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STUDIES ON THE SYRPHIDAE 4
JAPANESE GRAPTOMYZINAE

By TOKUICHI SHIRAKI

Since *Graptomyza albeta* has been described from Japan by E. SÉGUY in 1948, the Graptomyza-flies were represented only in tropical and subtropical regions in all parts of the world except America. Afterwards three others are found in Japan, which are quite new to science and may be distinguished by the following short key :

Female

1. In profile the face at the lower half subquadrately produced forwards about as long as the eye-width, ocellar triangle conspicuously raised above the eye-margin.....
.....*albeta* SÉGUY
- The face produced less than the eye-width
2. The facial tubercle in profile rather angurately rounded..... 3
- The facial tubercle rather gently rounded, the apical and median bands of the wings complete..... *takeuchii* sp. n.
3. The apical and median bands of the wings complete, distinctly continued along the vein R4+5
- The apical and median bands of the wings mostly incomplete, not continued along R4+5
- *itoi* sp. n.

***Graptomyza takeuchii* sp. nov. Fig. 1.**

Female. Length about 5.2 mm. Face strongly produced downwards as a cone, less than half lying below the eyes, the lower portion quite perpendicular below the long low tubercle; ground color waxy pale yellow except a narrow median blackish stripe which is not reached to the antennal base; a triangular patch on the cheeks blackish; oral margin narrowly brownish. Pile of face, cheeks and frons yellowish white, below the facial tubercle there are long erect brownish setae. Frons more four-fifths as wide as one eye, yellowish brown with a X shaped black marking where it is quite raised, along the orbits there is a pair of yellowish spots; lunula pale yellowish brown; ocellar triangle longer than wide, blackish. Back of the head blackish, but the median upper portion brownish; pile snow white, except the occipital row of brownish bristles. The depression behind the lunula moderately large, with a distinct raised median line. Eyes with sparse, short, yellowish pubescence, in profile the hind margin evenly and slightly curved outwards, the front margin evenly and strongly convex, the lower margin not narrowed. Antennae elongate: the first joint dull blackish, with a conspicuous blackish bristle at the externo-

superior apex; second joint a little longer than the preceding one, yellowish, quite swollen, with a long blackish bristle at the externo-superior apex; third joint dull black with the lower side pale orange yellow, 3.3 times as long as wide; arista pale yellow, becoming blackish apically, the blackish plume sparse and rather long.

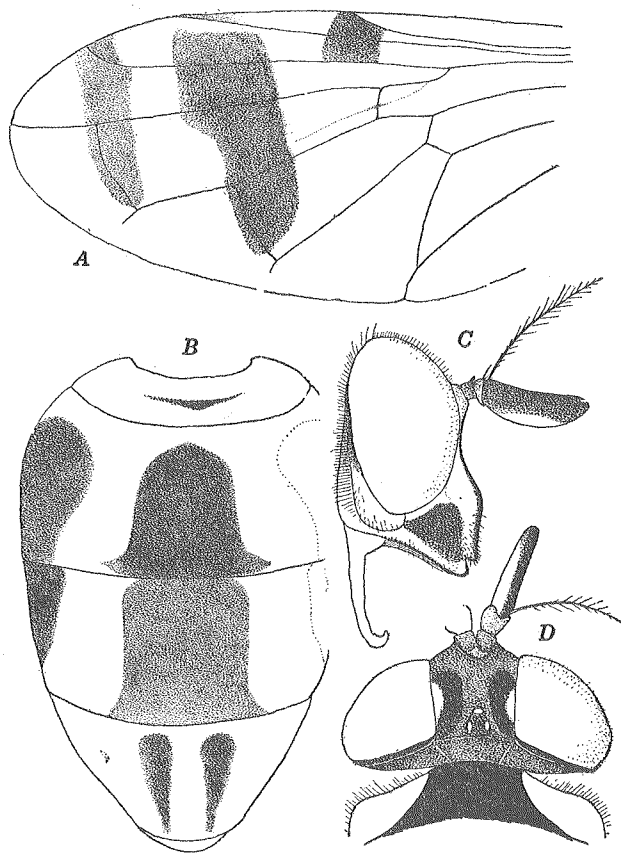


Fig. 1. *Graptomyza takeuchii* sp. nov. (♀)

A. Wing showing fasciae. B. Abdomen showing fasciae. C. Head in profile. D. Head in dorsal view.

Mesonotum metallic blackish blue with watery opalescence, the pile chiefly pale yellowish, with coarser brown hairs intermixed on the disc where they may predominate in part, the entire margin broadly dark brown except the transverse sutural stripes yellowish; postalar calli yellowish; humeral calli, propleura and a spot just below the notopleura, pale yellow. Bristles of thorax all black, strong and long, the prescutellar row fairly strong and quite differentiated from the long black hairs on the posterior part

of the mesonotum. Scutellum shining yellowish brown, with a very large dull colored depression which is densely black pubescent; four strong marginal bristles and several long black marginal hairs.

Legs yellowish, with the apical half of the femora, the tibiae (except the base), the apical two joints of posterior two tarsi and the apical three joints of anterior tarsi, blackish; pile yellow, but on the front legs black.

Wings colorless with the stigma yellowish brown; the veins blackish, their basal portions yellowish; the blackish fasciae as in the text figure; vena spuria hardly traced.

Abdomen yellowish brown. The first segment with a black fine median transverse line, the posterior margin distinctly blackish; second segment furnished with pale long dense hairs at the basal half of the lateral portions; the blackish patches on the dorsum as in the text figure; the venter yellow, the apical part blackish. The pile of the dorsum chiefly blackish, with yellowish hairs intermixed on the lateral parts of the first and second segments; the genital segments furnished with a few black long bristly hairs.

Described from a single female, Yakushima, Kyushu, 25th April, 1929, collected by K. TAKEUCHI, after whom the species is named. Type preserved in the Takeuchi Entomological Institute, Yamashina, Kyoto.

Graptomyza itoi sp. nov. Fig. 2.

Male. Length about 5 mm. Face very slightly widened below and moderately produced downwards as a blunt cone, about two-fifths lying below the eyes; in profile rather gently produced to the apex of the tubercle, thence very slightly retreating to the upper oral margin; the tubercle just middle of the facial length; ground color watery white, with a rather broad blackish median longitudinal stripe extending from the base of the antennae to the upper oral margin; pile of face wholly yellowish white. A triangular patch on the cheeks blackish, pale brownish pubescent; genae pale yellowish, furnished with pale yellow pubescence. Frons rather broad, slightly narrower than the width of an eye, nearly parallel-sided, black, with a dull brown median stripe and a pair of whitish yellow triangular lateral spots; lunula dull yellow; ocellar triangle about as long as wide, black, slightly elevated from the eye margin in profile; pile mostly brown. Back of the head dull black, blackish pubescent, except the eye-margins where the pile is whitish, the occipital row of bristles blackish. Eyes large, in profile the hind margin very slightly convex, the front margin somewhat angularly convex, rather narrowed below, distinctly but sparsely brown pubescent. Antennae large; the first joint black, with several black bristles on the upper apex; second joint black except the apex yellowish brown, one long and some short black bristles on the externo-superior apex; third joint rather broad, about two and a half times as long as wide, blackish with the under portion yellowish brown; arista yellow with the apical half blackish, with sparse, rather long, black plume.

Thorax deep black, the mesonotum with strong bronzy reflection, the pale markings distributed as follows: the transverse sutural regions and the postalar calli reddish yellow, the humeral calli, propleura and the posterior half of mesopleura, whitish yellow. Pile brownish, but on the yellowish portions yellowish; on the yellowish area of meso-

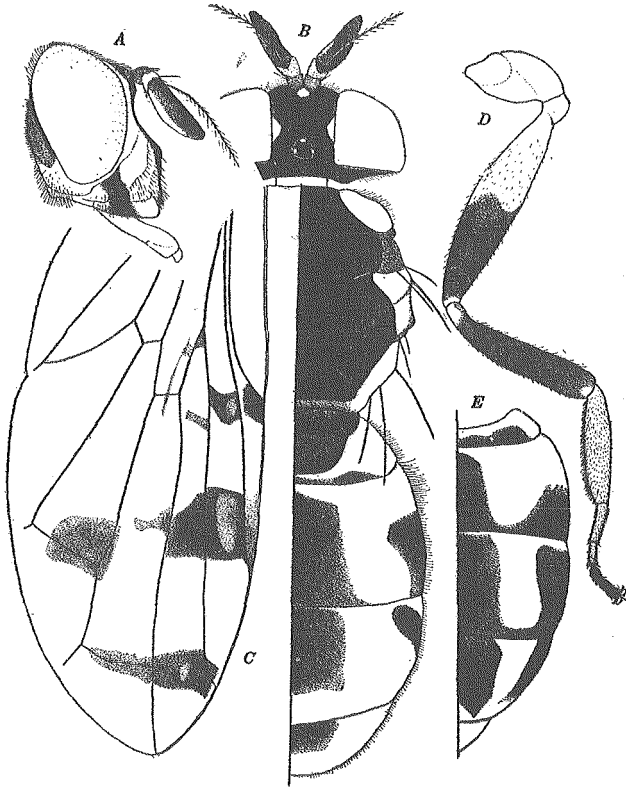


Fig. 2. *Graptomyza itoi* sp. nov.

A. Head in profil (♀). B. Head, thorax and abdomen in dorsal view (♀). C. Wing showing fasciae (♀). D. Hind leg (♀). E. Abdomen showing fasciae. (♂).

pleura there are long and dense hairs which are directed hindwards; bristles all black, the prescutellars long but rather weak. Scutellum black, with a concavity occupying almost the whole disc, punctured and brown pubescent, on the interno-posterior margin of the depression there are some very short spine-like bristles; two marginal bristles very strong, others weak.

Legs black, except the coxae, the basal half and extreme apex of femora, the base of tibiae and three basal joints of posterior two tarsi, pale yellow; pile pale except on the black portions where it is blackish; hind tibiae furnished with numerous spine-like bristles on the posterior three-fifths.

Wings very slightly tinged with greyish; stigma pale yellowish, the base blackish, the apex brownish; three evident blackish transverse fasciae as follows: one in the cell RI behind the base of the stigma subquadrate, one extending from the brownish apical

area of the stigma to the lower corner of the cell M2 (discoidal), continuously in almost the same width, and one originating at the tip of R2+3 and hardly reaching M along the apical margin of the cell R5, this third band being nearly separated into two by R4+5; vena spuria hardly traceable. Squamae white, with black margin and yellowish fringe. Halteres pale yellow.

Abdomen pale yellowish, becoming reddish apically, with black fasciae as in the text figure. The venter yellowish, with the last segment blackish; hypopygium shining black. Pile of the abdomen yellowish except on the discal blackish areas, where it is black.

Female. Length about 6.5 mm. Face almost parallel-sided, moderately produced downwards, not conical but subquadrate, about two-fifths lying below the eyes. The facial tubercle more conspicuous than in the male, the margin (in profile) below the tubercle more or less concave; genae more prominent than in the male. Frons very slightly widened forwards with straight lateral margins. Pile of head is distinctly fewer than in the male. Eyes in profile comparatively broader, the hind margin being more convex than in the male. The third joint of antennae with the apical margin rather oblique, while in the male perpendicularly and evenly convex.

The mesonotum with some bluish reflection. The marginal bristles of scutellum more conspicuous. The blackish fasciae of wings rather irregular, the type as in the text figure. Abdomen much broader and rather reddish, the black fasciae as in the text figure. Genital segments orange yellow, furnished with yellow hairs, of which some ones on the penultimate segment are long and bristle-like.

One male and four females, Hanase, Kyoto, 3rd June, 1951, collected by S. ITO, for whose honour the species is named. The type male and female preserved in author's collection; the paratypes three females in the Entomological Institute, Naniwa University.

Graptomyza ishikawai sp. nov. Fig. 3.

Female. Length about 6mm. Face almost parallel-sided, distinctly narrower than an eye, produced downwards as a blunt cone, about half lying below the eyes, the lower portion below the rather broadly rounded facial tubercle shorter than the upper portion; ground color pale yellowish, with a median blackish stripe extending from the base of antennae to the upper oral margin; pile yellowish, but bristly hairs along the median stripe brown. Cheeks with a large blackish patch which is not reached to the oral margin, but the oral margin narrowly blackish. Genae yellowish, pale pubescent. Back of the head black, furnished with a white pubescence, the occipital row of bristles being blackish. Frons deep black, shining, with a pair of dull yellow lateral spots; lunula yellowish brown; ocellar triangle black, its sides almost equal, not prominent above the eye. Antennae ferruginous, the second yellowish; third joint more blackish and greyish pruinose, with the lower portion yellowish, three and a half times as long as wide, somewhat tapering, gently convex below; arista pale yellow, darkened apically, rather thick, longer than the third antennal joint, with sparse, long, black plume.

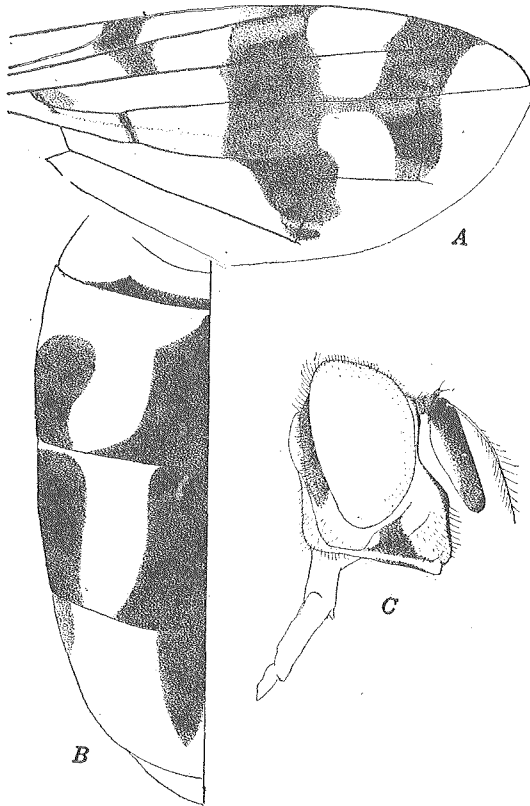


Fig. 3. *Graptomyza ishikawai* sp. nov. (♀)

- A. Wing showing fasciae. B. Abdomen showing fasciae.
C. Head in profile.

Thorax deep shining black, the mesonotum with metallic watery bluish reflection; yellowish markings as follow: humeral calli, the transverse sutural areas, postalar calli, propleura, the posterior one-third of mesopleura and a small spot just below the wing-bases. Pile of thorax yellow, rather abundant. Bristles of thorax rather strong, all black. Scutellum deep shining black, with a dull black depression occupying almost whole of its disc, furnished with dense setae and with brushy setae along the interno-posterior margin; marginal bristles black, two of which conspicuously long.

Legs reddish yellow, with the apical two-fifths of femora, tibiae (except the knee), front tarsi and two apical joints of posterior two tarsi, black; pile yellowish, but blackish on the black portions; hind tibiae furnished with some spine-like bristles on the posterior half.

Wings sparsely tinged with greyish, with the stigma very slightly yellowish, its base

and apex distinctly blackish, the blackish markings as in the text figure; vena spuria rather long traceable.

Abdomen rather narrow, pale orange-yellow, reddish toward the apex; the blackish fasciae as in the text figure. The venter pale yellow, with a narrow reddish brown median stripe, the apical sternites being reddish black; the genital segments reddish yellow, brown pubescent.

A single female, Karuizawa, Nagano Prefecture, 16th September, 1949, collected by R. ISHIKAWA, after whom the species is named.