

## New Sciaridae from the Hawaiian Islands (Diptera)

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Through the kindness of Dr. D. Elmo Hardy I have been able to examine the Sciaridae from the collection of the University of Hawaii. Previously only a single species of the genus *Sciara* had been reported from this area, *Sciara molokaiensis* Grimshaw. Through the kindness of Dr. Alan Stone, U. S. National Museum, I am able to include Grimshaw's description of this species. The most valuable source of reference for the determination of the Hawaiian species proved to be the key prepared by Edwards (1928) (see list of references).

Since the latest revision of the supra-specific categories of this family is that of Frey, all specimens were determined to their correct group in Frey's keys. All material was found to fall in the genus *Lycoriella* of Frey. However, I do not agree with Frey's concepts of this group in this respect and shall treat, at present, *Lycoriella* as a subgenus of *Sciara*.

The following key to the Hawaiian species is based largely upon color characteristics. Such a key should be considered as being only provisional. For accurate species determination, male genitalia seem to be the most reliable criterion.

Key to Species of *Sciara* of Hawaii

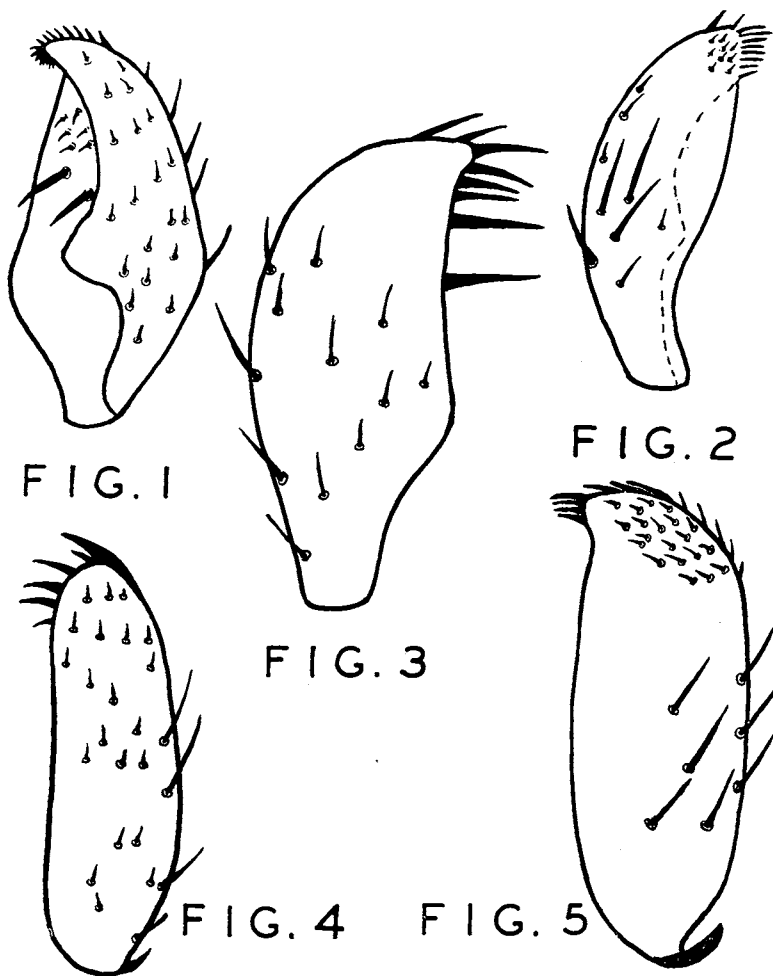
- |   |                                     |
|---|-------------------------------------|
| 1. Basal two segments of antenna dark brown.....                                | 2                                   |
| Basal two segments of antenna yellow or ochreous.....                           | 3                                   |
| 2. Mesoscutum black, abdomen brown.....   | <i>Sciara hardyi</i> n. sp.         |
| Mesoscutum yellow and brown, abdomen ochreous.....                              | <i>Sciara garretti</i> n. sp.       |
| 3. Flagellar segments of antennae blackish.....                                 | <i>Sciara molokaiensis</i> Grimshaw |
| At least one of the flagellar segments yellow or ochreous.....                  | 4                                   |
| 4. Flagellar segments entirely ochreous.....                                    | <i>Sciara johannseni</i> n. sp.     |
| Some of flagellar segments dark brown.....                                      | 5                                   |
| 5. First flagellar segment yellow, remainder dark brown, mesoscutum dark brown  |                                     |
| .....   | <i>Sciara stonei</i> n. sp.         |
| First flagellar segment and apical half of segments two and three yellow, meso- |                                     |
| scutum yellow with W-shaped brown pattern.....                                  | <i>Sciara laffooni</i> n. sp.       |

Grimshaw's description of *Sciara molokaiensis* is included for completeness so that later workers will have available in one paper the descriptions of all Hawaiian species of the genus *Sciara*.

*Sciara molokaiensis* Grimshaw.

Grimshaw, "Fauna Hawaiiensis," 3:2, 1901:

"♀ Long. corp. 1½ mm.; al. 2½ mm. Antennae blackish, joints of scape lighter, those of flagellum sessile, twice as long as broad. Head black, palpi yellow. Thorax black, shining, humeri yellowish, pleurae yellowish, but dark above the intermediate coxae, halteres yellowish with dark club. Abdomen reddish-brown, hind borders of the seg-



## EXPLANATION OF FIGURES

(Male claspers)

1. Ventral view of right clasper of *Sciara johannseni* n. sp. 2. Ventral view of left clasper of *Sciara hardyi* n. sp. 3. Ventral view of clasper of *Sciara garretti* n. sp. 4. Ventral view of right clasper of *Sciara laffooni* n. sp. 5. Ventral view of right clasper of *Sciara stonei* n. sp.

ments, especially of the apical ones, darker, venter yellow. Legs pale, all the coxae and femora yellow, the latter with a black spot at the extreme base, tibiae yellowish with the spurs conspicuous and whitish, tarsi brownish, becoming darker towards the tip. Wings greyish hyaline, costal and first and third longitudinal veins darker and stronger than the rest, first longitudinal vein ending at half the length of the wing, before the base of the fork and opposite the tip of the sixth vein; distance between the tips of the first and third veins four times that between the tip of the third vein and the termination of the costal; anterior branch of the fork ending midway between its posterior branch and the tip of the third vein; termination of the fifth vein midway between the posterior branch of the fork and the sixth vein; furcation of fifth and sixth veins near the base of the wing and considerably before the origin of the anterior cross vein.

"Hab. Molokai Mts., 6500 ft., September 1893, one female."

### *Sciara (Lycoriella) johannseni* n. sp.

**Male.** Length 2.25 mm. General color dark brown.

**Head:** Vertex and occiput dark brown. Compound eyes hairy, eye-bridge complete. Ocelli three, yellowish in color. Antennae sixteen-segmented. First two segments yellow, remainder uniformly ochreous with silvery pile. Mouthparts ochreous.

**Thorax:** General color dark brown. Mesoscutum dark brown laterally and posteriorly. Disk of mesoscutum yellow. Humeri yellow. Dorsocentral bristles strong, black. Scutellum brown, four scutellar bristles. Pleura reddish brown. Wing 1.75 mm. long. Veins yellowish. Costa extends about 0.75 the distance from  $R_{4+5}$  to  $M_{1+2}$ . Only the radius with macrotrichia.  $R_{1+2}$  ends before the fork of M. Petiole of cubitus about 0.7 as long as basal section of media. Halteres have yellow petiole and dark brown knob. Legs yellow, under surface of trochanters with black stripes. Spurs of meso- and metathoracic tibiae subequal in length.

**Abdomen:** Dark brown, the hypopygium somewhat paler. Dististyle (figure 3) with a median lobe on the ventral surface. Tip of dististyle with many small black setae. Two strong setae on mesal surface of dististyle.

In Edwards' (1928) key this species would run to couplet 47. It is not *Sciara leucocera* Kieffer. It resembles somewhat *Sciara garretti* n. sp. but differs in regard to the color pattern of the thorax and in the structure of the dististyle.

I take pleasure in naming this species for Dr. O. A. Johannsen, the dean of the American workers in this group.

Described from two males taken on the island of Oahu, December 10, 1913. Type in my collection, paratype in collection of the University of Hawaii.

In addition a specimen closely allied to *S. johannseni* was taken in March, 1951, in Honolulu by D. Elmo Hardy. The genitalia are very similar to those of *S. johannseni*. However, the color pattern of the thorax resembles more closely that of *Sciara laffooni* n. sp., but differs in the details of the markings of the mesoscutum. The specimen does not seem to warrant description as a new species. At this time I regard it as an atypical variety of *Sciara johannseni*.

### *Sciara (Lycoriella) hardyi* n. sp.

**Male.** Length 1.75 mm. General color black.

**Head:** Vertex and occiput black. Lower surface of head and mouthparts somewhat paler. Compound eyes hairy. Eye-bridge complete. Ocelli three, light brown. Antennae sixteen-segmented. Basal two segments dark brown, flagellum ochreous.

**Thorax:** General color black, shining. Dorsocentral bristles strong, black. Scutellum black, four scutellar bristles. Wing 1.5 mm. long. Veins yellowish. Costa extends about 0.7 distance from  $R_{4+5}$  to  $M_{1+2}$ . Subcosta short.  $R_{1+2}$  ends proximad of fork of M. Petiole of cubitus about 0.7 as long as the basal section of M. Petiole of haltere whitish

yellow, knob black. Legs yellow, ventral surface of trochanters with black stripe. Tibial spurs yellow, those of meso- and metathorax subequal in length.

*Abdomen:* Brown, each segment somewhat darker apically. Dististyle (figure 2) brown, concave distally. Has approximately eight strong setae on mesal surface and two subapical setae. In addition a tuft of smaller setae near tip on ventral surface.

In Edwards' (1928) key this species would run to couplet 44. It does not agree with the description of *Sciara niveiapicalis* Brunetti. My species lacks the characteristics given in the second half of the couplet in that the costa extends more closely to  $M_{1+2}$ . The hypopygium resembles somewhat that of *S. modesta* Staeger as figured by Lengersdorf.

I take pleasure in naming this species for Dr. D. Elmo Hardy, whose interest in the Diptera has been most helpful.

Described from one male taken at a light trap in Honolulu, Oahu, January 25, 1951 by B. L. Defibaugh. Type in my collection.

### *Sciara (Lycoriella) garretti* n. sp.

*Male.* Length 2 mm. General color reddish brown.

*Head:* Dark brown including the mouthparts. Compound eyes hairy, Eye-bridge complete. Ocelli three, yellowish brown. Antennae sixteen-segmented. Antennae dark brown with silvery pubescence.

*Thorax:* General color ochreous to reddish. Mesoscutum yellow with a brown stripe on each side and a brown, tripartate pattern in the center. Ground color between the tripartate stripes yellow. Dorsocentral bristles strong and black. The scutellum is dark brown and has four scutellar bristles. Pleura brown above and pale yellow below. Wing 1.5 mm. long. Veins yellowish. Costa extends about 0.7 the distance from  $R_{4+5}$  to  $M_{1+2}$ . Subcosta short, ends free.  $R_{1+2}$  ends proximad of fork of M. Radius with macrotrichia. Petiole of cubitus about 0.8 the length of the basal section of M. Halteres have yellow petiole and brown knob. Legs yellow, appearing somewhat darker apically. Trochanters with black stripe on ventral surface. Tibial spurs yellow, those of meso- and metathorax subequal in length.

*Abdomen:* Brownish yellow. Dististyle (figure 3) yellow with brownish apex. Two subapical setae and a strong apical seta. In addition there are about 5-6 setae on the mesal surface. There are about 25-30 small setae toward the apex of the clasper.

In Pettey's key this species would run to couplet with *Sciara (Neosciara) luteola* (Pettey). In Edwards' (1928) key this species would run to couplet 47. It does not agree with the description of *S. leucocera* Kieffer on the basis of the color of the antenna. In some respects it resembles my *Sciara johannseni*, but the structure of the hypopygium differs.

I take pleasure in naming this species for C. B. D. Garrett who has described many new species of Nematocera from British Columbia.

Described from two males collected on the island of Oahu, December 10, 1913. Type in my collection, paratype in collection of University of Hawaii.

### *Sciara (Lycoriella) laffooni* n. sp.

*Male.* Length 2 mm. General color dark brown and yellow.

*Head:* Vertex and occiput dark brown. Mouthparts ochreous. Compound eyes hairy. Eye-bridge complete. Antennae sixteen-segmented. First three segments and apical half of segments four and five, yellow. Remainder of antennae dark brown with short, silvery pile. Flagellar segments not noticeably petiolate.

*Thorax:* General color brown and yellow. Mesoscutum has yellow humeri. Lateral edges, dark brown. At the posterior portion of the mesoscutum a dark brown band which extends anteriorly a distance subequal to the length of the scutellum. Extending anteriorly from dark band at the rear of the scutum is a more or less W-shaped dark

brown pattern which encloses three yellow areas. Dorsocentral bristles strong, black. In addition, this species has a pair of strong setae on the lateral margin of the scutum between the humeri and the wing-bases. Scutellum dark brown with four marginal setae. Pleura dark brown above, yellow below. The two areas subequal in size. Wing 1.75 mm. long. Veins yellow. Costa extends about 0.7 the distance from  $R_{4+5}$  to  $M_{1+2}$ . Subcosta short, ends free. Radius with macrotrichia.  $R_{1+2}$  ends before fork of M. Petiole of cubitus about 0.66 the length of the basal section of M. Petiole of haltere yellow, the knob dark brown. Legs yellow, trochanters with black stripe, ventrally. Spurs of meso- and metathoracic tibiae subequal in size.

*Abdomen:* Dark brown except for hypopygium which is yellowish. Clasper (figure 4) with one strong apical seta and three equally strong setae on apical mesal surface. In addition, a pair of smaller setae. Base of clasper with a hook-like process. The clasper resembles somewhat that of *Sciara lapponica* Lengersdorf.

This species would run to couplet with *Sciara ocellaris* Comstock in Pettey's key but differs in regard to structure of hypopygium. In Edwards' (1928) key this species would run to couplet 47. It does not agree with either of the two categories listed there. Superficially, it resembles my *S. johannseni* but the structure of the clasper is wholly distinct.

Described from two males from light trap January 25, 1951 in Honolulu by B. L. Defibaugh. Type in my collection, paratype in collection of the University of Hawaii.

I take pleasure in naming this species for Jean Laffoon who is currently monographing the North American species of *Mycetophila*.

### *Sciara (Lycoriella) stonei* n. sp.

*Male.* Length 2 mm. General color, dark brown-black.

*Head:* Vertex and occiput black. Compound eyes hairy. Eye-bridge complete. Ocelli three, brown. Antennae sixteen-segmented. First three segments yellow, remainder dark brown with silvery pubescence. Flagellar segments petiolate. Maxillary palpi yellow.

*Thorax:* Mesoscutum dark brown, pollinose. Dorsocentral bristles strong, black. Scutellum dark brown with four marginal bristles. Mesopleura somewhat paler than notum. Wing 2 mm. long. Veins yellow. Costa extend about 0.7 distance from  $R_{4+5}$  to  $M_{1+2}$ . Subcosta short, ends free. Radius with macrotrichia.  $R_{1+2}$  ends before fork of M. Petiole of cubitus about 0.6 as long as basal section of M. Basal half of petiole of haltere white, remainder of haltere black. Legs yellow. Tibiae and tarsi infuscated. Trochanters with a ventral black stripe. Spurs of meso- and metathorax yellow, subequal in size.

*Abdomen:* Dark brown, venter somewhat paler. Dististyle (figure 5) dark brown with four stout setae at apex. Base of dististyle with a peculiar hook-like structure.

In Edwards' (1928) key this species would run to couplet 45. It differs from *Sciara politula* Edwards in having two spurs on the meso- and metathoracic tibia. It differs from *S. nitidithorax* Brunetti in the color of the antennae, in having the mesoscutum pollinose and in the color of the haltere, legs and abdomen.

This species is described from seven males taken at light traps in January 1951 by D. E. Hardy and B. L. Defibaugh in Honolulu, Oahu.

I take pleasure in naming this species for Dr. Alan Stone of the U. S. National Museum. Type and two paratypes in my collection. Remainder of paratypes in collection of the University of Hawaii.

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