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A REVISION OF THE CULICINE MOSQUITOES
OF INDIA.

Part VII.

THE LARVAE OF SOME SPECIES OF *STEGOMYIA* (THEO.)
THE LARVAE OF SOME SPECIES OF *FINLAYA* (THEO.)
THE LARVA OF *CHRISTOPHERSIOMYIA THOMSONI* (THEO.)
THE LARVA OF *MIMOMYIA CHAMBERLAINI* (LUDL.)
THE LARVA OF *AEDOMYIA CATASTICTA* (KNAB.)

BY

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THE LARVAE OF SOME SPECIES OF *Stegomyia* (Theo.)
GENERAL CHARACTERS OF THE KNOWN INDIAN SPECIES.

FINAL instar, or fourth stage. *Head* and *siphon* strongly chitinised, blackish or dark brown in colour. *Antenna* short, shaft smooth,* the tuft usually reduced to one small hair. *Mentum* or *labial sclerite* subtriangular, teeth moderate, and all of about the same size; the various species do not show any marked specialisation in the form of this plate. Thoracic and abdominal segments without long single bristles or conspicuous spines, the tufted hairs being usually normal, but there are in most species two pairs of *subventral thorn-like processes* on the thorax

* NOTE.—I have described the antennal shaft as smooth when spicules or points cannot clearly be seen under a two-thirds objective. In some species, to which this description applies, minute points or hairs can be made out under a higher power.

at the bases of tufted hairs. *Comb* of eighth abdominal segment always with large teeth, usually less than fifteen in number, and arranged in a single rank. *Siphon* short and stumpy, and only about twice the length of the diameter at the base. *Pecten* well developed, teeth with lateral denticles. *Siphonal hair tufts* always a single pair near the posterior border, and usually placed about midway between the base and apex. *Acus** of siphon absent or vestigial. *Anal segment*, dorsal plate almost completely enclosing the segment (*S. vittata* is a notable exception in this respect, as in several other details of structure); the more ventral pair of subdorsal hairs always long and single.

Stegomyia vittata (Bigot).

Larva, fourth stage or final instar, identified by the isolation method and described from skins cast at the time of pupation. As mentioned above the larva of this species differs in several details from those of other species in the genus.

Diagnostic characters.—One pecten tooth detached from the main rank and placed between the hair tuft and apex of siphon. Comb of eighth abdominal segment with 6 to 9 large teeth without lateral denticles. Antennal tuft of three hairs. Dorsal plate of anal segment small.

Description.—Antenna (Plate XXXIV, fig. 2) shaft with a few minute spicules, tuft of three hairs, arising slightly nearer the base than the apex. Subventral thoracic processes small, the point divided into several minute teeth. Comb of eighth abdominal segment of 6 to 9 large teeth (usually 8), without lateral denticles, arranged in one row but not always in a regular rank (Plate XXXIV, figs. 9 and 10). Siphon (Plate XXXIV, fig. 1) about twice the length of the diameter at the base. Pecten, 20 to 34 long pointed teeth with small basal lateral denticles (Plate XXXIV, figs. 5, 6, 7 and 8), one tooth detached from the main rank and lying between the hair tuft and apex of siphon. Hair tuft attached at a point three-quarters of the length of the siphon from the base. Anal segment, dorsal plate small and covering less than half the segment in side view; the more dorsal subdorsal hairs each of six branches; lateral hair single and short; anal papillae long and pointed, about twice the length of the anal segment; longest hairs of anal fan longer than the papillae.

* NOTE.—I have given this name to a small chitinous plate, occurring in several Culicine genera, attached to the base of the siphon on either side towards the posterior border (*vide* figures of larvae of *Finlaya* species in the plates accompanying this paper).

The larvae usually occur in domestic collections of water, but have been found in rock pools.

Stegomyia albopicta Skuse. (*scutellaris* Theo. nec. Walk.)

Larva, fourth stage or final instar, identified by the isolation method, and described from skins cast at the time of pupation.

Diagnostic characters.—Comb teeth without lateral denticles and much larger than the pecten teeth, antenna short and the tuft reduced to a single hair, subventral thoracic processes smaller than in *S. argentea* (*fasciata*), usually double, and with minute teeth.

Description.—Antenna (Plate XXXIV, fig. 4) short, tuft of a single hair arising rather beyond the middle point of the shaft from the base. Subventral thoracic processes smaller than in *S. argentea* (*fasciata*), and usually double, two thorn-like spines being placed side by side, one or both with minute teeth. Comb of eighth abdominal segment, 8 to 10 large teeth in one rank, sharp at the tip, without lateral denticles, and much larger than the pecten teeth (Plate XXXIV, figs. 11 and 12). Siphon (Plate XXXIV, fig. 3) usually more than twice the length of the diameter at the base. Pecten, 9 to 16 teeth, with basal lateral denticles (Plate XXXIV, figs. 13, 14 and 15). Tuft of from three to five branches, arising midway between the base and apex of the siphon, or slightly nearer the apex, and always beyond the last pecten tooth. Anal segment, dorsal plate forming almost a complete ring, and bearing a lateral hair of two branches (in one specimen three); papillae long with rounded tips, and about three times as long as the anal segment; longest hairs of anal fan longer than the papillae; outer subdorsal hairs of two or three branches.

The larvae have been found in a variety of situations including tree-holes, bamboo stumps, water butts, jars, etc.

Stegomyia argentea (Poiret.) (*fasciata* L.).

Larva fourth stage or final instar, identified by the isolation method, and described from skins cast at the time of pupation.

Diagnostic characters.—Comb teeth with well developed lateral denticles, subventral thoracic processes large and thorn-like.

Description.—Antenna (Plate XXXV, fig. 2) shaft smooth, tuft of a single small hair arising rather beyond the middle point from the base. Subventral thoracic processes large and thorn-like (Plate XXXV, fig. 3) with a single sharp point, both pairs about the same size. Comb of eighth abdominal segment, 8 to 12 teeth with well-developed lateral

denticles (Plate XXXV, figs. 5 and 6). Siphon (Plate XXXV, fig. 1) usually slightly more than twice the length of the diameter at the base; hair tuft with three to five branches and rather nearer the apex than the base of the siphon. Pecten, 12 to 20 teeth with basal lateral denticles (Plate XXXV, figs. 7 and 8), the most apical tooth sometimes slightly detached from the main rank; the number of teeth may vary on the two sides of the same individual, one of the specimens examined has 12 teeth on one side and 19 on the other; one or two teeth may be placed to one side of the main rank. Anal segment, dorsal plate forming almost a complete ring, lateral hair of two branches (occasionally single); anal papillae rounded at the extremities and about twice the length of the complete anal segment; longest hairs of the anal fan twice the length of the papillae. Outer subdorsal hairs of two, three, or four branches.

The larvae have only been found in domestic or artificial collections of water, and always near human habitations.

THE LARVAE OF SOME INDIAN SPECIES OF *Finlaya* (THEO.)*

GENERAL CHARACTERS OF THE KNOWN INDIAN SPECIES.

Head, antenna, and mentum, much as in *Stegomyia*, but the last mentioned structure is subject to modification in the size of the teeth. *Thorax* in some species with long single spines or bristles (the latter sometimes branched and plumose). *Comb* of eighth abdominal segment a triangular patch of small teeth (except in *F. nivea* (Ludl.) which resembles *Stegomyia* in this respect; a description of this larva is reserved for a following paper), and composed of more than 20 teeth (usually from 30 to 70). *Siphon* in some species resembling *Stegomyia*, but *acus*† usually present. *Pecten* spines, especially those towards the apex, and siphonal tuft, subject to specialisation. *Anal segment*, dorsal plate covering only half the segment in side view, posterior border with small teeth. Ventral subdorsal hairs of anal segment always single and long, the more dorsal pair sometimes composed of a number of short branches.

Many of the species, including those recently discovered, exhibit well marked specific characters, and I have not found a great deal of

* NOTE.—In a previous paper (*Ind. Jour. Med. Res.*, Vol. XI, No. 1, 1923, July) the larvae of *F. magna*, (Theo.) *F. deccana*, (Barraud) and *F. assamensis*, (Theo.) have been described.

† NOTE.—*Vide* note under general features of *Stegomyia* larvae on a previous page regarding this structure.

variation in the larvae of the same species from different localities. In some cases (e.g., *F. pseudotaeniata*), I have been able to examine a series of larvae from such widely separated places as Shillong (Assam), Kasauli (Western Himalayas), and Tavargatti (Bombay Deccan). These three places form a triangle, each side of which is 1,000 miles or more in length. The larvae from the three places show only minor variations, and may be easily separated from those of any other known Indian species.

Finlaya uncineta (Edw.)

Larva, fourth stage or final instar, identified by the isolation method and described from skins cast at the time of pupation. The description and figures are based upon a skin from which the type female specimen of this species resulted, but a few other skins obtained have been examined to ascertain the amount of variation in different structures.

Diagnostic characters.—Siphon a little more than two and a half times the length of the diameter at the base, and rather wider in the middle than at the base. Pecten teeth short and broad, each with one large and several smaller denticles, usually not more than 12 teeth in the rank. Tuft of siphon about midway between the base and apex or slightly nearer the latter.

Description.—Head dark brown or blackish; antenna (Plate XXXVI, fig. 2) short, tuft of a single hair placed nearer the apex than the base. Thorax without conspicuous spines or bristles, the tufted hairs being normal. Comb of eighth abdominal segment with about 30 teeth in a triangular patch. Siphon (Plate XXXVI, fig. 1) dark brown, lighter at the apex, index 2.6,* rather wider in the middle than at the base; pecten, 10 to 12 short and broad teeth, all with one large and several smaller denticles (Plate XXXVI, fig. 3); tuft of four branches, the base at about the middle point of the siphon. Anal segment, dorsal plate covering rather more than half the segment in side view, posterior border with small teeth; outer subdorsal hairs each of three branches; lateral hair single and about the length of the anal segment; fan hairs each divided into several branches.

The larvae have been found in tree-holes at Simla, Western Himalayas, and Kurseong, Eastern Himalayas.

* NOTE.—The index used in these descriptions is the relation of the diameter at the base to the length of the chitinised part of the siphon tube.

Finlaya greeni (Theo.)

Larva, fourth stage or final instar, identified by the isolation method, and described from skins cast at the time of pupation, and from full grown larvae taken at the same time and place.

Diagnostic characters.—Siphon unusually long and fusiform, three and a half times the length of the diameter at the base, and blackish in colour throughout. Antenna moderately long and thin. Lateral hair of anal segment of several very fine and short branches.

Description.—Head blackish brown; antenna (Plate XXXVIII, fig. 2) moderately long and thin, tuft represented by a single hair, placed rather further from the base than the apex. Mentum, teeth very pointed, those near the apex small and close together, middle tooth large, basal teeth wide apart. Tufted hairs of thorax normal. Comb of eighth abdominal segment composed of about 40 teeth in a triangular patch. Siphon (Plate XXXVIII, fig. 1) blackish throughout, widest in the middle, index 3.5; pecten 24 to 30 teeth, small, pointed, and all with lateral denticles (Plate XXXVIII, fig. 3); tuft of six branches, about midway between the base and apex. Anal segment, dorsal plate covering the upper half of the segment in side view, posterior border with small teeth; outer subdorsal hairs of two long branches; lateral hair of several very fine and short branches.

The larvae have been found in tree-holes, at Yellapur, North Kanara district.

Finlaya trilineata (Leic.) (*Howardina trilineata* Theo.)

Larva, fourth stage or final instar; identified by the isolation method and described from skins cast at the time of pupation.

Diagnostic characters. Siphon about twice the length of the diameter at the base, the last two or three pecten teeth nearest the apex of the siphon spine-like and without lateral denticles, hair tuft of siphon normal with about six rather long branches; lateral hair of anal segment three or four branched, and one and a quarter times the length of the dorsal plate.

Description.—Head strongly chitinised. Antenna (Plate XXXVII, fig. 2) shaft smooth, hair tuft two branched and arising about midway between the base and apex. Thorax without long single spines. Comb of eighth abdominal segment with 26 to 30 teeth in a triangular patch (Plate XXXVII, fig. 5). Siphon (Plate XXXVII, fig. 1) index 2.1, broadest at the base. Pecten, 16 to 19 long pointed teeth with lateral

denticles, except the two or three nearest the apex which are spine-like and without denticles (Plate XXXVII, figs. 3 and 4). Hair tuft of five or six long branches, arising at three-fifths of the length of the siphon from the base. Anal segment, dorsal plate covering rather more than the upper half of the segment in side view, the posterior edge with numerous small spines; outer, or more dorsal, subdorsal hairs each divided into three or four long branches; lateral hair three or four branched and one and a quarter times the length of the dorsal plate measured along the mid dorsal line; fan plate bearing ten or twelve hairs each divided into from three to eight fine branches.

The larvae have been found in tree-holes at Tavargatti, and other places in the Bombay Deccan.

Finlaya greigi (Barraud).

Larva, fourth stage or final instar, identified by the isolation method and described from skins cast at the time of pupation. The description and figures are based upon the larval skin from which the type female specimen of this species resulted, but other skins have been examined in order to ascertain the amount of variation in different structures.

Diagnostic characters. Siphon with five or six large bristles at the apical end of the pecten, which are without lateral denticles. Siphon two and a half times the length of the diameter at the base. Thorax with a pair of strong plumose branched bristles, each of three or four short branches. Lateral hair of anal segment single.

Description.—Head moderately chitinised and yellowish brown. Antenna (Plate XXXVII, fig. 7) short, with a tuft of two or three fine hairs, arising at about the middle point of the antenna. Thorax with a pair of plumose branched bristles, each of three or four short branches; a number of other pairs of single or two-branched bristles on the thorax and abdominal segments. Comb of eighth abdominal segment with about 60 teeth placed close together in a triangular patch. Siphon (Plate XXXVII, fig. 6) pale brown in colour, broadest in the middle, index 2.5. Pecten of 20 teeth, those between the base of the siphon and the hair tuft with lateral denticles, the five or six teeth towards the apex very large, strong, and bristle-like, and without denticles (Plate XXXVII, figs. 8 and 9), point of last bristle reaching nearly to the apex of the siphon. Hair tuft of siphon normal, and of six subplumose branches. Anal segment, dorsal plate forming a moderately large saddle, posterior border with small teeth; outer or more dorsal subdorsal hairs each of four long branches; lateral

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hair single, plumose, and slightly longer than the anal segment. Anal fan of twelve hairs each divided into several branches.

The larvae have been found in rock pools at Haflong, Cachar Hills, Assam, and were not found in tree-holes, although there were many in the neighbourhood, containing larvae of other species.

***Finlaya pseudotaeniata* (Giles).**

Larva, fourth stage or final instar, identified by the isolation method, and described from skins cast at the time of pupation.

Diagnostic characters.—Antennal tuft of one small hair; comb of eighth abdominal segment with 40 to 45 small teeth in a triangular patch; siphon twice the length of the diameter at the base; pecten teeth all with denticles; dorsal plate of anal segment covering only half the segment in side view; lateral hair, single, bristle-like, and longer than the anal segment.

Description.—Head dark brown or blackish. Antenna (Plate XXXVI, fig. 5), shaft smooth, tuft of one small hair, its base at about the middle of the antenna or slightly either side of this point. Comb of eighth abdominal segment with 40 to 45 small teeth in a triangular patch. Siphon (Plate XXXVI, fig. 4), index 2, yellow in colour, broadest at the base; pecten 21 to 28 long pointed teeth all with lateral denticles (Plate XXXVI, fig. 6), tuft normal, of 4 to 6 branches, placed at two-thirds of the length of the siphon from the base. Anal segment, dorsal plate covering half the segment in side view, posterior border with small teeth; outer dorsal hairs of two long branches; lateral hair single and strong, from one and a half times to twice the length of the anal segment; anal papillae long and pointed, and about three times the length of the anal segment (in some specimens shorter); anal fan, twelve hairs, each of two branches.

The larvae have been found in tree-holes, rock pools, and in one instance in a cement sink beneath a water tap.

Assam, Shillong; Eastern Himalayas, Kurseong; Western Himalayas, Kasauli; Bombay Deccan, Tavargatti and other places.

***Finlaya elsiae* (Barraud).**

Larva, fourth stage or final instar, identified by the isolation method, and described from skins cast at the time of pupation. The description and figures here given are based upon larval skins from which the type male and female specimens of this species resulted, but a series of other

skins has been examined to ascertain the amount of variation in various structures.

Diagnostic characters. Thorax with several pairs of long single spines on the dorsum; siphonal hair tuft represented by a strong plumose bristle.

Description.—Head deep brown or blackish; antenna (Plate XXXVIII, fig. 5), shaft with small spicules (distinctly seen under a two-thirds objective), tuft with three to five branches, arising at two-fifths to four-fifths of the length of the antenna from the base. Mentum, apical teeth placed close together, and smaller than those towards the base. Thorax with several pairs of long single spines, of which the strongest are simple, the others subplumose. Comb of eighth abdominal segment with 60 to 70 teeth in a triangular patch. Siphon (Plate XXXVIII, fig. 4), index 2.1 to 2.4, widest at the base, moderately chitinised and studded with very minute hairs. Pecten, 14 to 19 long sharp teeth, all with small lateral denticles (Plate XXXVIII, fig. 6). Hair tuft of siphon represented by a single strong plumose bristle; in a few specimens this bristle is bifid (Plate XXXVIII, fig. 4b) and this appears to be more often the case in larvae of the male sex. Anal segment; dorsal plate covering the upper half of the segment in side view, posterior border with small teeth, ventral half of the segment very thinly chitinised and bearing minute hairs; the more dorsal pair of subdorsal hairs each of three or four moderately long branches; lateral hair single and shorter than the anal segment; anal papillae very long and tapering to a point, and nearly four times the length of the anal segment; anal fan of about twelve hairs, each divided into fine branches from two to ten in number.

The larvae have been found in rock pools at Shillong, Assam.

THE LARVA OF *Christophersiomyia thomsoni* (THEO.) (STEGOMYIA THOMSONI THEO.).

Larva, fourth stage or final instar, identified by the isolation method, and described from skins cast at the time of pupation, and from full grown larvae taken at the same time and place.

Description.—Body creamy white, contrasting with a dark head and blackish siphon. Antenna (Plate XXXV, fig. 13) longer than in *Stegomyia* (about twice the length of that of *S. albopicta*), shaft with spicules, tuft of two or three hairs arising slightly beyond the middle point from the base. Mentum (Plate XXXV, fig. 12) more pointed than in *Stegomyia*, 11 teeth either side of the central one, the basal teeth large, the four or five nearest the apex very small. Comb of eighth abdominal segment,

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about 14 teeth in a single rank placed close together, strong and sharp pointed, without lateral denticles, but with a few small hairs (Plate XXXV, figs. 10 and 11). Siphon (Plate XXXV, fig. 4), index 3.6, widest in the middle; acus very small, and apparently absent in many specimens. Pecten of about sixteen small teeth, each with several lateral denticles (Plate XXXV, fig. 9); tuft of six or eight branches arising very slightly beyond the middle point from the base. Anal segment, dorsal plate almost surrounding the segment, narrow ventrally; outer subdorsal hairs of two branches, inner single and long; lateral hair of four or five fine short branches; anal papillae, dorsal pair longer than the ventral, the former a little more than three times the length of the chitinised part of the segment. Anal fan very small, longest hairs only half the length of the dorsal papillae.

The larvae have been found in tree-holes at Bombay, and upon the islands in the harbour.

THE LARVA OF *Mimomyia chamberlaini* (LUDL.) (RADIOCULEX
CLAVIPALPUS THEO.)

Larva, fourth stage or final instar, identified by the isolation method and described from skins cast at the time of pupation, and from full grown larvae taken at the same time and place.

Description.—Head black; antenna (Plate XXXIX, fig. 2), shaft blackish on the basal three-quarters, and bearing a number of small spines; tuft at about the middle point, with subplumose branches; subapical bristles very long and placed some distance below the tip. Outer postantennal hairs of head of about sixteen blackish and densely plumose branches; preclypeal hairs conspicuous as a pair of strong black bristles. Thorax with several pairs of spine-like processes at the bases of tufted hairs, the latter subplumose. Comb of eighth abdominal segment with ten to sixteen teeth, the majority in one row, but two usually in front of the rank and towards the posterior border of the segment (*vide* Plate XXXIX, fig. 1). Siphon (Plate XXXIX, fig. 1) short and slightly curved, index 4.5, one pair of subposterior hair tufts; pecten one to three teeth, without lateral denticles (Plate XXXIX, fig. 3); acus small. Anal segment (Plate XXXIX, fig. 1), dorsal plate completely enclosing the segment, much narrower ventrally than dorsally, posterior border with conspicuous teeth, lateral hair plumose and extremely long; both pairs of subdorsal hairs of several branches; anal papillae small and shorter than the anal segment;

anal fan hairs of irregular lengths and arising from separate bases and not from a chitinised grid-like fan plate as in most other genera.

The larvae from which the description is made were found in a weedy pool on the banks of Chilka Lake, north-east Madras. It is a widely distributed species in India, and the Central Malaria Bureau collection, Kasauli, contains adults from Amritsar, Punjab (Christophers); Madras (Patton); Coonoor (Patton).

THE LARVA OF *Aedomyia catasticta* (KNAB.)

Larva, fourth stage or final instar, identified by the isolation method, and described from skins cast at the time of pupation, and from full grown larvae taken at the same time and place.

Description.—The whole larva is only moderately pigmented and pale in colour. It possesses several peculiar features. Antenna (Plate XL, fig. 3) large and very broad in side view, tuft of eight to twelve plumose hairs, apex with three long hairs and a papilla, shaft hairy. Pre-clypeal hairs conspicuous as a pair of strong black bristles. Post-antennal tufted hairs blackish and plumose. Thorax with extremely long plumose tufted hairs arising from small chitinised plates, the latter also bear thorn-like processes. Teeth of comb of eighth abdominal segment unusually long and bristle-like arranged in one rank along the posterior edge of a thinly chitinised plate, ten to fifteen teeth on each side of the segment (Plate XL, fig. 2 shows a part of one plate and a few teeth). Siphon (Plate XL, fig. 1) short, the whole surface setose; a pair of sub-posterior tufted hairs with five or six extremely long branches, arising nearer the apex than the base, and another pair with shorter branches at the extreme tip; a pair of single hairs towards the apex anteriorly; tip of siphon with a pair of strong curved spines. Acus present; pecten absent. Anal segment (Plate XL, fig. 4), dorsal plate forming a complete ring, dorsal portion bearing hairs. Both pairs of subdorsal hairs single and each hair plumose along the dorsal edge; lateral hair of three to five rather long branches; anal fan hairs springing from fan plate, each hair plumose along one side.

The larvae from which the description is made were found in a weedy pond on the banks of Chilka Lake, north-east Madras. The Central Malaria Bureau collection, Kasauli, contains adult specimens from Poona, Madras, and the Andaman Islands.

EXPLANATION OF PLATE XXXIV.

Drawings illustrating the larval structure of Indian species of *Stegomyia*

- Fig. 1. *S. vittata*, siphon, side view.
" 2. Ditto antenna.
" 3. *S. albopicta*, siphon, side view.
" 4. Ditto antenna.
Figs. 5 & 6. *S. vittata*, pecten teeth from main rank.
" 7 & 8 Ditto detached apical pecten tooth from two individuals.
" 9 & 10. Ditto comb teeth.
" 11 & 12. *S. albopicta*, comb teeth.
" 13, 14 & 15. Ditto pecten teeth.
Figs. 1 to 4 are all drawn to the scale shown under fig. 1.
Figs. 5 to 15 are all drawn to the scale shown under fig. 5.

PLATE XXXIV.

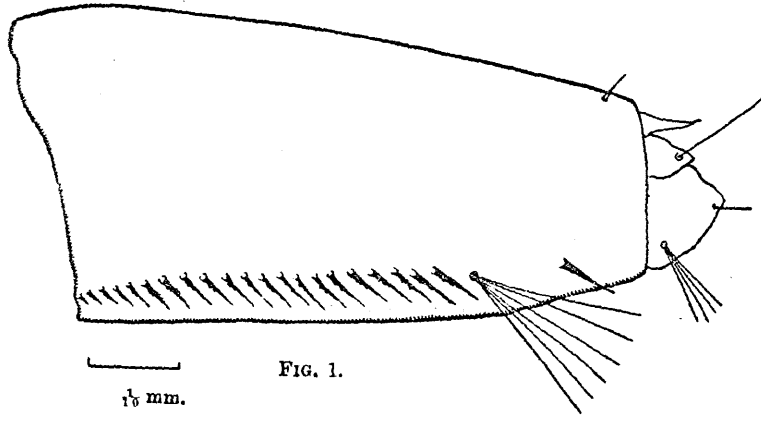


FIG. 1.

$\frac{1}{16}$ mm.



FIG. 2.

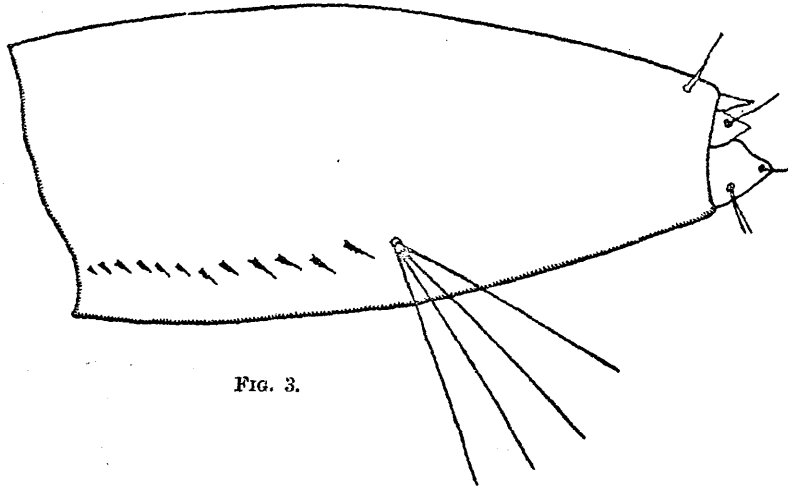
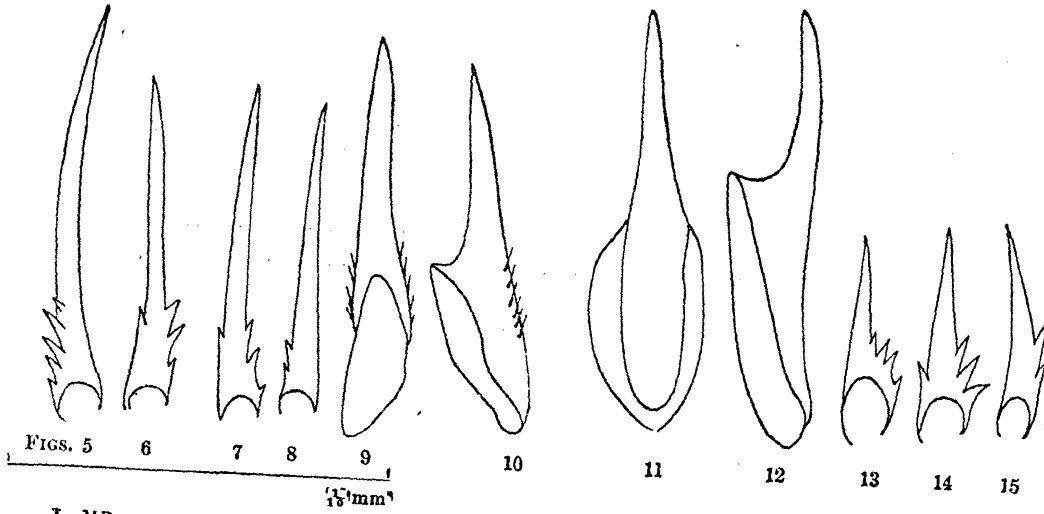


FIG. 3.



FIG. 4.



FIGS. 5

6

7

8

9

10

11

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13

14

15

J, MR

$\frac{1}{16}$ mm

EXPLANATION OF PLATE XXXV.

Drawings illustrating the larval structure of *Stegomyia argentea* (*fasciata*) and *Christophersiomyia thomsoni*.

- Fig. 1. *S. argentea*, siphon, side view.
" 2. Ditto antenna.
" 3. Ditto subventral thoracic process.
" 4. *C. thomsoni*, siphon, side view.
Figs. 5 & 6. *S. argentea*, comb teeth.
" 7 & 8. Ditto pecten teeth.
Fig. 9. *C. thomsoni*, pecten tooth.
Figs. 10 & 11. Ditto comb teeth.
Fig. 12. Ditto one side of mentum.
" 13. Ditto antenna.

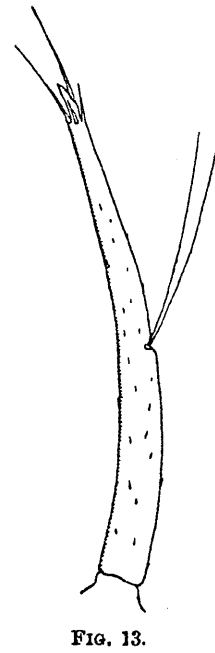
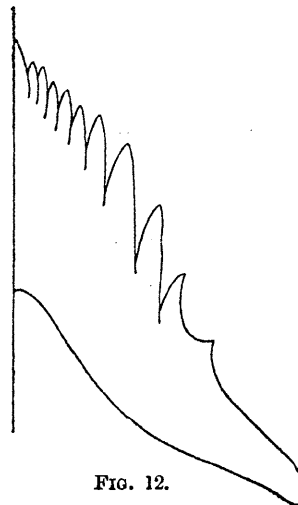
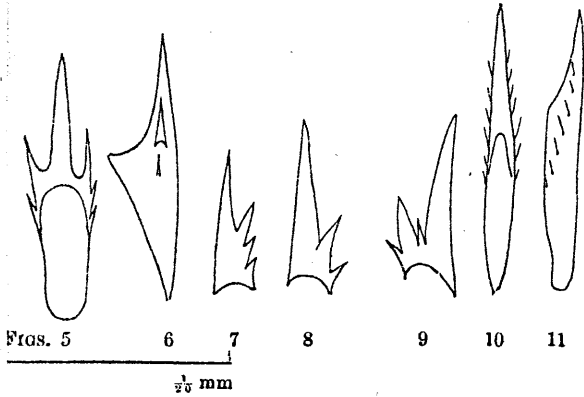
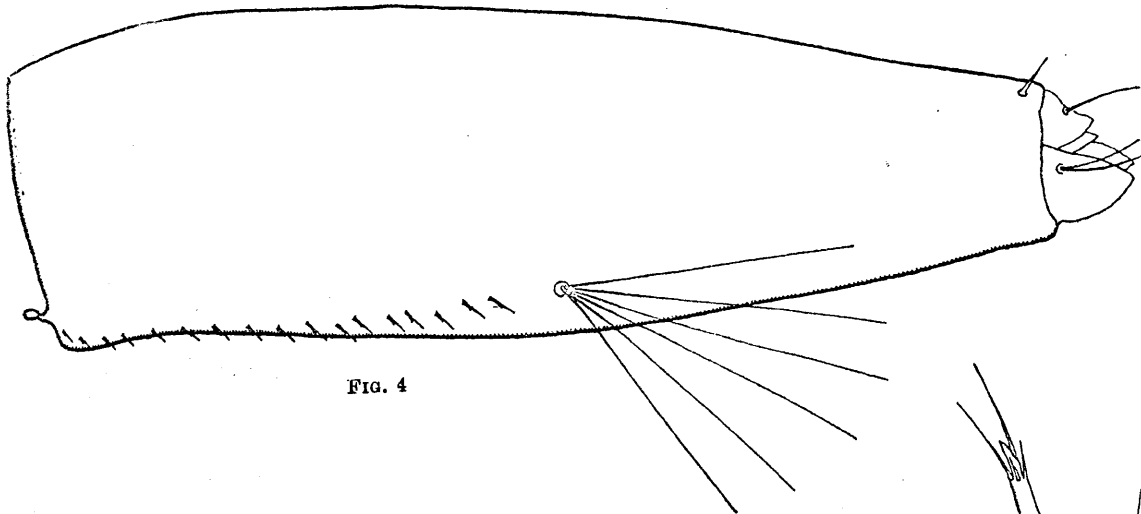
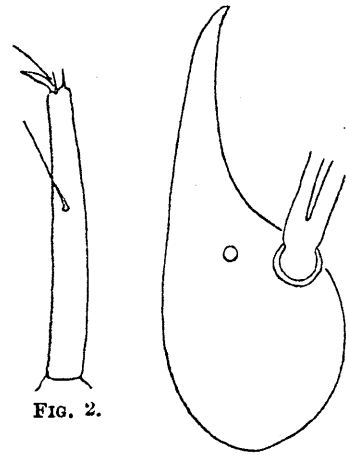
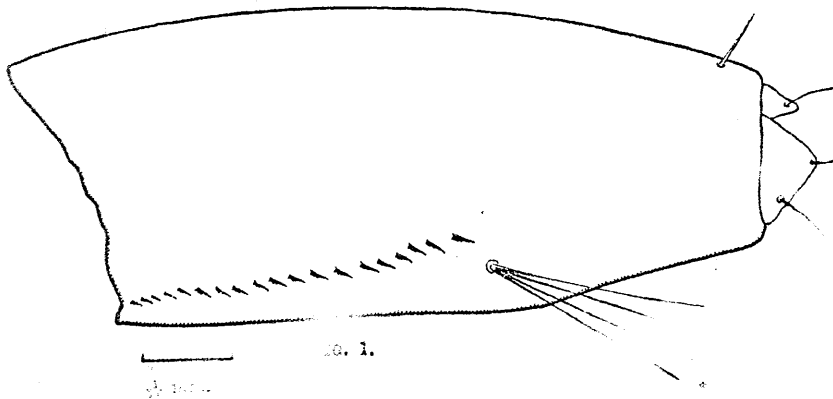
Figures 1, 2, 4 and 13 are all drawn to the scale shown under fig. 1.

Figures 3 and 5 to 12 are all drawn to the scale shown under figs. 5 and 6.



FIG. 5

PLATE XXXV.



EXPLANATION OF PLATE XXXVI.

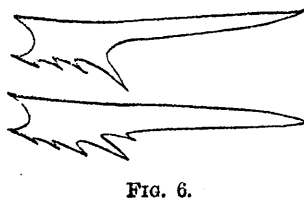
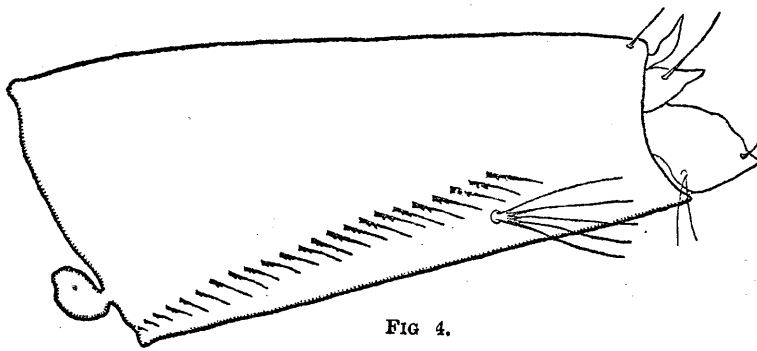
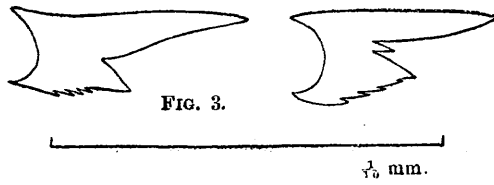
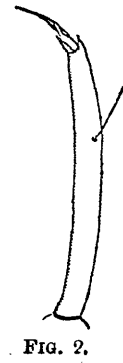
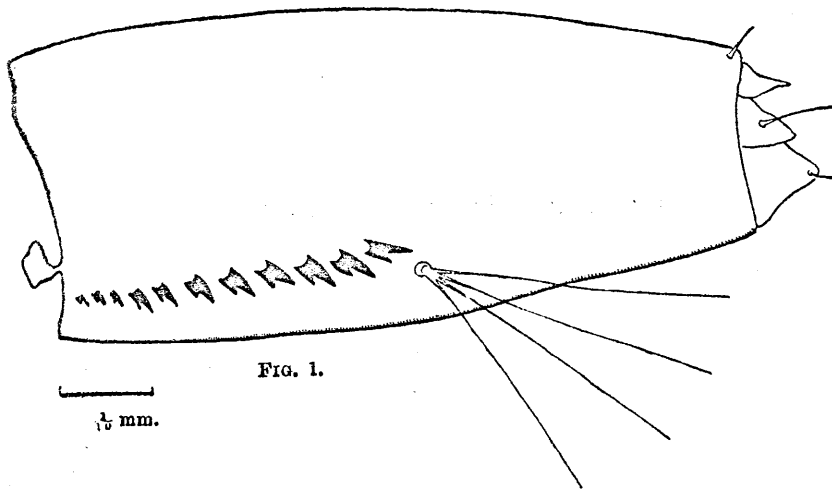
Drawings illustrating the larval structure of Indian species of *Finlaya*.

- Fig. 1. *F. uncinata*, siphon, side view.
" 2. Ditto antenna.
" 3. Ditto pecten teeth.
" 4. *F. pseudotaeniata*, siphon, side view.
" 5. Ditto antenna.
" 6. Ditto pecten teeth.

Figs. 1, 2, 4 and 5, are all drawn to the scale shown under fig. 1.

Figs. 3 and 6 are drawn to the scale shown under fig. 3.

PLATE XXXVI.



EXPLANATION OF PLATE XXXVII.

Drawings illustrating the larval structure of Indian species of *Finlaya*.

- Fig. 1. *F. trilineata*, siphon, side view.
" 2. Ditto antenna.
" 3. Ditto apical pecten bristle.
" 4. Ditto pecten tooth opposite hair tuft
, 5. Ditto comb tooth.
" 6. *F. greigi*, siphon, side view.
" 7. Ditto antenna.
" 8. Ditto apical pecten bristle.
" 9. Ditto pecten tooth between base of siphon and hair tuft.

Figs. 1, 2, 6 and 7 are drawn to the scale shown under fig. 1.

Figs. 3, 4, 5, 8 and 9 are drawn to the scale shown under fig. 5.

PLATE XXXVII.

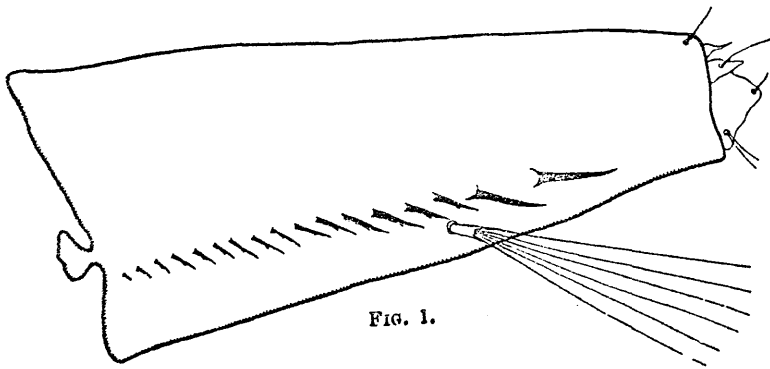


FIG. 1.

$\frac{1}{10}$ mm.



FIG. 2.



FIG. 3.

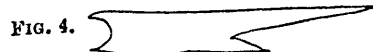


FIG. 4.



FIG. 5.

$\frac{1}{10}$ mm.

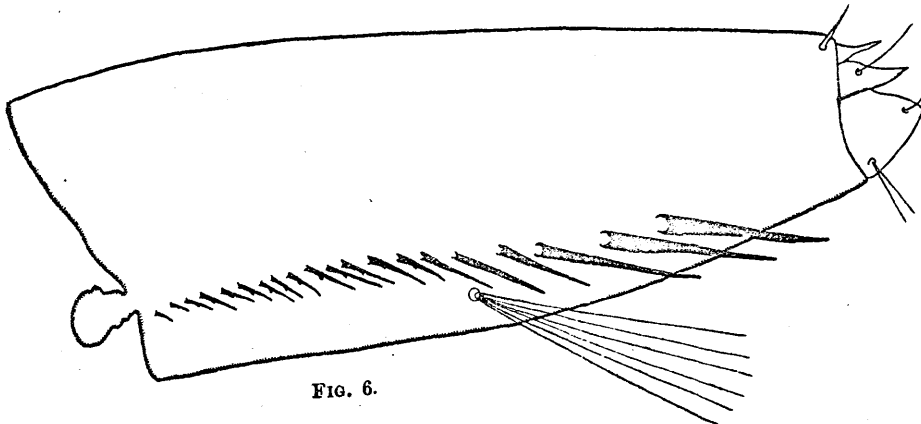


FIG. 6.



FIG. 7.



FIG. 8.

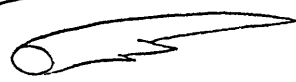


FIG. 9.

EXPLANATION OF PLATE XXXVIII.

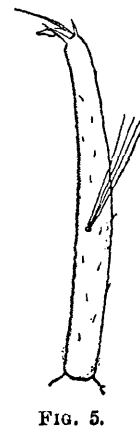
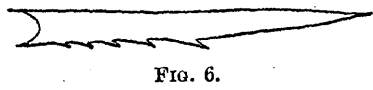
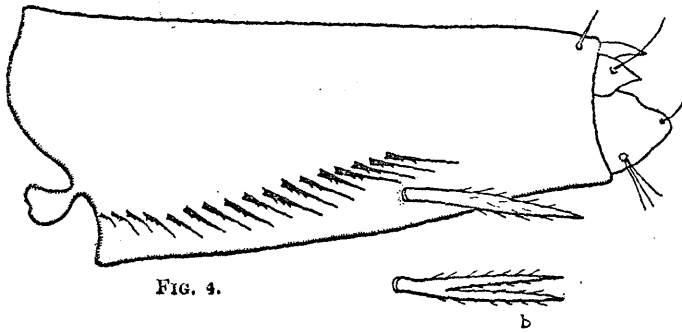
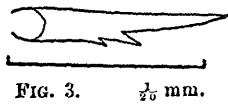
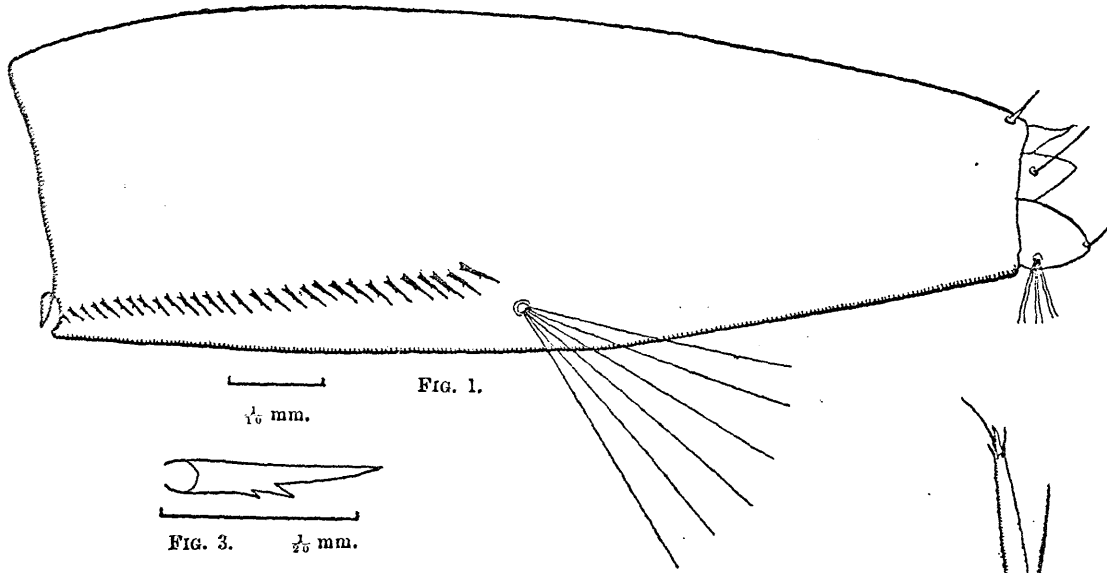
Drawings illustrating the larval structure of Indian species of *Finlaya*.

- Fig. 1. *F. greeni*, siphon, side view.
" 2. Ditto antenna.
" 3. Ditto pecten tooth.
" 4. *F. elsiac*, siphon, side view ; b. variation of hair tuft.
" 5. Ditto antenna.
" 6. Ditto pecten tooth.

Figs. 1, 2, 4 and 5 are drawn to the scale shown under fig. 1.

Figs. 3 and 6 are drawn to the scale shown under fig. 3.

PLATE XXXVIII.



EXPLANATION OF PLATE XXXIX.

Drawings illustrating the larval structure of *Mimomyia chamberlaini*
(*Radioculex clavipalpus*).

- Fig. 1. Side view of terminal segments of full grown larva.
" 2. Antenna.
" 3. Pecten tooth.

PLATE XXXIX.

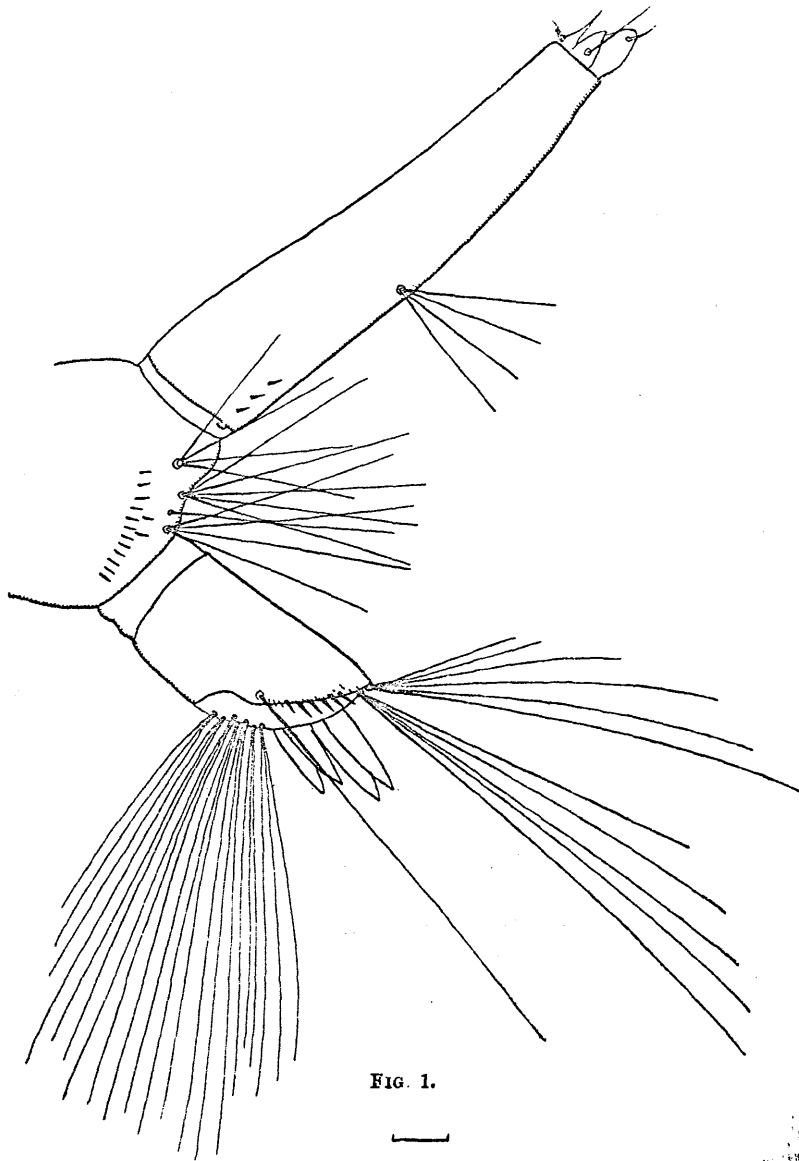


FIG. 1.

$\frac{1}{10}$ mm.

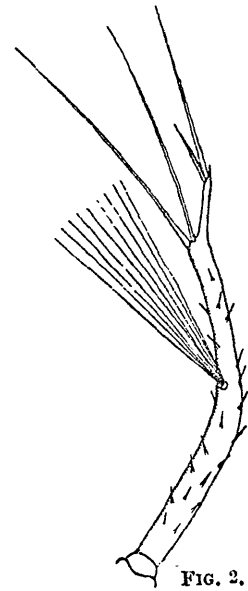


FIG. 2.

$\frac{1}{10}$ mm.



FIG. 3.

$\frac{1}{10}$ mm.

erlain

EXPLANATION OF PLATE XL.

Drawings illustrating the larval structure of *Aedomyia catasticta*.

- Fig. 1. Siphon, side view.
„ 2. Portion of comb of eighth abdominal segment.
„ 3. Antenna, side view.
„ 4. Anal segment (subdorsal and fan hairs indicated).

PLATE XL.

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VOL. 1, PLATE XL, FIG. 1
1910

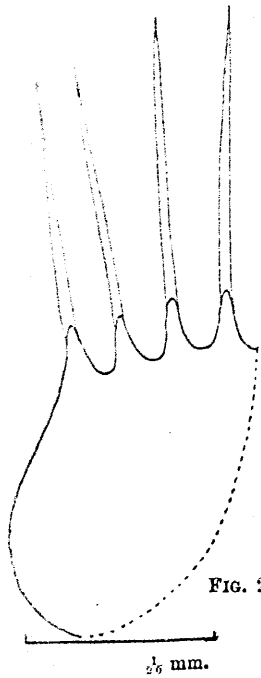


FIG. 2.

$\frac{1}{2}$ mm.

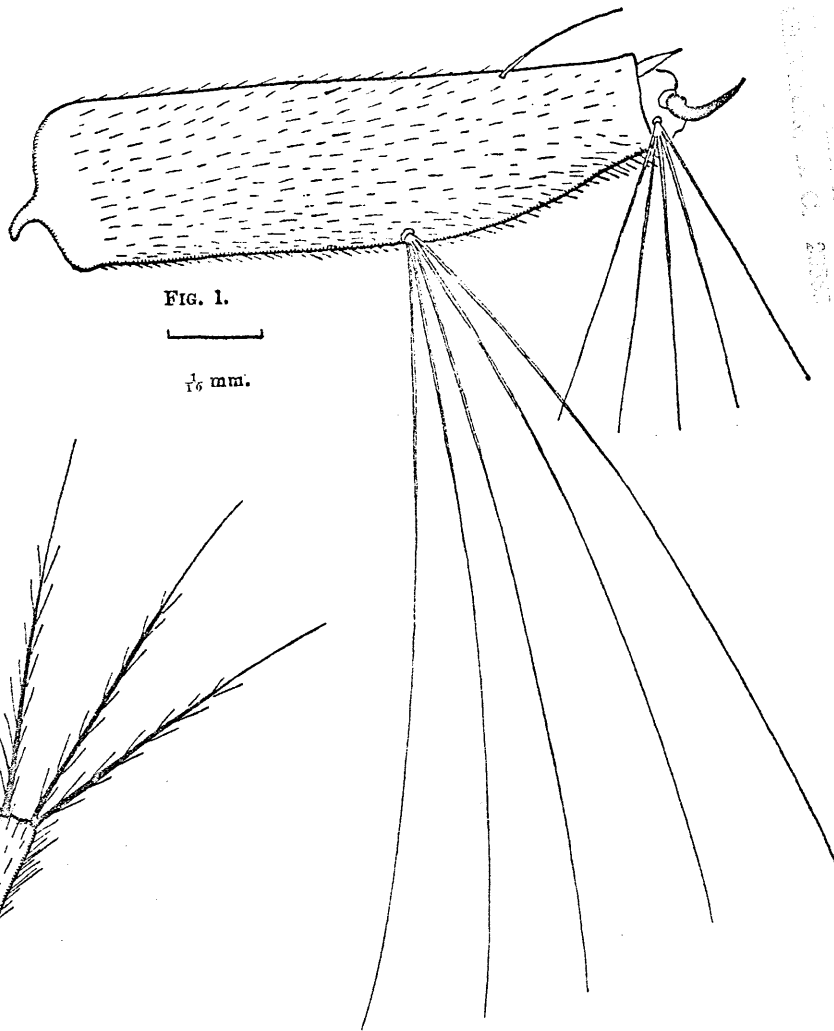


FIG. 1.



$\frac{1}{6}$ mm.

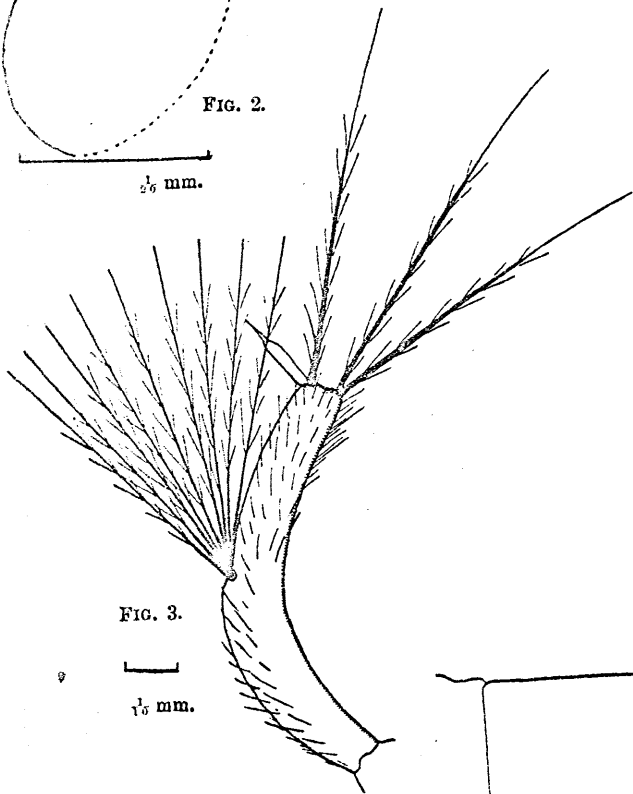


FIG. 3.



$\frac{1}{6}$ mm.

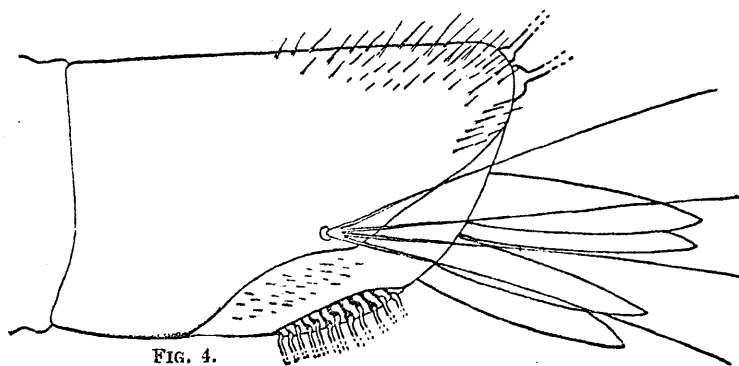


FIG. 4.



$\frac{1}{6}$ mm.