

ANNALS
OF
The Entomological Society of America

Volume 47

JUNE, 1954

No. 2

NINE NEW SPECIES OF NEOTROPICAL CULEX,
EIGHT FROM PANAMA AND ONE FROM
HONDURAS (Diptera, Culicidae)

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In the present publication the authors describe nine new species of *Culex* from Middle America distributed among the following subgenera: one *Culex* sens. str., one *Microculex* and seven *Melanoconion*. Six of the new species were collected in the course of extensive light trap surveys in Middle America, conducted by the authors and Dr. Harold Trapido; two were reared many years ago by the senior author and again picked up during the light trap survey and the *Microculex* has been repeatedly collected as adult and larva by the senior author in the highlands of Panama.

All type material has been deposited at the United States National Museum.

Culex (*Melanoconion*) *intonsus* n. sp.

Male.—A small, dark, unmarked *Culex*. Palpi longer than the proboscis. Antennae densely plumose.

Male terminalia: Basistyle conical, about twice as long as its greatest width, bearing the usual deciduous stiff hairs and two prominent setae, one at the base of the outer division of the subapical lobe and the other at the inner apical corner, near the insertion of the dististyle. Latter about one-half the length of the basistyle, narrowed at about the middle, then widened beyond distal half and finally tapered into a flat, upturned, snout-like tip; lower border with a marked swelling at the point where it begins to widen, bearing a prominent tuft of hairs; eye-seta inserted beyond this swelling; appendiculate spine widened at tip. Outer division of the subapical lobe of the basistyle a narrow column, bearing at the inner corner the usual hooked-tip filament and a slender, straight, rod-like appendage and on the outer corner the following appendages: inserted on the inner aspect of the column three slender closely appressed filaments with expanded

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foliaceous tips and mesially a more prominent, broader filament with recurved tip; on the outer aspect of the column there is a widely expanded leaf. Inner division of the lobe with widely divaricate arms about equal in size, upper arm with a sinuate appendage ending in a hooked-tip filament, lower arm bearing a similar appendage straight for basal two-thirds and sharply angled upward on apical third. Inner plate of the phallosome erect, with three points as follows: a laterally curving horn located subapically on the ventral border; on the dorsal aspect and exactly opposite the ventral horn a spine-like, sharply pointed tooth; a third point on the dorsoapical corner of the plate just above the other dorsal point so that there is between them a rather deep concave surface. Lobes of the ninth tergite large, rugose, somewhat sac-like with scattered small stiff hairs, longer on outer surface.

Female, Larva and Pupa Unknown.

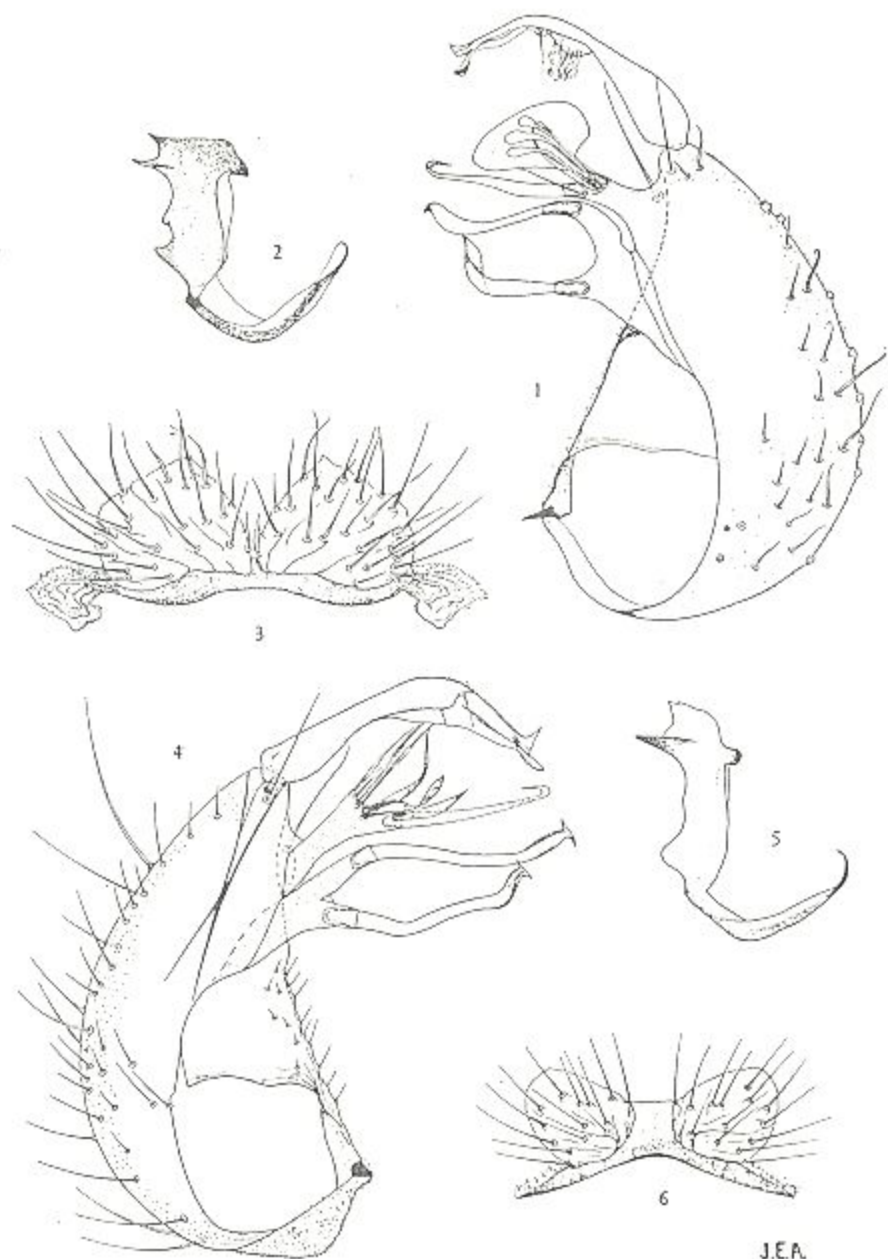
Type Material.—*Holotype* male mounted on a slide with terminalia dissected, stained and mounted separately on same slide; taken at light in the Lancetilla Valley, Tela, Honduras, X-2-53.

Taxonomic Discussion.—There are only two described species of *Melanoconion* known to the authors with a tuft of hairs on the underside of the dististyle, namely, *coppenamensis* Bonne-Wepster and Bonne and *comatus* Senevet et Abonnenc; *intonsus* n.sp. can be separated from these species by the shape of the dististyle and of the subapical lobe of the basistyle.

Culex (*Melanoconion*) *quasihybridus* n. sp.

Male.—A small, dark, unmarked *Culex*; palpi longer than the proboscis; antennae densely plumose.

Male terminalia: Basistyle conical, slightly over twice as long as wide, bearing a prominent seta at apex of inner surface and the usual stiff deciduous setae on outer border. Dististyle slightly less than half the length of the basistyle, narrowed at the middle then expanding abruptly on apical third and finally tapering apically into a flat, upturned snout; upper surface clothed with fine, minute hairs on distal third; two eye-setae inserted on expanded portion, one near the upper border at the level where the minute hairs begin and the other basad and close to the lower border; appendiculate spine inserted subapically, widened at tip. Outer division of the subapical lobe of the basistyle rather long, narrowly columnar, bearing the following appendages: a long hooked-tip filament and a short, stout and pointed filament inserted on inner angle of column; three or four closely appressed flat filaments inserted on outer angle of column; a long curved filament which exceeds the outer ones inserted between the outer and inner angles and on inner surface of column, and a narrow twisted leaf inserted at this same level but on outer surface of column. There is a prominent seta inserted on the basistyle proper at the base of the outer division of the lobe. Inner division of the lobe of the basistyle with divaricate arms; upper arm longest bearing a gradually curving rod with T-shaped tip, lower arm with a twice-angled rod ending in a capitate tip closely appressed to the upper rod. Inner plate of the phallosome erect, apical surface flat, oblique, with two or three very small serrations, dorsoapical corner ending in an acutely pointed tip; there



Culex intonsus n. sp. and *C. quasihybridus* n. sp., male terminalia.
FIG. 1. *C. intonsus*, style. FIG. 2. *C. intonsus*, phallosome. FIG. 3. *C. intonsus*, lobes of the ninth tergite. FIG. 4. *C. quasihybridus*, style. FIG. 5. *C. quasihybridus*, phallosome. FIG. 6. *C. quasihybridus*, lobes of the ninth tergite.

are two subapical points on opposite sides, the dorsal one a moderate, pointed, heavily sclerotized tooth; ventral one a short, sharply curving horn. Lobes of the ninth tergite small, rounded, with scattered short, straight hairs on basal two-thirds, tip smooth, hairless.

Female, Larva and Pupa Unknown.

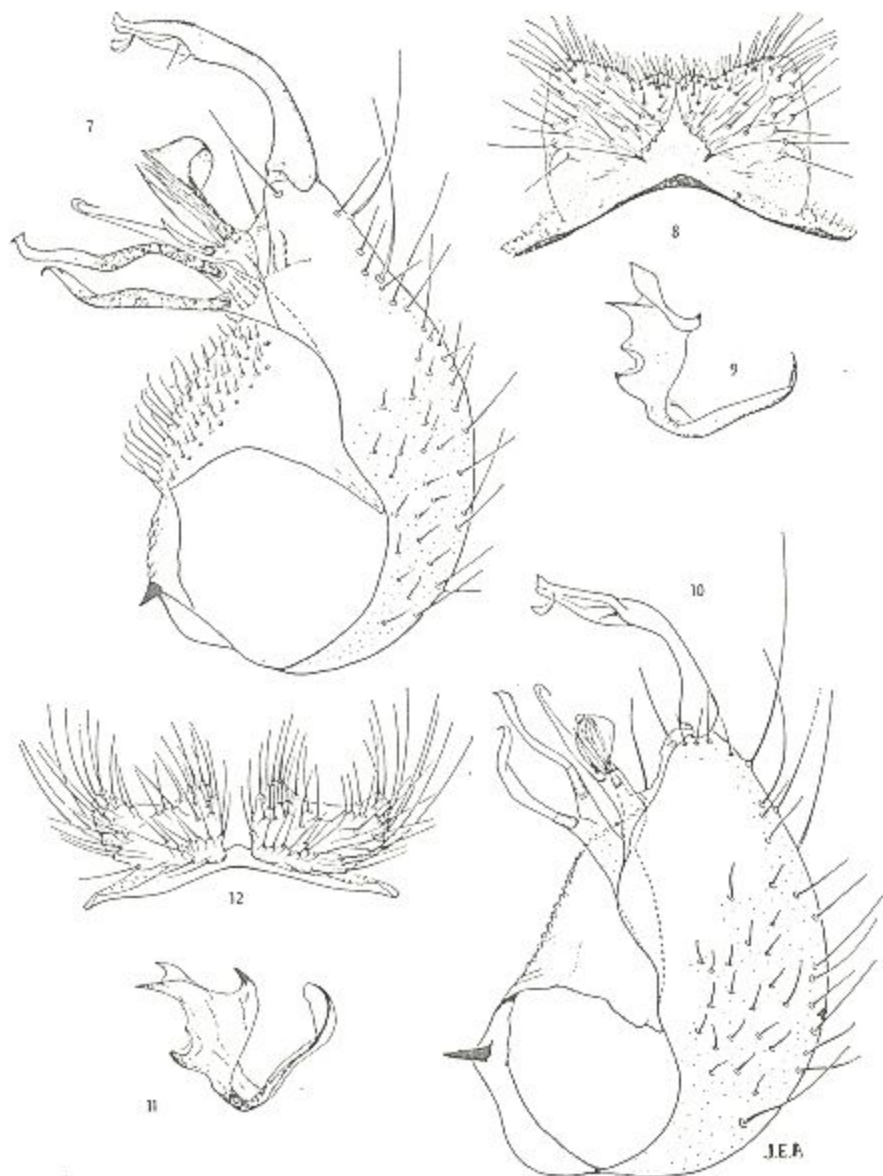
Types.—*Holotype* male, mounted on slide with terminalia dissected and mounted separately on same slide; Puerto Pilón, Province of Colon, Republic of Panama, 28 August, 1952. *Paratypes*: one male, same data as holotype; one male, Puerto Pilón, 25 August 1952; two males, Mindi Dairy, Canal Zone, 22 August, 1952.

Taxonomic Discussion.—This new species exhibits features of both *educator* D. & K. and *iolambdis* Dyar, being apparently closest to the former species. By characters of the style and lobes of the ninth tergite it is inseparable from *educator*, but the phallosome is quite distinct, resembling somewhat that of *iolambdis*, but differing from it in the lack of the prominent denticles present on the dorsoapical angle of the phallosome of the latter species. We cannot disregard the possibility that this form may represent but a hybrid between *educator* and *iolambdis*, but since hybridization in *Melanoconion* is not well understood at present and since these two rather distinct species have similar distribution and seem to occupy the same ecological niche thus apparently invalidating the assumption of free hybridization between them, we have decided to describe this form as a new species.

Culex (Melanoconion) fairchildi n. sp.

Male.—A small, unmarked *Culex*. Palpi exceeding the length of the proboscis. Antennae densely plumose.

Male terminalia: Basistyle broadly conical, inflated at about the middle, inner surface with a large patch of fine hairs just below the subapical lobe, outer surface densely clothed with fine hairs distally on ventral half. Dististyle narrowed at about the middle, then widened on distal half and tapering into an upturned, flat, snout-like tip; eye-setae inserted on an indentation at the widened portion of the dististyle; outer surface clothed with minute stiff setae on distal half; appendiculate spine inserted subapically, widened at tip. Outer division of the subapical lobe of the basistyle a short, broad column, inner corner of column with the usual two filaments, one long and hooked-tip, the other short, straight and pointed; outer corner bearing three or four closely appressed filaments; between these two groups of appendages there is the usual broad, curved filament directed toward and exceeding the outer filaments; inserted near the outer corner of the column at the same level of the filaments but on the outer face, there is a broad pedunculate leaf with straight inner border ending in a triangular, acutely pointed tip. Inner division of lobe with divaricate arms, upper one longest, bearing a slightly sinuate filament with T-shaped tip; lower arm almost sessile with a filament that curves sharply upward on distal third and ends in a capitate tip closely appressed to filament of upper arm. Inner plate of the phallosome appearing almost erect in some preparations, somewhat dorsally inclined in others; apex smooth, narrowly shield-like, triangularly pointed dorsally; body of phallosome with two points on opposite sides, dorsal one more apically located,



Culex fairchildi n. sp. and *C. bilobatus* n. sp., male terminalia.
FIG. 7. *C. fairchildi*, style. FIG. 8. *C. fairchildi*, lobes of the ninth tergite.
FIG. 9. *C. fairchildi*, phallosome. FIG. 10. *C. bilobatus*, style. FIG. 11. *C. bilobatus*, phallosome. FIG. 12. *C. bilobatus*, lobes of the ninth tergite.

straight, acutely pointed; ventral one a laterally curving, heavily sclerotized horn. Lobes of the ninth tergite rugose, highly membranous, sac-like, clothed with short stiff hairs, denser on distal surface which is asymmetrically divided by a concave depression into two parts, outer part broad and rather flat, inner part a small upturned lobe; inner surfaces of lobes closely appressed to each other.

Type Material.—*Holotype* male, mounted on a slide with terminalia dissected and mounted separately on same slide; Patino Point, Darien Province, Republic of Panama, 17 July, 1952, taken at light. *Paratypes*: four males same data as holotype; one male, same data as holotype except collection date which is 16 July, 1952.

This species is named after our colleague, Dr. G. B. Fairchild.

Taxonomic Discussion.—By characters of the basistyle and dististyle *C. fairchildi* n.sp. appears closely related to *C. tecmarsis* Dyar, from which it may be separated by the following characteristics: 1) The leaf on the outer division of the subapical lobe of the basistyle has a rounded inner corner in *tecmarsis* while it ends in a triangular point in *fairchildi* n.sp. 2) The inner plate of the phallosome is more erect in *fairchildi* n.sp. and the apex is broader. 3) The lobes of the ninth tergite are long, narrow and finger shaped in *tecmarsis*, while they are shorter, broader and sac-like in *fairchildi* n.sp.

Culex (Melanoconion) *bilobatus* n. sp.

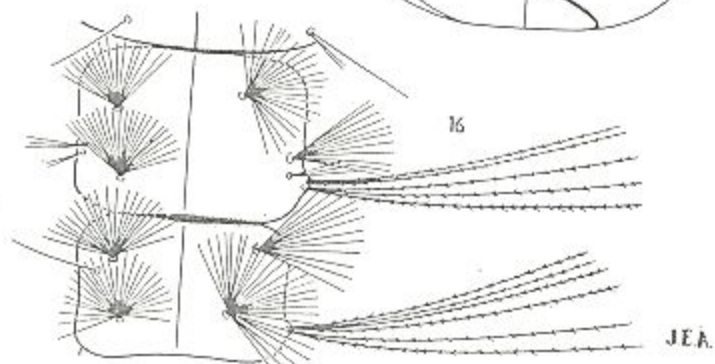
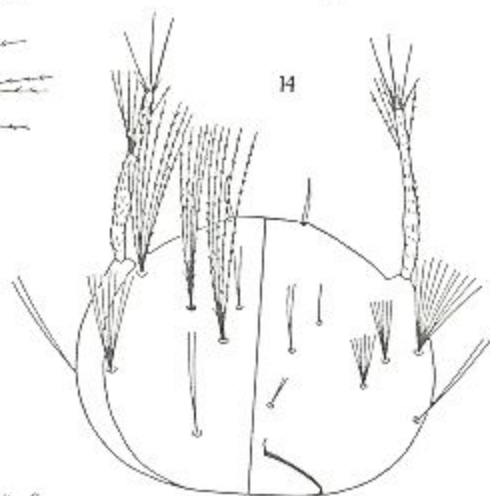
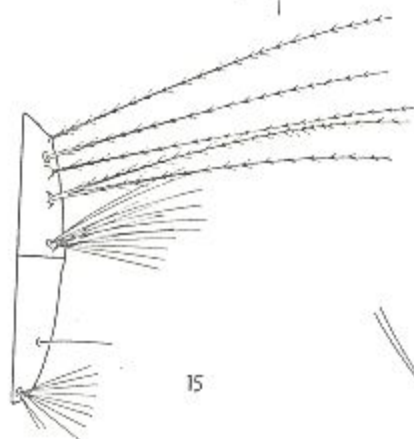
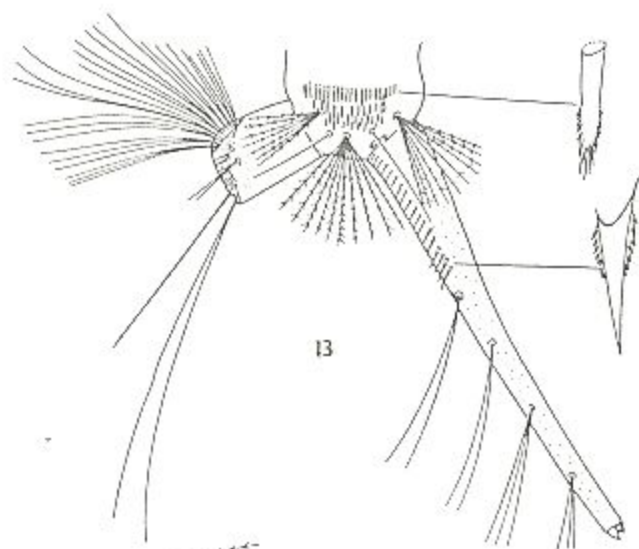
Male.—A small, dark, unmarked *Culex*. Palpi exceeding the length of the proboscis. Antennae densely plumose.

Male terminalia: Basistyle roundly conical and somewhat inflated at about the middle; outer surface densely clothed with short, fine hairs on ventral aspect; inner surface with a small patch of very short setae just below the subapical lobe and two prominent setae, one just basad the outer division of the subapical lobe, the other near the apex. Dististyle about one-half the length of the basistyle, abruptly narrowed at about the middle then sharply angled and narrowly expanded on outer half to end in an upturned, flat snout-like tip; distal third with a few stiff, very small hairs on upper border; one eye-seta inserted medianly on expanded part; appendiculate spine inserted subapically, expanded distally. Outer division of the subapical lobe of the basistyle a short column, inner angle with the usual long, hooked-tip filament; outer angle with four closely appressed filaments; inserted between the inner and outer angles of the column there is also the usual broad, curved appendage which exceeds the filaments on outer angle; closely appressed to the outer aspect of the column, there is a narrow, separate and prominent arm bearing a widely expanded, nearly quadrate leaf. Inner division of the subapical lobe with divaricate arms, outer arm with a slightly sinuate appendage ending in a T-shaped tip; inner arm short, almost sessile, bearing an appendage which sharply curves upward on outer third to end in a T-shaped tip closely appressed to the

EXPLANATION OF PLATE III

Culex erythronfer n. sp., larva.

FIG. 13. Terminal abdominal structures. FIG. 14. Head. FIG. 15. Prothorax. FIG. 16. Abdominal segments I and II.



appendage of the outer arm. Inner plate of the phallosome sharply angled at middle into a broad L-shaped plate; angle of L with a heavy, broad horn; distal arm bifid, upper point rather broad and curved, inner point narrow, straight, acutely pointed; surface between these two points quadrately concave. Lobe of the ninth tergite with concave upper surface giving it a bilobed appearance; outer angle much broader than inner one, lobe completely covered with very stiff, moderate, slightly curved hairs, longest on outer part.

Types.—*Holotype* male, mounted on a slide, with terminalia dissected and mounted separately on same slide; collected in a light trap at the Rio Banana, near Almirante, Bocas del Toro Province, Republic of Panama, IV-20-53.

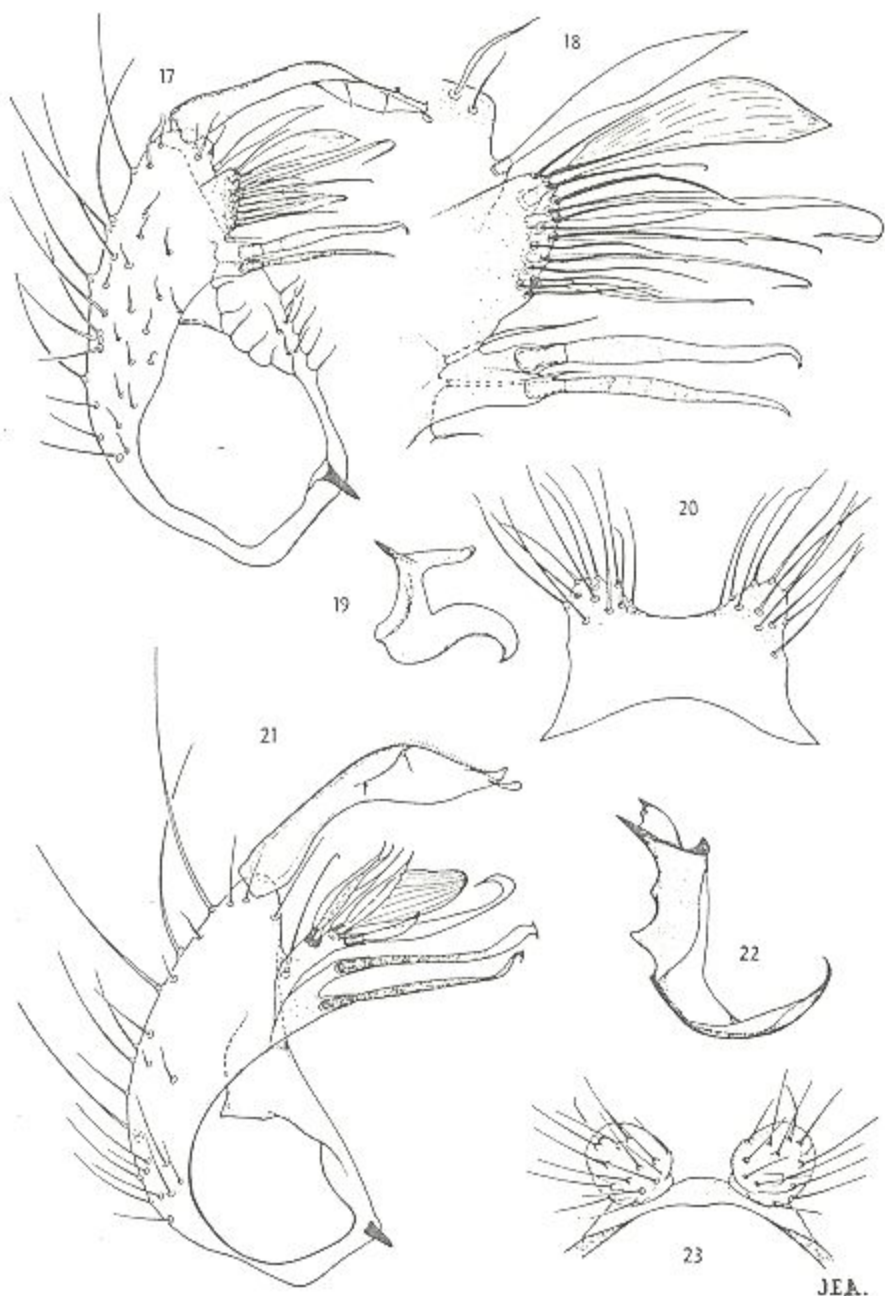
Taxonomic Discussion.—This species is apparently related to *tecmaris* Dyar. The shape of both the basistyle and dististyle is like the latter species. The outer division of the lobe bears, like in *tecmaris*, a broadly expanded leaf, but in *tecmaris* the leaf is inserted with the four appendages on the outer angle, while in *bilobatus* this leaf is inserted on a separate arm which arises from the outer aspect of the column. The lobes of the ninth tergite also differ widely, as in *tecmaris* they are long and finger-shaped, while in *bilobatus* n.sp. they are short and rounded with bilobed upper surface.

Culex (*Melanoconion*) *changuinolae* n. sp.

Male.—A small, dark, unmarked *Culex*. Palpi exceeding the length of the proboscis. Antennae densely plumose.

Male terminalia: Basistyle conical, rather slender, about twice as long as its greatest width, bearing scattered long, stiff hairs on the dorsal aspect. Dististyle over half the length of the basistyle, slightly narrowed at the middle then greatly widened on distal half and finally tapered into a small, upturned, snout-like tip; upper surface clothed with minute hairs on distal half; one eye-seta inserted near the upper surface where the dististyle begins to taper, the other inserted basad toward the lower surface where the dististyle begins to widen; appendiculate spine inserted subapically, widened at tip. Outer division of the subapical lobe of the basistyle a short and rather broad column; on the inner corner of the column there are inserted the usual two filaments, one long and hooked tip, the other short and pointed; on the outside corner there are inserted the usual three or four closely appressed filaments; between these two sets of filaments there are two appendages, one inserted on the inner aspect of the column, a long, curved filament, the other inserted on the outer aspect of the column is a fairly large leaf expanded apically. Inner division of the subapical lobe of the basistyle with two arms about equal in size, each arm bears a long appendage straight for most of its length and ending in a capitate tip. Inner plate of the phallosome bent dorsally at an oblique angle beyond the middle and ending in two points, upper point rather broad and triangular, lower point straight, narrow, acutely pointed; on the ventral aspect, at the point where the plate angles dorsally, there is a third, curved, horn-like point. Lobes of the ninth tergite, small, rounded, separate, clothed with scattered rather short and stiff hairs.

Type Material.—*Holotype* male, mounted on a slide with terminalia



Culex erethyzofer n. sp. and *C. changuinolae* n. sp., male terminalia.

FIG. 17. *C. erethyzofer*, style. FIG. 18. *C. erethyzofer*, subapical lobe of basistyle. FIG. 19. *C. erethyzofer*, phallosome. FIG. 20. *C. erethyzofer*, lobes of ninth tergite. FIG. 21. *C. changuinolae*, style. FIG. 22. *C. changuinolae*, phallosome. FIG. 23. *C. changuinolae*, lobes of the ninth tergite.

dissected and mounted separately on same slide; taken in a light trap in the vicinity of Almirante, Bocas del Toro Province, 1 May, 1953.

Paratypes: one male taken at the type locality on 16 April, 1953; one male same data as holotype, collected on 17 April 1953; two males same data as holotype, collected on 29 April, 1953.

Taxonomic Discussion.—*C. changuinolae* n.sp. appears related to *C. evansae* Root, since the shape of the basistyle and dististyle are quite similar. It may be differentiated from the latter species by the following characters: 1) the leaf on the outer division of the subapical lobe in *changuinolae* n.sp. lacks the prominent spur on its upper surface so characteristic in *evansae* Root. 2) The inner plate of the phallosome in *changuinolae* n.sp. is not as erect as in *evansae* and the apex does not show the denticles so prominent in *evansae*. 3) The lobes of the ninth tergite are smaller, more rounded and set wider apart in *changuinolae* n.sp. than in *evansae*.

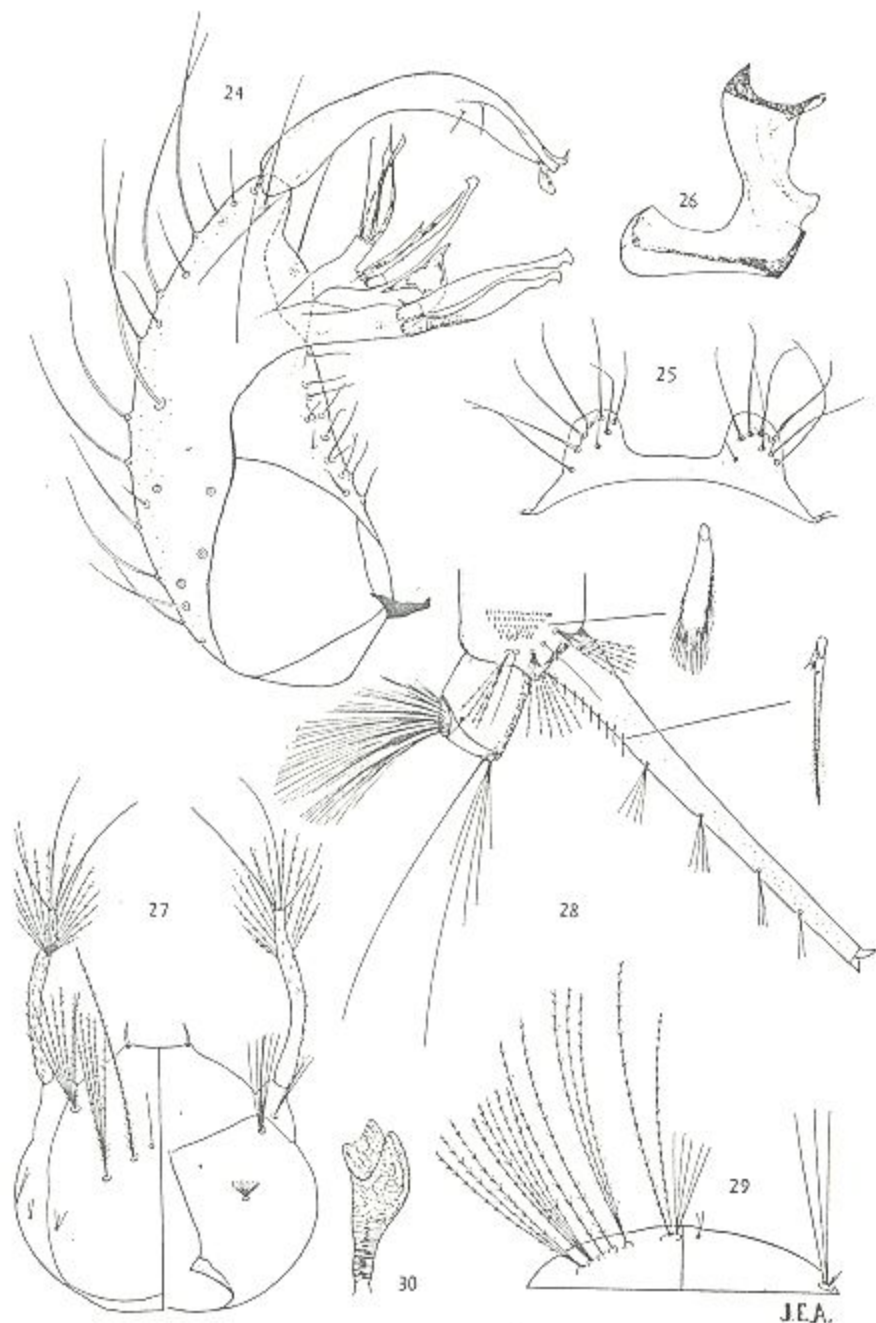
Culex (Melanoconion) *pseudotaeniopus* n. sp.

Male.—A dark brown, medium-sized *Culex*. Antennae densely plumose. Palpi longer than the proboscis, with small white rings at the joints. All femora and tibiae white-tipped, more prominently so on hind legs. Hind tarsi with white rings involving both ends of the joints, fifth segment entirely white-scaled.

Male terminalia: Basistyle conical, nearly three times as long as its greatest width, bearing a small patch of scattered small setae just below the lower division of the subapical lobe and a stiff seta near the insertion of the dististyle. Latter somewhat narrowed at the middle, then widened on distal half and finally tapering into an upturned, flat snout-like point; outer border with a row of fine, short setae on distal half; appendiculate spine expanded apically. Outer division of the subapical lobe of the basistyle subdivided, outer arm bearing on outer corner three closely appressed flat filaments and on inner corner a long curved filament which bends toward the dististyle; inner arm with a single long, hooked-tip filament; between these two arms there are inserted on the concave surface two filaments, one about two-thirds the length of the other. Inner division of the subapical lobe undivided, bearing at about the middle a short filament with hooked tip, and at its apex two subequal somewhat distorted filaments, the upper one with a membranous spur on its outer border. Inner plate of the phallosome erect, with two points, ventral one a sharp, curved horn pointing laterally, dorsal point short, bifid or jagged at tip and pointing dorsally. Lobes of the ninth tergite small, set wide apart, mound-like, with scattered short stiff hairs.

Female.—Unknown.

Larva.—Head wider than long, bulging at the sides; antennae almost as long as the head, dark, curved, clothed with spinules and with a notch on distal third bearing a long, multiple tuft; apical appendages consisting of three long dark setae, a short straight, whitish filament and a small digit. Head hairs as follows: No. 4 single, fine and short, less than one-third the length of No. 6; No. 5 six-branched shorter than No. 6 which is single and very long; No. 7 a multiple tuft similar to No. 5; No. 8 and No. 9 very small, practically obsolete three-



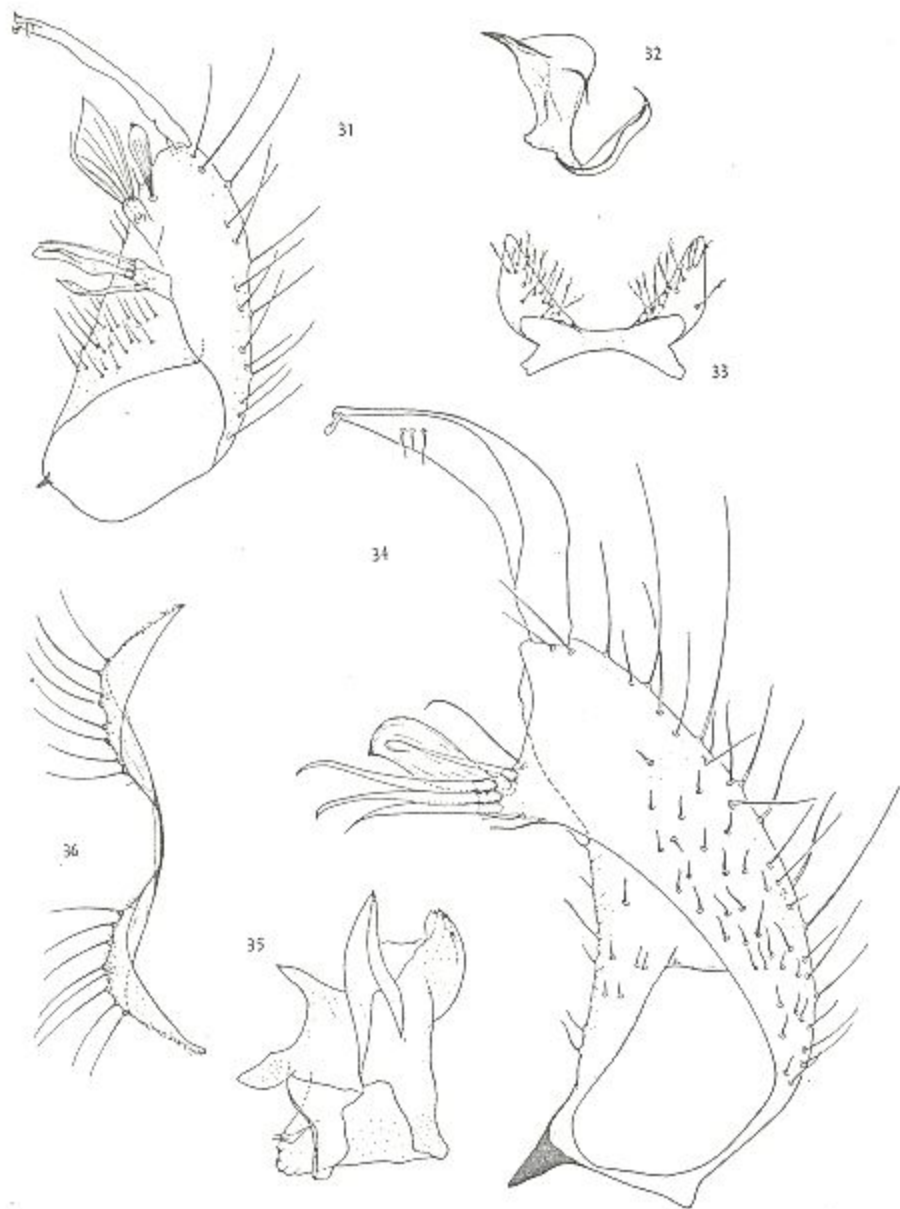
Culex pseudotaeniosus n. sp., male terminalia, larva and pupa.
FIG. 24. Male terminalia, style. FIG. 25. Male terminalia, lobes of the ninth tergite. FIG. 26. Male terminalia, phallosome. FIG. 27. Larva, head. FIG. 28. Larva, terminal abdominal structures. FIG. 29. Larva, prothorax. FIG. 30. Pupa, trumpet.

branched tufts; No. 10 small and double, about twice as long as No. 9; No. 11 a 4 to 5-haired tuft of about same length as No. 4; No. 12 a fairly long six or more branched tuft somewhat shorter than No. 7; No. 13 a very small and fine multiple tuft. Prothoracic hairs as follows: Nos. 1, 2, and 3 inserted on same tubercle, Nos. 1 and 2 single and long, about equal in size, No. 3 a rather short tuft about one-third the length of No. 1; No. 4 triple; No. 5 and No. 6 single; No. 7 with five branches; No. 8 triple; Nos. 9 and 10 rather long, double and single respectively; No. 13 a minute multiple tuft; No. 14 short and double. Lateral abdominal hair No. 6 very long and with three subequal branches on segments I and II, quadruple, shorter and weaker on subsequent abdominal segments. Eighth segment with over fifty comb-scales arranged in a triangular patch four to five rows deep. Air-tube long and slender, 9 x 1, bearing about ten pecten teeth running on basal fifth of tube followed by four pairs of two to four-branched, fine tufts inserted in a straight line. Anal segment longer than wide, ringed by the saddle. Anal hair No. 1 single and very small; No. 2 with five subequal branches; No. 3 single and long, as long as the longest branch of No. 2.

Pupa.—Trumpets rather short and stumpy, tubular on basal third, broadening out apically and ending in two free lateral flaps. Paddles broadly ovoid, midribs quite pronounced to apex, followed by a small single hair. Outstanding abdominal setae as follows: No. 2 a multiple tuft on segments III and IV; with two or three branches on segments V, VI and VII, always smaller than the length of the segment; No. 5 with four or five branches and about equal in size to No. 2 on segment III, longer, stronger and with additional branches on segments IV, V and VI; very small and single on segment VII; No. 8 double and short on segments VII and VIII.

Type Material.—*Holotype* male, mounted on a slide with terminalia dissected and mounted separately on same slide; taken at light, Mojanga Swamp, Canal Zone, 17 June, 1952. *Paratypes*: pinned male with terminalia, larval and pupal skin mounted on two slides, Cerro Jefe (3,000 ft.) Province of Panama, Republic of Panama, 2 April, 1946 (P. Galindo, coll.); three male terminalia, four larval and two pupal skins mounted on slides, Cerro Jefe, on following dates: XI-30-45; XII-18-45; V-30-46; one larval skin from Tocumen, Province of Panama, Republic of Panama, 26 December, 1946. All larvae taken in shallow pools among rocks or buttressed roots in slowly flowing, densely shaded, jungle streams.

Taxonomic Discussion.—The species is very close to *taenioopus* D. & K. from which it may be easily differentiated by the following male terminalia characters: in *taenioopus* D. & K. the outer division of the subapical lobe of the basistyle is subdivided and the appendages are inserted in two groups at the apex of each subdivision; on the other hand in *pseudotaenioopus* n.sp. these appendages are inserted in three groups, one group from the apex of each subdivision and another group between them on the deep concave portion of the arm. The inner plate of the phallosome also differs in these two species; in *taenioopus* the dorsal point is a long, curved, acutely pointed tooth, while in *pseudotaenioopus* it is short and with a bifid or jagged tip.



Culex caribeans n. sp. and *C. laticlasper* n. sp.

FIG. 31. *C. caribeans*, style. FIG. 32. *C. caribeans*, phallosome. FIG. 33. *C. caribeans*, lobes of the ninth tergite. FIG. 34. *C. laticlasper*, style. FIG. 35. *C. laticlasper*, phallosome. FIG. 36. *C. laticlasper*, lobes of the ninth tergite.

Culex (Melanoconion) caribbeanus n. sp.

Male.—A medium-sized, light colored, unmarked *Culex*. Palpi longer than the proboscis, antennae densely plumose.

Male terminalia: Basistyle conical, two and one-half times as long as its greatest width, covered with stiff long hairs on the outer surface. Dististyle slender, nearly straight, not expanded apically; appendiculate spine small, expanded at tip; two eye-setae, one inserted subapically, the other at about outer fourth. Inner division of the subapical lobe with three appendages as follows: basal one a rather stout filament expanded and curved upward on distal fourth and broadly pointed at tip; middle one a broad distorted appendage, longer and stouter than the basal one, with blunt tip and with a prominent median longitudinal carina which runs from its base almost to tip; outer appendage a slender nearly straight pointed filament. Outer division of the lobe a narrow column bearing a broadly expanded leaf and some four or five setiform filaments, one with hooked tip. Just beyond the outer division of the lobe and inserted on the basistyle proper there is a narrow leaf. Inner plate of the phallosome with dorsoapical angle produced into a long, narrow, acutely pointed, beak-like tooth; apex smooth and roundly inflated; a prominent, triangular sclerotization on the ventral border pointing basally. Lobes of the ninth tergite somewhat inclined outwardly, tapering from base to apex which is smooth and hairless; upper surface with a number of short, dendritic hairs.

Types.—*Holotype* male, mounted on a slide with terminalia dissected and mounted separately on same slide; Mojinga Swamp, Cauzal Zone, 6 July 1952, taken at light. *Paratype* male, same data as holotype, 14 July 1952, at light.

Taxonomic Discussion.—*C. caribbeanus* n.sp. appears close to *dunni* D. & K. and *seteki* Dyar. It may be separated from both species by the presence of the prominent median longitudinal carina on the middle appendage of the inner division of the subapical lobe of the basistyle, by the inflated apical surface of the inner plate of the phallosome and by the triangular sclerotization present on the ventral border of the phallosome.

Culex (Microculex) erethyzonfer n. sp.

Male.—Proboscis rather long, about as long as fore femur, bronzy brown. Palpi exceeding the length of the proboscis by less than the length of the last palpal segment. Antennae densely plumose, slightly shorter than the proboscis. Occiput with narrow golden scales and some erect forked ones. Mesonotum uniformly dull brown, clothed with small, narrow, bronzy scales. Pleura yellowish brown. Legs uniformly brownish. Abdomen unbanded.

Male terminalia: Basistyle conical, slightly less than twice as long as its greatest width, clothed with stiff long hairs on outer surface. Dististyle more than half the length of the basistyle, sharply bent inwardly and somewhat expanded on distal half, ending in a small, recurved tooth; outer border with fine short setae on distal third; both eye-setae inserted near outer border; appendiculate spine only slightly expanded apically. Subapical lobe of the basistyle divided, inner division a short column bearing apically two heavy rod-like appendages,

upper one longer, stouter and more recurved at tip; outer division subquadrate, bearing several rows of appendages as follows: on the inner surface there are two rows of some fourteen dark, heavy setae; on the outer surface and starting at the anterior end there are three fine filaments somewhat hooked at tip followed by a stouter hooked-tip filament and a narrow leaf. Inserted on the basistyle proper and just beyond the lobe there is a prominent leaf-like filament. Inner plate of the phallosome with two main points; dorsal point short and bifid, ventral point longer, recurved at tip; basal hooks curving anteriorly. Lobes of the ninth tergite small, mound-like, fused at the base.

Female.—Unknown.

Larva.—Head broader than long bulging at the sides. Antennae three-fifths the length of the head, light-colored, clothed with spinules and bearing a compact tuft of hairs from a slight notch just beyond the middle; apical appendages as follows: two long ones equal in size on inner surface; one about two-thirds as long as inner ones inserted medianly and a short digit on outer border. Head hairs as follows: No. 4 double, about one-third as long as Nos. 5 and 6, which are long, four to five-branched tufts, longer than the antennae; No. 7 with six or seven branches; No. 8 double and somewhat longer than No. 4; No. 9 with six or seven branches; No. 10 double; No. 11 a multiple tuft; No. 12 and No. 13 with six branches and slightly shorter than No. 4; No. 14 single and very short; No. 15 double and about as long as No. 4. Prothoracic hairs as follows: No. 1 a long five to six-branched tuft; No. 2 apparently obsolete; No. 3 a multiple tuft somewhat shorter than No. 1; No. 4 double; Nos. 5, 6, and 7 single; No. 14 single and very short. All prominent dorsal and ventral abdominal hairs long and strong stellate tufts. Abdominal hair No. 6 long and triple in segments I and II, very long and double on segments III to VII. Lateral comb of eighth abdominal segments of some fifty scales arranged in a broad patch three rows deep. Air tube slightly over eight times as long as its basal width, bearing on basal third some twenty pecten teeth followed by four pairs of long two or three-haired tufts, progressively shorter apically. Anal segment somewhat longer than wide, ringed by the saddle which is covered with short spicules and bears two or three rows of long, simple spines on apical border; anal hair No. 1 double and short; No. 2 in threes; No. 3 double.

Pupa.—Unknown.

Types.—*Holotype* male, mounted on a pin; terminalia dissected and mounted on a slide; taken sweeping in dense forest at Palo Santo, Chiriqui Volcano region, 4,500 feet elevation, Republic of Panama, X-18-50. *Paratypes*: one male mounted on a pin with terminalia dissected and mounted on a slide, Cerro Punta, Chiriqui Volcano region, V-26-46; resting in hollow tree in the forest; one male emerging from pupal case, mounted on a slide, with associated larval skin and male terminalia mounted on two separate slides, Bambito, Chiriqui Volcano region, 5,500 ft., X-20-45, reared from epiphytic bromeliads, one male terminalia (male lost) taken at Cerro Punta, V-26-46; one male terminalia (male lost) taken at El Hato, Chiriqui Volcano region, 4,000 ft., IX-5-46; one whole larva taken in epiphytic bromeliads at El Hato on IX-5-46; one larval skin from terrestrial bromeliads taken at Nueva

Suiza, Chiriqui Volcano region, 5,000 ft., X-11-44. Ten whole larvae from epiphytic bromeliads, Bambito, X-11-44.

Taxonomic Discussion.—By the characters presented by Lane (1953) in his keys and descriptions this species appears related to *neglectus* Lutz as the basal hooks of the phallosome are curved anteriorly and the apical lobe bears a slender leaf which is enveloped by the setae from the lobe. However, Lane does not mention the very characteristic fusing at the base of the lobes of the ninth tergite and *neglectus* does not appear to have the lanceolate filament inserted on the basistyle beyond the subapical lobe. The larvae of these two species also differ as in *neglectus* the airtube is 14 x 1, while in *erethysonfer* n. sp. it barely reaches 8 x 1.

Culex (Culex) laticlasper n. sp.

Male.—Proboscis longer than fore femur, dark. Palpi exceeding the length of the proboscis by almost the length of the last two segments, dark. Antennae densely plumose. Occiput clothed with narrow recumbent dark scales and forked erect ones; eye borders white. Mesonotal integument dark brown, with two darker lines along the middle, clothed with small, narrow, bronzy scales. Pleura greyish brown with small patches of white scales on upper third of sternopleura and mesopleura. Femora dark-scaled above, pale below, tips with narrow rings of white scales. Tibiae dark-scaled, with an apical patch of white scales on the outer surface, quite large and prominent on hind tibiae. Tarsi dark. Wing scales narrow, dark. Abdomen dark with basal segmental lateral spots of white scales.

Male terminalia: Basistyle conical, rather slender, about three times as long as its greatest width, clothed on outer surface with long stiff hairs. Dististyle about half the length of the basistyle and very broad, curving inwardly and tapering to tip on distal half, bearing two or three eye-setae and a subapical appendiculate spine which is rather slender and somewhat expanded at apex. Subapical lobe of the basistyle narrow but very prominently produced, bearing from base to apex the following appendages: one straight pointed rod, two rods longer than the first with curved tips, a broad leaf, a rod markedly recurved at apex and a curved seta. Plate of the phallosome divided, inner division the usual broad, curved, tooth-like process; outer division quite simple, without teeth or complicated processes; tergal border produced medianly into a slender, pointed horn, apex a rounded, rather bulbous process. Tenth sternites with well developed basal arm and a tuft of hairs at apex which extends along the outer border to about the middle of the sternite. Ninth tergite poorly developed, bearing a row of seven to nine hairs.

Female.—Coloration of the male. Palpi short, about twice as long as the clypeus. Antennae not plumose slightly longer than the proboscis.

Larva and Pupa.—Unknown.

Type Material.—*Holotype* male, mounted on a slide with terminalia dissected and mounted separately on same slide, Cerro Punta, Chiriqui Volcano region, Republic of Panama, 6,500 ft., XII-10-52. *Allotype* female mounted on a pin, Cerro Punta, V-22-46. *Paratypes* three males mounted on pins with terminalia mounted on slides, Cerro

Punta, V-22-46. Holotype taken at light, allotype and paratypes reared from larvae found breeding in the water held by palm spathes on the forest floor.

Taxonomic Discussion.—This species differ from other species of the subgenus by the broad clasper and shape of the phallosome. Females differ from all other species representing the subgenus in Panama by the dark brown color of the mesonotal integument which is light colored in all the other species.

LITERATURE CITED

- Lane, J. 1953. Neotropical Culicidae, Vol. 1. Univ. Sao Paulo Pub., 548 pp.
Rozeboom, L. E., and Komp, W. H. W. 1950. A Review of the species of *Culex* of the subgenus *Melanocnion*, Ann. Ent. Soc. Amer., 43: 75-114.

THE BEETLES OF THE PACIFIC NORTHWEST, PART I, INTRODUCTION AND ADEPHAGA, by MELVILLE H. HATCH. Pp. vii+340, 37 plates, frontispiece, 2 text figs. Paper, photographic offset process. University of Washington Press, Seattle. 1953. Price, \$5.00.

No one is better acquainted with the beetle fauna of the Pacific Northwest, taken as a whole, than the genial coleopterist from the University of Washington. Dr. Hatch has the happy faculty of approaching his studies with the enthusiasm of the novice combined with the mellowness and cautious tread of experience. The present work from his pen, culminating years of study, is the first of several volumes which will attempt to cover this large and important order of insects as it occurs in British Columbia, Washington, Oregon, and Idaho. It is the first major work dealing in a comprehensive way with an important group of insects in this area, and will probably set more or less of a pattern for future similar works to follow.

The introductory pages include, in addition to the usual explanatory material, definitions, acknowledgments, etc., a brief history of Northwestern coleopterology, suggestions for making a collection, a zoogeographical analysis of the Northwestern fauna, a discussion of the ecological relationships and economic importance, and some philosophical considerations. The body of the work is made up of keys which are extensive enough to amount to brief descriptions or extended diagnoses. Geographical distribution is indicated within the keys and is given only in general terms, for this purpose Washington and Oregon each being divided into two parts, Idaho into three, and British Columbia into four. Most of the illustrations are line drawings but some use the carbon pencil techniques which Dr. Hatch and his students frequently employ. Both types of illustrating reproduce well by the offset process. Most plates illustrate from four to ten beetles each, dorsal view, but some plates give details of structure. The illustrations appear to be well executed. Finally, there are eleven pages of citations.

The final test of any taxonomic work comes, of course, through its use, and the reviewer is in no position to pass judgment in this matter. He does know, however that, in addition to the years of study in his laboratory, Dr. Hatch carried his manuscript with him at all the important beetle collections of the area, private and institutional alike, and checked his manuscript against those collections as he traveled. There will undoubtedly be some criticism of the form in which the work is presented, but with such a large undertaking one has to select material, condense, and make omissions where they will be of least significance. As to the way of handling these condensations and selections, there are bound to be differences of opinion. The reviewer feels that in this set of volumes we will have contributions comparable to Blatchley's *Coleoptera and Rhynchophora of Indiana*, or to the *Insects of Connecticut* series, and that, like those works, the "Beetles of the Pacific Northwest" will prove very useful far beyond the geographical region which it is intended to cover.—M. T. J.