

New Hawaiian Sciaridae (Diptera)¹

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The following descriptions of apparently new species of Sciaridae are taken from my manuscript monograph of this family. The complete study will appear in the first volume on the Diptera of Hawaii. Since this volume will not appear in print for two or more years it is perhaps best that these descriptions be published at this time so that the names will be available for use in the INSECTS OF MICRONESIA study which is now underway. The drawings have all been prepared by Miss Marian S. Adachi.

Plastosciara (*Cosmosciara*) *adrostylata*, new species (figs. 1a-c)

This species, as well as *P. longicosta*, n. sp., would not fit Frey's (1948, NOT. ENT. 27:46) concept of *Plastosciara* because of the more elongate spurs on the hind tibiae. It would run imperfectly in his key to *Spathobdella* Frey but that genus has the second palpal segment elongated. Both species differ from *P. flavibasis* Edwards, from Samoa, by having the eye bridge narrowed to a single row and then discontinuous on the top of the head for a distance equal to the length of two or three facets, not "three facets wide"; the thorax is brown, not "shining black"; the tibial spurs are longer than the tibial diameter, not "fully as long as . . ."; all abdominal sclerites brown, not first tergum yellow and two to four black; claspers of male with several spines at apex, not "with two bristly spines at tip," and wings 1.4-1.5 mm., not 2.0 mm. *P. adrostylata*, n. sp., and *longicosta*, n. sp., may be separated by the characters given in the description and figures below; the most striking characteristics are found in the male genitalia (see figs. 1b and 3d).

Male. Head: Antennae brown, the flagellar segments are quadrate in shape. The first segment of the palps is oval with four rather strong setae. The second is small, oval, with two apical setae; it is about one-fifth as long as the enlarged portion of the second. Eye bridge made up of two rows of facets over most of the front, narrowly interrupted in the middle.

Thorax: Brown, halteres with yellowish bases. Two moderately large setae plus some smaller hairs are on margin of scutellum. Dorsocentral and marginal setae well developed on mesonotum. Acrostichals lacking except for about a half dozen small hairs on anterior portion of mesonotum. Legs:

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Largely yellow, tarsi and tibiae discolored with brown. Spurs of hind tibiae one-third to one-half longer than the diameter of the tibia. Hind tibiae about two and one-half times longer than the basitarsi. Wings: The costa extends approximately two-thirds the distance between tips of R_{4+5} and M_1 ; crossvein r-m bare. Vein R_1 is one-half to three-fourths longer than r-m and ends slightly beyond a level with tip of Cu_1 and at about apical four-fifths of vein M_{1+2} . M_{1+2} about one-third longer than M_2 (fig. 1a). $M_{3+4} + Cu_1$ about half as long as base of M.

Abdomen: Brown, covered with brown to black setae, the conjunctiva are pale. The ninth tergum is about as wide as long, is broadest at base and gradually tapered to a rounded apex; the setae are rather evenly distributed (fig. 1b). Genitalia: The ninth sternum is short and broad, the basistyli are nearly as broad as long (not counting apical lobe) and each is produced at apex into a moderately strong obtuse lobe extending about two-fifths the length of the clasper. Claspers very broad and short, about two-thirds as wide as long and with four short, stout, spines in a clump at the apex (fig. 1c).

Length: body 1.5–1.7 mm.; wings 1.4–1.5 mm.

Female. The females have not been associated with the males.

Holotype male and two male paratypes, Waikane, Oahu, September 4, 1927, ex dead *Xanthoxylum*, 2,200 ft., E. H. Bryan, Jr. One male specimen is on hand which seems to fit here but is aberrant, collected at the B. P. Bishop Museum, Honolulu, December 11, 1952, C. P. Hoyt.

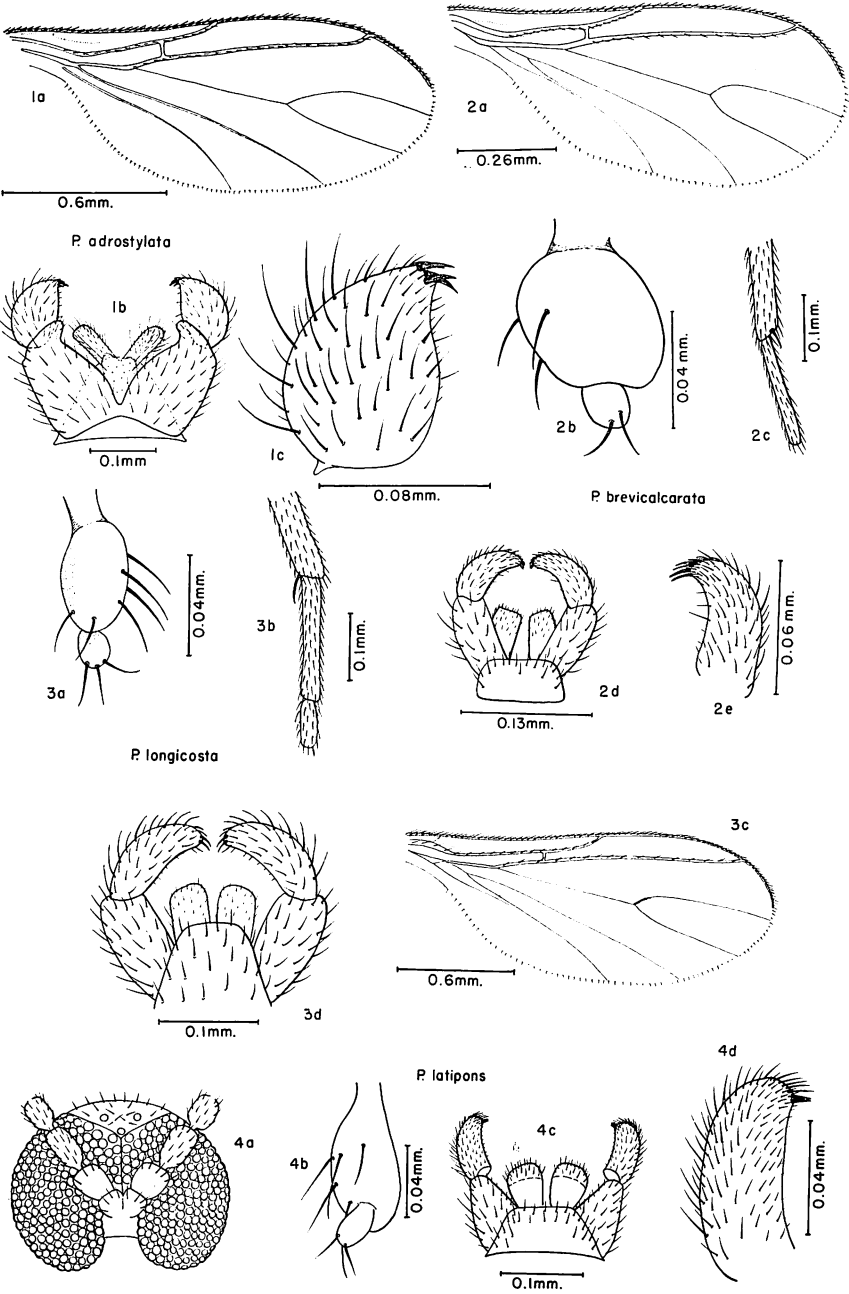
Type (no. 2483) and the aberrant specimen returned to the Bernice P. Bishop Museum. The paratypes are being deposited in the collections of the U.S. National Museum and the University of Hawaii.

Plastosciara (Cosmosciara) brevicealcarata, new species (figs. 2a–e)

This species is distinguished from other known *Cosmosciara* by the very short tibial spurs and by the genitalia of the male, as described and figured below. The male claspers are more slender and the tergum much broader than in the other Hawaiian species; the tergum has setae only along the posterior margin. The wing venation also differs from that of the other Hawaiian species as discussed below.

Male. Head: Two rows of facets over most of the eye bridge, the bridge is interrupted in the middle by a distance equal to two or three eye facets. First segment of palps globular, the second tiny, a little longer than wide and with a pair of setae at the apex (fig. 2b). Antennae brown tinged with yellow. The flagellar segments, excluding the first and last and not counting the attenuated portions, are one-half longer than wide; the narrow necks of the segments are one-third as long as the nodes.

Thorax: Dark brown to black, halteres tinged with yellow. Scutellum with a pair of rather strong marginal bristles. Dorsocentral and marginal bristles rather well developed on mesonotum, acrostichals lacking or very few. Legs:



Largely yellow, tinged with brown on the tarsi and tibiae. The hind tibiae are two and one-half times longer than the basitarsi. The tibial spurs are not quite equal in length to the diameter of the tibia (fig. 2c). Wings: The costa extends about two-thirds the distance between tips of R_{4+5} and M_1 . Vein R_1 ends slightly before a line drawn from the apex of Cu_1 and near the middle of M_{1+2} . R_1 about two times longer than r-m and the latter only half as long as the base of M. Crossvein r-m bare or with but one or two setae. M_{1+2} slightly longer than M_2 . The base of $M_{3+4} + Cu_1$ very faint and about one-third as long as the base of M. The first anal vein appears to fuse with Cu_1 just before a point opposite the base of M_{1+2} (fig. 2a).

Abdomen: The sclerites are brown, the conjunctiva are yellow. Genitalia: Yellow-brown. The claspers are two and one-half times longer than wide, slightly curved on inner margin and with three to five closely placed sub-apical and apical spines, as in fig. 2e. The ninth tergum is one-half broader than long and has setae only on the posterior portion (fig. 2d).

Length: body, 1.3 mm.; wings, 1.1 mm.

Female: Flagellar segments about as long as wide, not counting the attenuated portions. Otherwise fitting the description of the male, except for genital characters.

Holotype male, Honolulu, Oahu, collected on window at B. P. Bishop Museum, Dec. 6, 1952, C. P. Hoyt. Allotype female, same data as type, April, 1952, A. Suehiro. Eight male and thirty female paratypes; OAHU: same data as type and allotype; Honolulu, on windows and at light, University of Hawaii campus, Dec., 1952, to Mar., 1954, D. E. Hardy, M. S. Adachi; Mt. Tantalus, Aug., 1952, D. E. Hardy; Kuliouou, Feb. 7, 1953, C. P. Hoyt. Also several dozen additional specimens are preserved in alcohol. Most of the specimens have been taken indoors.

Type (no. 2481), allotype and a series of paratypes are in the B. P. Bishop Museum. The remainder are being deposited in the following collections: U.S. National Museum, Hawaiian Sugar Planters' Association and the University of Hawaii.

***Plastosciara (Cosmosciara) longicosta*, new species (figs. 3a-d)**

Differing from *P. adrostylata*, n. sp., by having the male claspers two times longer than wide, the apical spines stronger and not densely clumped. The ninth sternum is not so distinctly lobate on the hind margin and the other

FIG. 1. *Plastosciara adrostylata*, n. sp. a, wing; b, male genitalia, ventral view; c, clasper of male.

FIG. 2. *Plastosciara brevicarata*, n. sp. a, palp of male; b, apex of hind tibia and basitarsus; c, wing; d, male genitalia, dorsal; e, male clasper.

FIG. 3. *Plastosciara longicosta*, n. sp. a, wing; b, palp of male; c, hind tibia and two basal tarsal segments; d, male genitalia, dorsal.

FIG. 4. *Plastosciara latipons*, n. sp. a, head of male; b, palp of male; c, male genitalia, dorsal; d, clasper of male.

structures of the genitalia are differently developed (fig. 3d). Also the costa extends about four-fifths the distance between the tips of R_{4+5} and M_1 rather than two-thirds the distance; the r-m crossvein is setose over most, or all, its length, rather than bare, and the flagellar segments of the antennae are longer than wide.

Male. Head: Antennae brown, tinged with yellow, the flagellar segments are about one-half longer than wide. The basal segment of each palp is oblong, a little over half again as long as wide. The second is about one-fourth as long as the swollen portion of the second and has three setae at apex (fig. 3a). The eye bridge contains two rows of facets and is interrupted on the front for a distance equal to two facets.

Thorax: Brown to black, sometimes tinged with rufous. Halteres with pale stems and dark knobs. Acrostichal setae present on anterior half of mesonotum. Legs: Largely yellow, tarsi and tibiae sometimes discolored with brown. Spurs of hind tibiae about one-half longer than the diameter of the tibia (fig. 3b). Hind basitarsi about two-fifths as long as the tibiae. Wings: Costa extending four-fifths the distance between the tips of R_{4+5} and M_1 . R_1 one-half longer than r-m ending about opposite the apex of Cu_1 and at about the apical three-fourths of M_{1+2} . Crossvein r-m about equal to base of M. $M_{3+4} + Cu_1$ about half as long as M (fig. 3c).

Abdomen: The sclerites are brown covered with dark hairs, the conjunctiva are pale. The ninth tergum is about as long as wide and rather truncate at apex (fig. 3d). Genitalia: The claspers are two times longer than wide, blunt at apex and with two rather strong subapical spines and a row of strong setae along the ventral surface.

Length: body, 1.5 mm.; wings, 1.35 mm.

Female. Fitting the description of the male except that the sclerites of the abdomen are more yellow-brown, also the thorax is more distinctly yellow to rufous tinged.

Holotype male and allotype female, Halawa Ridge, Oahu, Nov. 24, 1952, ex moss, C. P. Hoyt. About 50 paratypes, predominantly females; OAHU: same data as type; Manoa Valley, Jan., 1955, ex rotting log, M. Adachi; Mt. Tantalus, reared from rotten wood, Aug., 1955, D. E. Hardy; Honolulu, on window and at light, Dec., 1952—May, 1955, D. E. Hardy; Mokuleia, Dec., 1952, C. P. Hoyt; Peahina (Peahinaia?), Jan. 17, 1953, C. P. Hoyt; and Pupukea trail, no date given, C. P. Hoyt. A series of thirteen females which apparently belong here are in the B. P. Bishop Museum from Alakai Swamp, Kauai, June, 1917, C. N. Forbes. They have the thorax and abdomen entirely rufous or yellow, with no dark markings. Also, one female from Puu Kukui, Maui, 4,500 ft., June, 1954, M. Tamashiro, seems to belong here; it has the facets in the eye bridge reduced, however, to one row. These specimens are not being designated as paratypes.

Type (no. 2482), allotype and a series of paratypes are in the B. P. Bishop Museum. Paratypes are being deposited in the following collections: U.S. National Museum; British Museum (Nat. Hist.); Hawaiian Sugar Planters' Association; University of Hawaii.

Plastosciara (Plastosciara) latipons, new species (figs. 4a-d)

This species differs from any of the known species of *Plastosciara* (*Plastosciara*) by having the male claspers three times longer than wide with no strong spines on inner margin.

Male. Head: Eye bridge made up of five rows of facets and occupying the entire area between the antennae and the lower ocellus (fig. 4a). The eyes are sparsely haired. Antennae brown, the nodes of the flagellar segments, except at base and apex, are one-third longer than wide. The first segment of the palp is oblong, the swollen portion is two times longer than wide and has three or four strong setae above. The second segment is less than one-fifth as long as the first and has three setae at its apex (fig. 4b).

Thorax: Entirely brown, tinged with yellow in the ground color. Halteres with pale stems and dark knobs. Dorsocentral and marginal setae strong on mesonotum, acrostichals lacking. Scutellum with two rather strong and several weak setae on hind margin. Legs: Chiefly yellow, tibiae and tarsi tinged with brown. Spurs of hind tibiae just slightly longer than the diameter of the tibia. Posterior basitarsi about two-fifths as long as the tibiae. Basitarsi of front and middle legs about one-third as long as the tibiae. Wings: Costa extending about two-thirds the distance to apex of M_1 . Vein R_1 equal in length to r-m crossvein and also approximately equal to the base of M . The base of $M_{3+4} + Cu_1$ is about one-third as long as the base of M .

Abdomen: The sclerotized portions are dark brown, the conjunctiva pale. The sclerites are covered with short brown setae. The ninth tergum is nearly three times wider than long and most of the setae are located near the posterior margin (fig. 4c). Genitalia: The claspers are three times longer than wide, rather parallel-sided and have two (or possibly three) closely placed subapical spines plus numerous hairs (fig. 4d).

Length: body, 1.6 mm.; wings, 1.4 mm.

Female unknown.

Holotype male, taken in a light trap operated by the Hawaiian Sugar Planters' Association at Ewa, Oahu, April, 1955. Paratypes, three males, same data as type.

Type (no. 2484) in the B. P. Bishop Museum. The paratypes are distributed among the following collections: U.S. National Museum, Hawaiian Sugar Planters' Association, and the University of Hawaii.

Sciara (Leptosciara) hawaiiensis, new species (figs. 5a-c)

This species seems to be more closely related to *Sciara distigma* Edwards, from Fiji, than to any other *Sciara* known to me. That species differs, however, by having the mesonotum shining orange with a pair of oval, black, widely separated, spots at about the middle and by having the hairs on the thorax small and inconspicuous (this may be a *Sciara sens. str.*). In Edwards' key to the Oriental species *S. hawaiiensis* runs to *Phorodonta pubericornis* Edwards (JOURN. FED. MAL. STATES MUS. 14:20, 1928) but the claws are simple, not toothed, the male antennal segments are not covered with long pubescence and the constrictions between the segments are not unusually long. *Sciara dives* Johannsen, from California, and *S. vicina* Johannsen, from New York, are probably *Leptosciara*, but they are black species with very differently developed genitalia.

S. (Leptosciara) hawaiiensis is best differentiated by the predominantly rufous thorax, the elongate third palpal segment and by the genital characters.

Male. Head: Eyes black, sparsely haired. Occiput brown, face and area around antennal bases brownish yellow. Scape and pedicel bright yellow, flagellum brown to black; flagellar segments rather elongate, about three times longer than wide. Eye bridge containing four rows of facets. Palps yellow (fig. 5a), the third segment is long and slender, rather parallel-sided, at least five times longer than wide and two times longer than the second segment. The second is about two times longer than wide. The basal segment is swollen apically, constricted at base and has no sensory structure.

Thorax: Predominantly rufous (orange to yellow in some specimens), tinged with brown on the pleura, hind portion of mesonotum and disc of scutellum; these portions are also lightly gray pollinose. The coloration of the mesonotum may be variable; a series on hand from Kula Pipe Line, Maui, and Keanakolu, Hawaii, have it ranging in coloration from brownish red to dark brown, nearly black. They seem identical with typical specimens, however, in regard to structural details. Each pleuron usually has a distinct brown band extending across it longitudinally at level of upper third of sternopleura; the lower portion of the sternopleuron is yellow. Eight to ten pairs of dorsocentral bristles are developed, the hind pair is the strongest and is slightly larger than the postalar or supraalar bristles. There are also eight or more bristles in a row along the lateral margins of the mesonotum. The hind margin of the scutellum has six strong bristles. Legs: Largely yellow, with brown to yellow-brown tibiae and brown tarsi. The spurs are yellow, those of the hind legs are rather large and are approximately one-third as long as the basitarsi. The hind tibiae have a row of rather strong posterodorsal bristles on apical two-thirds. Wings: Vein R_1 ends near the middle of the front margin of the wing, well before a point opposite the forking of M_1 and 2. R_1 is approximately five times longer than R_{2+3} . Vein R_{4+5} ends at

a point about opposite the end of M_2 and the costa extends about two-thirds the distance between the tips of R_{4+5} and M_1 . The stem of M_{1+2} is present but is very faint. Veins M_1 , M_2 , M_{3+4} , the apical part of M_{1+2} and the r-m crossvein are setose (fig. 5b).

Abdomen: Chiefly brown on the dorsum, yellow on the venter, the genitalia and on the hind margins of the terga, especially one to four. In some specimens the abdomen is largely dark brown to black on the dorsum. Genitalia: Largely yellow, claspers discolored with brown and sometimes a brownish tinge on the ninth segment. The ninth tergum is short, not much over half as long as the sternum. The claspers are slender, nearly parallel-sided, about three to four times longer than wide; each has two short apical spines, four rather strong subapical and two small spines on inner margin near apical third of the clasper (fig. 5c).

Length: body and wings, 1.8–2.2 mm.

Female: Very similar to the male, except for sexual characters. The mesonotum and scutellum tend to be paler in color, often entirely orange or yellow. The spurs of the hind tibiae are shorter, being about one-fourth as long as the basitarsi.

This is a rather common species in the mountains from 1,500 to 5,000 feet elevation and has been reared from rotting wood and *Freycinetia* (ieie) on several occasions. It is found at lower elevations (in light trap collections) but in fewer numbers than in the mountains.

Holotype male and allotype female, Mt. Tantalus, Oahu, reared from rotting wood, Nov., 1953, and Feb., 1953, D. E. Hardy. Paratypes, about 75 individuals (about 50 females and 25 males) from the following localities: OAHU: same as type; Maunawili, Feb., 1953, D. E. Hardy; Pupukea trail, 1,500 ft., Dec., 1952, D. E. Hardy; Manoa Valley, Apr., 1935; Waialae Iki, Mar. 21, 1920, E. H. Bryan, Jr.; Kuliouou Val., 1,500 ft., Feb. 7, 1953, C. P. Hoyt; Poamoho trail, May, 1943, 1,700 ft., D. E. Hardy; Palolo, Oct., 1918, O. H. Swezey; Mt. Kaala, Jan., 1922–Apr., 1952, O. H. Swezey, D. E. Hardy; and Pauoa Flats, Mar., 1935, O. H. Swezey. MAUI: Haleakala, Mar., 1932, O. Bryant; Kula Pipe Line, 4,500–5,000 ft., Mar.–Apr., 1932, O. Bryant; Makawao, June, 1952, at light, D. E. Hardy, M. Tamashiro; Puu Kukui, 3,000–4,500 ft., June, 1953, D. E. Hardy; Waihee, June, 1952, at light, D. E. Hardy, M. Tamashiro; Makamakaole Valley, June, 1952, and Paliku, Haleakala Crater, June, 1952, D. E. Hardy. KAUAI: Kawaikoi Stream, 3,700 ft., Aug., 1953, D. E. Hardy; Kalalau Lookout, 4,000 ft., Aug., 1953, D. E. Hardy; Halemanu swamp, Aug., 1953, D. E. Hardy; Hanalei Valley, July, 1952, D. E. Hardy; Nualolo Valley, July, 1953, 3,400 ft., D. E. Hardy and Awaawapuhi, June, 1922, E. H. Bryan, Jr. HAWAII: Pauahi, 4,300 ft., Aug., 1952, W. C. Mitchell and D. E. Hardy; Bird Park, Kilauea, July, 1953, D. E. Hardy; near Kawaina, Kona, 3,000 ft., July, 1953, D. E. Hardy; Upper Olaa rain forest, July, 1953, D. E. Hardy; Olaa flume road, July, 1953, D. E.

Hardy; Hawaii Nat. Park, Mar., 1954, R. Namba; Keanakolu, Hawaii, 7,000 ft., Oct. 29, 1952, C. P. Hoyt. MOLOKAI: Waialua Beach, July, 1952, M. Tamashiro; Kalae, Mar., 1954, R. Namba; and Kamiloloa, 3,200 ft., Dec. 20, 1925, E. H. Bryan, Jr. LANAI: Lanaihale, 3,200 ft., June 2, 1953, D. E. Hardy. I have numerous other specimens in alcohol from many localities on Oahu.

Type (no. 2491), allotype and a series of paratypes in the B. P. Bishop Museum. The remainder are being distributed among the following collections: U.S. National Museum, British Museum (Nat. Hist.), Hawaiian Sugar Planters' Association, and the University of Hawaii.

Sciara (Lycoriella) hoyti, new species (figs. 6a-c)

This species resembles *S. hardyi* Shaw but the palps are short and the male genitalia are very different, as shown in figure 6c and as discussed below. The females are difficult to separate from those of *S. prominens*, n. sp.; the most reliable characters for differentiating them seem to be the presence of a dense clump of sensory setae on the palps and the short costa and subcosta in *hoyti*. The costa extends just slightly beyond the middle of the distance between the tips of veins R_{4+5} and M_1 and Sc ends about opposite the forking of M_{3+4} and Cu_1 , well before the base of the r-m crossvein. In *prominens* the costa extends about four-fifths the distance to M_1 and the subcosta is rather well developed and extends to the middle of crossvein r-m. Also in *hoyti* the wings are less dusky fumose and vein R_1 is shorter, about equal or but slightly longer than r-m crossvein, rather than one-half longer as in *prominens*.

Male. Head: Antennae entirely brown, the flagellar segments are two to three times longer than wide. Palps short, the first segment has a slightly depressed area containing a clump of a dozen or more short sensory setae in the middle of the dorsal surface (fig. 6a); the second segment nearly round; the third two times longer than wide but scarcely one-third to one-half longer than the second. Three rows of eye facets are present in the eye bridge.

Thorax: Entirely dark brown to black, halteres tinged with yellow. Legs: All yellow, except for brown discolorations on the coxae and tarsi. Spurs of hind tibiae about one-third longer than the width of the tibiae. Wings: Vein R_1 short just slightly longer than r-m crossvein (fig. 6b). Base of $M_{3+4} + Cu_1$ slightly less than one-half as long as base of M. Vein M_2 just slightly longer than M_{1+2} .

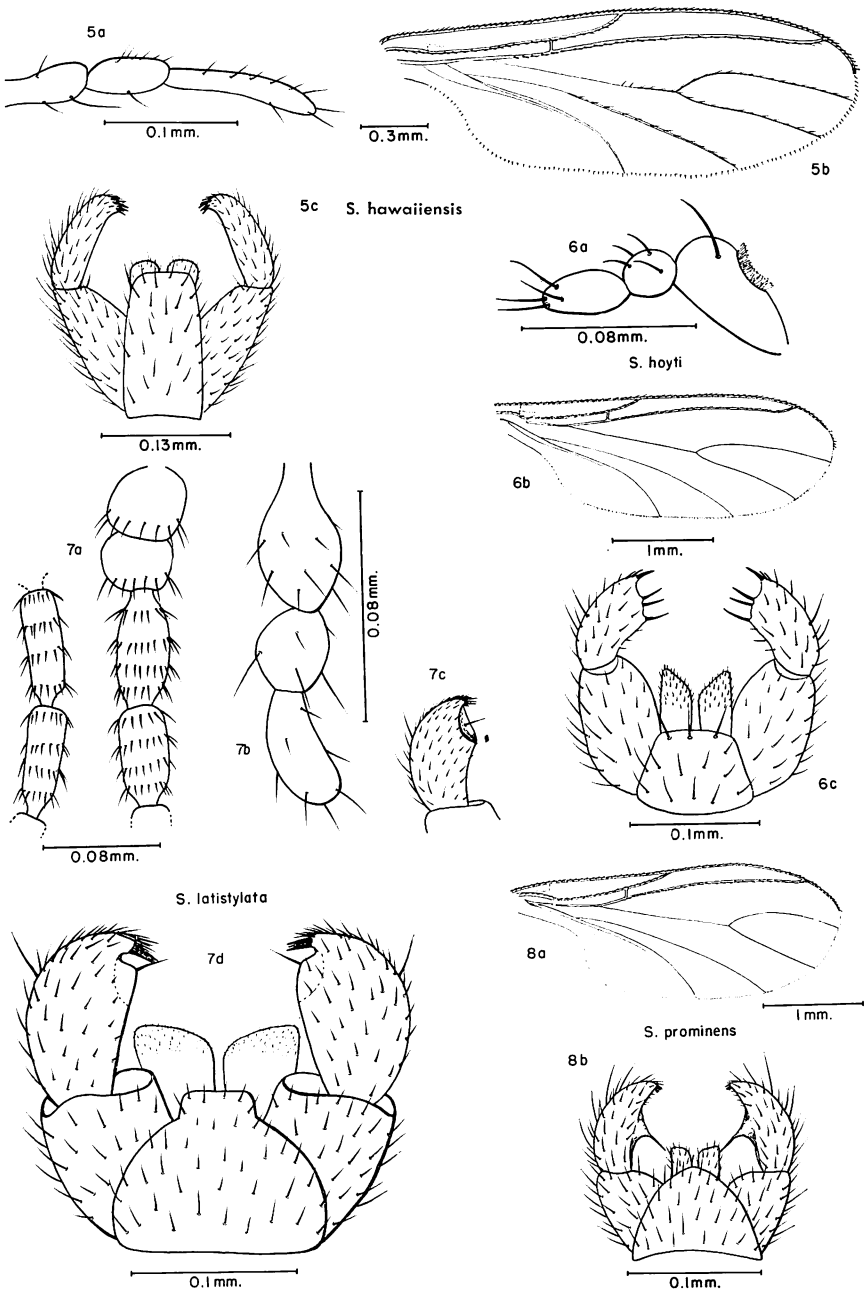
Abdomen: Entirely brown. Ninth sternum nearly two times wider than long. The tergum is rather quadrate in shape. Genitalia: claspers broad, about

FIG. 5. *Sciara hawaiiensis*, n. sp. a, palp of male; b, wing; c, male genitalia, dorsal.

FIG. 6. *Sciara hoyti*, n. sp. a, palp of male; b, wing; c, male genitalia, dorsal.

FIG. 7. *Sciara latistylata*, n. sp. a, antenna of male; b, palp of male; c, clasper of male; d, male genitalia, dorsal.

FIG. 8. *Sciara prominens*, n. sp. a, wing; b, male genitalia, dorsal.



two times longer than wide, with three closely grouped spines at apex and three moderately strong, distinctly spaced, spines on under side at about apical two-thirds (fig. 6c).

Length: body, 1.8 mm.; wings, 1.5 mm.

Female. The antennal segments are shorter than those of the male, those of the flagellum are just slightly longer than wide. Two rows of facets are in the eye bridge. Otherwise as described above except for genital characters.

Length: body, 1.7–2.0 mm.; wings, 1.5 mm.

Holotype male, Keanakolu, N. slopes of Mauna Kea, Hawaii, 5,200 ft., Oct. 29, 1952, C. P. Hoyt. Allotype female, same general area and date except at higher elevation on Mauna Kea, at Kaula Gulch, 7,000 ft., C. P. Hoyt. Three paratype males, same data as type, Oct. 28, 1952, "reared from moss," C. P. Hoyt.

This species has been named for Dr. C. P. Hoyt who did preliminary studies on this group in Hawaii and who collected much of the material used in my study of the Hawaiian sciarids.

The type (no. 2493) and allotype are in the B. P. Bishop Museum. The paratypes are being deposited in the collections of the U.S. National Museum, Hawaiian Sugar Planters' Association, and the University of Hawaii.

Sciara (Lycoriella) latistylata, new species (figs. 7a–d)

This species strongly resembles *S. hardyi* Shaw until the male genital characters are studied. It is distinguished from other Hawaiian sciarids by the distinctive shape of the clasping structures (fig. 7d).

Male. Head: Antennae all dark brown, flagellar segments about three times longer than wide, not including constrictions between nodes, and with four distinct whorls of setae on each segment (fig. 7a). Eye bridge made up of three or four rows of facets. No sensory structure on the first segment of the palp. The second segment is oval and the third is rather slender, about four times longer than wide and one and two-thirds to two times longer than the second (fig. 7b).

Thorax: Dark brown to black, halteres yellow-brown. Dorsocentral and marginal bristles on the mesonotum, also acrostichal hairs, well developed. Scutellum with six to eight moderately strong bristles on the margin. Legs: Yellow, except for some brown discoloration on the coxae. The tibial spurs are well developed, those of the hind legs are about one and two-thirds longer than the width of the tibia. The hind basitarsi are nearly half as long as the tibiae. The hind tibiae each have a row of short, erect, posterodorsal bristles on the apical two-thirds. Wings: Vein R_1 is one-third to one-half longer than the r-m crossvein. Vein M_{1+2} is two-fifths longer than M_2 .

Abdomen: Entirely dark brown. Genitalia: Ninth sternum twice as wide as long. Claspers very broad, equal in width or slightly wider than the apices of the lobes of the sternum (basistyli). The inner surfaces are markedly

concave on the upper half and one strong spine arises from near the ventral edge of the concavity at the apical two-thirds of the clasper; there are also four or five rather well developed subapical spines present (fig. 7c). The claspers are also equal in length to the sternum (fig. 7d).

Length: body, 1.7–1.8 mm.; wings, 1.4–1.5 mm.

Female unknown.

Holotype male, Kuliouou, Oahu, 1,500 ft., Feb. 7, 1953, C. P. Hoyt. Paratypes, five males; Maunawili, Oahu, Feb., 1953, D. E. Hardy; and Ewa, Oahu, at light, April, 1955, J. W. Beardsley.

Type (no. 2490) returned to the B. P. Bishop Museum. Paratypes are in the following collections: U.S. National Museum, Hawaiian Sugar Planters' Association and the University of Hawaii.

Sciara (Lycoriella) prominens, new species (figs. 8a–b)

Fitting in the *hardyi* complex of species because of the dark coloration but the male genitalia are very different from any other *Sciara* in our fauna (fig. 8b). The females resemble those of *S. hoyti*, n. sp.; for differentiating characters see discussion under that species.

Male. Entirely dark brown to black except for the appendages. Head: The eye bridge contains three to four rows of facets. The palps are dark colored and rather short. The first segment lacks a sensory structure and is strongly attenuated at base. The second is oval, just slightly longer than wide. The third is two times longer than wide and one-half longer than the second. The antennae are all dark colored, the flagellar segments are about three times longer than wide, not including the constrictions between nodes.

Thorax: Dark brown to black on the dorsum, lighter brown on the sides. Halteres yellow-brown. Legs: Yellow, except for slight discolorations of brown on the coxae and tarsi. The spurs at the apices of the hind tibiae are almost two times longer than the width of the segment. Each hind tibia has a row of conspicuous erect, but short, setae on the apical two-thirds of the posterodorsal surface. The hind basitarsi are nearly one-half as long as the tibiae. Wings: Faintly brownish tinged. Vein R_1 one-half longer than the r-m crossvein. The fork of M_1 and 2 is situated in the outer two-thirds of the wing and the stem of these veins is distinct and two-thirds longer than M_2 . Vein M_2 is just slightly curved at its base and is almost straight in line with M_{1+2} . The costa extends three-fourths to four-fifths the distance to M_1 (fig. 8a).

Abdomen: Entirely dark brown. Genitalia: Claspers about three times longer than wide and about equal in length to the ninth sternum; bearing a series of small spines along inner margin and at apex besides the large submedian spine (fig. 8b). The ninth tergum is gradually tapered and rounded at apex, it extends almost to apices of the basistyli (ninth sternum).

Length: body, 2.0 mm.; wings, 1.75–1.85 mm.

Female. The antennal segments are shorter than in the male and the eye bridge has just two rows of facets and are not completely joined in the middle of the vertex. The costa is slightly longer than in the male, extending four-fifths to five-sixths the distance to tip of M_1 , and M_{1+2} is about equal in length to M_2 .

Length: body, 2.2 mm.; wings, 2.4 mm.

Holotype male, Pupukea, Oahu, Dec. 27, 1952, C. P. Hoyt. Allotype female, Keanakolu trail, Hawaii, 4,500 ft., Oct. 28, 1952, C. P. Hoyt. Paratypes, six males, eighteen females; OAHU: same as type; Halawa trail, Dec. 10, 1952, C. P. Hoyt; Pupukea trail, no date, C. P. Hoyt; HAWAII: Keanakolu, Kaluakauka, 5,000 ft., Oct. 30, 1952, C. P. Hoyt; Keanakolu, Kaula Gulch, 7,000 ft., Oct. 29, 1952, C. P. Hoyt; Bird Park, Kilauea, July, 1953, D. E. Hardy; and Akaka Falls, Aug., 1952, D. E. Hardy. Also a series of females in alcohol from the type locality.

Type (no. 2492), allotype and nine paratypes in B. P. Bishop Museum. Paratypes deposited in the collections of the U.S. National Museum, the University of Hawaii and the Hawaiian Sugar Planters' Association.

Sciara (Lycoriella) solispina, new species (figs. 9a-c)

Fitting in the complex of species which have the body and antennae entirely dark brown to black. It differs from all of the known *Sciara* from Hawaii by the male claspers terminating in a single strong spine (fig. 9c).

Male. Head: Eyes bare, eye bridge narrowed to three rows of facets. Antennae entirely dark colored. The flagellar segments are approximately three times longer than wide; the attenuated portions are short, about one-sixth to one-seventh as long as the remainder of the segment. The palps are brown tinged with yellow; the basal segment has a large conspicuous sensory structure near the apex. This is rather raspberry-like in shape and has a clear oblong or oval spot in middle near apex. The third segment is rather short, slightly less than one-half longer than the second (fig. 9a).

Thorax: Entirely dark colored with no distinct vittae on the mesonotum. Scutellum with six to eight moderate sized setae on the margin. Dorsocentral and marginal hairs rather well developed on the mesonotum, also a few scattered acrostichal setae present. Legs: The spurs of the middle and hind tibiae are approximately equal in length; they are about one-third longer than the diameter of the tibia. The hind tibiae have a row of moderately strong, erect, posterodorsal setae. The hind basitarsi are slightly less than half as long as the tibiae. Wings: Vein R_1 just slightly longer than the r-m crossvein, the latter is bare. The costa is produced about three-fourths the distance to the tip of vein M_1 . Vein M_{1+2} is approximately equal in length to vein M_2 (fig. 9b).

Abdomen: The ninth tergum is narrow, rather elongate, about two times longer than wide and with scattered setae on the apical half and on the sides.

Genitalia: The claspers are rather slender, the inner margin is straight; each terminates in a strong bristle and there are numerous rather strong setae along the ventral margin and around the apex (fig. 9c).

Length: body, 2 mm.; wings, 1.5 mm.

Female. Fitting the description of the male except for sexual characters and except that the antennal segments of the specimen at hand are about one and one-half times longer than wide and vein R_1 is one-third to one-half longer than r-m.

Length: body, 3 mm.; wings, 2.5 mm.

Holotype male, Kaula Gulch, north slopes of Mauna Kea, Hawaii, 7,000 ft., Oct., 1952, D. E. Hardy. Allotype female, Keanakolu, Hawaii, 5,000 ft., Oct., 1952, D. E. Hardy. One paratype male, same data as allotype, C. P. Hoyt.

Type (no. 2489) and allotype in B. P. Bishop Museum, paratype in collection at the University of Hawaii.

***Sciara (Lycoriella) spatitergum*, new species (figs. 10a-c)**

This is the species which Shaw ("PROCEEDINGS," 14:492, fig. 4, 1952) figured as *S. laffooni* Shaw, "described from two males from light trap... in Honolulu." I have studied the type and the paratype and found these are both specimens of *S. garretti* Shaw (= *S. johannseni* Shaw nec *johannseni* Enderlein). They are mounted on paper points but the diagnostic characters are obvious, and I have made a slide mount of the paratype. Another male specimen was in the collection returned by Shaw; it consists of one wing and the abdomen mounted on a slide. This specimen was not designated as a paratype but is obviously the specimen figured by Shaw as *laffooni*. This is a good species but the name *laffooni* is not available for it since the type is a synonym.

This species resembles *S. garretti* Shaw in coloration and mesonotal markings. It is distinguished by the lack of a sensory structure on the first segment of the palps (fig. 10a), the all yellow lower half of pleura and by the shape and development of the genitalia (fig. 10c). It also closely resembles *S. radicum* Brunetti but the genitalia are very different.

The scape, pedicel and sometimes the basal segments of the flagellum are yellow, antennae otherwise brown. The third segment of the palp is about one-half longer than second (fig. 10a). The legs are yellow, the hind tibiae have a row of rather well developed short, erect, posterodorsal bristles on the apical two-thirds. Vein R_1 is about one-half longer than r-m. The base of M_{1+2} is faint and is approximately equal in length to M_2 . The mesonotum is largely yellow, brown on the sides and sometimes on hind portion in front of scutellum and with a brown vitta down each dorsocentral area from anterior margin, nearly converging before scutellum, and a rather faint (often lacking) vitta down the middle of the mesonotum. The sternopleura, hypopleura, and metapleura are yellow, the remainder of the pleura are brown.

The genitalia are yellow and the very large tergum is readily visible *in situ*. Each dististyle has one apical and four subapical spines (fig. 10b) very much like *hardyi*, but the ninth tergum is broadly expanded and much greater developed (fig. 10c.).

Length: body and wings, 1.4–1.5 mm.

This has been bred from decaying plants of various kinds, including sugar cane and bananas. It is common at lights and has been collected on Oahu, Maui, and Hawaii.

Holotype male, Honolulu, Oahu at light, Oct., 1952, C. P. Hoyt. Allotype female, University of Hawaii campus, at light, May, 1952, D. E. Hardy. About 75 paratypes, sexes about evenly distributed. Many from Honolulu taken from Feb., 1910, to Nov., 1955, some reared from rotting sugar cane, some from sweet potatoes and some from coffee grounds. OAHU: Hickam Field, at light, Mar., 1955; Ewa, at light, Apr.–May, 1953, J. W. Beardsley; Maunawili, Feb., 1953, D. E. Hardy; Waialua, at light, July, 1953; Manoa Valley, Nov., 1951, M. S. Adachi. MAUI: Waihee, at light, July, 1952, M. Tamashiro; Makamakaole Valley, June, 1953, D. E. Hardy; Keanae, July, 1953, D. E. Hardy. MOLOKAI: Puu Kolekole, July, 1953, D. E. Hardy and M. Tamashiro; Maunawainui Valley, July, 1953, D. E. Hardy. HAWAII: Kaiholena Ridge, July, 1952, 2,300 ft., D. E. Hardy; Honokaa, July, 1953, D. E. Hardy; Kahuku Ranch, 3,000 ft., July, 1953, D. E. Hardy; near Pawaina, Kona, 3,000 ft., July, 1953, D. E. Hardy; and Upper Hamakua Ditch trail, Kohala Mts., O. H. Swezey.

Type (no. 2486), allotype and a series of paratypes in the B. P. Bishop Museum. The remainder of the paratypes distributed in the following collections: U.S. National Museum, British Museum (Nat. Hist.), Hawaiian Sugar Planters' Association and the University of Hawaii.

Scatopsciara (Uddmaniella) *nigrita*, new species (figs. 11a–d)

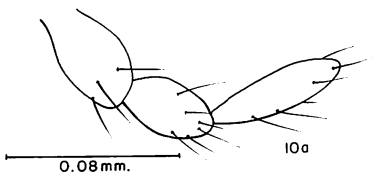
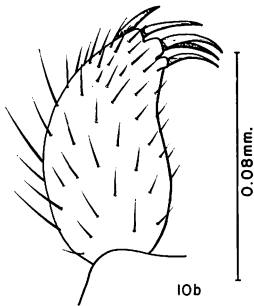
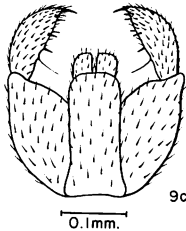
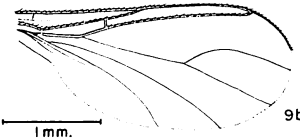
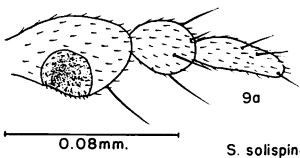
A small dark brown to black species apparently related to *S. unicalcarata* Edwards, from New Zealand. It differs (as compared with the original description) by being smaller, body 1.7 mm. (not 3 mm.); the tibial spurs being longer, about one-half longer than the width of the tibiae (not "about half as long as tibial diameter"); the r-m crossvein being over two times longer than basal section of M (not "about as long") and veins M₁ and 2 divergent toward wing tip (not "straight and parallel"). In Frey's key to the species from Northern Europe (NOT. ENT. 27:69, 1948) it runs in the section with

FIG. 9. *Sciara solispina*, n. sp. a, palp of male; b, wing; c, male genitalia, dorsal.

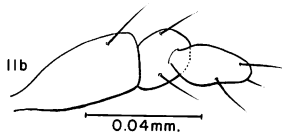
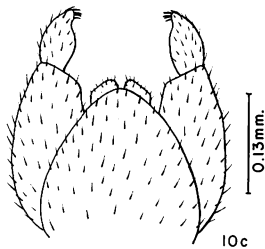
FIG. 10. *Sciara spatitergum*, n. sp. a, palp of male; b, clasper of male; c, male genitalia, dorsal.

FIG. 11. *Scatopsciara nigrita*, n. sp. a, antenna of male; b, palp of male; c, wing; d, male genitalia, dorsal.

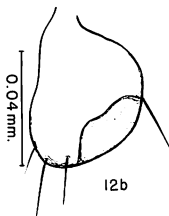
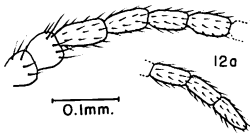
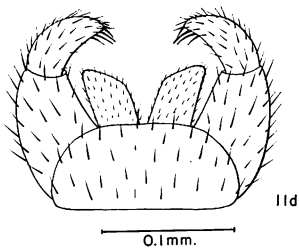
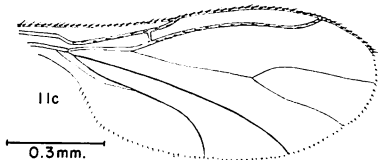
FIG. 12. *Scythropochroa magnisensoria*, n. sp. a, antenna of male; b, palp of male; c, wing; d, male genitalia, ventral.



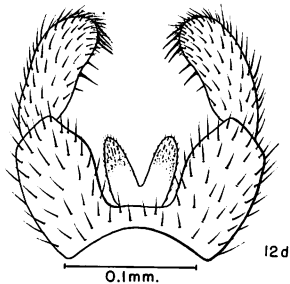
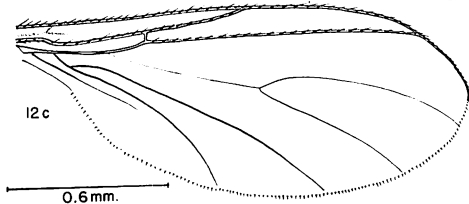
S. spatitergum



S. nigrita



S. magnisensorio



S. calamophila Frey and *leucoptera* Frey but it is very different from either of these species.

Male. Head: Antennae entirely dark colored, the flagellar segments, not counting the constrictions, are one-half longer than wide (fig. 11a). First segment of palps nearly two times longer than wide and lacking a sensory structure. Second segment just slightly longer than wide and third just a little longer than second and about one-half longer than wide (fig. 11b). Eyes sparsely haired, eye bridge four facets wide.

Thorax: Dark brown to black, mesonotum with a narrow rufous to yellow line down each dorsocentral row. Halteres dark brown. Two strong bristles at apex of scutellum. Dorsocentral bristles well developed. Legs: The tibiae and tarsi are strongly tinged with brown to black and the hind femora are discolored with brown; the other segments are pale. The single spur of each hind tibia is one-half longer than the width of the tibia and the basitarsus is about two-fifths the length of the tibia. Wings (fig. 11c): Dusky fumose. R_1 very short, equal or slightly shorter than r-m crossvein and entering the costa near the middle of M_{1+2} . Crossvein r-m bare, or with but one or two bristles and approximately half as long as the basal section of M. Vein R_{4+5} curves upward slightly just before the apex. M_{1+2} is about equal in length to M_1 and the costa extends two-thirds the distance to the tip of M_1 .

Abdomen: Dark brown to black. The ninth tergum is twice as broad as long, its posterior margin is gently convex. Genitalia: The ninth sternum is deeply concave on its hind margin, cleft nearly to the base of the segment. The claspers are two times longer than wide, are somewhat tapered at the apex and armed with one moderately strong apical and four or five subapical spines (fig. 11d).

Length: body, 1.6–1.7 mm.; wings, 1.3–1.4 mm.

Female: Fitting the description of the male except for genital characters and except that the eye bridge contains but three rows of facets and the base of M is two and one-half times longer than r-m. The allotype is slightly teneral and the thorax and abdomen are brown tinged with red, the humeral angles are yellow and a faint yellow vitta extends down each dorsocentral row.

Length: body, 2.0 mm. (measured to tip of extended abdomen); wings, 1.75 mm.

Holotype male, Palolo Valley, Oahu, Mar. 14, 1953, C. P. Hoyt. Allotype female, Honolulu, T. H., Apr. 7, 1925, ex rotten plumeria, O. H. Swezey. Twenty paratypes, five females and fifteen males; OAHU: same data as allotype and same locality; on window, Honolulu, Dec., 1954, M. S. Adachi; Maunawili, Jan.–Feb., 1953, 1,100 ft., C. P. Hoyt, and D. E. Hardy; Manoa Falls, Aug. 29, 1955, D. E. Hardy; Malamalama, Feb., 1919, E. H. Bryan, Jr.; Mokuleia, Kukuiala Val., Dec., 1952, C. P. Hoyt; Ewa, at light, Apr., 1955; Maunalani Ridge, Mar. 14, 1953, C. P. Hoyt; Mt. Tantalus, June, 1953,

D. E. Hardy; HAWAII: Hawaii National Park, Kilauea, June, 1953, D. E. Hardy.

Type (no. 2488), allotype and three paratypes returned to the B. P. Bishop Museum. The remainder are being deposited in the collections of the U.S. National Museum, the Hawaiian Sugar Planters' Association and the University of Hawaii.

***Scythropochroa magnisensoria*, new species (figs. 12a-d)**

This species fits in the group of *Scythropochroa* which have the base of vein $M_{3+4} + Cu_1$ shorter than the base of M_1 , rather than longer than as in the type, the Palaearctic species and *S. nitida* Edwards from New Zealand. It seems more closely allied to *S. samoana* Edwards than to any other species known to me. *S. samoana*, however, differs strikingly by being several times larger (body, 5.5 mm. rather than 1.5 mm.); being predominantly black colored, rather than rufous to brownish red; and the wing venation differs considerably. In *S. magnisensoria* vein R_1 is about half as long as R , not longer and ends well before the fork of M_{1+2} , not beyond fork; M_{1+2} is just slightly longer than M_2 , not 1.5 times longer and R_{4+5} ends slightly before level of tip of M_2 , not beyond.

Male. Head: The eye bridge is two facets wide over most of the vertex but is briefly interrupted on the upper portion by a space equal to the combined width of about three facets. Antennae yellow tinged with brown, the flagellar segments, not counting the short constrictions, are approximately two times longer than wide (fig. 12a). Each palp is short and thick, scarcely longer than wide, and with a very large sensory pit occupying nearly the entire apex (fig. 12b).

Thorax: Entirely rufous tinged lightly with brown. The halteres are yellow, discolored with brown at their apices. Legs: Yellow, tinged lightly with brown. The tibial spurs are yellow, their length is about equal to the diameter of the tibia. The posterior basitarsi are one-third as long as the tibiae. Wings: Slightly fumose. Vein R_1 one-half longer than r-m crossvein, the latter is devoid of bristles and is about three-fourths as long as the base of M . The costa extends about two-thirds the distance between the tips of R_{4+5} and M_1 . The basal section of vein $M_{3+4} + Cu_1$ is scarcely over one-third as long as the base of M (fig. 12c).

Abdomen: Brownish yellow, the conjunctiva pale colored. The ninth tergum is short and broad, it is nearly twice as wide as long. Genitalia: The claspers are a little over twice as long as wide with four subapical spines and two spines near median surface below, besides a row of strong bristles around the apex (fig. 12d).

Length: body and wings, 1.3–1.5 mm.

Female. Much like the male, the facets in the eye bridge are somewhat more sparse, often narrowed to a single row just before the blank space on

the vertex and the flagellar segments are about one-half longer than wide.

Holotype male, Kuliouou Valley, Oahu, Feb. 7, 1953, 1,500 ft., C. P. Hoyt. Allotype female, Opaepa, Oahu, Jan., 1953, C. P. Hoyt. Paratypes, twelve males and eight females from the following localities: OAHU: same as allotype; Maunawili, Feb., 1953, D. E. Hardy; Peahina (Peahinaia?), Jan. 17, 1953, C. P. Hoyt; Lanihuli, Feb. 18, 1920, E. H. Bryan, Jr.; MAUI: Puu Kukui, Apr., 1953, M. Tamashiro; Upper Hamakua Ditch trail, "on Lula palm" (loulou?), Oct. 4, 1929, R. R. Whitten; MOLOKAI: Puu Alii, July, 1953, D. E. Hardy; HAWAII: Kahuku Ranch, 3,000 ft., July, 1953, D. E. Hardy; 29 mi. Olaa, July, 1922, W. M. Giffard; LANAI: Lanaihale, 3,200 ft., June 2, 1953, D. E. Hardy. Also a series of about sixty alcohol specimens of both sexes from the latter locality and same data as allotype; also one female each, on paper points, from Hookomo, Hawaii, Aug. 9, 1935, *Sophora*, R. L. Usinger and Kaula Gulch, Keanakolu, Hawaii, 7,000 ft., Oct. 29, 1952, C. P. Hoyt. The latter have not been designated as paratypes.

Type (no. 2485), allotype and eight paratypes in the B. P. Bishop Museum. The remainder are being distributed among the following collections: U.S. National Museum, Hawaiian Sugar Planters' Association and the University of Hawaii.