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MEROPIDIA, A NEW GENUS OF FLOWER FLIES (DIPTERA: SYRPHIDAE) FROM SOUTH AMERICA.

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ABSTRACT

A new genus and three new species of Syrphidae are described: Meropidia Hippa & Thompson, neurostigma Hippa (Bolivia) (type-species), nigropilosa Thompson (Colombia), and rufa Thompson (Ecuador). This genus is placed in subfamily Eristalinae, tribe Milesiini, and subtribe Tropidiina.

During our studies of the milesiine syrphids (Thompson 1972, Hippa 1978), we independently discovered a distinctive new genus of flower flies from the Andean Cordillera. This genus is here described to validate its name and those of its included species for our separate studies on the classification and zoogeography of flower flies.

Meropidia Hippa & Thompson, gen. n. (Figs. 1-12)

Robust, moderately pilose species with sexually dimorphic pilose face, pollinose pattern on mesonotum, pilose metasternum.

Head: In frontal view elliptical (fig. 8); face sexually dimorphic, in male with a broad, low, medial tubercle (fig. 10), in female concave (fig. 9), pale, wholly pollinose, pilose laterally; facial groove short; facial stripe very broad; cheek broad; frontal prominence not produced, at dorsal 1/3 of head; frons pilose; frontal triangle broad, short, scarcely longer than vertical triangle; front with slightly convergent sides dorsally, at level of anterior ocellus about 1/4 as wide as head; vertical triangle short, broad, nearly equilateral, with posterior ocelli at level of posterior eye margin; eye bare; male very narrowly dichoptic. Antenna with basal segments elongate; 3rd segment shorter than broad, apically truncate, with several sensory pits on mesial surface.

Thorax: Mesonotum slightly longer than wide, with pollinose pattern, with unmodified hairs only; scutellum about twice as broad as long, with apical

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marginal sulcus, with unmodified hairs only, with well-developed subscutellar fringe; mesopleuron with well-differentiated anterior and convex posterior parts, with anterior part bare; sternopleuron continuously pilose posteriorly; hypopleuron bare; metathoracic spiracle nearly size of 2nd antennal segment, well exposed in lateral view; metasternum (fig. 5) not strongly developed, with a large lateral cleft, pilose. Legs: Hind coxa and trochanter simple; hind femur slightly thickened throughout, slightly arcuate, otherwise simple; hind tibia modified basally (fig. 6), apicoventrally simple. Wing (fig. 7): Marginal cell open; apical cell acute apically, with short petiole; upper and lower marginal crossveins confluent, without spurs; third vein slightly sinuate; anterior crossvein strongly oblique, long, ending at outer 1/4 of discal cell; anal cell petiole long, straight.

Abdomen: About 1.4 times as long as mesonotum and scutellum together, conical in males, more ovate in females. Male genitalia (figs. 1-4): Symmetric; cercus triangular, emarginate dorsally; surstyle narrow, elongate, slightly arcuate; 9th sternum ventrally carinate; lingular area slightly produced medially; superior lobe elongate, pilose, with apical ctenidion; aedeagal apodeme short, triangular; ejaculatory apodeme L-shaped; aedeagus with tubular apex, with a pair of small subapical lateral lobes.

Type-species, *Meropidia neurostigma* Hippa.

Meropidia belongs to the subfamily Eristalinae (= Milesiinae), tribe Milesiini, and subtribe Tropidiina (*Tropidia* group of Thompson 1972, 1975; Hippa 1978). The genus is readily distinguished from all other cristaline genera by a pilose face and metasternum and a simple hind femur. In the most recent keys to the Neotropical genera of Eristalinae (Thompson 1972), *Meropidia* runs to *Criorhina* (Thompson 1972: 149, couplet ≠13) and can be separated from that genus by the characters given above, as well as by the sexually dimorphic face, lateral cleft in the metasternum, and non-segmented aedeagus. The sister-group of *Meropidia* is *Orthoprosopa* Macquart and *Paratropidia* Hull (the *Paratropidia* group of Hippa 1978), and together these genera form the pleisomorphic sister-group to the rest of the subtribe Tropidiina. These relationships will be discussed more fully in later papers.

The name *Meropidia* is an arbitrary combination of letters selected so as to be similar to *Tropidia*, a related genus. Like the name *Tropidia*, *Meropidia* is feminine.

Key to the species of *Meropidia* Hippa & Thompson

1. Femora broadly black basally, at least basal 1/4 of front, basal 1/3 of middle and basal 2/5 of hind femur black; hind tarsus dark brownish black on basal 4 tarsomeres; apical abdominal terga black, apical 1/3 of 3rd in female and all of 4th in male and 5th terga in female black; mesonotum and scutellum with yellow pile; antenna dark brownish orange to black (Bolivia) *neurostigma* Hippa
— Femora black on basal 1/5 or less; hind tarsus with at most basitarsomere black 2
2. Femora, hind tarsus, and apical terga entirely orange; mesonotum and scutellum with yellow pile; antenna orange (Ecuador) .. *rufa* Thompson
— Hind femur very narrow black, black on basal 1/5 or less; hind basitarsomere partially black; apical terga with at least 2nd and 3rd terga entirely orange (other terga missing); mesonotum and scutellum with extensive black pile; antenna black (Colombia) .. *nigropilosa* Thompson

Meropidia neurostigma Hippi, sp. n.

(Figs. 1-12)

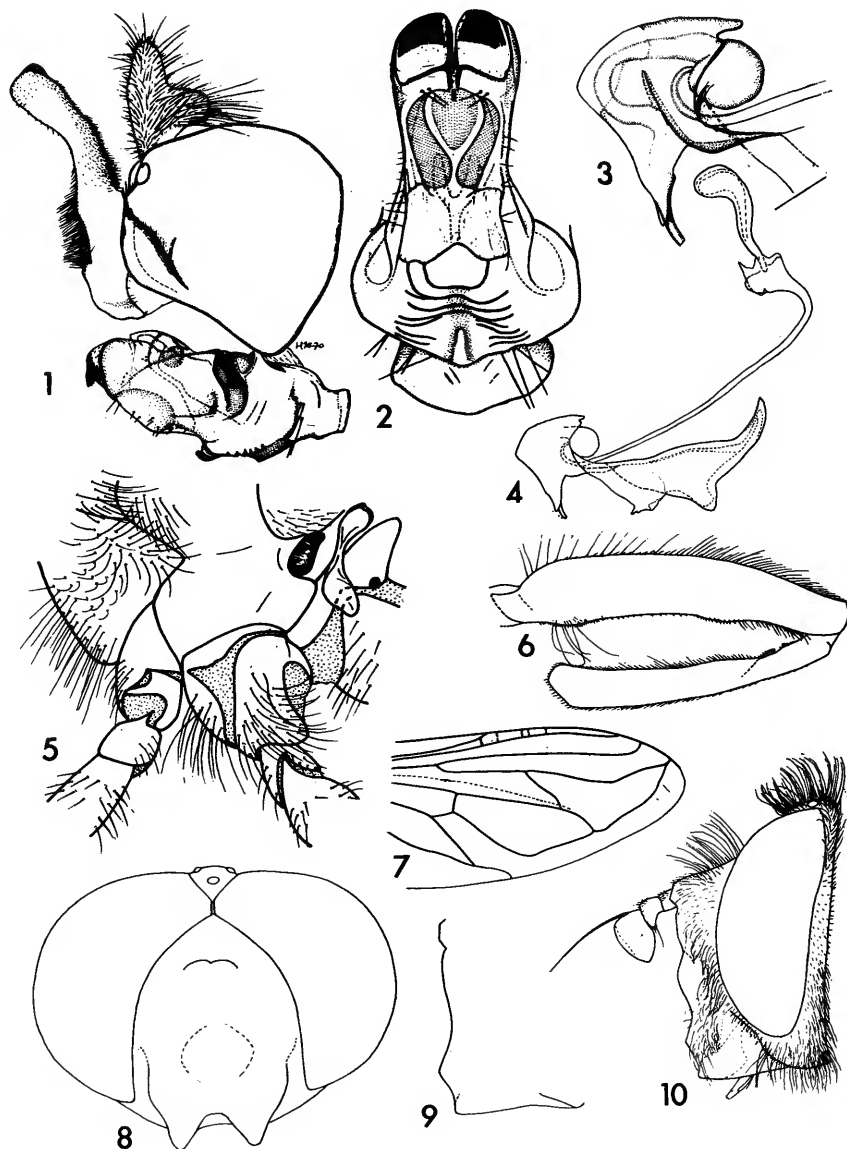
Length about 14 mm, wing, 10.5 mm.

Male. — *Head* (fig. 8, 10): Face yellowish orange, with yellow pollen and pile; cheek black, shiny anteriorly, with pale pollen and pile posteriorly; frontal triangle yellowish orange, shiny on frontal lunule, with yellow pollen and black pile elsewhere; eyes narrowly separated, separated by width of arista; vertical triangle orange except brown ocellar triangle, with pollen same color as ground color, with black pile; occiput dark, with dense yellow pollen, with yellow pile ventrally and yellow and black pile dorsally. *Antenna*: Basal segments blackish brown, with black pile; 3rd segment dark brownish orange to black except dorsoapically; arista blackish brown.

Thorax: Humerus yellow, with yellow pile; mesonotum dark except indistinctly paler orange laterally, with dense yellowish brown pollen, with a pattern of less and darker blackish brown pollinose areas similar to female (fig. 12) except medial vitta is interrupted on posterior 1/4 and there are very obscure darker sublateral postsutural vittae, with yellow pile; scutellum yellowish orange, with yellow pile and subscutellar fringe; pleura black, with moderately dense pale grayish pollen, with yellow pile; spiracular fringes yellowish; metasternum black, with gray pollen, with black pile; squama pale yellowish with darker yellow margin and fringe; halter yellowish. *Legs*: Coxae black, extensively pollinose, with black pile except pale laterally on front and hind coxae; trochanters black, extensively pollinose, with black pile except pale ventrally on middle and apicoposterolaterally on hind trochanter; front and middle femora black and pollinose on basal 1/3, yellow apically, with yellow pile; hind femur black and shiny on basal 2/5, yellow apically, with yellow pile except black ventrally; tibiae and front and middle tarsi yellow, with yellow pile; hind tarsus brownish black except orange apical tarsomere, with dark pile. *Wing*: With 4-5 stigmatic crossvein, slightly smoky, with a faint darker cloud subapically and to base of fork of R_3 , completely microtrichose; epaulet with black pile.

Abdomen (fig. 11): 1st tergum blackish brown except orange apical margin, with pollen, with yellow pile except dark apicomedial 2/3; 2nd tergum extensively orange, narrowly dark brownish black basomedially, paler brown apicomedially and along posterior margin, with yellow pile except darker on dark areas; 3rd tergum extensively orange, with sparse silvery pollen on anterior 1/2, dark brownish black along posterior margin, with yellow pile except dark on apicomedial 2/3; 4th tergum shiny black except for a narrow anterior silvery pollinose submedial vitta, with black pile except yellow laterally; 1st sternum shiny black except dull pollinose anteriorly and laterally, with yellow pile; 2nd and 3rd sterna shiny yellowish orange, with yellow pile; 4th sternum black, with pollen except for a large triangular shiny medial area, with submembranous posterior emargination, with black pile except for a few pale medial and lateral hairs. Male genitalia (figs. 1-4): As figured.

Female. — Similar to male except for normal sexual dimorphism and: Face concave, without tubercle, straight under antenna, with oral margin produced; antenna with basal segments paler brown: 3rd segment brown except narrowly orange basally; front orange, shiny on anteriomedial 1/2; mesonotum with postsutural lateral margin more distinctly orange; mesonotal pollinose pattern as in fig. 12; femora more extensively orange; hind femur with some pale hairs intermixed ventrally; hind tibia simple; 2nd tergum darkened posteromedially only at hind margin; 3rd tergum with apical darkened fascia blackish and broader laterally on apical 1/3, also with anteromedial blackish vittate macula,



Figs. 1-10. *Meropidia neurostigma* Hippa: 1, male genitalia, lateral view; 2, 9th sternum, ventral view; 3, aedeagus, lateral view; 4, aedeagus and associated structures, lateral view; 5, thoracic pleura, lateral view; 6, hind leg, lateral view; 7, wing, dorsal view; 8, head, male, frontal view; 9, facial profile, female; 10, head, male, lateral view.

with more extensively silvery pollen, with about apical 3/4 with black pile; 4th tergum with sublateral dark orange maculae on anterior margin, with silvery pollen except for a large shiny medial subtriangular area and small shiny sublateral areas near anterior margin, with lateral hairs mostly dark; 4th sternum simple, shiny; 5th tergum shiny black; 5th sternum shiny black except dull apically, with black pile; cercus orange.

Holotype male: Bolivia, Cochabamba, Incacha, 25-31 August 1956, L. E. Peña G., deposited in the Canadian National Collection, Ottawa. **Paratypes:** 2 females with same data as holotype (CNC); 1 female, Bolivia, Chapares, Chimore, January 1972, M. Fritz (USNM).

***Meropidia rufa* Thompson, sp. n.**

Length 13 mm, wing 10.4 mm

Female. — Head: Orange except more grayish white on dorsal 2/3 of occiput, with whitish yellow pollen; face straight except slightly produced medially, with yellow pile; front with yellow pile on dorsal 1/2, with black pile on ventral 1/2; vertex with black pile anteriorly, with yellow pile posteriorly; occiput with yellow pile except with a few black hairs on dorsal 1/4; antenna orange with black pile; 3rd segment quadrate; arista brownish black.

Thorax: Humerus orange, with yellow pile; mesonotum black except orange laterally, with dense greenish-gray pollen, with indistinct narrow submedial black vittae that are interrupted at transverse suture, with yellow pile; pleura orange except black pectus (= ventral propleuron, all sternopleuron and hypopleuron), with sparse gray pollen, with orange pile except for a few black apicoposterior hairs on mesopleuron; metasternum black, with black pile; scutellum orange, with orange pile except for a few darker brownish orange marginal hairs; plumula, halter, and squama orange except more brownish on dorsal squamal lobe. **Legs:** Coxae, trochanters black, with gray pollen, with black pile medially and yellow pile laterally; femora, tibiae and tarsi orange, with orange pile. **Wing:** Light brownish yellow, completely microtrichose, with 1-2 stigmatic crossveins; epaulet with black pile.

Abdomen: Orange, with orange pile except black on 4th and 5th segments and narrowly apicomedialely on 2nd and 3rd segments; dorsum with dull pollen; sterna shiny; cercus orange.

Holotype female: Eastern Ecuador, Limon, 900 m, November 1948, Z. Müller, deposited in the American Museum of Natural History, New York.

***Meropidia nigropilosa* Thompson, sp. n.**

Length: 12.1 mm (without apical abdominal segments), wing 10.9 mm.

Female. — Head: Face golden orange, with golden pollen, with yellow pile, concave; cheek narrowly orange anteriorly, otherwise black, with orange pile; front darker orange, with light brown pollen medially on ventral 1/2 and golden pollen on dorsal 1/2 and laterally, with black pile; vertex dark orange, with golden pollen, with black pile; occiput black, with grayish-golden pollen, with yellow pile; antenna black, with black pile; 3rd segment trapezoidal.

Thorax: Black except orange humerus and scutellum; mesonotum with grayish to dark golden pollen, with narrow medial brownish-black vitta ending in a triangular macula anterior to scutellum, with broader black submedial vittae that are interrupted at transverse suture and not reaching scutellum, with brownish-black macula posterior to humerus, with black pile extensive, with golden pile intermixed anteriorly and laterally; pleura with gray pollen,

with yellow pile extensive, with black pile dorsoposteriorly on mesopleuron and between front and middle coxae; metasternum with black pile; scutellum orange, with black pile except for orange ventral fringe and a few orange marginal hairs; halter, plumula, and squama orange except more brownish on dorsal squamal lobe. *Legs*: Coxae, trochanters black, with gray pollen, with black pile medially, with yellow pile laterally; front and middle femora, tibiae, and tarsi orange, with orange pile; hind femur distinctly black basally, orange elsewhere, with black pile ventrally and on apicolateral 1/3, with orange pile elsewhere; hind tarsus orange except black basal 2/3 of basitarsomere, with orange pile except black on basitarsomere and medial 1/2 of 2nd tarsomere. *Wing*: Brownish, completely microtrichose, with 3-4 stigmatic crossveins; epaulet with black pile.

Abdomen (4th and apical segments missing): First segment black except narrowly orange on apical margin of tergum, with grayish pollen, with yellow pile except black apicomediaally on tergum; 2nd tergum orange, with dull pollen, with a small black basomedially vittate macula and black apicolateral fasciate maculae, with most of pile missing, but apparently pile was extensively orange except narrowly black along apical margin; 3rd tergum orange, with dull pollen, with black apical margin and with black area broader laterally and narrow medially; 2nd and 3rd sterna shiny, orange, with orange pile.

Holotype female: Colombia, Western Cordillera, Monte Socorro, 3, 800 m, Coll. Fassl., C. T. Trechmann Bequest, B.M. 1964-549, deposited in British Museum (Natural History), London.

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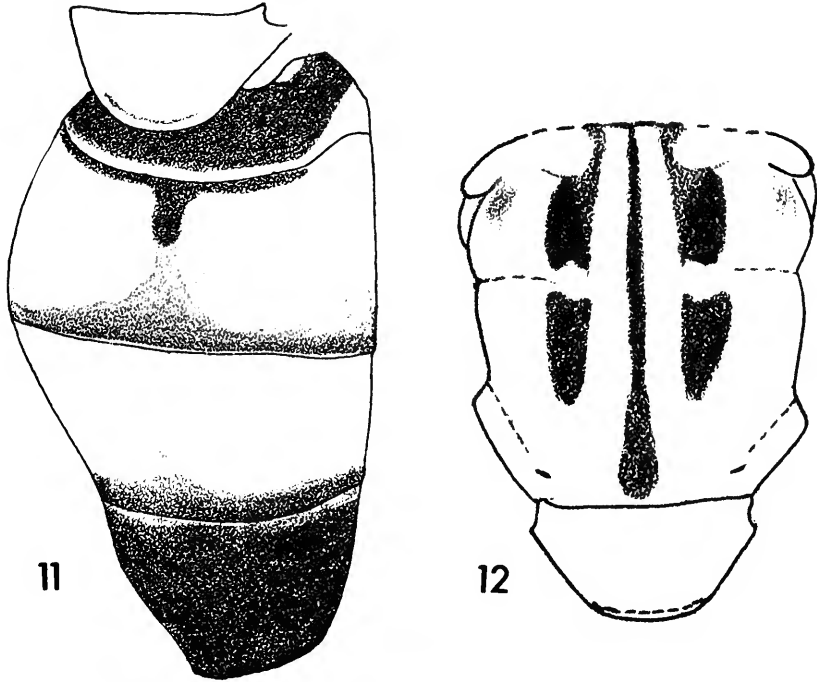
RESUMO

Meropidia Hippa e Thompson, gen. n. (espécie-tipo, *neurostigma* Hippa) (Syrphidae, Eristalinae, Milesiini, Tropidiina) com três espécies são descritos. O gênero é caracterizado pela face pilosa, dimórfica: levemente tuberculada no macho e reta na fêmea; gena nua; antena simples, não alongada ou especialmente modificada; olhos nus; região anterior da mesopleura nua; esternopleura inteiramente pilosa; "barrete" nu; metasterno piloso, com fenda lateral membranosa; escutelo com sulco marginal apical e franja subscutelar; pernas simples, exceto a tibia posterior do macho com um dente basimediano.

Meropidia neurostigma Hippa (Bolívia): Antena castanha; tarso posterior preto; mesonoto e escutelo com pilosidade alaranjada.

Meropidia rufa Thompson (Equador): Antena alaranjada; tarso posterior alaranjado; mesonoto e escutelo com pilosidade alaranjada.

Meropidia nigripilosa Thompson (Colômbia): Antena preta; tarso posterior preto no basitarsômero e alaranjado nas demais partes; pilosidade do mesonoto e escutelo preta.



Figs. 11-12. *Meropidia neurostigma* Hippa: 11, abdominal pattern, dorso-oblique view; 12, thoracic pattern, dorsal view.

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