

DIPTERA COLLECTED ON SOUTHAMPTON ISLAND  
BY GEORGE MIKSCH SUTTON  
TRICHOCERIDÆ AND TIPULIDÆ

BY CHARLES P. ALEXANDER  
Massachusetts State College, Amherst, Massachusetts

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II. DIPTERA COLLECTED ON SOUTHAMPTON ISLAND BY  
GEORGE MIKSCH SUTTON.

TRICHO CERIDÆ AND TIPULIDÆ.

By CHARLES P. ALEXANDER.

MASSACHUSETTS STATE COLLEGE, AMHERST, MASSACHUSETTS.

Through the kind interest of Dr. William J. Holland, I have been privileged to study the Crane-flies collected on Southampton Island by Mr. George Miksch Sutton and now preserved in the collection of the Carnegie Museum.

The present report is divided into two divisions, the first of which considers the Crane-flies secured by Mr. Sutton on Southampton Island, the second division being a discussion, with list and bibliography, of the Tipulidæ of the Canadian Arctic.

All types and uniques resulting from the present interesting series of Tipulidæ are preserved in the Carnegie Museum. I wish to express my indebtedness to Drs. Holland and Avinoff, and to Messrs. Kahl and Sutton, for the opportunity of studying this relatively extensive series of Arctic American Tipulidæ.

DIVISION I.

THE TIPULIDÆ AND TRICHO CERIDÆ OF SOUTHAMPTON ISLAND.

Family TRICHO CERIDÆ.

Genus TRICHO CERA Meigen.

1. *Trichocera hiemalis* (de Geer).

1776. *Tipula hiemalis* de Geer; Mém. pour serv. à l'Hist. des Ins., VI: 360, pl. 21, figs. 1-5.

Southampton Island, 1930 (*Sutton*); 5 specimens.

The fly had been previously recorded from Greenland.

Family TIPULIDÆ.

SUBFAMILY TIPULINÆ.

Genus PRIONOCERA Loew.

2. *Prionocera electa* Alexander.

1927. *Prionocera electa* Alexander; Canadian Ent., LIX: 188-189.

Southampton Island, July 3, 1930 (*Sutton*); 1♀.

Described from Hopedale, Labrador (Lat.  $55\frac{1}{2}^{\circ}$  N.). The present female differs from the unique type, a male, chiefly in the short-petiolate to nearly sessile cell  $M_1$  of the wings, but certainly appears to represent the same species. The unusually broad and conspicuous obliterate streak before the cord, in conjunction with the infumed outer radial field and short upcurved vein  $R_3$ , distinguish the present fly from allied regional species of *Prionocera*.

## Genus NEPHROTOMA Meigen.

3. *Nephrotoma lundbecki* (Nielsen).

1909. *Pachyrrhina lundbecki* Nielsen; Meddelelser om Grønland, XXIX: 390-391.  
 1919. *Nephrotoma arctica* Alexander; Report Canadian Arctic Exped. 1913-18, Vol. III, part C: 10c-11c.

Southampton Island, box closed August 1, 1930 (*Sutton*); 1♀.

The type of *lundbecki* was from East Greenland, that of *arctica* from the Canadian Northwest Territories. The present station bridges the hitherto extensive gap in the range of the fly.

## Genus TIPULA Linnæus.

4. *Tipula (Vestiplex) arctica* Curtis.

1831. *Tipula arctica* Curtis; Description of the insects brought home by Commander J. Clark Ross. Ross's Voyage to the Arctic regions, *Appendix*, p. lxxvii.  
 1931. *Tipula (Vestiplex) arctica* Edwards; Ann. Mag. Nat. Hist., (10) VIII: 80.

Southampton Island, July 3, 1930 (*Sutton*); 7, ♂, ♀.

Widely distributed in the Arctic Regions of the New World. (Alexander, 1919, 1925; Curtis, 1831; Henriksen and Lundbeck, 1917; Nielsen, 1907).\* Records for Arctic Europe require confirmation.

5. *Tipula diflava* Alexander.

1919. *Tipula diflava* Alexander; Report Canadian Arctic Exped. 1913-18, Vol. III, part C: 12c.

Southampton Island, July 3, 1930 (*Sutton*); 8, ♂, ♀.

Described from the Canadian Northwest and Yukon Territories.

6. *Tipula hollandi* sp. nov., (Plate XXV, figs. 1-5).

General coloration yellowish gray, the præscutum with three clearer gray stripes, which are bordered by brown; a capillary median brown vitta extending the entire length of mesonotum; antennæ black throughout; wings faintly brownish, variegated by dark brown and whitish subhyaline areas; abdominal tergites obscure yellow, with three continuous, longitudinal black stripes; male hypopygium with the caudal margin of tergite with a broad U-shaped notch; basistyle partly fused with sternite; eighth sternite unarmed.

*Male*: Length, about 12-13 mm.; wing, 13-14.

Frontal prolongation of head about equal in length to remainder of head, light gray; nasus stout; palpi black throughout. Antennæ black throughout, the basal segment pruinose; flagellar segments with the basal enlargement only feebly developed; terminal segment very small; verticils shorter than the segments. Head brownish gray, somewhat clearer gray on front and on the narrow posterior orbits; a scarcely indicated median brown vitta.

Pronotum gray, with a capillary brown median line. Mesonotal præscutum yellowish gray, with three somewhat clearer gray stripes which are bordered by brown lines, these being narrower in the paratype than in the type; a capillary brown vitta extends the entire length of mesonotum; each scutal lobe with two brown areas. Pleura clear gray, the dorso-pleural membrane buffy. Halteres buffy, the knobs darker, tipped with obscure yellow. Legs long and slender; coxæ and trochanters light gray; femora fulvous-yellow, the tips broadly blackened; tibiæ and tarsi black; tibial spurs 1- 2- 2; claws very small. Wings

\*Dates in parenthesis refer to Bibliography at end of paper.

(Pl. XXV, fig. 1) with the ground-color faintly brownish, variegated with darker brown and whitish subhyaline areas, the darker markings including small spots at origin of *Rs*, end of *Sc* and stigma, the last sending a seam caudad onto the anterior cord; further dark areas in cell *M* on either side of a subhyaline spot and in cell *Cu* before mid-length; the whitish subhyaline areas lie before and beyond the origin of *Rs*, as a narrow, incomplete cross band beyond the cord, as a large, conspicuous spot at near two-thirds the length of cell *M*, and as a common area at near the basal third of cells *Cu* and *1st A*; veins dark brown, *Sc* more yellowish brown. Costal fringe short and dense; macrotrichia of veins beyond cord very sparse, including a series of about a score on distal section of  $R_{4+5}$  and a nearly complete series on distal section of  $Cu_1$ ; squama naked. Venation:  $R_{1+2}$  complete, with from six to eight macrotrichia on basal half; petiole of cell  $M_1$ , subequal to *m*; *m-cu* at fork of  $M_{3+4}$ .

Basal abdominal tergite gray, the succeeding tergites obscure yellow, trivittate with brownish black; sternites obscure yellow, broadly brownish black medially; outer segments, including hypopygium, more uniformly grayish black. Male hypopygium (Pl. XXV, fig. 2) with the tergite entirely separated from the sternite by pale membrane; basistyle not completely separated from the sternite, the sutures indicated on the dorsal, and a little less extensively on the ventral portion; a further small, elongate, roughly triangular area is cut from the sternite adjoining the dorsal sutures. Ninth tergite (Pl. XXV, fig. 3) dark gray, not heavily sclerotized and polished black, as is the case in several Arctic species of *Tipula*; transverse, the caudal margin with a very broad U-shaped notch; caudal third of tergite with very small, delicate setulæ, including a marginal fringe. Region of ninth sternite (Pl. XXV, fig. 4) broadly membranous. Eighth sternite unarmed. Outer dististyle (Pl. XXV, fig. 5, od) relatively slender, clavate, narrowed at base. Inner dististyle (Pl. XXV, fig. 5, id) broad, the outer margin wrinkled and provided with numerous erect pale setæ.

*Habitat*: Canadian Arctic.

*Holotype*: ♂, Southampton Island, July 3, 1930 (*Sutton*).

*Paratopotype*: ♂.

I take great pleasure in naming this handsome *Tipula* in honor of Dr. William J. Holland. The closest ally appears to be *Tipula subpolaris* Alexander, likewise from the Canadian Arctic. Both species agree in having the antennæ uniformly blackened, the tibial spurs long and slender, and with a wing-pattern of somewhat similar appearance. The present fly has the yellow and black abdominal pattern quite distinct, and with the details of the hypopygium very different, the basistyle being partly fused with the sternite, and the notch of the tergite more broadly U-shaped.

#### 7. *Tipula suttoni* sp. nov. (Pl. XXV, figs. 6-10).

General coloration gray, the præscutum with two intermediate brown stripes; antennæ black throughout; wings grayish subhyaline, the brown stigma small and relatively ill-defined; *m-cu* connecting with  $M_4$ , some distance beyond the origin of latter; male hypopygium with the lobes of the tergite sooty-black, rounded, separated by a narrow median notch, on ventral surface with a heavily blackened plate that bears four slender spines; outer dististyle buffy-yellow, very broad.

*Male*: Length, about 9-12 mm.; wing, 10.5-14 mm.

*Female*: Length, about 13 mm.; wing, 15 mm.

Frontal prolongation of head relatively short and stout, dark gray; nasus stout; palpi black, the basal segments dusted with gray. Antennæ relatively short, black throughout, the segments a little pruinose; flagellar segments short, the basal enlargement of each subequal in length to the remainder of segment, the verticils shorter than the segments. Head gray, with a barely indicated capillary median vitta; anterior vertex wide, without tubercle; eyes small; genæ with abundant erect setæ that are smaller on the posterior vertex, lacking on the median area.

Mesonotum gray, the præscutum with two distinct brown stripes, the lateral pair being

obsolete or nearly so; postnotal mediotergite with a capillary darkened median line. Pleura gray, the dorso-pleural membrane more buffy. Notum and pleura, together with the coxæ, with abundant long setæ, which are chiefly pale in color. Halteres dusky, the base of stem restrictedly pale, the apex of knob more or less yellowish. Legs with the coxæ and trochanters gray; femora reddish brown, passing to black at tips; tibiae and tarsi black; legs relatively short and stout; tibial spurs 1 -2 -2; claws with a single small tooth near base. Wings grayish subhyaline; stigma relatively small and ill-defined, brown; obliterative areas extensive, but not conspicuous; veins brown. Costal fringe short and dense; macrotrichia of veins very sparse, including a weak series along the entire length of distal section of  $R_{4+5}$  and for almost the whole length of vein 2nd A. Squama naked but with a series of more elongate setæ on margin immediately beyond it. Venation (Pl. XXV, fig. 6):  $R_{1+2}$  entirely preserved;  $m-cu$  connecting with  $M_4$  shortly beyond base, leaving a short basal section;  $Cu_2$  very pale; cell 2nd A wide.

Abdomen gray, the caudal margins of intermediate tergites narrowly buffy, the lateral margins more broadly so, in some specimens this pale color obsolete or nearly so; outer dististyle of hypopygium buffy; tergal lobes sooty-black. Male hypopygium (Pl. XXV, fig. 7) with the eighth tergite not concealed beneath the seventh. Ninth tergite entirely distinct from the sternite; basistyle partly fused with sternite, the suture indicated both dorsally and ventrally, the fusion being complete on the mid-third. Ninth sternite extensive, with a deep U-shaped median notch, the remainder of the mid-ventral region narrowly membranous; outer dorsal portion of sternite densely set with short, erect setulæ. Ninth tergite (Pl. XXV, fig. 8) entirely blackened above, with two conspicuous lobes, which are separated by a deep median notch; lobes rounded, their dorsal surface densely covered with short setæ; on ventral surface of tergite a narrow blackened sclerotized band, which bears two slender spines on either side, the more lateral pair being directed caudad, the sublateral spines smaller and directed more dorsad. Eighth sternite unarmed. Outer dististyle (Pl. XXV, fig. 9, od) unusually broad and flattened, only a little narrower than long. Inner dististyle heavily blackened, narrow, shaped as shown (Pl. XXV, fig. 9, id).

*Habitat*: Canadian Arctic.

*Holotype*: ♂, Southampton Island, July 1930 (*Sutton*).

*Allotopotype*: ♀, July 3, 1930.

*Paratopotypes*: 4 ♂♂, July 3, 1930.

The holotype male is the specimen having the smallest measurements, as given above.

*Tipula suttoni* is named in honor of the collector, Dr. George Miksch Sutton. In its general appearance, almost uniform gray coloration, unpatterned wings and rather conspicuously hairy body, the species somewhat resembles *T. besselsi* Osten Sacken and allied members of this immediate group, but is very distinct in the details of the male hypopygium.

The female, which I refer to this species as allotype, has an ovipositor of peculiar type (Pl. XXV, fig. 10). The cerci are very thin, non-sclerotized, the apex of each acutely pointed, the margins smooth; hypoalvæ with a dorsal flange-like lobe at base, these valves obtuse at their apices. This type of ovipositor remotely suggests the condition found in the subgenus *Vestiplex* but is quite distinct.

#### SUBFAMILY LIMONIINÆ.

##### Tribe Eriopterini.

##### Genus HELOBIA Saint Fargeau.

##### 8. *Helobia hybrida* (Meigen).

1804. *Limonia hybrida* Meigen; *Klassificat.*, 1: 57, pl. 3, fig. 17.

1900. *Helobia hybrida* Coquillett; *Proc. Washington Acad. Sci.*, 2: 399.

Southampton Island (*Sutton*); 1 ♂, 1 ♀.

The present fly has a vast range throughout the Holarctic region.

## DIVISION II.

## THE TIPULIDÆ OF ARCTIC AMERICA.

The true Arctic *Tipulidæ* of the World are mostly very similar in their general appearance. This statement is especially true concerning the dominant genus *Tipula*, where several subgenera are involved, yet all species appear at first sight to be much alike. Gray is the predominant color, while shortened legs are very characteristic. Some species of this genus are strikingly pilose but others have a more normal vestiture. Subapterous species are frequent on the Pribilof Islands (Alexander, 1923), but elsewhere in the far north have not been taken in any numbers. Among the characteristic Arctic *Tipulidæ* in the New World may be mentioned: *Prionocera parrii*, *P. parrioides*, *Nephrotoma lundbecki*, *Tipula (Vestiplex) arctica*, *T. besselsi*, *T. besselsoides*, *T. diflava*, *T. hewitti*, *T. hollandi*, *T. johanseni*, *T. suttoni*, *Dactylolabis rhicnoptiloides* and *Rhabdomastix (Sacandaga) caudata*.

## A LIST OF THE TIPULIDÆ OF ARCTIC AMERICA.

*Areas included:* (1) *Alaska*, north of the Arctic Circle but also including the Pribilof Islands. (2) *Canadian Northwest Territories*, north of the Arctic Circle, including all of the District of Franklin (Baffinland and Ellesmereland) but including also Southampton Island and coastal Labrador, as far south as 55° N. Latitude. (3) *Greenland*.

*Areas omitted:* (1) *Alaska*, south of the Arctic Circle, including the Alaska Peninsula and Aleutian Islands (this omitted area includes numerous *Tipulidæ* from Sitka, described by Bergroth; the Harriman Alaska collections, reported on by Coquillett; the Katmai collections, discussed by Alexander; and other smaller series. These species are not Arctic species, but are more especially Hudsonian and Vancouverian types). (2) *Canadian Northwest Territories*, south of the Arctic Circle, including the Districts of Mackenzie and Keewatin, with the exception of Southampton Island (this omitted area includes numerous high Hudsonian types taken by Bryant, Harper, Kennicott, and others, but with few or no strictly Arctic *Tipulidæ*). (3) *Southern Labrador*. Most of the species of *Tipulidæ* taken by Perrett at Hopedale (Lat. 55½° North) are widely distributed Hudsonian types, but at the same time include a lesser number of apparently true Arctic species. Southern Labrador, Canadian Labrador and Newfoundland have produced no strictly Arctic *Tipulidæ*.

*Southampton Island.* Despite the fact that it lies south of the Circle, all species of *Tipula* and *Nephrotoma* taken by Mr. Sutton represent characteristic Arctic species. It seems certain that the above artificial and arbitrary boundaries listed above will require much modification as a result of future discoveries.

(The date in parenthesis pertains to the Bibliography).

## TIPULINÆ.

- Prionocera electa* Alexander. Labrador; Southampton Island. (Alexander, 1927)  
*P. parrii* (Kirby). Canadian Northwest. (Alexander, 1919)  
*P. parrioides* (Alexander). Canadian Northwest. (Alexander, 1919)  
 [*Nephrotoma arcticola* Alexander = *N. lundbecki* (Nielsen)]  
*N. lundbecki* (Nielsen). Canadian Northwest; Southampton Island; Greenland (Nielsen, 1907; Alexander, 1919)  
*Tipula alascaensis* Alexander. Pribilof Islands. (Alexander, 1923)  
*T. aleutica* Alexander. Pribilof Islands. (Alexander, 1923)  
*T. aperta* Alexander. Labrador. (Alexander, 1918a)

- T. bergrothiana* Alexander. Northern Alaska. (Alexander, 1918a)  
*T. besselii* Osten Sacken. Canadian Arctic. (Osten Sacken, 1876)  
*T. besseloides* Alexander. Canadian Northwest. (Alexander, 1919)  
*T. canadensis* Loew. Labrador. (Alexander, 1928)  
*T. coracina* Alexander. Northern Alaska. (Alexander, 1918a)  
*T. difflava* Alexander. Canadian Arctic. (Alexander, 1919)  
*T. entomophthoræ* Alexander. Labrador. (Alexander, 1928)  
 [ *T. glomerata* Walker = *T. arctica* Curtis ]  
*T. grenfelli* Alexander. Labrador. (Alexander, 1928)  
*T. hewitti* Alexander. Canadian Northwest. (Alexander, 1919)  
*T. hollandi* sp. nov. Southampton Island. (this report)  
 [ *T. imperfecta* Alexander = *T. aperta* Alexander ]  
*T. johanseni* Alexander. Canadian Northwest. (Alexander, 1919)  
*T. kirbyana* Alexander. Northern Alaska. (Alexander, 1918b)  
 [ *T. labradorica* Alexander = *T. platymera* Walker ]  
*T. macrolabis* Loew. Labrador. (Alexander, 1928)  
 [ *T. nodulicornis* Zetterstedt = *T. arctica* Curtis ]  
*T. packardi* Alexander. Labrador. (Alexander, 1928)  
*T. perretti* Alexander. Labrador. (Alexander, 1928)  
*T. platymera* Walker. Labrador. (Alexander, 1928)  
*T. pribilofensis* Alexander. Pribilof Islands. (Alexander, 1923)  
*T. productella* Alexander. Labrador. (Alexander, 1928)  
*T. septentrionalis* Loew. Labrador. (Alexander, 1928)  
*T. sarta* Loew. Labrador. (Alexander, 1928)  
*T. subarctica* Alexander. Canadian Northwest. (Alexander, 1919)  
*T. subpolaris* Alexander. Canadian Northwest. (Alexander, 1919)  
*T. subsarta* Alexander. Labrador. (Alexander, 1928)  
*T. suttoni* sp. nov. Southampton Island. (this report)  
 [ *T. tessellata* Loew = *T. platymera* Walker ]  
*T. whitneyi* Alexander. Pribilof Islands. (Alexander, 1923)  
*T. (Nesotipula) pribilovia* Alexander. Pribilof Islands. (Alexander, 1921b)  
*T. (Vestiplex) arctica* Curtis. Canadian Arctic; Greenland; Arctic Europe (?). (Alexander, 1919; Curtis, 1831; Nielsen, 1907)

## LIMONIINÆ.

## LIMONIINI.

- Limonia (Dicranomyia) decora* (Stæger). Canadian Arctic.  
*L. (D.) halterata* (Osten Sacken). Labrador. (Osten Sacken, 1869)

## PEDICIINI.

- Tricyphona brevifurcata* Alexander. Canadian Northwest. (Alexander, 1919)  
*T. glacialis* Alexander. Pribilof Islands. (Alexander, 1921b)  
*T. hannai* Alexander. Pribilof Islands. (Alexander, 1923)

## HEXATOMINI.

- Dactylolabis rhicnoptiloides* (Alexander). Canadian Northwest; Ellesmereland; Labrador.  
 (Alexander, 1919, 1924; Johnson, 1929)  
*Limnophila (Phylidorea) fulvocostalis* Coquillett. Bering Island. (Coquillett, 1899)

## ERIOPTERINI.

- Chionea waughii* Curran. Labrador. (Curran, 1925)  
*Neolimnophila ultima* (Osten Sacken). Northern Alaska; Canadian Northwest.

- Rhabdomastix (Sacandaga) caudata* (Lundbeck). Baffinland; Greenland. (Alexander, 1914; Lundbeck, 1898)  
*Helobia hybrida* (Meigen). Canadian Northwest; Southampton Island.  
*Ormosia affinis* (Lundbeck). Greenland. (Lundbeck, 1898)  
*Erioptera (Psiloconopa) angustipennis* Alexander. Canadian Northwest. (Alexander, 1919)

Records of a few European species of *Tipulidæ*, which have been recorded for Greenland, apparently in error, are omitted from the above list. Such records include *Limonia (Dicranomyia) modesta* (Wiedemann), *Ormosia fascipennis* (Zetterstedt), *Nephrotoma lineata* (Scopoli), and others.

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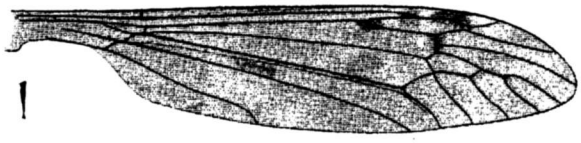
## EXPLANATION OF PLATE XXV.

*Tipula hollandi* sp. nov.

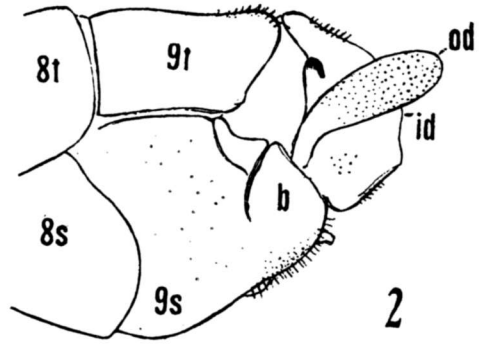
- FIG. 1. Wing. Fig. 2. Male hypopygium, lateral aspect.  
FIG. 3. Male hypopygium, 9th tergite; dorsal aspect.  
FIG. 4. Male hypopygium, 9th sternite and basistyle, ventral aspect.  
FIG. 5. Male hypopygium, inner and outer dististyles.  
(Symbols: a, ædeagus; b, basistyle; id, inner dististyle; od, outer dististyle; s, sternite; t, tergite).

*Tipula suttoni* sp. nov.

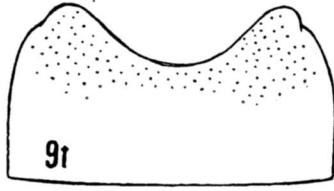
- FIG. 6. Wing-venation. Fig. 7. Male hypopygium, lateral aspect.  
FIG. 8. Male hypopygium, 9th tergite, dorsal and ventral aspects.  
FIG. 9. Male hypopygium, inner and outer dististyles.  
FIG. 10. Ovipositor, lateral aspect.  
(Symbols: b, basistyle; id, inner dististyle; od, outer dististyle; s, sternite; t, tergite).



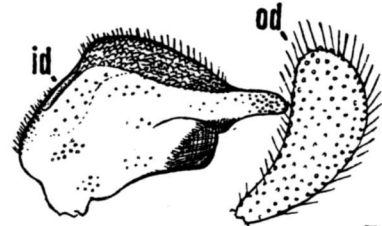
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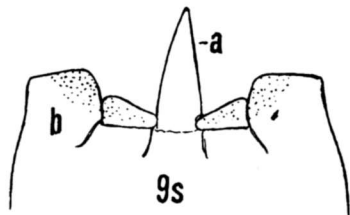
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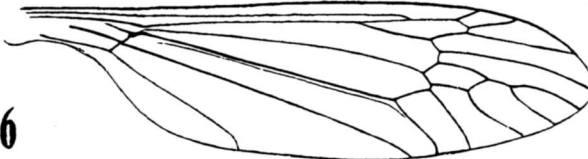
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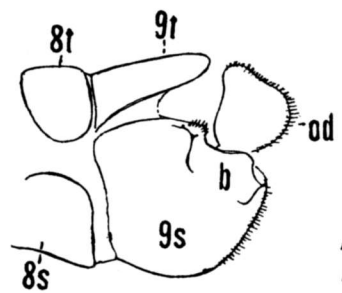
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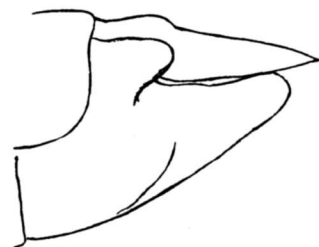
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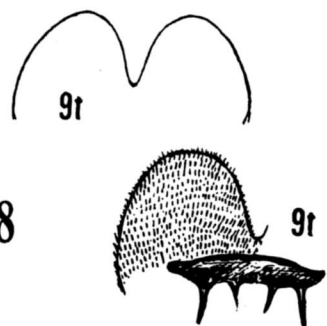
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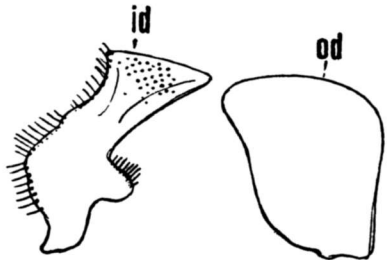
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