsi blackish brown, having hairs as in tibiae. Hind legs mostly black except the apices of femora and the bases of tibiae reddish brown, furnished with whitish hairs, but the apices of femora bearing black hairs and the inner side of tarsi brownish ones. Length: ca. 8 mm.

**Distr.:** Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref., V-11, T. Edashige leg.; 3 **paratopotypes**, 3 ♂, V-11, T. Edashige leg.

This new species somewhat resembles *lineola* Zetterstedt, but it is at once distinguished from the latter by the abdominal patterns.

26. *Epistrophe omogensis* sp. nov. Fig. 3, 2.

♀. Head rather large, distinctly broader than the thorax. Frons black, somewhat obscured by a grayish dust, furnished with a blackish erect pubescence, divergent downward, in the middle with a relatively broad longitudinal brownish stripe which has a metallic lustre; frontal process very short and broad, with the very large metallic shining lunula. Vertex black, with a metallic lustre, sparsely furnished with blackish hairs, about  $1/6$  as wide as head, only the hind part covered with a brownish dust. Face nearly parallel-sided, about  $5/12$  as wide as head, moderately hollowed beneath the antennae, with a rather large facial knob, orange yellow, covered with a whitish dust and sparsely furnished with short whitish hairs, with a bare shining black median longitudinal streak, which is nearly of the same width throughout but it is suddenly narrowed upwards beneath the antennae, the mouth edge bare, the cheeks dull orange yellow; back of the head black, covered with a grayish white dust, and densely with light-yellowish gray hairs. Antennae brown, covered with a whitish dust; first segment a little shorter than a half length of the third; the second a little shorter than the preceding, with blackish brown tinge on the upper surface of apex; the third blackish brown, with the under surface of base brown; arista blackish brown, with the base lighter, microscopically pubescent, a little longer than antenna, the basal  $1/3$  slightly thickened. Mesonotum with a strong bluish brassy lustre, furnished with yellowish gray short, erect hairs, the lateral sides being covered with a yellowish gray dust; pleura brassy, covered with a yellowish gray dust, particularly dense on mesopleura and sternopleura, furnished with long light yellowish gray hairs which are relatively dense on meso-, ptero- and sterno-pleura; scutellum large, bluish brassy, with the margins waxy yellow, sparsely furnished with blackish and yellowish gray hairs which become longer at the hind margin. Wings relatively long, slightly infuscated toward the tip, with dark brown pterostigma; veins blackish brown, the venation as in the figure. Abdomen elongate black, with reddish brown bands as shown in the figure, covered with short blackish hairs which are grayish yellow along the lateral margins; first tergite furnished with yellowish gray hairs, reddish brown along the anterior margin, with a bluish brassy lustre on the hind margin; the second with long hairs antero-laterally, from anterior part to the markings covered with yellowish gray hairs; the fourth tergite with reddish yellow narrow hind margin. Four anterior legs pale brownish yellow, furnished with whitish hairs which become shorter and darker at apices of femora and of tibiae; coxae and trochanters of hind legs brown, covered with whitish hairs, the femora black except the both ends brownish, covered with whitish hairs which

become shorter and blackish at the apices, the tibiae blackish brown with the base paler, along the outside there are blackish hairs and on the inside light yellowish brown hairs. Length: ca. 10 mm.

**Distr.:** Shikoku.

**Holotype**, ♀, Mt. Omogo, Ehime Pref., VI-27, 1951, M. Miyatake leg.

This species is near to *cinctella* Zetterstedt, but it is quite distinguishable from in the relatively longer wings, in the conspicuous median black stripe of face, in the broader abdomen and in others.

27. *Epistrophe cinctella* (Zetterstedt, 1843) Nom. Jap.: *Obi-hoso-hirataabu*

**Spec. exam.:** 1♂, Omogo Valley, VII-26, 1951, M. Miyatake leg.; 1♀, Mt. Ishizuchi, VII-27~28, 1951, M. Miyatake leg.; 1♀, 2♂♂, Mt. Ishizuchi, VII-27~28, 1952, T. Edashige leg.; 1♀, 3♂♂, Mt. Ishizuchi, VIII-2, 1952, I. Kusunoki leg.

**Distr.:** Hokkaido, Shikoku [*hab. nov.*], Saghalien, Kuriles, Europe, India.

Genus *Metasyrphus* Matsumura, 1917

28. *Metasyrphus nitens* (Zetterstedt, 1842)

Nom. Jap.: *Nami-hoshi-hirataabu*

**Spec. exam.:** 1♀, Omogo Valley, VI-18, 1952, T. Edashige leg.; 1♂, Mt. Ishizuchi, VII-28, 1952, T. Edashige leg.

**Distr.:** Hokkaido, Honshu, Shikoku [*hab. nov.*], Kyushu, Korea, Europe.

Genus *Syrphus* Fabricius, 1775

29. *Syrphus serarius* Wiedemann, 1830

Nom. Jap.: *Kuro-hirataabu*

**Spec. exam.:** 5♀♀, 8♂♂, Mt. Ishizuchi, VII-27, 1951, M. Miyatake leg.; 2♀♀, 3♂♂, Mt. Ishizuchi, VII-28, 1952, T. Edashige leg.; 3♂♂, Omogo Valley, VI-26~27, 1951 M. Miyatake leg.

**Distr.:** Honshu, Shikoku [*hab. nov.*], Kyushu, Formosa, Korea, etc.

30. *Syrphus fulvicornis* sp. nov. Fig. 4, 1.

♂. Frons black with the apex of lunula yellowish brown, covered with a grayish yellow dust, furnished with blackish long erect hairs; frontal process conspicuous, not dusted, with a lustre, but the basal portion is somewhat covered with a dust. Vertical triangle narrow, black with a weak lustre, and rather sparsely erect hairs. Eyes densely covered with short grayish brown pubescence which becomes paler on the lower portion, touched in a distance a little shorter than the length of the vertical triangle (about 8/9). Face very slightly convergent below, yellowish brown, with the cheeks, mouth edge

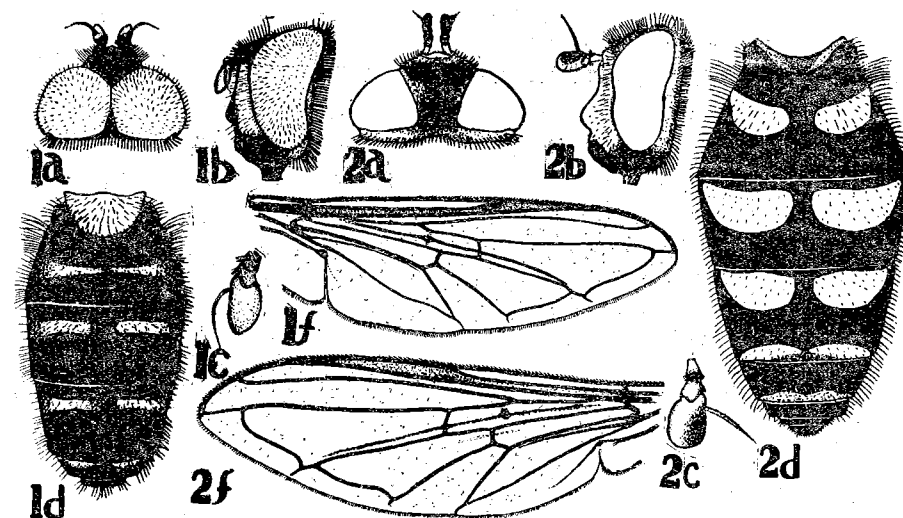


Fig. 4. 1a-f, *Syrphus fulvicornis* sp. nov.; 2a-f, *Syrphus ventralis* sp. nov.

and median longitudinal stripe black, sparsely furnished with blackish hairs except the cheeks bearing whitish hairs, covered with a whitish dust except the bare and shining black median callus. Back of the head black, densely covered with a grayish dust, furnished with grayish hairs which become light brownish and partially blackish near the vertex. Antennae brown with the first and second segments darker; the first and second about same in length; the third conspicuously narrowed at the tip, about three times as long as the first, covered with a whitish dust; arista brown, a little longer than the third antennal segment.

Thorax, abdomen, wings and legs mostly same as in *Syrphus serarius*, but the blackish hairs on the scutellum a little sparser, the transverse bands in abdomen narrower and more densely white-dusted, the genitalia relatively large, strongly shining and with shorter pubescence. Length: ca. 7 mm.

**Distr.:** Shikoku.

**Holotype**, ♂, Mt. Ishizuchi, Ehime Pref., VII-27, 1951, M. Miyatake leg.; 1 paratopotype, 1♂, VII-27, 1951, M. Miyatake leg.

This new species resembles *Syrphus serarius* Wiedemann, but may be distinguished by the small size, the coloration of the third segment of antennae, the shape of the abdominal markings, and many others.

31. *Syrphus vitripennis* Meigen, 1822

**Spec. exam.:** 1♀, Omogo Valley, V-11, 1952, T. Edashige leg.; 1♀, Omogo Valley, VI-

18, 1952, T. Edashige leg.; 1♀, 2♂♂, Mt. Ishizuchi, VI-27, 1951, H. Kusunoki leg.; 1♀, 6♂♂, Mt. Ishizuchi, VII-26~23, 1952, T. Edashige leg.

**Distr.:** Hokkaido, Honshu, Shikoku [*hab. nov.*], Kyushu, Formosa, Europe.

32. *Syrphus ventralis* sp. nov. Fig. 4, 2.

♀. Head broader than the thorax. Frons broad divergent below, black with a cupreous lustre, the lateral sides of frontal process and lunula being orange yellow, furnished with blackish erect hairs, in front of the ocellar triangle there is an ill-defined transverse band formed of a grayish yellow dust. Vertex about 1/4 as wide as head, coloured and haired similarly to the frons. Face parallel-sided, about a half as wide as head, waxy pale yellow, slightly obscured by a grayish dust, sparsely furnished with brown short erect hairs which are quite absent on the orange yellow facial knob and become grayish or yellowish gray at the browish black mouth edge and cheeks. Back of the head slightly hollowed, densely covered with a whitish dust, furnished with light yellow hairs which become partially blackish. Antennae light-yellowish, with the apex of first segment, the base of the second and the upper part of the third blackish brown; first segment about a little shorter than a half length of the third, broadened apically; the second as long as the first; the third slightly broadened toward the round apex; arista light-blackish brown, the apex darker, remarkably tapering in the apical one-third, about as long as the second and third segments united together. Mesonotum black, with a weak cupreous lustre, densely covered with yellowish erect hairs, the lateral sides somewhat obscured with a brownish gray dust; pleura black, covered with light yellowish hairs which become brownish on the upper part of mesopleura where it is covered with a brownish gray sparse dust; scutellum waxy yellow, furnished with blackish erect hairs, on the lateral sides they become grayish yellow. Wings slightly infuscated, with light blackish brown pterostigma; veins black, the venation as in the figure. Abdomen black, with the patterns as shown in the figure, which are mostly reddish yellow, covered with blackish hairs, but the yellowish portions and antero-lateral parts bearing yellowish gray ones; the spots of the second tergite reaching the lateral margins, of the third and the fourth not reaching the lateral margins respectively, but the hind marginal bands hardly extending to the lateral margins. Ventrals of abdomen mostly brownish yellow, on the third and fourth sternites there are median black spots along the hind margins. Coxae and trochanters black, sparsely covered with a whitish pubescence and a grayish dust; fore and mid femora brownish yellow, the basal half blackish, covered with blackish hairs which become grayish at the bases; tibiae and tarsi of fore and mid legs yellowish, furnished with short whitish hairs, at the bases of tibiae, they are intermixed with short blackish ones; hind femora brownish black with the yellowish apex, covered with grayish hairs which

become shorter and blackish at the tops; hind tibiae and tarsi blackish, the former having the yellowish bases, furnished with blackish short hairs, but the inner surface of tarsi are densely furnished with short depressed yellowish hairs. Length: ca. 10 mm.

**Distr.:** Shikoku.

**Holotype**, ♀, Omogo Valley, Ehime Pref., V-11, 1952, T. Edashige leg.

This new species belongs to the *ribesii* group, but it differs in the abdominal interrupted bands, in the black cheeks, in the round black spot on the hind margin of each the third and fourth sternites, and in others.

Genus *Sphaerophoria* St. Fargeau et Serville, 1825

33. *Sphaerophoria javana* (Wiedemann, 1824)

**Spec. exam.:** 1♀, Mt. Omogo, VII-26, 1951, M. Miyatake leg.

**Distr.:** Honshu, Shikoku [*hab. nov.*], Kyushu, Korea, Formosa, India, Ceylon, Java, Sumatra, Neu-Ginea and Australia.

34. *Sphaerophoria menthastri* (Linné, 1753) Nom. Jap.: *Mame-hirataabu*

**Spec. exam.:** 1♀, Omogo Valley, VI-18, 1952, T. Edashige leg.; 1♂, Omogo Valley, IX-7, 1952, T. Edashige leg.

**Distr.:** Hokkaido, Honshu, Shikoku, Kyushu, Saghalien, South-Manchuria, China, West-Siberia, Europe.

35. *Sphaerophoria cylindrica* (Say, 1824) Nom. Jap.: *Naga-hime-hirataabu*

**Spec. exam.:** 1♂, Omogo Valley, VI-18, 1952, T. Edashige leg.

**Distr.:** Honshu, Shikoku, Kyushu, Korea, Formosa, North-America.

Genus *Olbiosyrphus* Mik., 1897

36. *Olbiosyrphus sapporensis* (Matsumura, 1916) Nom. Jap.: *Kibari-hirataabu*

**Spec. exam.:** 1♂, Omogo Valley, VI-18, 1952, T. Ishihara leg.

**Distr.:** Hokkaido, Honshu, Shikoku [*hab. nov.*].

Subfamily BACCHINAE Brues et Melander (1930)

Genus *Baccha* Fabricius, 1805

37. *Baccha apicalis* Loew, 1858 Nom. Jap.: *Tsumaguro-koshibozo-hanaabu*

**Spec. exam.:** 3♀♀, 1♂, Mt. Omogo, VII-26, 1951, M. Miyatake leg.; 1♀, Omogo Valley,

VIII-15, 1951, M. Miyatake leg.; 1♀, Omogo Valley, IX-7, 1951, M. Miyatake leg.; 1♀, Omogo Valley, IX-17, 1952, K. Sasaki leg.; 1♀, Mt. Ishizuchi, VII-27, 1951, M. Miyatake leg.

Distr.: Honshu, Shikoku (*hab. nov.*), Kyushu, Formosa, Philippines, Java.

33. *Baccha maculata* Walker, 1852 Nom. Jap.: *Madaya-koshiboso-hanaabu*

Spec. exam.: 1♀, 2♂♂, Omogo Valley, V-11~12, 1952, T. Edashige leg.; 1♂, Mt. Omogo, VII-26, 1951, M. Miyatake leg.; 1♀, Mt. Ishizuchi, VII-27, 1952, T. Edashige leg.

Distr.: Japan, Korea, Formosa, India.

Subfamily SPHEGINAE Brues et Melander (1930)

Genus *Sphegina* Meigen, 1822

39. *Sphegina elongata* sp. nov. Fig. 5, 1-2.

♂. Frons black, almost parallel-sided, about 1/5 as wide as head, furnished with short grayish hairs except the bare frontal process, with a pair of large grayish white markings which are covered with a grayish dust and a grayish pubescence; frontal process small; lunula black. Vertex black, a little narrower than 1/4 of head, sparsely furnished with grayish hairs and thinly covered with a grayish dust, ocellar triangle shining black, without any dust. Face a little divergent below, the middle part about 1/4 as wide as head, the mouth edge produced antero-inferiorly, light yellowish brown, the upper portion being brownish black, sparsely covered with a grayish dust and with a grayish pubescence, along the eye-margins there is a sparse whitish pubescence; back of the head black, covered with a grayish dust and hairs. First segment of antennae brownish black, about 1/3 as long as the third; the second brown with the blackish brown base, about 2/3 as long as the following; the third blackish brown with the brown base, covered with a whitish dust, almost square; arista blackish brown except the basal one-third light brown, microscopically pubescent, a little shorter than 5/3 as long as the three antennal segments united together. Rostrum brown. Mesonotum black with a metallic lustre, furnished with short grayish yellow hairs, sparsely covered with a grayish dust except the median area, the base of humeral calli and the post-alar calli blackish brown; pleura black, covered with a grayish dust, furnished with short grayish hairs which become longer on the meso- and pteropleura. Scutellum shining black, furnished with short grayish hairs, sparsely covered with a grayish dust on the anterior and posterior parts, with two very long bristly hairs on the hind margin, which are about 4/3 as long as scutellum. Wings mostly transparent, with the dull brownish pterostigma and blackish brown veins, the venation as in the figure. Abdomen black with a metallic lustre, the basal one third of third tergite light

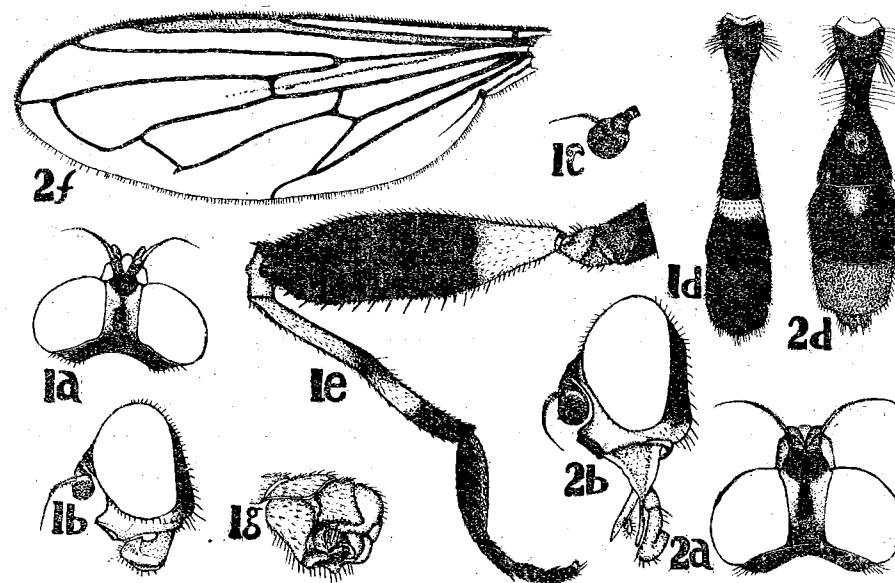


Fig. 5. 1a-d, *Sphegina elongata* sp. nov. ♂; 2a-f, *Sphegina elongata* sp. nov. ♀.

yellowish brown, furnished with grayish short hairs; first tergite sparsely covered with a grayish dust, furnished with long pale hairs along the lateral sides; the second about 5/6 as long as head, mesonotum and scutellum united together, constricted at about 1/3 from the anterior margin, the narrowest portion being about 1/3 as wide as the hind margin; the third broadened behind, about 2/5 as long as the second, the hind margin being about 3/2 as wide as the hind margin of second; the fourth a little shorter and broader than the third, the hind margin being about 6/5 as wide as the hind margin of second; underside furnished with grayish hairs, light yellowish brown; the fourth sternite shining black, its hind margin blackish brown, with a blackish horn-like process; genitalia light blackish brown. Legs furnished with short grayish hairs; fore and mid legs mostly light yellowish brown, the two apical segments of tarsi blackish brown; coxae of hind legs blackish brown, trochanters light blackish brown, femora shining black with the light yellowish brown base, on the under surface there are black bristles and short small teeth, but on its paler portion there are only blackish hairs, tibia light yellowish brown with the apex and the middle portion blackish brown, tarsus blackish brown. Length: ca. 8.5 mm.

♀. Differs from the male in the following points:— Frons shining black, the middle portion about 1/4 as wide as head. Vertex about 1/4 as wide as head. Face in the middle portion about 1/3 as wide as head. Abdomen:

second tergite about  $\frac{2}{3}$  as long as the head, mesonotum and scutellum united together, the hind margin about  $\frac{5}{2}$  as wide as the narrowest portion, with a large brownish red median spot which has two black dots in the middle; the third about  $\frac{3}{5}$  as long as the second, distinctly wider than the preceding, about one-third from the anterior margin being broadest and then slightly narrowed behind, with a large triangular reddish brown spot on the anterior half and the same coloured lateral margins; the fourth reddish brown, a little shorter and narrower than the third; the following segments also reddish brown; underside yellow-reddish brown. Length: ca. 8.5 mm.

Distr.: Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref.; **allotopotype**, ♀; 1 **paratopotype**, 1♂, all, VI-18, 1952, T. Edashige leg.

Somewhat allied to *clunipes* Fallén, but it is quite different in many character, particularly in the male genitalia which is also quite different from the another Palaearctic species.

40. *Sphegina japonica* sp. nov. Fig. 6, 1-2.

♂. Head black. Frons almost parallel-sided with the middle part about  $\frac{1}{5}$  as wide as head, sparsely covered with a grayish dust, thinly pubescent along the eye-margins, frontal process very short, lunula bare, shining black. Vertex mostly bare, black, weakly shining, a little wider than  $\frac{1}{5}$  of head-width. Face a little divergent below, sparsely covered with a grayish dust, furnished with short grayish hairs, mouth part brown, remarkably produced forward. Antennae brown, with the base of second and third segments blackish; the first about  $\frac{1}{4}$  as long as the third, the second about one half as long as the following; the third round, about as long as width; arista blackish brown, thickened at base, microscopically pubescent, a little longer than the three antennal segments united together. Mesonotum black with a metallic lustre, fairly narrow, slightly longer than  $1\frac{1}{2}$  times the width, very slightly broadened behind, thinly covered with a grayish dust, sparsely furnished with very short depressed hairs; pleura covered with a relatively dense grayish dust. Scutellum black, with a metallic lustre, thinly covered with a grayish dust, sparsely furnished with short grayish hairs, on the hind margin there are two grayish hairs which are about as long as the scutellum. Wings mostly transparent, with the infuscated pterostigma; veins black, the venation as in the figure. Abdomen mostly black, with a metallic lustre, two broad reddish brown bands on the third and fourth tergites, the hind margin of fourth tergite very narrowly yellow, the fifth tergite brownish; the pubescence short and grayish, but on the hind portion of each tergite it is blackish; first tergite narrowed hindward, as long as hind margin, furnished with light yellowish long hairs along the postero-lateral margins; the second about  $\frac{2}{3}$  as long as the length of head, mesonotum and scutellum united together, very narrow,

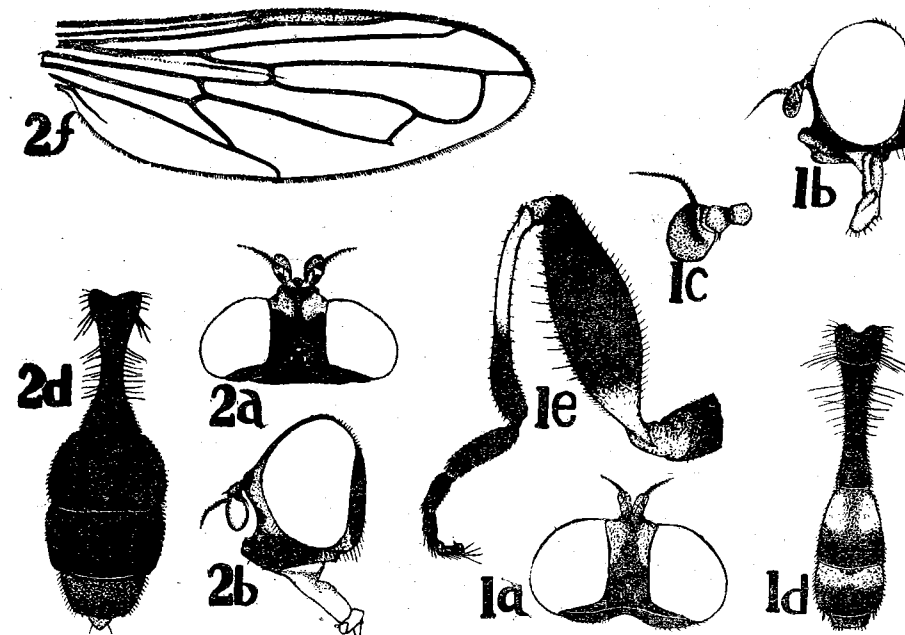


Fig. 6. 1a-d, *Sphegina japonica* sp. nov. ♂; 2a-f, *Sphegina japonica* sp. nov. ♀.

narrowest in the middle, the lateral margins with long sparse grayish hairs; the third widened hindward, about  $\frac{2}{3}$  as long as the second, the hind margin about twice as wide as the hind margin of second; the fourth about as wide as the third, a little shorter than the width; third sternite shining black, very narrow, with very broad yellow pleural membranes; fourth sternite black, furnished with yellow bristly hairs on the hind portion; genitalia reddish brown, with brown pubescence. Fore and mid legs light-yellowish brown, with short grayish hairs; coxae of hind legs brown, trochanters light-yellowish brown, femora thickened, shining black with the light yellowish brown base; on the under surface there are a series of light yellowish bristles and short black teeth, tibiae light yellow with the shining black apex, tarsi mostly brownish black with the paler apex. Length; ca. 6 mm.

♀. Differs from the male in the following points:—Frons broader, in the middle part about  $\frac{1}{3}$  as wide as head. Vertex about  $\frac{1}{3}$  as wide as head. Face at the middle part about as wide as vertex. Abdomen: the hind part of the second tergite relatively wide, the third almost hemispherical, the fourth with a pair of reddish brown spots near the anterior margin. Fore and mid legs mostly brownish yellow, with the mid femora and the apex of mid tibiae darker, and the tarsi blackish brown apically. Length: ca. 6.5 mm.

Distr.: Honshu, Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref., VI-18, 1952, T. Edashige leg.; **allotopotype**, ♀, IX-8, 1951, M. Miyatake leg.; 1 **paratype**, 1 ♀, Karuizawa, Nagano Pref., VII-22, 1951, S. Hisamatsu leg.

Rather near to *clunipes* Fallén, but it is distinguished from the latter by the longer abdomen, the very small third sternite, etc.

Subfamily **BRACHYOPINAE** Brues et Melander (1730)

Genus **Rhingia** Scopoli, 1763

41. **Rhingia laevigata** Loew, 1853      Nom. Jap.: *Hana-daka-hanaabu*

**Spec. exam.**: 1 ♀, Omogo Valley, V-10, 1952, T. Ishihara leg.; 1 ♂, Omogo Valley, IX-7, 1952, T. Edashige leg.; 1 ♀, Omogo Valley, IX-23, 1952, T. Yano leg.; 1 ♀, Omogo Valley, X-17, 1952, T. Mohri leg.

**Distr.**: Hokkaido, Honshu, Shikoku [*hab. nov.*].

Subfamily **CHRYSTOXINAE** Verrall (1901)

Genus **Chrysotoxum** Meigen, 1803

42. **Chrysotoxum grande** Matsumura, 1911 Nom. Jap.: *Ou-higenaga-hanaabu*

**Spec. exam.**: 1 ♀, Mt. Ishizuchi, VI-27, 1951, H. Kusunoki leg.; Mt. Ishizuchi, VII-27, 1951, M. Miyatake leg.

**Distr.**: Hokkaido, Honshu, Shikoku [*hab. nov.*], Kyushu.

43. **Chrysotoxum nigroscutellum** sp. nov.

♂. Head large, much wider than the thorax. Frons black, small, remarkably divergent inferiorly, furnished with blackish hairs, covered with a whitish dust between the eyes; frontal process when seen from above conspicuously produced forwards and slightly upwards, rather narrow and almost parallel-sided, about as long as width. Vertical triangle relatively narrow and long, about 1/14 as wide as head, well-elevated from eye-surface, black, bearing black hairs. Eyes densely covered with short dark brownish hairs, which become whitish on the lower portion, touched in a distance about three-fourths as long as vertical triangle. Face slightly widened below, at the middle about one half as wide as head, in profile not straight but moderately concave, light yellow with a broad (nearly one half as wide as face) strongly shining black longitudinal median stripe which is conspicuously narrowed toward the antennal bases and slightly at the mouth edge, with the cheeks strongly shining black; pubescence rather dense, erect, its colour similar to the ground colour. Back of the head distinctly hollowed, black, densely covered with a

grayish dust; furnished with grayish hairs which become blackish on the upper portion.

Antennae black: first segment about 5/7 as long as the third, moderately compressed, with the tip moderately rounded, furnished with short, thick, depressed, black bristly hairs; the second about 4/7 as long as the following, a little swollen at the apex, the pubescence similar to the preceding one but a little longer; the third when seen from inner side nearly parallel-sided, about four times as long as width; arista black, a little longer than the third antennal segment (about 15/14). Rostrum blackish brown, lighter at the apex.

Mesonotum short, about as long as width, black with a very weak bluish metallic lustre, with a pair of gray-dusted median longitudinal stripes which are not reaching to the hind margin; humeral calli densely covered with a whitish yellow dust, with a bluish lustre; postalar calli covered with a grayish yellow dust, with a bluish lustre; pubescence mostly dark grayish, erect, partially blackish, particularly just above the wing-bases. Pleura black, with a bluish metallic lustre, the anterior half of mesopleura and the upper portion of sternopleura covering with a grayish dust, mostly furnished with black hairs. Scutellum black with a bluish metallic lustre, the anterior and posterior margins thinly covered with a grayish dust, furnished with long erect blackish hairs which become grayish on the anterior portion. Squamae light yellow, with yellowish cilia. Wings almost same as in *coreanum* Shiraki; halteres with very slender brownish stalk and orange yellow head. Abdomen black with a weak bluish lustre, with a narrow, interrupted in the middle, yellowish, transverse median band on each the second to fourth tergites and with a entire same coloured transverse band along the hind margin of each the third to fifth tergites, the median bands not reaching to the lateral margins, while the marginal bands reaching to the lateral margins, the band on the fifth very broad and produced triangularly forwards but not reaching to the anterior margin; pubescence dense, mostly erect and yellowish brown, but on the first, the front part of second and the fifth tergites it is black, and on the hind half of third it becomes very short, somewhat depressed, bristly and black. The underside of abdomen shining black, densely furnished with long, black erect hairs, with a narrow yellowish band along the hind margin of each the first to fourth sternites; genitalia black, somewhat brownish-dusted, furnished with long black hairs.

Coxae and trochanters black, furnished with blackish long hairs; femora black, gradually palened toward the reddish yellow apex, furnished with black hairs; tibiae yellow, somewhat brownish apically, particularly on the hind one; tarsi brownish yellow. Length: ca. 17.5 mm.

♀. Differs from the male in the following points:— Frons distinctly divergent forwards, with a pair of gray-dusted subquadrate spots at the base of frontal process, the vertex about one-sixth as wide as head; facial median black stripe about a half as wide as face; hind marginal band of the fourth



tergite moderately produced forward where it is triangularly incised. Length: ca. 18 mm.

**Distr.:** Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref., V-20, 1952, S. Hisamatsu leg.; **allotopotype**, ♀, VI-18, 1952, T. Edashige leg.; 1 **paratype**, 1 ♂, Tarumi (Matsuyama), Ehime Pref., 1951, T. Funabiki leg.

This new species is allied to *coreanum* Shiraki and also to *sachalinensis* Matsumura, but it is distinguished from the latter in the third antennal joint not narrowed apically, the frontal process narrower and produced somewhat obliquely upwards, the frons of female rather longer and with distinctly inwardly curved lateral margins, the fifth tergite without median transverse band, and others. From *coreanum* it differs in the relatively shorter first antennal joint, the broader facial stripe, the black scutellum, and others.

Subfamily EUMERINAE Curran (1928)

Genus *Eumerus* Meigen, 1822

44. *Eumerus chimensis* sp. nov. Fig. 7, 1-2.

♂. Frons small almost equilateral-triangular, densely covered with a whitish dust and sparsely with short whitish hairs. Vertical triangle prominent, about 1/8 as wide as head, black, with a purplish metallic lustre, furnished with blackish hairs around the ocelli and with grayish ones on the hind part. Eyes covered with a very minute sparse grayish pubescence, touched in a short distance about one-fourth as long as vertical triangle. Face almost parallel-sided, in the middle part about 2/7 as wide as head, black, covered with a whitish yellow dust and with a sparse grayish pubescence, with the cheeks mostly bare; in profile almost straight; back of head hardly hollowed, black, covered with a grayish dust, except the upper portion bare, the eye-margins very narrowed and furnished with a grayish brown pubescence on the upper portion and with a grayish one on the lower portion. Antennae light yellowish brown, first segment about 1/6 as long as the third, a little darker, the second about one half as long as the following, a little darker, the third very broad, somewhat oval, with the dark brown anterior margin; arista blackish brown with the base paler, as long as three antennal segments united together. Mesonotum relatively short, distinctly narrower than head, black, with a purplish metallic lustre, covered with grayish brown hairs; mesopleura and sternopleura furnished with whitish hairs, and pteropleura with grayish hairs. Scutellum black, with a purplish metallic lustre, furnished with grayish brown hairs. Wings slightly infuscated, with dark brownish pterostigma; veins blackish brown, the venation as in figure. Abdomen distinctly longer than head and thorax united together, as broad as thorax, black, with a weak

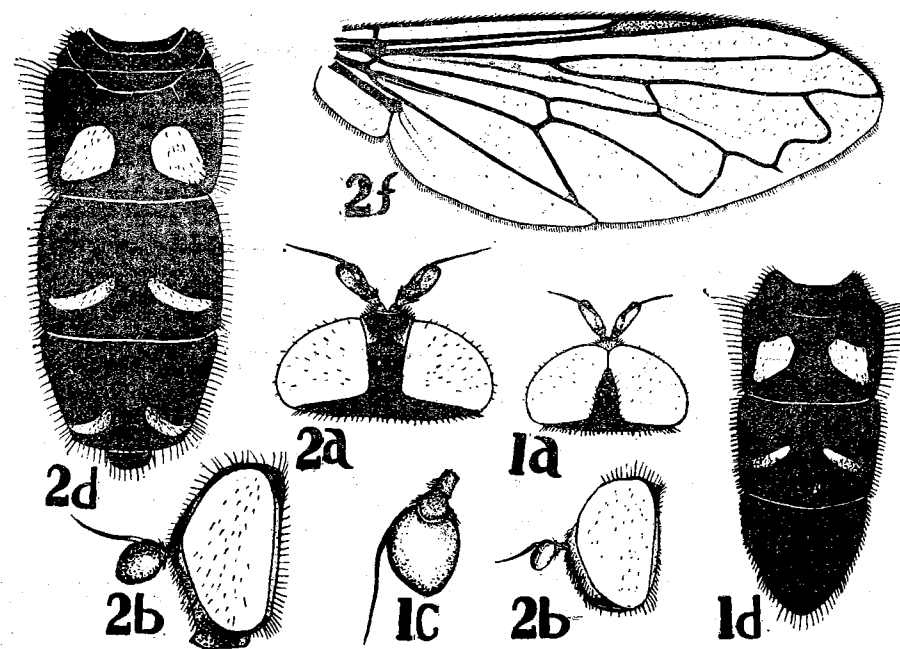


Fig. 7. 1a-d, *Eumerus chimensis* sp. nov. ♂; 2a-f, *Eumerus chimensis* sp. nov. ♀.

purplish metallic lustre, densely covered with short blackish hairs, with two pairs of oblique reddish yellow spots, of which the first pair on the second tergite is broad and is covered with sparse minute white pubescence, and the second one on the third tergite is very narrow and is covered with a dense white dust and minute white pubescence; fourth tergite with a pair of oblique narrow spots formed of a gray dust and whitish pubescence, the spots being reached to the lateral margins of the segment. Coxae and trochanters black, with grayish hairs, femora black with brownish apices, fore and mid tibiae brownish yellow with darker middle part, hind tibia black with brownish yellow base, the blackish portions of hind femur and tibia furnished with a metallic lustre, anterior two pairs of tarsi grayish yellow, hind tarsi longer than the tibia, distinctly broadened, silvery tomentose. Length: ca. 6.5 mm.

♀. Differs from the male in the following points:— Frons about 1/5 as wide as head, a little divergent below, black, with a bluish metallic lustre, furnished with blackish hairs, along the eye-margins there is a sparse short whitish pubescence, with a pair of ill-defined spots covered with a grayish dust just front ocellar elevation. Face a little narrower than 1/4 of head, in profile hardly concave. Antennae darker. Mesonotum as well as scutellum with a rather cupreous metallic lustre, with a pair of very narrow longitudinal

stripes formed of a grayish dust, which are not extended to the hind margin. Shape of the abdominal spots as shown in the figure. Hind tarsi narrower and not silvery. Length ca. 8 mm.

**Distr.:** Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref., IX-7, 1952, T. Edashige leg.; **allotopotype**, ♀, IX-7, 1952, T. Edashige leg.; 8 **paratopotypes**, 2♂♂, 4♀♀, IX-7, 1952, T. Ishihara et T. Edashige leg., 1♂, VII-25, 1951, M. Miyatake leg., 1♀, IX-7, 1951, M. Miyatake leg.

Very near to *japonicus* Matsumura, but this species has relatively broad vertex and face, more rounded third antennal segment, less broad spots of second abdominal tergite, relatively shorter and broader second hind tarsal segment of male (much shorter than half the length of the metatarsus and about as long as width, while in *japonicus* it is about half as long as the metatarsus and distinctly longer than width), and other minute characters.

Subfamily **MILESINAE** Williston (1886)

Genus **Milesia** Latreille, 1804

45. **Milesia undulata** Vollenhoven, 1863 Nom. Jap.: *Sirosuji-naga-hanaabu*

**Spec. exam.:** 2♂♂, Omogo Valley, VI-26, 1951, H. Kusunoki leg.

**Distr.:** Japan, Saghalien.

Subfamily **ZELIMINAE** Shiraki (1949)

Genus **Penthesilea** Meigen, 1800

46. **Penthesilea nigrescens** sp. nov. Fig. 8.

♂. Frons black with yellowish brown apex, very small, a little produced, densely covered with a yellowish gray dust, except a very narrow medio-longitudinal furrow, the lunula reddish brown. Vertical triangle about 1/10 as wide as head, very slightly elevated. Eyes bare, touched in short distance about one-third as long as vertical triangle, about twice as long as width in profile. Face black, obscured by a dense yellowish gray tomentum and bearing a few blackish hairs on the sides and between the antennae and the eyes, rather bulkily produced to the front mouth edge; cheeks broad, shining black and quite bare except on the eye-margins. Back of the head black, covered with a sparse yellowish brown dust, closed with rather long blackish hairs for about the lower two-thirds of the eye, but then almost bare until the dark hairs on the occiput. Antennae dull brown, the first segment a little swollen apically, the second about 3/4 as long as the preceding, the third elliptical in shape, nearly as long as the first and about 2/3 as long as height; arista about as long as the three antennal segments united together, brownish

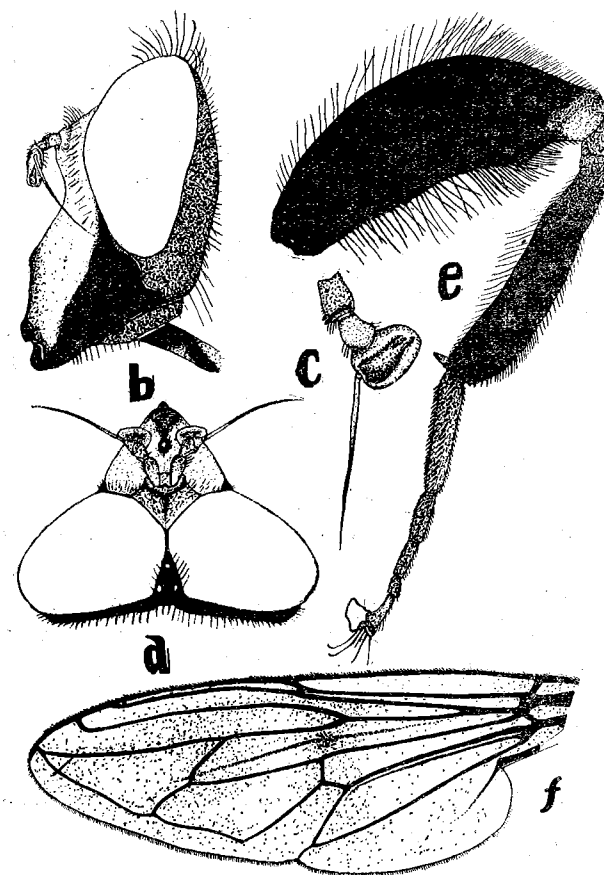


Fig. 8. *Penthesilea nigrescens* sp. nov.

a sparse dull yellowish brown dust, densely covered with very long shaggy blackish, brown tipped hairs. Wings slightly infuscated, with blackish brown veins which become yellowish toward the bases except the extreme bases, the venation as in the figure.

Abdomen at the base of second tergite about as wide as thorax and then slightly narrowed towards the apex, about as long as the remaining body, black, with metallic lustre, covered with a dull brownish dust except the antero-lateral parts of each the second to fourth tergites, first tergite bearing short black hairs, the second covered with black hairs, with non-dusted median longitudinal stripe and hind marginal band, furnished densely with long black hairs which become much longer on the antero-lateral margins; the third very sparsely covered with a grayish dust and densely with black longer hairs, somewhat shining, along the hind margin there are orange

black, with basal 1/3 brown, the apex paler, placed on about the middle of the upper margin of third segment. Rostrum rather slender, brownish black.

Mesonotum nearly as wide as head, dull black, thinly covered with a yellowish brown dust on the humeral calli and the portion between them, with a pair of dull brownish median longitudinal stripes which are only recognizable from the posterior above direction and are not reaching to the hind margin, densely covered with blackish long erect hairs, the postalar calli densely furnished with grayish black shaggy hairs which have pale tips; pleura somewhat shining black, furnished with long, shaggy, grayish black hairs mostly on the upper portion. Scutellum transverse, black, obscured by

yellow hairs intermixed, about at the two-thirds from the fore margin there is a black narrow transverse streak which is widely interrupted in the middle; the fourth covered with a rather dense, but irregularly transversely striated, grayish yellow dust, the pubescence entirely brownish yellow; genitalia rather prominent, black, obscured by a grayish dust, bearing rather sparse brownish yellow pubescence. Legs black, the tibiae blackish brown, tarsi brownish yellow; coxae furnished with long black hairs; four anterior femora moderately shining, with the extreme tip reddish brown, along the under side there are numerous long black hairs which become shorter gradually toward the apex; hind femora conspicuously thickened, the upper surface rounded and in profile strongly convex, the under side somewhat straight, shining with the extreme apex reddish brown, the pubescence black and long, irregularly intermixed with shorter hairs; hind tibiae castaneous, with the both ends palened, moderately curved, at the apex of inner side there is a pale yellow somewhat triangular process. Length: ca. 18 mm.

**Distr.:** Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref., VI-18, 1952, T. Ishihara leg.; 1 **paratype**, 1 ♂, Mt. Sara, Ehime Pref., V-17, 1951, T. Shiraki leg.

This new species is quite different from the species known to us. Somewhat allied to *Penthesilea rubripes* Matsumura from Formosa, but it is, at once, distinguished in the black legs and many other characters.

Genus *Matsumyia* Shiraki, 1949

47. *Matsumyia nigrofacies* Shiraki, 1949

Nom. Jap.: *Kaoguro-ōmomobuto-hanaabu*

**Spec. exam.:** 1 ♀, Omogo Valley, VII-25, 1951, M. Miyatake leg.

**Distr.:** Hokkaido, Honshu, Shikoku [*hab. nov.*].

Genus *Zelima* Meigen, 1800

48. *Zelima nigripes* Zetterstedt, 1838

**Spec. exam.:** 1 ♂, Omogo Valley, VI-18, 1952, T. Edashige leg.

**Dist.:** Europe, Japan [Shikoku—*hab. nov.*].

49. *Zelima coquilletti* Hervé-Bazin, 1914 Nom. Jap.: *Ruri-iro-naga-hanaabu*

**Spec. exam.:** 1 ♀, Mt. Omogo, VII-26, 1951, M. Miyatake leg.; 1 ♂, Omogo Valley, VIII-15, 1951, M. Miyatake leg.; 1 ♂, Mt. Ishizuchi, VII-26, 1952, T. Edashige leg.

**Distr.:** Japan, Formosa.

50. *Zelima frontalis* sp. nov. Fig. 9, 2.

♂. Black. Frons small, about 1/5 as wide as head, remarkably produced,

pale brownish yellow with the blackish brown lateral sides, practically bare from pubescence. Face hollowed, slightly widened downwards, brownish yellow, with blackish eye-margins, the lower mouth-edge and the extreme

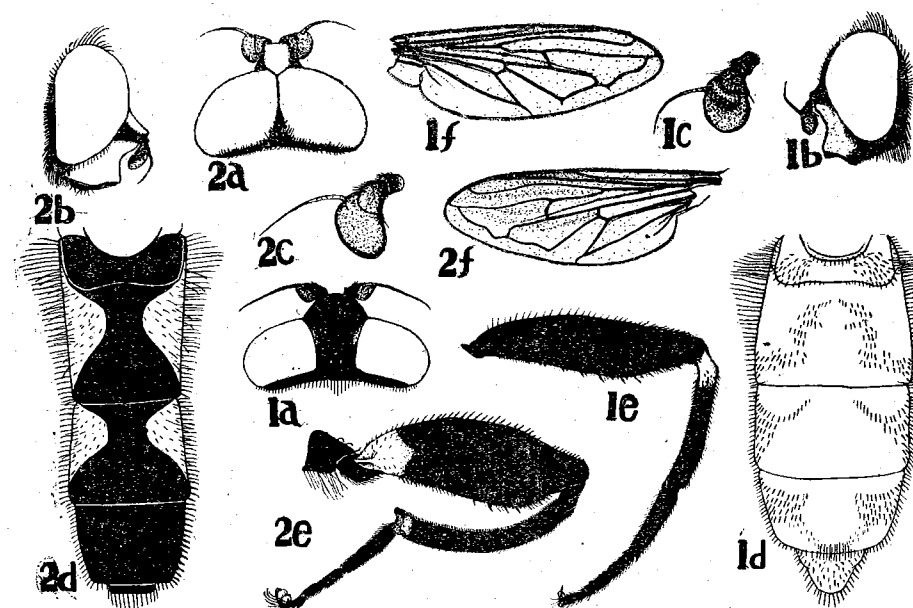


Fig. 9. 1a-f, *Zelima latifrons* sp. nov.; 2a-f, *Zelima frontalis* sp. nov.

upper portion being reddish brown, along the eye-margins bearing a few very minute white pubescence; cheeks dull black except the genal orbits shining reddish brown, furnished with grayish hairs. Antennae blackish brown; first segment about 1/3 as long as the third, brownish black; the second slightly longer than the preceding, blackish at the base, bearing some long bristles at the under apex; the third subovate, paler, covered with a whitish dust; arista blackish brown, the basal one-third moderately thickened and yellowish. Eyes bare, touched in a rather long distance about 2/3 as long as vertical triangle. Vertical triangle black, bearing a few grayish hairs, about 1/8 as wide as head; back of the head black, furnished with grayish hairs. Mesonotum subquadrate, about 1½ times as long as width, black with a cupreous metallic lustre, densely covered with light-brownish erect, very short hairs; a pair of ill-defined spots formed of whitish dust on inside of each humeral callus; pleura black, covered with a sparse whitish dust, furnished with whitish longer erect pubescence on the upper portion; scutellum black, with a bluish metallic lustre, distinctly margined with brownish tinge, furnished with grayish hairs,

a transverse narrow furrow near the base and another ill-defined one behind the middle. Wing slightly infuscated, darkened towards the tip, veins mostly blackish brown, venation as in the figure. Abdomen about as long as the head and thorax united together, nearly parallel-sided, with the fourth segment bent angularly downward, with two pairs of reddish yellow spots as shown in the figure, covered with brown short hairs, which on the yellowish spots and along the lateral sides are whitish; the first tergite bare from pubescence on the middle portion, with the lateral sides narrowly yellowish; the spots of the second and third tergites not extending to each hind margin but occupying the entire lateral margins; the fourth tergite entirely black, with a metallic lustre, the pubescence almost all whitish; genitalia moderately prominent, black, somewhat obscured by a grayish dust, bearing some whitish short hairs. Underside of abdomen mostly brownish yellow, furnished with whitish long hairs; the first sternite black leaving the hind margin, the fourth sternite entirely black.

Anterior and intermediate legs reddish yellow, furnished with a whitish dust, coxae black, trochanters dark brown, femora with whitish long hairs on the intero-lateral sides. Hind legs black with the yellowish base of femora; femora conspicuously thickened with very narrow both ends, strongly shining, the pubescence rather short, on the under side there are some irregularly arranged short and long spines as shown in the figure; tibiae conspicuously evenly curved, with the extreme tip brownish, the apex of underside triangularly produced forwards; tarsi with the tip of each segment paler, pubescence very short, being blackish brown on the outside and gray on the inner side. Length: ca. 11 mm.

Distr.: Shikoku.

Holotype, ♂, Omogo Valley, Ehime Pref., VI-26, 1951, M. Miyatake leg.

This new species is distinguished from the Palaearctic and Oriental species known to us in the patterns of abdomen and many other characters.

# 51. *Zelima latifrons* sp. nov. Fig. 9, 1.

♀. Black, with a purplish lustre. Head about as wide as thorax; frons black, rather flat, not elevated from the eyes, broad, in the middle about 1/4 as wide as head, a little divergent downward, covered with some blackish hairs, along the eye-margins there is a pair of very faint long triangular spots formed of a gray dust, the frontal process broad, trapezoid, with the lateral sides narrowly covered with a golden yellow dust. Face moderately widened below, well hollowed, in the middle part about 2/5 as wide as head, distinctly covered with a yellowish gray dust; cheeks slightly dusted, with a few whitish pubescence on the genal orbits. Vertex not dusted, with a purplish lustre, about 1/3 as wide as head, sparsely furnished with

blackish hairs; back of the head covered with a thin grayish dust, furnished with yellowish gray hairs which become moderately longer on the lower portion. Antennae almost black; the first segment a little shorter than a half of the third; the second about 2/3 as long as the following; the third almost round, a little paler, thinly covered with a grayish brown dust; arista brownish black, the basal one-third moderately thickened and brownish. Mesonotum a little longer than wide, black, with a purplish lustre, not dusted but on the inside of humeral calli there is a pair of golden yellow dusted spots, the pubescence very short and blackish, but it becomes somewhat longer and paler on the anterior half; postalar calli furnished with yellowish brown, somewhat longer hairs; pleura black, strongly shining, bearing grayish hairs which become whitish and somewhat denser. Scutellum with a purplish lustre, furnished with yellowish gray, very long and short, erect hairs. Wings very slightly infuscated, with pale brown pterostigma and brownish black veins, the venation as in the figure; squamae whitish, with pale yellow margin; halteres pale orange yellow. Abdomen nearly as long as the head and thorax united together, black, with a purplish lustre, furnished with very short blackish hairs, some yellowish gray hairs distributed as shown in the figure. Underside of abdomen black, bearing sparse whitish hairs. Legs slender, black, with whitish hairs; hind coxae with long hairs; fore and mid femora with whitish and partially blackish hairs intero-lateral sides furnished with whitish long hairs; hind femora moderately thickened, the apical portion covered with blackish very short pubescence, the underside armed with black spines as shown in the figure; tibiae yellowish white at base, inner side of fore and mid ones bearing blackish short hairs; hind tibiae with short blackish hairs except at the both ends; fore and mid tarsi yellow or light-brownish yellow except the third to apical segments black; hind tarsi with short yellowish gray hairs on the inner and blackish hairs on the outsides. Length: ca. 11 mm.

Distr.: Shikoku.

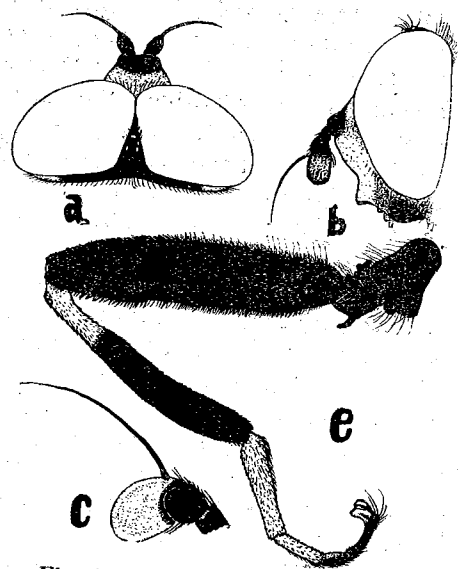
Holotype, ♀, Mt. Ishizuchi, Ehime Pref., VII-23, 1952, T. Ishihara leg.

This species allied to *simplex* Shiraki, but it differs from the latter in the black fore and mid tibiae, in the relatively smaller third antennal joint, and in other characters.

# 52. *Zelima hisamatsui* sp. nov. Fig. 10.

Rather large, elongate, moderately shining black species. Related to *florum* Fabricius, but it differs in wholly black abdomen.

♂. Head about as wide as thorax; frons somewhat strongly produced, shining black, the basal half densely covered with a yellowish white dust, the extreme apex castaneous brown, along the eye-margins of the upper portion there is a few yellowish, rather appressed, short pubescence; vertical triangle

Fig. 10. *Zelima hisamatsui* sp. nov.

about one and a half times as long as width, on the ocellar tubercle there is very few black pile and about at the hind margin some long black hairs; face wholly covered with a grayish white dust, the facial orbits narrow, the portion between the eyes and lower mouth-edges strongly shining. Eyes touched in a distance about as long as the vertical triangle. Back of the head whitish-dusted, the upper portion black pilose and the lower portion furnished with whitish, rather long hairs which are extending on the cheeks; occipital cilia black. Antennae shining black with brownish third segment which is somewhat subquadrate and is covered with a grayish dust; arista blackish, about twice as long as antenna. Mesonotum a little longer than width, dull bluish shining, with a pair of conspicuous white-dusted humeral spots, covered with blackish, short, erect pubescence which becomes moderately longer along the lateral sides and on the posterior portion; scutellum with some bluish lustre, well carinate along the hind margin, the pile longer, along the margin there are about four pairs of especially longer hairs, the lower marginal cilia whitish and directed nearly hindward; pleura moderately shining, the upper portion pilose. Halteres yellowish white, with dark base and more yellowish head. Squamae whitish, with yellowish gray margins. Wings well infuscated at the apical half, with yellowish costal cell and blackish pterostigma, the veins black, the venation as in the figure. Legs moderately shining black; hind trochanters with a hindly directed slender spine on the under hind margin; hind femora very slightly thickened, with the both ends narrowed, covered with black, short, suberect pubescence, but on the upper surface there are white, longer, erect hairs which become gradually shorter apically, the under side furnished with some sparse, black spines which become dense at the apical one-fourth; tibiae black with yellowish basal one-third; tarsi reddish yellow, with the three apical segments black, the front third tarsal segment being yellowish. Abdomen slender, conspicuously longer than the head and thorax (including the scutellum) united together, nearly parallel-sided, moderately shining, without any trace of pale markings, but when seen from behind above there might be recognizable one pair of triangular dull grayish dusted lateral spots on each the second and third tergites, covered with black

depressed, short pubescence on the discs, while the lateral portions, particularly on the first and second tergites, as well as on the triangular spots, furnished with long, erect, whitish hairs; genitalia moderately prominent, strongly shining black, with sparse black pile. Length: ca. 14.5 mm.

**Distr.:** Shikoku.

**Holotype**, ♂, Omogo Valley, Ehime Pref., VIII-3, 1951, S. Hisamatsu leg.

**Genus *Ferdinandea* Rondani, 1844**

53. *Ferdinandea cuprea* (Scopoli, 1763) Nom. Jap.: *Sujiki-futamori-hanaabu*  
Mt. Kamegamori, (Miyamoto, S. 1934)\*

**Genus *Temnostoma* St.-Fargeau et Serville, 1825**

54. *Temnostoma jozankeanum* (Matsumura, 1915)  
Nom. Jap.: *Jozan-naga-hanaabu*  
Mt. Ishizuchi, (S. Miyamoto, 1934)\*\*

**Genus *Takaomyia* Hervé-Bazin, 1914**

55. *Takaomyia 6-maculata* (Matsumura, 1915)  
Nom. Jap.: *Mutsuboshi-hachimodoki-hanaabu*  
**Spec. exam.:** 2 ♀, 1 ♂, Omogo Valley, VI-5, 1952, T. Yano leg.; 1 ♀, Mt. Ishizuchi, VII-27, 1952, T. Edeshige leg.  
**Distr.:** Hokkaido, Shikoku (*hab. nov.*).

**Subfamily MERAPIOIDINAE Shiraki (1949)**

**Genus *Narumyia* Shiraki, 1952**

56. *Narumyia narumii* Shiraki, 1950 Nom. Jap.: *Narumi-hanaabu*  
**Spec. exam.:** 1 ♀, Omogo Valley, V-12, 1952, T. Edeshige leg.  
**Distr.:** Honshu, Shikoku (*hab. nov.*).

**Subfamily ERISTALINAE Verrall (1901)**

**Genus *Eristalis* Latreille, 1804**

57. *Eristalis cerealis* Fabricius, 1805 Nom. Jap.: *Shima-hanaabu*  
**Spec. exam.:** 1 ♂, Omogo Valley, VI-26, 1951, H. Kusunoki leg.; 1 ♀, 1 ♂, Omogo Valley,

\* loc. cit. p. 293, \*\* loc. cit. p. 300.

IX-7, 1952, T. Edashige leg.; 3 ♀♀, Omogo Valley, X-17, 1952, T. Moiri leg.; 1 ♀, Omogo Valley, IX-23, 1951, T. Yano leg.

Distr.: Japan, Asia.

Genus *Lathrophthalmus* Mik., 1897

58. *Lathrophthalmus viridis* (Coquillett, 1893) Nom. Jap.: *Ruri-hanaabu*

Spec. exam.: 1 ♀, Omogo Valley, V-12, 1952, T. Edashige leg.

Distr.: Honshu, Shikoku, Kyushu.

59. *Lathrophthalmus ocularis* (Coquillett, 1893)

Nom. Jap.: *Hoshime-hanaabu*

Spec. exam.: 2 ♀♀, Omogo Valley, IX-7, 1952, T. Edashige leg.

Distr.: Hokkaido, Honshu, Shikoku, Kyushu, E.-Asia.

60. *Lathrophthalmus quinquestriatus* (Fabricius, 1794)

Nom. Jap.: *Kigoshi-hanaabu*

Spec. exam.: 3 ♀♀, 1 ♂, Omogo Valley, X-17, 1952, Mohri leg.

Distr.: Honshu, Shikoku [*hab. nov.*], Kyushu, Okinawa, Formosa, Asia-Tropics.

Genus *Eristalomyia* Rondani, 1857

61. *Eristalomyia tenax* (Linné, 1758)

Nom. Jap.: *Hanaabu*

Spec. exam.: 1 ♂, Omogo Valley, VI-18, 1952, T. Edashige leg.

Distr.: Cosmopolitan.

Genus *Megaspis* Macquart, 1842

62. *Megaspis zonata* (Fabricius, 1787)

Nom. Jap.: *On-hanaabu*

Spec. exam.: 1 ♀, Omogo Valley, IX-7, 1952, T. Edashige leg.

Distr.: Asia.

Subfamily LAMPETINAE Shiraki (1949)

Genus *Tubifera* Meigen, 1800

63. *Tubifera virgata* (Coquillett, 1889)

Nom. Jap.: *Ashibuto-hanaabu*

Spec. exam.: 1 ♀, Mt. Ishizuchi, VII-23, 1948, T. Kobayashi leg.

Distr.: Hokkaido, Honshu, Shikoku [*hab. nov.*], Kyushu, China.

Genus *Pseudomerodon* Shiraki, 1930

64. *Pseudomerodon takasagoensis* (Matsumura, 1916)

Nom. Jap.: *Takasago-momobuto-hanaabu*

Spec. exam.: 1 ♀, Mt. Ishizuchi, VII-26, 1952, T. Edashige leg.

Distr.: Honshu, Shikoku [*hab. nov.*], Kyushu.

Genus *Imatisma* Macquart, 1842

65. *Imatisma dimorpha* Shiraki, 1930

Nom. Jap.: *Futagata-hanaabu*

Spec. exam.: 1 ♂, Jōjusha, VII-28, 1951, M. Miyatake leg.

Distr.: Hokkaido, Honshu, Shikoku [*hab. nov.*], South-Manchuria.

Subfamily VOLUCELLINAE Verrall (1901)

Genus *Volucella* Geoffroy, 1764

66. *Volucella jeddona* Bigot, 1875

Nom. Jap.: *Bekkō-hanaabu*

Spec. exam.: 1 ♀, Omogo Valley, V-12, 1952, T. Edashige leg.

Distr.: Hokkaido, Honshu, Shikoku [*hab. nov.*].

67. *Volucella nigricans* Coquillett, 1893

Nom. Jap.: *Kuro-bekkō-hanaabu*

Spec. exam.: 1 ♂, Omogo Valley, VIII-3, 1952, H. Kusunoki leg.; 1 ♀, Omogo Valley, VIII-15, 1951, T. Ishihara leg.

Distr.: Hokkaido, Honshu, Shikoku [*hab. nov.*].

68. *Volucella tabanoides* Motschulsky, 1859

Nom. Jap.: *Shirosuji-bekkō-hanaabu*

Spec. exam.: 1 ♀, Mt. Omogo, VII-26, 1948, T. Kobayashi leg.; 1 ♀, Omogo Valley, VII-25, 1951, M. Miyatake leg.; 1 ♀, Omogo Valley, IX-7, 1952, T. Ishihara leg.; 1 ♀, Mt. Ishizuchi, VII-27, 1948, T. Kobayashi leg.; 1 ♂, Mt. Ishizuchi, VII-27, 1951, M. Miyatake leg.; 1 ♂, Mt. Ishizuchi, VII-23, 1952, T. Edashige leg.

Distr.: Hokkaido, Honshu, Shikoku [*hab. nov.*], Korea, Saghalien, Siberia.

Subfamily GRAPTOMYZINAE Shiraki (1949)

Genus *Graptomyza* Wiedeman, 1830

69. *Graptomyza itoi* Shiraki *in press.*

**Spec. exam.:** 1♀, Omogo Valley, VI-13, 1952, T. Ishihara leg.; 1♂, Omogo Valley, IX-28, 1952, T. Yano leg.

**Distr.:** Honshu (Kyoto), Shikoku (Omogo Valley).

This description is appearing in "Insecta Matsumurana".

Subfamily MICRODONTINAE Verrall (1901)

Genus *Microdon* Meigen, 1803

70. *Microdon caeruleus* var. *simplex* Shiraki, 1930

**Spec. exam.:** 1♂, Omogo Valley, VII-25, 1951, M. Miyatake leg.; 1♂, Omogo Valley, VII-14, 1952, T. Edashige leg.

**Distr.:** Honshu, Shikoku [*hab. nov.*], Formosa.

71. *Microdon oitanus* Shiraki, 1930

Nom Jap.: *Onita-arisanabu*

**Spec. exam.:** 1♂, Omogo Valley, VI-26, 1951, H. Kusunoki leg.; 1♂, Omogo Valley, VI-26, 1952, T. Edashige leg.

**Distr.:** Shikoku [*hab. nov.*], Kyushu.

72. *Microdon bifasciatus* Matsumura, 1915

Nom. Jap.: *Hutaobi-arisanabu*

**Spec. exam.:** 1♂, Mt. Omogo, VII-26, 1951, M. Miyatake leg.

**Distr.:** Hokkaido, Shikoku [*hab. nov.*].

Explanation of Pl. 3.

1a-c. *Cheilosia abbreviata* sp. nov. ♂; 2a-c. *Cheilosia yanoi* sp. nov. ♀; 3b. *Cheilosia yanoi* sp. nov. ♂; 4a-c. *Cheilosia fuscipennis* sp. nov. ♀; 5a. *Cheilosia fuscipennis* sp. nov. ♂; 6a-c. *Cheilosia aokii* sp. nov. ♀; 7a, b. *Cheilosia aokii* sp. nov. ♂; 8a-c. *Cheilosia omogensis* sp. nov. ♀; 9a, b. *Cheilosia omogensis* sp. nov. ♂.

Pl. 3.

