A Mosquito Taxonomic Glossary

II. Adult Head (Internal)*

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For a full explanation of this project see Part I (Knight 1970). As before, terms recommended for standardized use are given fully capitalized. Synonyms to these are in lower case and underlined. Standardized abbreviations are also suggested.

We wish to acknowledge most gratefully the provision by Dr. H. C. Chapman, of the adult mosquito specimens from which all of the drawings of this and of Part I were made. The drawings were prepared by Mrs. Yvonne Lee.

ala clypealis.-- See LABRAL LEVER.

anterior arm of tentorium.-- See ANTERIOR TENTORIAL ARM.

ANTERIOR HARD PALATE (AHP).-- In adult mosquitoes applied to the irregular plate distally on the roof of the cibarial pump; bearing one or more palatal papillae.

ANTERIOR TENTORIAL ARM (ATA).-- The apodeme extending posteriad from the anterior tentorial pit, its apex sometimes (always in mosquitoes) meeting the apex of the posterior tentorial arm at a visible fusion point; sometimes bearing a small dorsal tentorial arm; also sometimes bearing a small ventral tentorial arm. (Syn.: anterior arm of tentorium.)

body of the tentorium.-- See CORPOTENTORIUM.

BUCCAL CAVITY.-- Properly used for the part of the stomodeum just behind the mouth when differentiated from the pharynx; not differentiated in mosquitoes. See CIBARIAL PUMP.

buccopharyngeal armature.-- See CIBARIAL ARMATURE.

CARDO (Cd).-- The basal sclerotized unit of a maxilla. In adult Diptera apparently regularly small and imbedded in the membrane near the posterior tentorial pit; in mosquitoes hardly distinguishable from the stipes except by the muscle insertions.

*Supported in part by the Southeast Asia Mosquito Project through Research Contract No. DA-49-193-MD-2672 from the U. S. Army Medical Research and Development Command, Office of the Surgeon General, Washington, D. C.

CIBARIAL ARMATURE (CA).-- In females of some mosquitoes, a series of teeth (CIBARIAL TEETH) occurring on a transverse ridge (CIBARIAL BAR) lying at the posterior margin of the cibarium on the floor of the entrance (mouth) to the pharynx. (Syn.: buccopharyngeal armature, pharyngeal armature.)

CIBARIAL BAR (CB).-- See CIBARIAL ARMATURE. (Syn.: pharyngeal bar).

CIBARIAL PUMP (CP).-- The preoral area or cibarium (food chamber) in adult mosquitoes; serves as the primary sucking pump; the ventral wall is continuous with the upper surface of the hypopharynx; the dorsal surface is the so-called epipharyngeal wall from the labrum, to which is attached the dilator muscles from the clypeus; the posterior end of the pump opens into the mouth. The "buccal cavity" of many mosquito anatomical descriptions is actually a portion of this structure.

CIBARIAL RIDGE (CiR).-- In females of some mosquito genera, one of a series of short spiculate ridges lying just posterior to the cibarial bar.

CIBARIAL TEETH (CT).-- See CIBARIAL ARMATURE. (Syn.: pharyngeal teeth.) Commonly of two kinds, called CONES and RODS; when only a single type of tooth is present, the teeth may have more or less the character of cones.

CIBARIUM.-- See CIBARIAL PUMP.

clypeal apodeme.-- See LABRAL LEVER.

clypeal lever.-- See LABRAL LEVER.

CLYPEAL PHRAGMA (CPh).-- A flat, sheetlike clypeal apodeme extending from the exposed part of the clypeus to the lateral cibarial margin; present in mosquitoes and many other Diptera. (Syn.: fulcral plate, paraclypeal phragma.) This term is being proposed as new here because "fulcral plate" as commonly used in Diptera is too inclusive and "paraclypeal phragma" implies that the phragma somehow lies outside the clypeus.

COMMON SALIVARY DUCT (CSD).-- The common median portion of the salivary ducts.

CONE (Cn).-- See CIBARIAL TEETH. When both cones and rods are present, they are set alternately, the cones anterior to the rods, but sending posteriorly a basal extension (CREST) between the bases of the rods. A cone consists of a basal portion (PEDIMENT) and a terminal tapered portion (FILAMENT). In some cases, cones are supported by extra buttress-like ridges (ROOTS) arising from the flat dorsal surface of the ventral portion.

CORONAL RIDGE (CR).-- The apodematous portion of the coronal suture.

CORPOTENTORIUM (Co).-- The posterior part of the tentorium when processes of the posterior tentorial arms extend mediad and (sometimes) fuse. Believed by Robinson (1939) and Schiemenz (1957) to be represented in some mosquitoes by a slender process on each side extending from near the back of each posterior tentorial arm to the postoccipital ridge. (Syn.:corporotentorium; body of the tentorium.)

corporotentorium.-- See CORPOTENTORIUM.

CREST (Cr).-- See CONE.

DORSAL PAPILLA (DP).-- In adult mosquitoes, the minute tubercle-like structures borne on the roof of the cibarial pump (not to be confused with the palatal papillae which are borne ventrally on the anterior hard palate).

DORSAL TENTORIAL ARM (DTA).-- A process extending anterodorsad from the main part of the anterior tentorial arm. Absent or short in mosquitoes, reaching the antennal base in some insects.

epipharyngeal wall.-- See epipharynx.

epipharynx.-- A term applied by some to the ventral surface of the labrum and by others to the dorsal wall (epipharyngeal wall) of the cibarial pump; incorrect in that in neither location would it occur above the pharynx.

EPISTOMAL RIDGE (ER).-- The apodematous portion of the epistomal suture.

ESOPHAGUS (Es).-- The portion of the stomodeum following the pharyngeal pump; begins in the neck and extends through into the thorax.

FILAMENT (Fi).-- See CONE.

FOOD MEATUS.-- The food channel formed by the juxtaposition of the mouthparts; in mosquitoes distad of the cibarial pump.

FRONTAL RIDGE (FR).-- The apodematous portion of the frontal suture. (Syn.: postfrontal ridge.)

fulcral apophysis.-- See LATERAL FLANGE. Considered by Schiemenz (1957, 283) in Culiseta to consist of two paired lateral flanges, a dorsal pair and a ventral pair.

fulcral plate.-- See CLYPEAL PHRAGMA.

genal shelf.-- See SUBGENAL RIDGE.

INTERANTENNAL RIDGE (IR).-- The apodematous portion of the interantennal suture (or groove).

LABRAL LEVER (LL).-- A paired hook-shaped apodeme of the basal dorsal extension of the mosquito labrum; a muscle attached at its inner end has its opposite attachment on the proximal end of the ventral wall of the labrum; possibly homologous with the "torma" of certain other Diptera. (Syn.: "torma" as used for adult Culicidae, clypeal apodeme, clypeal lever, ala clypealis, lamina frontalis.)

lamina frontalis.-- See LABRAL LEVER.

LATERAL FLANGE (LF).-- Applied in adult mosquitoes to the lateral expansion of the base of the cibarial pump. (Syn.: fulcral apophysis, at least in part.)

mandibular condyle (as used in mosquitoes).-- See MANDIBLE.

mandibular suspensorium.-- See MANDIBLE. (Syn.: suspensorium of (the) mandible or mandibular condyle.)

MOUTH (M).-- The anterior opening of the stomodeum; in mosquitoes the opening from the cibarial pump to the pharynx; not to be confused with the 'secondary mouth' (anterior opening of the cibarial pump) or 'tertiary mouth' (anterior opening of the food meatus).

OCULAR RIDGE (OR).-- The apodematous portion of the ocular suture in the adult head. (Syn.: orbital ridge.)

orbital ridge.-- See OCULAR RIDGE.

PALATAL PAPILLA (PPa).-- In adult mosquitoes, the minute tubercle-like structures borne ventrally on the anterior hard palate.

POSTERIOR HARD PALATE (PHP).-- In mosquitoes applied to the large plate proximally in the roof of the cibarial pump; bearing several ventral papillae.

paraclypeal phragma.-- See CLYPEAL PHRAGMA.

PEDIMENT (Pd).-- See CONE.

pharyngeal armature.-- See CIBARIAL ARMATURE.

pharyngeal bar.-- See CIBARIAL BAR.

PHARYNGEAL PUMP (PP).-- A bulblike expansion of the pharynx behind the brain and the subesophageal ganglion; posteriorly opens into the esophagus.

pharyngeal teeth.-- See CIBARIAL TEETH.

PHARYNX (Ph).-- The part of the stomodeum between the mouth and the esophagus; in adult mosquitoes posteriorly developed into a bulblike pharyngeal pump.

posterior arm of tentorium.-- See POSTERIOR TENTORIAL ARM.

POSTERIOR TENTORIAL ARM (PTA).-- The apodeme extending anteriad from the posterior tentorial pit, its apex sometimes (always in mosquitoes) meeting the apex of the anterior tentorial arm at a visible fusion point; usually with a medial extension which may meet that of the opposite side forming a corpotentorium or a tentorial bridge (for the situation in mosquitoes see CORPOTENTORIUM). (Syn.: posterior arm of tentorium.)

postfrontal ridge.-- See FRONTAL RIDGE.

POSTOCCIPITAL RIDGE (PoR).-- The apodematous ridge internally on the adult head between the occiput and the nape.

prefrontal ridge.-- This term was applied by Schiemenz (1957) to the apodematous portion of the "prefrontal suture." The precise identity and relationship of this structure has not yet been adequately delineated.

ROD(Rd).-- See CIBARIAL TEETH. Arise from circular, oval or elliptical origins between the crests of the cones; each rod has a tapering or bulbous base and usually has a simple rodlike tapering termination.

ROOT (Rt).-- See CONE.

SALIVARIUM.-- The pocket into which the common salivary duct opens between the bases of the hypopharynx and labium. Modified in some insects, including mosquitoes, into a salivary pump. q. v.

SALIVARY CANAL (SC).-- A canal present in Hemiptera, Homoptera and Diptera through which saliva passes from the salivary pump to the distal opening of the canal on the hypopharynx in Diptera or interlocking maxillae in Hemiptera and Homoptera; in mosquitoes a channel extending through the ventromedial rib of the hypopharynx.

SALIVARY DUCT (SD).-- A duct through which saliva passes from the salivary gland to the salivarium; in mosquitoes, paired distally, fusing medially forming the portion called the common salivary duct.

SALIVARY PUMP (SP).-- The modified salivarium (q.v.) characteristic of mosquitoes. (Syn.: salivary syringe).

salivary syringe.-- See SALIVARY PUMP.

stipes (St.)-- In adult mosquitoes, a paired rod in the adult head, internal and ventral to the tentorial arms, which represents the basal portion of the maxilla; posteriorly attached to the membrane at the ventral edge of the occipital foramen slightly internal to the posterior tentorial arm; anteriorly articulated with the free portion of the maxilla; provides support to the maxillary palpus; thicker and denser in the female than in the male.

SUBGENAL RIDGE (SR).-- The apodematous portion of the subgenal suture; in culicids arising from the ventromesal border of the anterior tentorial arm and continuous mesally with the epistomal ridge. (Syn.: genal shelf.)

suspensorium of the mandible.-- See MANDIBLE.

VENTRAL TENTORIAL ARM (VTA).-- A ventral spur on the anterior tentorial arm of the adult head.

tentorial bar.-- A term referring to the united anterior and posterior tentorial arms.

TENTORIUM.-- The endoskeletal cranial bracing in most ectognathous insects composed of 2 or 4 apodemes marked externally by tentorial pits (other arthropods have structures which may be homologous); in mosquitoes the left and right halves of the tentorium are hollow and do not connect with each other.

torma.-- See LABRAL LEVER.

VENTRAL PAPILLA (VP).-- In adult mosquitoes, minute tubercle-like structures borne proximally on the floor of the cibarial pump.

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ABBREVIATIONS

AHP-anterior hard palate
ATA-anterior tentorial arm
CA -cibarial armature
CB -cibarial bar
Cd -cardo
CiR-cibarial ridge
Cn -cone
Co -corpotentorium
CP -cibarial pump
CPh-clypeal phragma
Cr -crest
CR -coronal ridge
CSD-common salivary duct
CT -cibarial teeth
DP -dorsal papilla
DTA-dorsal tentorial arm
ER -epistomal ridge
Es -esophagus
Fi -filament
FR -frontal ridge
IR -interantennal ridge
LF -lateral flange
LL -labral lever
M -mouth
OR -ocular ridge
Pd -pediment
Ph -pharynx
PHP-posterior hard palate
PoR-postoccipital ridge
PP -pharyngeal pump
PPa-palatal papilla
PTA-posterior tentorial arm
Rd -rod
Rt -root
SC -salivary canal
SD -salivary duct
SP -salivary pump
St -stipes
SR -subgenal ridge
VP -ventral papilla
VTA-ventral tentorial arm

Explanation of Figures

Illustrations of the head of Aedes (Ochlerotatus) grossbecki Dyar and Knab. (Figs. 5-8).

Fig. 5 Lateral aspect of male head. Lateral wall of clypeus and head capsule removed.

Fig. 6 Lower half of lateral aspect of male head. Lateral wall of clypeus and head capsule removed. Greatly enlarged.

Fig. 7 Lateral aspect of female head. Lateral wall of clypeus and head capsule removed.

Fig. 8 Ventral aspect of female head. Greatly enlarged.

Fig. 9 Anterior aspect of female head of A. (Aedimorphus) vexans nocturnus (Theobald).

Fig. 10 Anterior aspect of female head of A. v. nocturnus. Internal view at level of dorsoanterior surface of stomodeum. The dotted outlines refer to associated surface structures.

Fig. 11 Anterior aspect of female head of Culex (Neoculex) territans Walker.

Fig. 12 Anterior aspect of female head of C. territans. Internal view at level of dorsoanterior surface of stomodeum. The dotted outlines refer to associated surface structures.

Fig. 13 Lateral view (cut away)of female anopheline head showing cibarial pump and pharynx (after Christophers 1933).

Fig. 14 Dorsal view of female anopheline head showing cibarial pump (after Christophers 1933).

Fig. 15 Dorsal view of clypeus, cibarial pump and pharynx of female anopheline head (after Christophers 1933).

Fig. 16 Cones and rods of female anopheline cibarial armature seen from above (after Christophers 1933).

Fig. 17 Lateral view of function of cibarial pump and pharynx of female anopheline head (after Christophers 1933).

Fig. 18 Anterior (a) and lateral (b) views of a cone from anopheline cibarial armature (after Christophers 1933).

Fig. 19 Anterior (a) and lateral (b) views of a rod from anopheline cibarial armature (after Christophers 1933).

Fig. 5

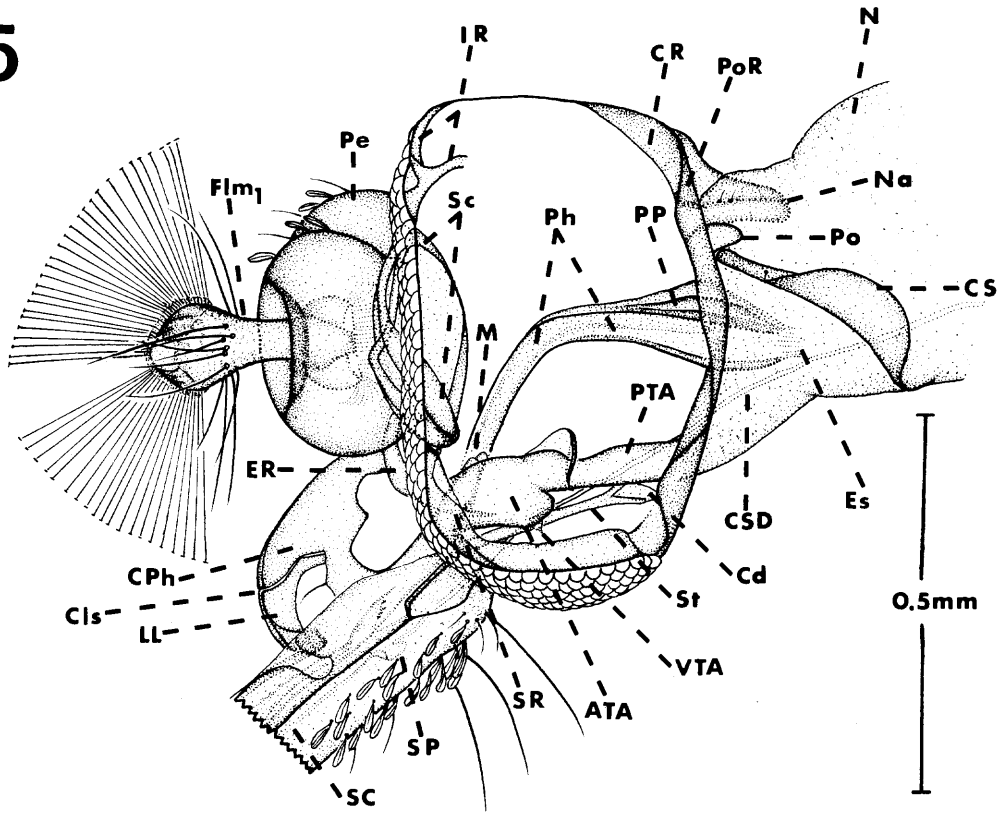
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Fig. 6

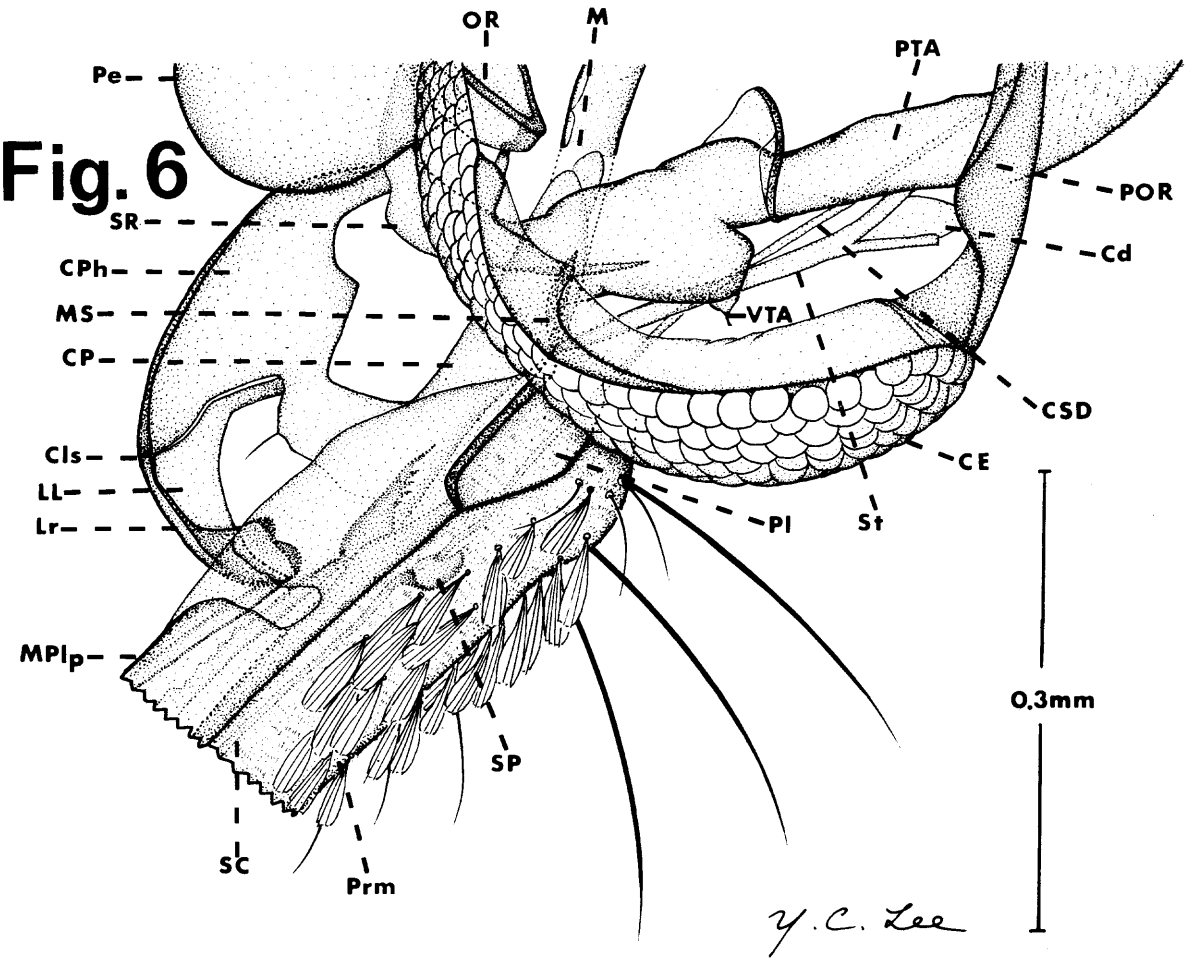
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Fig. 7

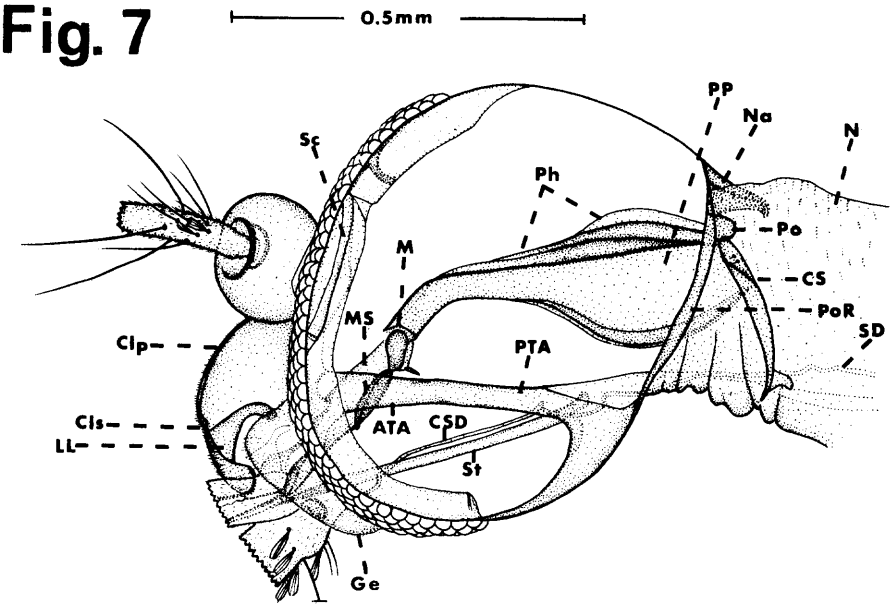
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Fig. 8

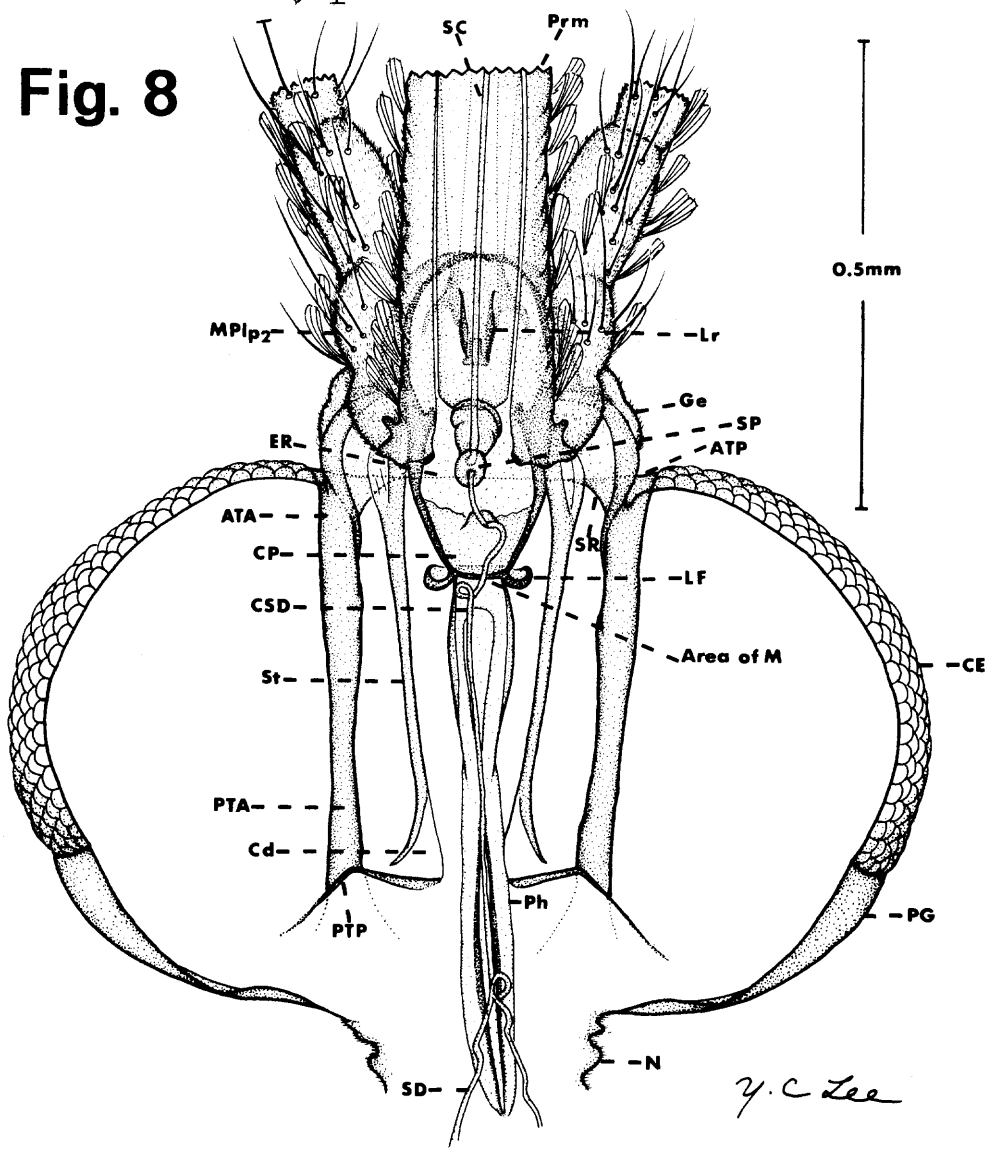
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Fig. 9

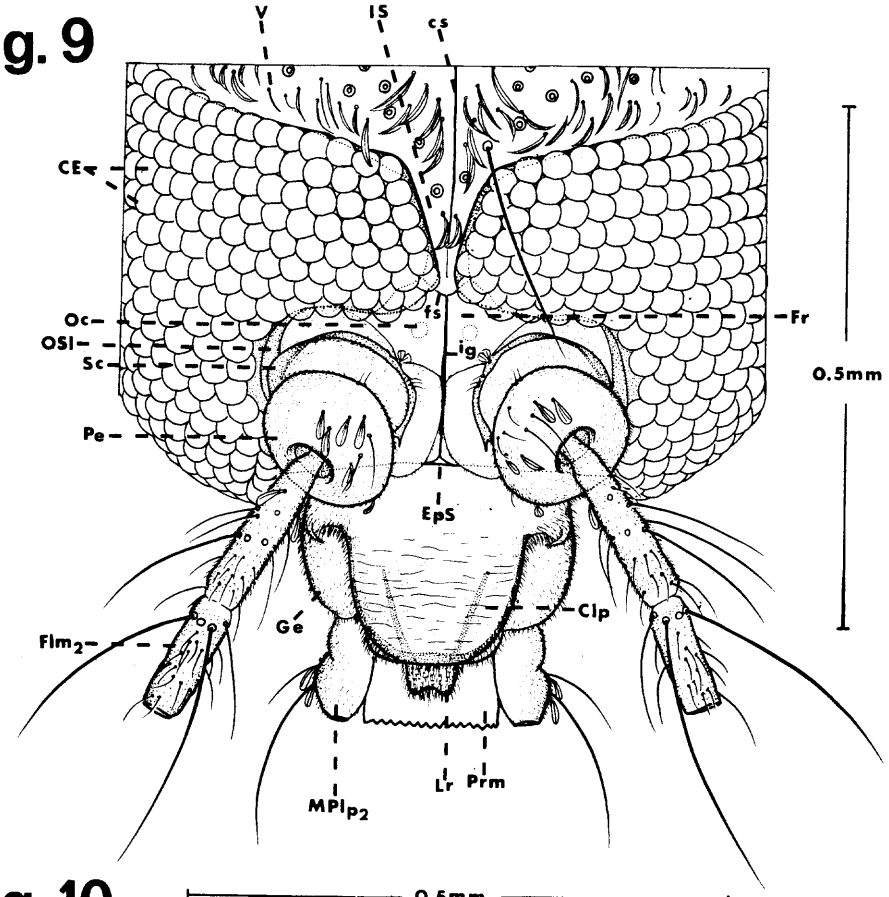
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Fig. 10

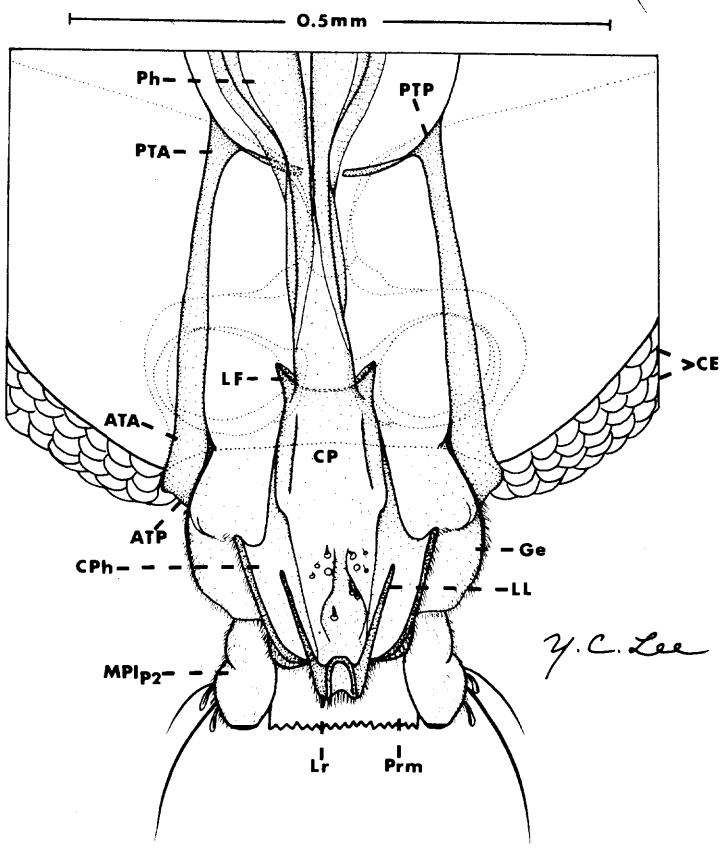
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Fig. 11

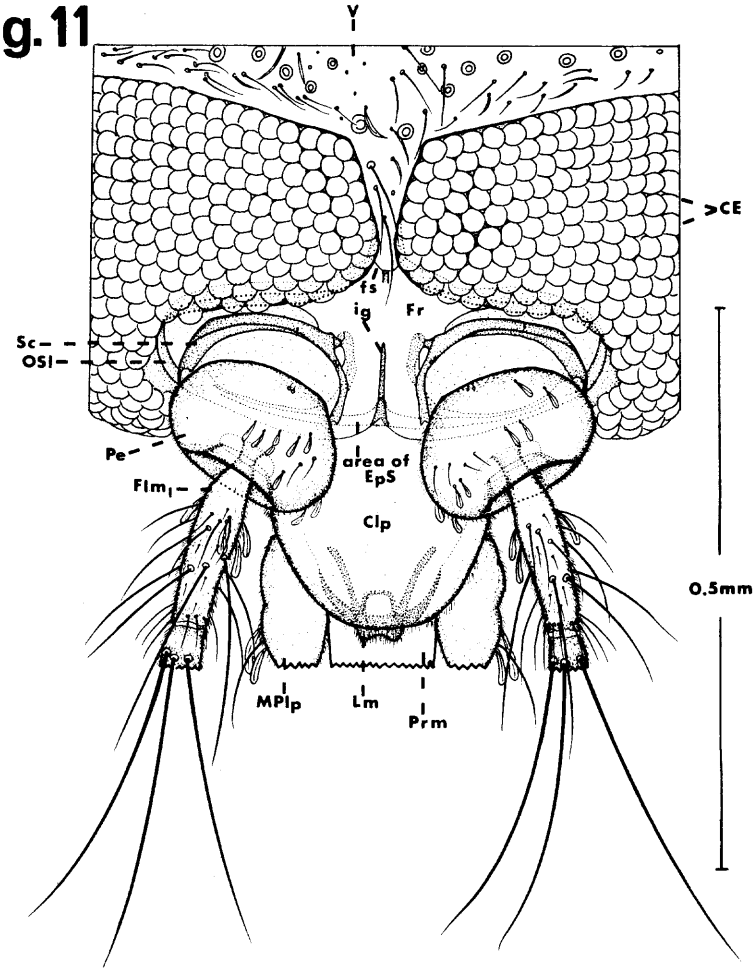
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Fig. 12

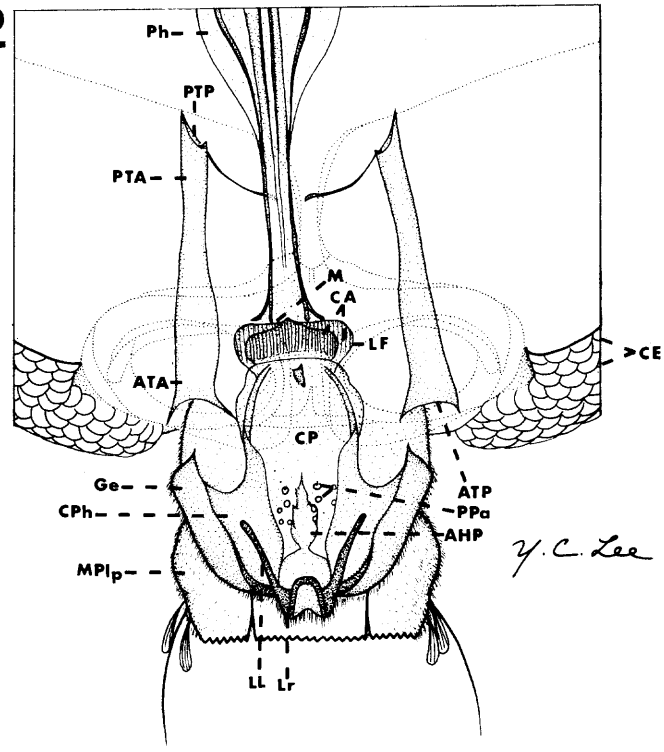
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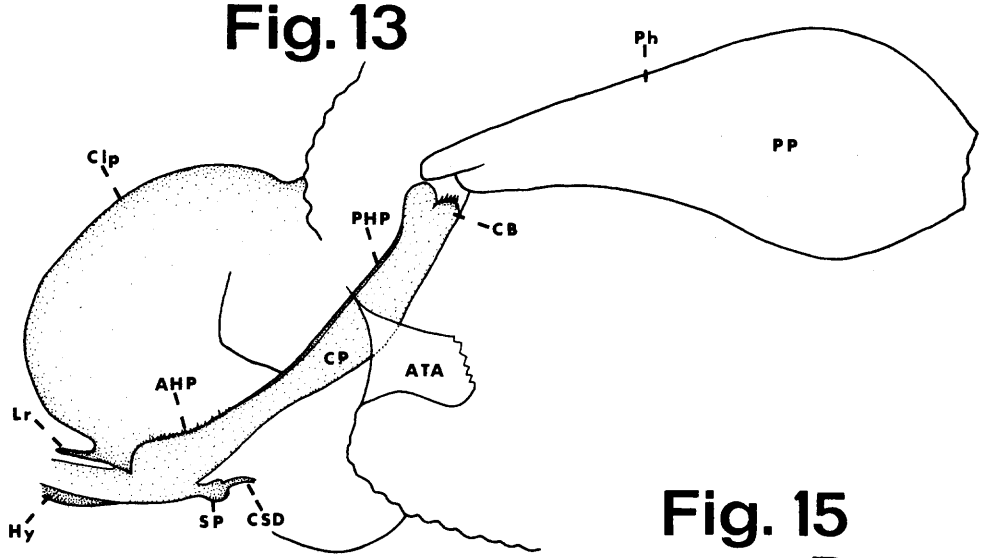
Fig. 13



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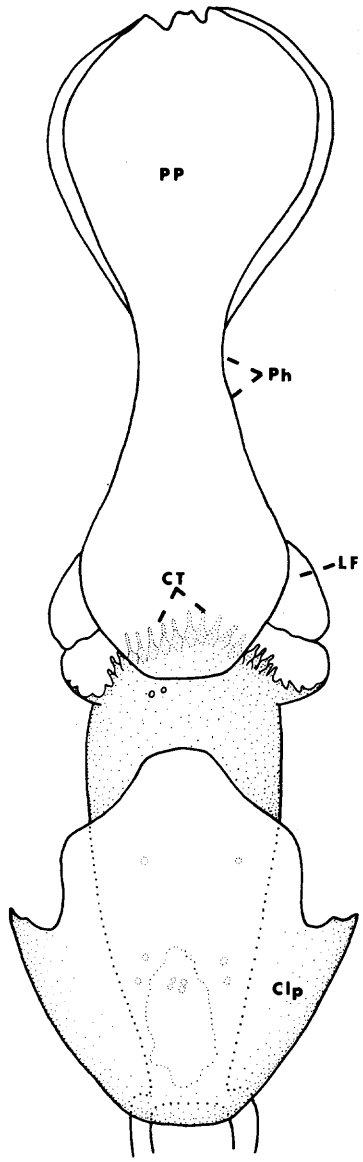

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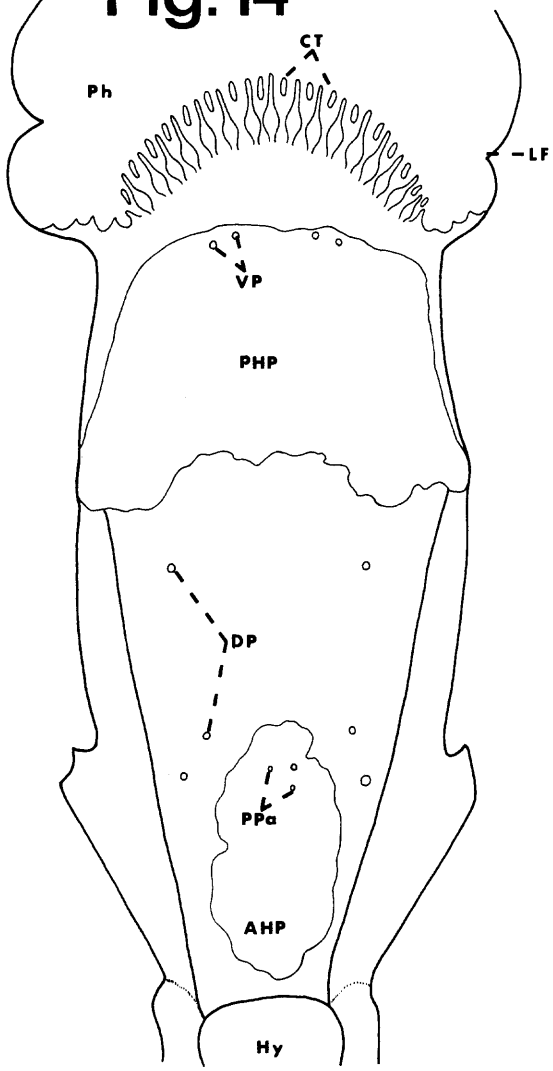

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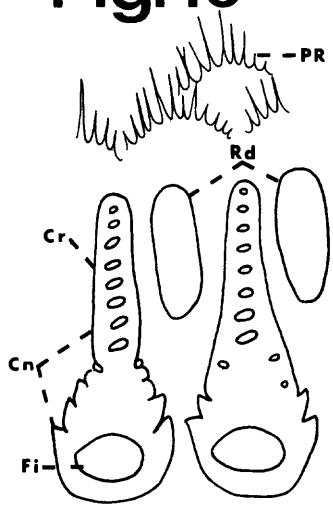

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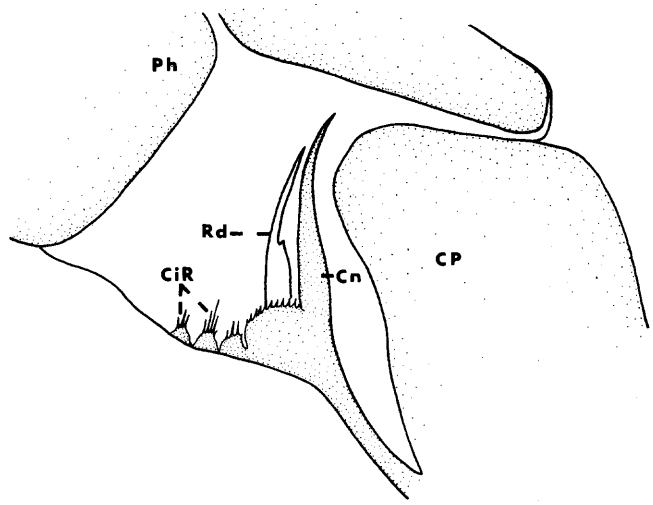

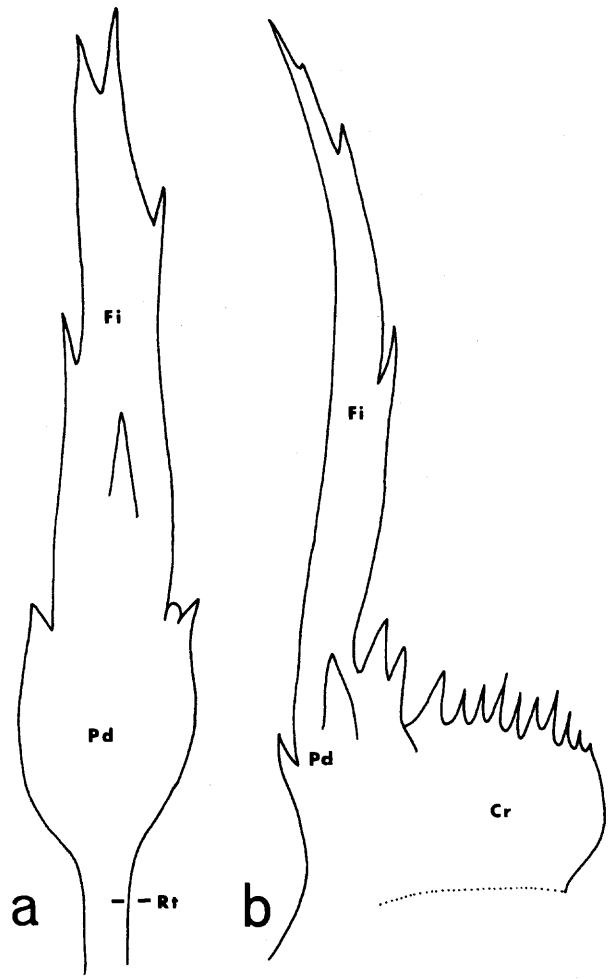

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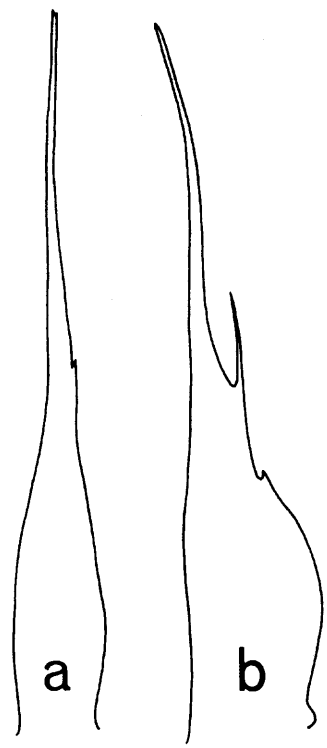

Fig. 19