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THE NORTH AMERICAN HELEOMYZID GENUS
LUTOMYIA, WITH DESCRIPTION OF A
NEW SPECIES

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A SERIES of flies collected in the state of Washington in burrows of the chipmunk *Eutamias amoenus affinis* (Allen) proved to be composed of two species of the family Heleomyzidae, the larvae of which are known to breed in mammal dung. One of the species is new to science; the other has been known only from the holotype. The study of the specimens has clarified the relationship of the genera *Lutomyia* Aldrich and *Criddleria* Curran, which form a small group of species distinguished from all other heleomyzids by having the fore cross vein close to the base of the discal cell, and the second vein close to the costa and often appearing to join it not far beyond the end of the first vein (Figs. 1 and 2). All but one or two of the available specimens have peculiarly mutilated wings like those figured for *Criddleria hemiptera*.¹

The material was received for study through Dr. T. H. Hubbell, Curator of Insects, of the University of Michigan Museum of Zoology.

¹C. H. Curran, *The Families and Genera of North American Diptera* (New York: Ballou Press, 1934), p. 381, Fig. 16.

Lutomylia Aldrich

Lutomylia Aldrich, 1922, *Brooklyn Entomol. Soc. Bull.*, 17: 108. Type, *L. spurca* Aldrich.

Criddleria Curran, 1929, *Canad. Entomol.*, 61: 31. Type, *C. hemiptera* Curran. New synonymy.

A genus of Heleomyzidae with head obviously higher than long; two pairs of orbital bristles, the anterior shorter and weaker than the posterior; mesopleuron, pteropleuron, and prosternum bare; humeral bristle present; one presutural and three postsutural dorsocentrals; two pairs of scutellar bristles; disk of the scutellum bare; middle tibia with several

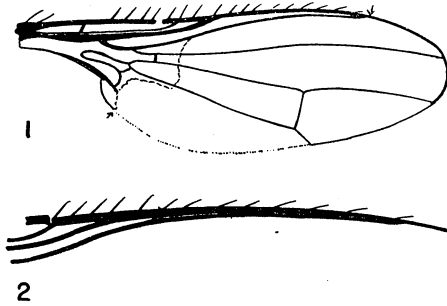


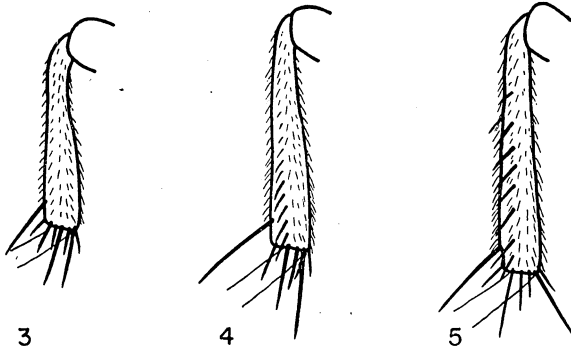
FIG. 1.—Wing of *Lutomylia distincta* Garrett. The anal area of the wing is missing in this specimen, and the probable outline of the wing margin is indicated by a dotted line. The arrows and broken line mark the place at which the apical part of the wing is torn off in most of the available specimens.

FIG. 2.—Part of costal margin of the wing of *Lutomylia spurca* Aldrich, showing the second vein apposed to the costa but not fused with it.

strong apical bristles ventrally; mid-femur with a number of strong anterior bristles, which may appear to form one curving row, or two or three broken or irregular rows; fore cross vein close to the base of the discal cell and slightly proximad of the apex of the first vein; second vein parallel to the first vein and costa and lying close to or in contact with the costa.

In the genotypes of both *Lutomylia* and *Criddleria*, the second vein does not end in the costa close to the apex of the first vein, but merely meets the costa at that point, and from there on the two are side by side without losing their identities

(Fig. 2). The second vein actually ends in the costa far out toward the apex of the wing, at a place approximating that in *Lutomyia distincta* and *L. aldrichi*. In the latter two species, however, as exemplified in Figure 1, the second vein is distinctly separated from the costa, though it lies much closer to it than in the wing of other heleomyzids. In all four species, the fore cross vein is close to the base of the discal cell, and it is this feature which appears to indicate their close relationship. The differences between the four in the closeness of the second vein to the costa are only in degree.



FIGS. 3-5.—Anterior aspect of middle tibia of *Lutomyia aldrichi*, *L. distincta*, and *L. hemiptera*, respectively.

The character of the distinct anterodorsal bristles on the mid-tibia, which was used as one of the distinguishing features of *Criddleria*, appears to rest only on a difference in extent of development. In two of the species, *L. spurca* and *L. aldrichi*, the anterodorsal row is composed entirely of short hairs (Fig. 3). In *L. hemiptera*, there is a row of strong but short bristles (Fig. 5). *L. distincta* is definitely intermediate, showing a bristle-like thickening of the anterodorsal hairs on the apical third of the tibia (Fig. 4).

No adequate evidence has been seen to support the view that the presence of strong posteroventral spines on the hind femur in the male sex is a character of generic importance. In the four species considered here, use of the character would divide obviously close relatives, for *spurca* and *aldrichi* have

a row of these strong spines, whereas *distincta* and *hemiptera* lack them.

Oecothea Haliday, which is associated with *Criddleria* in Curran's key on the basis of distinct bristles on the mid-tibia, is quite a different genus in several respects, having only one pair of orbital bristles, the disk of the scutellum with numerous hairs, and the usual heleomyzid wing venation with the fore cross vein near the middle of the discal cell and the second vein well separated from the costa.

KEY TO THE KNOWN SPECIES OF *Lutomyia*

1. Mid-tibia with several strong anterodorsal bristles midway on the tibia (Fig. 5); male with fine, weak hairs ventrally on the hind femur *Lutomyia hemiptera* (Curran)
- Mid-tibia without strong anterodorsal bristles midway on the tibia, at most a row of 3-6 short, slightly thickened hairs on the apical third (Figs. 3 and 4) 2.
2. Entire body reddish yellow; second vein meeting costa just beyond the tip of first vein and closely apposed to costa from there to a point beyond the level of the hind cross vein (Fig. 2): fore cross vein less than twice its length from the base of the discal cell; male with a row of 12 unusually strong, black, posteroventral spines on the hind femur *Lutomyia spurca* Aldrich
- Thorax black, heavily gray pollinose, abdomen reddish yellow to blackish; second vein throughout its length close to but distinctly separated from costa (Fig. 1); fore cross vein 3.5-4 times its length from base of discal cell 3.
3. Frontal vitta black; front broad, nearly three times the width of an eye, slightly but distinctly narrowed anteriorly; mid-tibia without bristles anterodorsally (Fig. 3); male with a row of strong black posteroventral spines on the hind femur *Lutomyia aldrichi* Sabrosky
- Frontal vitta orange to reddish; front narrower, 1.9-2.1 times the width of an eye, the sides parallel; mid-tibia with bristle-like hairs in the apical third of the anterodorsal row (Fig. 4); male without a row of strong posteroventral spines on the hind femur *Lutomyia distincta* Garrett

Lutomyia aldrichi, new species

MALE, FEMALE.—Predominantly dull gray black, the face and cheek, pteropleuron in part, humeral and postalar calli, ventral surface of scutellum, abdomen, fore coxa obscurely, all trochanters, knees narrowly, and posterior surface of hind

femur, yellow to reddish yellow, the extent of color somewhat variable and often obscured; front entirely dark, the frontal vitta black, orbits and ocellar triangle gray; basal antennal segments yellowish, third segment (present only in the allotype) black, the microscopically pubescent arista black basally but becoming paler toward the apex; haltere pale yellow.

Front broad, nearly three times the width of an eye; head 1.25 times as high as long; eye relatively large, the cheek about 0.4 times the height of an eye; one strong sternopleural bristle, with several distinct but weak hairs anterior to it; mid-tibia dorsally with only fine hairs outside of the preapical bristle (Fig. 3); hind femur of the male somewhat enlarged, with a posteroventral row of nine strong, black, posteriorly directed spines, the four nearest to the apex close together and comblike; distal four segments of fore tarsus only slightly broader than those of other tarsi.

Wings in all available specimens mutilated, as figured for *Criddleria*;² fore cross vein well proximad the apex of the first vein, and separated by 3.5–4 times its own length from the base of the discal cell; second vein close to first vein and costa but distinctly separated from them throughout its length, as in Figure 1.

Length, 2.5–4.5 mm.

Holotype, male, allotype, and three paratypes (two males and one female), Rocky Flat, sixteen miles northwest of Naches, altitude about 3800 feet, Yakima County, Washington, collected Nov. 14, 1946 (Harold E. Broadbooks), in nest of *Eutamias amoenus affinis*; four paratypes (three males and one female), collected Nov. 13, 1947, otherwise same data. Type, allotype, and two male paratypes in the University of Michigan Museum of Zoology, two paratypes (male and female) in the United States National Museum, three paratypes (two males and one female) in the George Steyskal collection.

The flies of this and the following species "were found crawling slowly about on the surface of and within a chipmunk nest composed of dry grasses and pappus . . . and located at the end of a tunnel," the length of which ranged from 24 to 38 inches in the different nests.

² *Ibid.*

The species is named in honor of the late John M. Aldrich, who was keenly interested in the family Heleomyzidae and who described the genus *Lutomylia*.

Lutomylia distincta Garrett

Garrett, 1924, *Ins. Insc. Menstr.*, 12 (1-3): 30-32 (British Columbia).

This species was described from a single female, and seems not to have been recorded again. The series of eleven specimens which I have before me makes it possible to associate the male and female of the species, and to furnish the following additional notes.

Front 1.9-2.1 times as broad as an eye; frontal vitta orange anteriorly, becoming reddish posteriorly, the orbits and ocellar triangle bright gray and rather sharply demarcated; cheek broad, its greatest height 0.55 times the height of an eye; distal four segments of the fore tarsus somewhat broadened and flattened, those of the other tarsi slender and elongate; mid-tibia with a row of 3-6 short, bristle-like anterodorsal hairs extending from the apical circle of spurs toward the middle of the tibia, these hairs but little longer than the ordinary clothing hairs on the tibia but somewhat thickened and suggestive of a row of tiny bristles (Fig. 4); hind femur of the male without a row of strong posteroventral spines, but with an irregular row of short, semierect hairs that are slightly thicker than the ordinary appressed clothing hairs of the femur; wings mutilated as figured by Curran for *Crid- dleria*, except in one male in which the right wing is nearly complete (Fig. 1); fore cross vein close to base of discal cell and second vein near but not closely apposed to the costa; hind cross vein only half its length from margin of wing.

Length, 3-4.5 mm.

Nine specimens (four males, five females), Rocky Flat, sixteen miles northwest of Naches, Yakima County, Washington, were collected Nov. 16, 1946 (Harold E. Broadbooks), from the nest of *Eutamias amoenus affinis* (U.M.M.Z. and U.S.N.M.); two females, collected Nov. 13, 1947, otherwise same data (G. Steyskal collection).

