

(Noona Dan Papers No. 92)

**The Soldier Flies (Diptera, Stratiomyidae)  
collected in the Philippine Islands by  
the Noona Dan Expedition.**

**Part I. Beridinae, Sarginae, Clitellariinae,  
Hermetiinae, and Cyphomyiinae.<sup>1</sup>**

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This report is based on the collection of soldier flies, in part, made in the Philippine Islands on the Noona Dan Expedition of 1961—62 (Petersen 1966), supplemented by material from the Bishop Museum, Honolulu (BM), the Swedish Museum of Natural History (SMNH), and the United States National Museum (USNM). All holotypes and allotypes, unless otherwise indicated, are in the Zoological Museum, Copenhagen, Denmark.

I am indebted to Dr. Leif Lyneborg and to the Zoological Museum, Copenhagen, for making this fine collection available to me for study.

Subfamily **BERIDINAE**

**Allognosta pleuralis**, new species

Distinguished from all other Oriental species except *A. fuscipennis* Enderlein and *A. stigmatalis* Enderlein by the contrasting black mesonotum and ochraceous pleura; the prominently black last palpal segment and the color pattern of the legs will distinguish it from both these species.

*Allognosta flavopleuralis* Frey and *A. varians* Frey, both from Burma, are described as having yellow, rather than ochraceous, pleura; if *pleuralis* is considered as having yellow pleura it will

<sup>1</sup> Scientific Paper 3079, College of Agriculture, Washington State University. Work was conducted under Project 9043.

trace to *flavopleuralis* in Frey's key except for the coloration of the wing; this and other minor discrepancies, together with the geographic separation, indicate different species. Though Frey's description is very brief, it indicates that the two species are quite closely related.

**F e m a l e.** Comparative measurements: head length 60 (60=1 mm); head height 70; head width 120; frons at vertex 48, at callus 35. Occipital orbit flaring somewhat upward on upper part, strongly narrowing to posterior corner of eye. Head black; occipital orbit and frons with numerous setigerous punctures, the hairs erect but short on frons, semi-appressed to appressed on orbits; callus shiny, bare; facial orbits and face with appressed to semi-appressed hairs: all vestiture pale yellowish. Scape, pedicel, and first two flagellomeres ochraceous, flagellum thence gradually darkening to black; apices of antennal segments and flagellomeres with black setulae. Proboscis brown; palpi brown, apical segment oval, inflated, black, with black setulae.

Mesonotum mostly and scutellum black, with abundant but not particularly conspicuous, appressed yellowish hairs; humeri, postalar callus and adjacent area from wing base to scutellum, prothoracic collar and all pleural and sternal areas ochraceous with whitish to yellowish inconspicuous hairs. Legs mostly ochraceous; front tibia except basal third and front tarsus, black; middle tibia except basal third, hind tibia except at basal half and middle and hind tarsi except most of their basitarsi, brownish-black. Fore tarsus expanded, the basitarsus almost as broad as its tibia. Wing uniformly clothed with microtrichia except at extreme base, pale brown, a little darker so near costal margin to wing apex, stigma and all veins distinctly brown. Halteres black, stalk mostly ochraceous.

Abdomen dark chestnut brown, darker laterally and at apex, under certain lights with a slight but distinct metallic bluish sheen, especially laterally; venter a little paler, first sternum ochraceous; seventh segment dorsally and ventrally almost black; eighth sternite small, triangular, black; cerci black. Pile abundant but short, appressed, conspicuous and for the most part concolorous with ground color; hairs on median parts of basal four sterna yellowish.

Length, 5—5.5 mm.

**M a l e.** Unknown.

Type s. Holotype, female, PALAWAN: Mantalingajan Range, Pinigisan, 600 m, 3 Sept. 1961. Paratype, female, PALAWAN: Brooke's Point, Uring Uring, 15 Aug. 1961.

A slightly teneral female bears the same data as the paratype except 20 August.

#### ***Allognosta platypus*, new species**

This is the only described species, except *phillippina* Frey, in which the femora are wholly yellow except for a terminal brownish-black to blackish ring on the front femur. It traces to *phillippina* in Frey's key but may readily be distinguished from that species by the ochraceous halter (described as "dunkel" by Frey) and the chestnut-brown abdomen (yellowish brown in *phillippina*). The two species must be very closely related; however, Frey's description is very brief, omits some important characters, and gives no measurements except that in his key his species traces to the group that is less than 7 mm in length. *A. platypus* is close to *A. crassitarsis* de Meijere which, like it, has an expanded front tarsus in the female, but in that species the apical half of the hind femur is black and the wing is differently patterned.

Female. Comparative measurements: head length 38 (60=1 mm), head height 62, head width 75; frons at vertex 33, at callus 30. Occipital orbits rounded in profile; frons almost parallel-sided. Head black. Frons narrowing a little toward frontal callus; the latter hardly developed in the usual sense, that is, marked only by a transverse depression, the frons being punctate virtually to that depression; however, the area between the depression and the antennal bases smooth, slightly elevated, and callus-like; the frons widening gradually but sharply below the transverse depression and onto the face. Frons above callus with abundant, short whitish hairs, face white pruinose, with scattered whitish hairs. Proboscis and palpi brown to brownish-black, terminal segment of palpi sometimes yellowish; palpi cylindrical, with two or three black setulae apically; palpi and proboscis black-haired. Scape, pedicel and first and sometimes second flagellomeres bright ochraceous, flagellum otherwise brownish-black; hairs black.

Thorax black; mesonotum shining, clothed with abundant, appressed, whitish pile. Pleura brownish-black to black, lightly cinereous pollinose and with whitish pile. Legs mostly light ochraceous; front tibia except extreme base, entire tarsus, and a

preapical annulus on the femur black; middle and hind tarsi becoming black beyond apex of their basitarsi. Wings uniformly clothed with microtrichia except at extreme base; almost hyaline but a light tinge of brown, developing into a light though distinct cloud at apex; stigma distinctly brown. Halteres ochraceous.

Abdomen chestnut brown, a little paler on sterna; pile fairly abundant but very short and inconspicuous, black on terga, whitish ventrally; cerci bright ochraceous.

Length, 3.5—4.5 mm, of holotype 4 mm.

Male. Unknown.

Type s. Holotype, female, PALAWAN: Mantalingajan Range, Pinigisan, 600 m, 3 Sept. 1961. Paratypes, 16 ♀ same data but Sept. 1, 3, 4, and 8.

#### Subfamily SARGINAE

##### **Microchrysa flaviventris** (Wiedemann)

*Sargus flaviventris* Wiedemann, 1824, p. 31.

PALAWAN: Pinigisan, 600 m, 1—13 Sept. 1961, both inside and outside forest, 12 ♀, 5 ♂; Uring Uring, 16 Aug. to 16 Sept. 1961, 3 ♀, 1 ♂. — TAWI TAWI: Tarawakan, 20 Oct. 1961, 1 ♀. — BALABAC: Dalawan Bay, 7—12 Oct. 1961, 2 ♀, 2 ♂. — MINDANAO: Sapamoro, 17 and 22 Dec. 1961, 2 ♀.

##### **Microchrysa fuscistigma** de Meijere

*Microchrysa fuscistigma* de Meijere, 1913, p. 321.

PALAWAN: Tagembung, 16 and 19 Sept. 1961, 3 ♀.

##### **Cephalochrysa chrysidiformis** (Lindner)

*Microchrysa chrysidiformis* Lindner, 1937, p. 373.

TAWI TAWI: Tarawakan, 12 Nov. 1961, 1 ♀.

##### **Sargus metallinus mactans** Walker

*Sargus mactans* Walker, 1860, p. 97.

TAWI TAWI: Tarawakan, 12 Nov. 1961, 1 ♀. — MINDANAO: Sapamoro, 20—21 Dec. 1961, 1 ♂, 2 ♀.

##### **Formosargus variegatus**, new species

Structurally closely similar to the type and only previously known species, *F. kerteszi*, differing from that species particularly in the pattern of the thorax and abdomen, notably the U-shaped yellow marking against a black background on the mesonotum of

the male and in the black metanotum and paired abdomen spots of the female.

**Male.** Head and appendages yellow except the following black areas: frons above callus to and including ocellar triangle and occiput except cerebrale. Frons narrowing from vertex to plane of antennal insertion; 0.21 head width across anterior ocellus, 0.17 head width at base of antennae. Pile of head inconspicuous, somewhat thicker and more prominent on vertex and face, light yellow. Prothorax wholly yellow; mesothorax yellow in ground color but conspicuously marked with black; humeri, postalar callus and scutellum wholly yellow; broad sides from humerus to postalar callus and thence across in front of scutellum and occupying most of the postsutural area, also a median area extending from anterior margin to a plane just anterior to suture, black; the mesonotum might be described as chiefly black with a broad U-shaped yellow marking, with slight appendages extending outward along suture. Anterior half of mesopleuron shiny black; most of hypopleuron, metapleuron and metanotum black; scutellum wholly yellow, legs yellow except constricted basal one-third to one-fourth of hind tibia, which is brown; hind tarsi almost white. Pile of scutellum scattered, black; that of thorax and legs otherwise yellow. Halteres yellow, wings hyaline, veins brown; venation as in *kerteszi*. First abdominal segment black, two through five inclusively yellow on basal half, black on apical half; background color approximately same dorsally and ventrally; pile thick, black on black and yellow on yellow areas dorsally, more extensively yellow ventrally except at apex of abdomen. Genitalia yellow, not dissected.

Length, 6 mm.

**Female.** Frons parallel-sided, about 0.27 head width. Thorax mostly yellow; mesonotum with a median blackish vitta extending from extreme anterior margin to scutellum and continued by a median, terminally rounded, area extending almost to apex of scutellum; a small, obscure brownish spot on each side of median vitta before suture and a more conspicuous, oval one behind suture. Polished propleural area reduced to a small quadrate spot adjacent to notopleural suture; metanotum mostly brownish black. Abdomen yellow; first tergum with an indefinitely outlined transverse band anteriorly; second through fourth terga each with a pair of small, rounded brownish spots. Genitalia yellow, cerci

brown. Legs wholly yellow. Otherwise as described for male.

Length, 6.5 mm.

**T y p e s.** Holotype, male, PALAWAN: Mantalingajan Range, Pinigisan, 600 m, 24 Sept. 1961. Allotype, female, BALABAC: Dalawan Bay, 13 Oct. 1961.

#### Subfamily CLITELLARIINAE

##### **Brachycara ventralis** Thomson

*Brachycara ventralis* Thomson, 1869, p. 461.

PALAWAN: Uring Uring, 16 Aug. 1961, 1 ♀. — BALABAC: Dalawan Bay, 9—12 Oct. 1961, 8 ♀, 7 ♂.

##### **Negritomyia maculipennis** (Macquart)

*Ehippium maculipennis* Macquart, 1849, p. 54 (358).

PALAWAN: Pinigisan, 600 m, 23 Sept. 1961, 1 ♂, 1 ♀; Uring Uring, 15 Aug. to 24 Sept. 1961, 7 ♀, 2 ♂. — BALABAC: Dalawan Bay, 6—13 Oct. 1961, 8 ♀, 3 ♂. — SAMAR: Osmena, South Coast, 11—20 April, 1945, J. Laffoon, USNM.

##### **Negritomyia consobrina** (Bigot)

*Ehippium consobrinum* Bigot, 1879, p. 208.

This species is represented in the Noona Dan material from the Bismarck Islands, but not from the Philippine Islands. It has been recorded from that archipelago, but such records need to be carefully checked. Until such a time, its occurrence on the Philippine Islands must be considered as hypothetical.

##### **Negritomyia punctifrons**, new species

Very similar to *consobrina* and *maculipennis*, but females readily distinguishable from both those species in the structure of the frons. The over-all coloration is black, with pile patterns of the thorax and abdomen essentially as in *consobrina* and *maculipennis*.

**F e m a l e.** Frons bare and shining just above antennae and with the usual pair of densely white, tomentum-like hair patches; just above each of these, adjacent to the eye, a distinct, keel-like ridge arises and runs along the ocular orbit, along side and to the occiput at the posterior margin of the ocellar triangle (Fig. 2); area between these ridges flattened, not bulging toward ocellar triangle. Area above the lower frontal hair patches smooth and shining; above this punctured, the punctures bearing white ap-

pressed hairs which become thinner toward the ocellar triangle, leaving a polished area there which is, however, interrupted by scattered setigerous punctures; an irregular row of these setigerous punctures extends just inside each frontal ridge and between this and the ocellar triangle. Frons at upper margin of eye about one-sixth head width, widening somewhat to just above bases of antennae, then expanding onto face. Pile of the head white, a few scattered white hairs on polished area above antennae; ocellar triangle black-haired; pile of eyes black, becoming white posteriorly. Antenna structurally and in color as in *maculipennis*. Pile of the abdomen whitish. Scutellar spines from lateral view essentially on a level with scutellum, a little shorter than it, black, apices brown, usually obscurely so. Wing light brown, a suggestion of a band from the stigma across apices of basal and anal cells; no distinct clouding, however. Hind and sometimes middle femur and

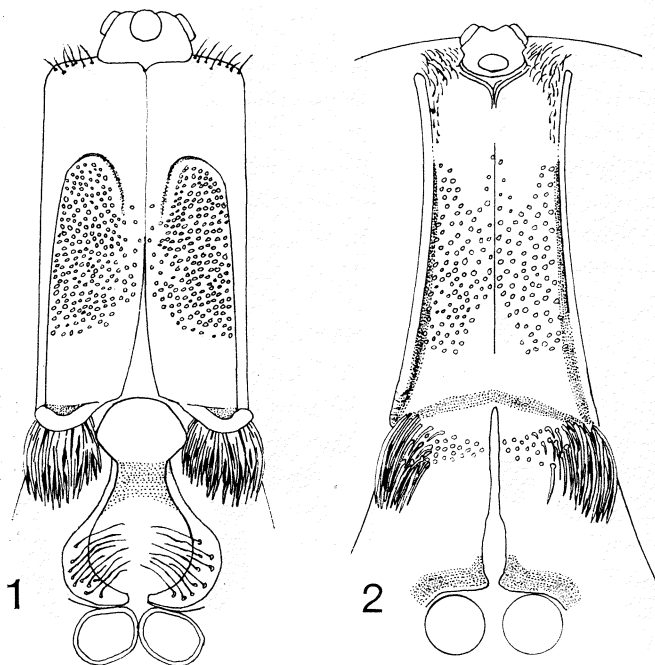


Fig. 1. *Negritomyia separata*, new species, frons of female, from antennal base upward. Pile removed from depressions on middle frons, for sake of simplicity; position of hairs shown by punctures. — Fig. 2. *Negritomyia punctifrons*, new species, the same. Illustrations by Milton Brewster.

all tibiae yellow at extreme base; tarsi yellow, apical tarsomeres becoming black.

Length, 7—11 mm, of holotype 10 mm.

**Male.** Similar to the female, except sexually. Eyes broadly contiguous halfway from anterior ocellus to antennal base; patch of hairs on frontal triangle dense and more shaggy than in *maculipennis*, the glabrous area below it smaller. Face wholly white pilose. Mesonotal pile more yellowish than in female. Leg and wing coloration as in female.

Length, 7—10 mm.

**Types.** Holotype, female, TAWI TAWI: Tarawakan, 12 Nov. 1961. Allotype, same data but Oct. 24. Paratypes, nine females same data but Oct. 23 to Nov. 14.

The structure of the frons is more reminiscent of the African *N. loewi* Brauer than of the related Oriental species. *N. loewi* is quite different, however; the wings are definitely clouded, the scutellar spines long and semierect, the femora are much more extensively yellow, and the frontal ridges are narrower among other things. Brunetti's statement (1923, p. 96) that *loewi*, (as *maculipennis* [Loew], not Macquart), was probably a synonym of *maculipennis* (Macquart), is puzzling.

Male genitalia seem to be identical in *maculipennis*, *consobrina*, and the two species described here; consequently, they are of no taxonomic value in this group.

### ***Negritomyia separata*, new species**

Close to *maculipennis*, but the depression above the antennal bases and the black hairs below and to the side of it distinguish it from other species known from the Philippine Islands. I considered the possibility of this depression and the lack of subapical wing cloud being the result of the separation of the lower frontalia as the result of a teneral condition, but none of the specimens in the type series show any evidence of being teneral; moreover, the black hairs definitely are not consistent with a teneral hypothesis.

**Female.** Upper frons much as in *maculipennis*, that is; swollen, bare and shining below the ocellar triangle; below this, a depressed area, sharply margined above and laterally, in which are located numerous setigerous punctures; still below this, in the area of the callus, polished and shining. Lower frons (Fig. 1)



markedly different from that of any other species known to me; medially with a dumbbell or key-hole-shaped depression, oriented lengthwise of the frons, its margin roughened below, just above the antennal base; a transverse depression, on a shallower level, extending to the eye margin below the callus; a median impression extending from ocellar triangle to lower frons and widening above the mid-frontal depression. Frons a little less than half the head width (0.23 in holotype), almost parallel-sided; a dense tuft of appressed, yellowish hairs, touching each eye, just below the transverse depression, and below each of these a shining bare area; median depression lined with erect black hairs which become dense below. Face yellow-haired with a few scattered black hairs medially. Eyes largely white-pilose, pile becoming black anteriorly. Scutellar spines almost on a plane with scutellum, slightly elevated, black, distinctly though usually narrowly reddish at apex. Wings light brown, a little darker near the veins, but with no clouding. Legs black, femora, especially hind ones, usually, and all tibiae, yellowish on base, extent of yellow in femora variable, sometimes extensively so, sometimes femora almost wholly black; middle and hind basitarsi usually yellow but this color also variable. Body coloration and pile otherwise much as in *maculipennis* and *consobrina*.

**M a l e.** Similar to female except sexually. Eyes contiguous for about half distance from ocellar triangle to antennae. Frontal depression greatly reduced as compared with female but very distinct; no transverse depression; frontal triangle with parted tufts of yellow hairs above, otherwise shiny and bare, but with prominent abundant, erect black hairs along frontal depression and above antennae as in female.

**T y p e s.** Holotype, female, presumably MINDANAO: Carl Semper Collection No. 429; Swedish Museum of Natural History; allotype, same data, No. 431; paratypes, 7 ♂, 7 ♀, Semper Nos. 429 and 431, SMNH; 1 ♀, Tugbungan sa Iibon, Semper No. 440, SMNH; 2 ♀, 1 ♂, Agusan, 10 km southeast of San Francisco, 4 to 17 Nov. 1959, C. M. Yoshimoto and L. W. Quate, BM.; 2 ♂, 1 ♀, Zamboanga del Norte, 6, 9 and 11 km east of Sindangan, 20 July 1958, Milliron, BM.; 2 ♂, Zamboanga del Sur, 45 m, steam pools, 8 Sept. 1958, Milliron, BM.; 1 ♀, Domingug, 22 Sept. 1959, Quate, BM. — JOLO: 1 ♀, Talipao, 15 to 30 m, grass foothills and jungle clearing, H. E. Milliron, BM. — TAWI TAWI: 1 ♂, Sapamoro, Curuan District, 17 Dec. 1961, Noona Dan Exp.

The Carl Semper collection was made in 1863—64, the specimens bearing numbers 429 and 431 being presumably from the Agusan Valley, according to information furnished to me by Dr. Per Inge Persson and taken from what were presumably Semper's notes.

### Negritomyia

#### Key to the Philippine Species

1. Wing with a strong, clearly differentiated cloud beyond the discal cell ..... 2  
Wing pale brownish, grayish or subhyaline ..... 3
2. Femora broadly yellow at base; female with polished upper part of frons, anterior to ocelli, strongly convex, the area of setigerous punctures in a slight concavity that is definitely margined above (cf. fig. 1) ..... *maculipennis*  
Femora wholly black; female with polished upper part of front flat, the area of setigerous punctures not in a concavity ..... *consobrina*
3. A tuft of thick, black pile on lower frons, above base of antenna; this area in female with a dumbbell shaped concavity, extending lengthwise of frons, and with the black hairs extending somewhat along its lower margin, which is rugulose; upper frons of female as in *maculipennis* ..... *separata*  
Only a few scattered pale hairs on lower front; female with at most a narrow, linear concavity on frons; upper frons of female flattened anterior to ocellar triangle, without any extensive bare, shining area, and with an irregular row of setigerous punctures extending to the vertex ..... *punctifrons*

Two species with unclouded or feebly clouded (though pale brownish or greyish) wings are described here. Two other species with similarly described wings, *N. albitarsis* (Bigot) (1879, p. 207) and *N. responsalis* (Walker) (1865, p. 106, redescribed by Brunetti, 1923, p. 97) are known, but neither of these can be the Philippine Islands species treated here. *N. albitarsis* can readily be separated from both of them by its predominately whitish tibiae and tarsi. *N. responsalis* seems to agree best with *N. punctifrons*, but the frons is wider and the vertex is bare, according to Brunetti; the leg coloration also is different.

#### Subfamily HERMETIINAE

##### *Hermetia inflata* (Walker)

*Massicyta inflata* Walker, 1859, p. 78.

PALAWAN: Pinigisan, 600 m, 8 Sept. 1961, outside forest, 1 ♀.  
— BALABAC: Dalawan Bay, 13 Oct. 1961, 1 ♀.

**Hermetia illucens** (Linnaeus)

*Musca illucens* Linnaeus, 1758, p. 589.

PALAWAN: Uring Uring, 25 Aug. and 4 Sept. 1961, 2 ♀. —  
TAWI TAWI: Tarawakan, 24 Oct. 1961, 1 ♀.

## Subfamily CYPHOMYIINAE

**Cyphomyia flaviceps** (Walker)

*Clitellaria flaviceps* Walker, 1857, p. 7, 108.

A damaged specimen, without antennae, proboscis or palpi and with badly damaged legs, appears to be this species, but I can not be sure of it.

PALAWAN: Uring Uring, 25 Aug. 1961, 1 ♀.

**Summary**

Fourteen species are recorded, five of which are described as new in the genera *Allognosta*, *Formosargus*, and *Negritomyia*. A key to *Negritomyia* is presented.

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