

A Mosquito Taxonomic Glossary
XIII. The Larval Pharynx*

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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 or terms used in error are in lower case and underlined, and standardized abbreviations are suggested. An appendix, however, is not included because the terms recommended in this part are, for the most part, self-explanatory, shorter than previously used terms, and clearly indicate the location of the named structures.

Readers are reminded that this is a preliminary presentation and that when all parts are completed, they will be thoroughly revised and issued under a single cover. Because of this, individuals interested in mosquito systematics and morphology are encouraged to comment on any portion of the included text with which they take exception.

Part XII of this series was the last in a sequence dealing with the larval gnathal appendages (Harbach and Knight 1977). As previously, the illustrations were drawn from specimens observed with the light and scanning electron microscopes. Blown-up areas were drawn specifically with the aid of SEM micrographs.

The larval culicid pharynx is remarkably similar in all non-predatory species. For this reason, an anopheline pharynx is not illustrated herein.

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apodeme supporting pharynx wall. -- See LATERAL ORAL BAR.

bristle-like setae. -- See PHARYNGEAL FRINGE ELEMENT.

brush of fine hairs. -- See PHARYNGEAL FRINGE.

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"cartilaginous" band. -- See LATERODORSAL PHARYNGEAL SCLERITE.

crescent. -- See DORSAL ORAL SCLERITE.

crescentic sclerite of pharynx roof. -- See DORSAL ORAL SCLERITE.

cilia. -- See PHARYNGEAL FRINGE ELEMENT.

chitinous arches. -- See MEDIODORSAL PHARYNGEAL SCLERITE and MEDIOVENTRAL PHARYNGEAL SCLERITE.

chitinous arch of the mouth angle. -- See LATERAL ORAL BAR.

chitinous clasp ("Chitinspangen"). -- See LATERAL ORAL BAR.

chitinous frames. -- See LATERAL ORAL BAR.

chitinous plate. -- See DORSAL PHARYNGEAL SCLERITE.

chitinous rays. -- See MEDIODORSAL PHARYNGEAL SCLERITE and MEDIOVENTRAL PHARYNGEAL SCLERITE.

chitinous ridges ("Chitinleisten"). -- See LATERAL ORAL BAR, LATERODORSAL PHARYNGEAL SCLERITE, MEDIODORSAL PHARYNGEAL SCLERITE, and MEDIOVENTRAL PHARYNGEAL SCLERITE.

chitinous rod-like thickening. -- See LATERODORSAL PHARYNGEAL SCLERITE.

comb of setae of the pharyngeal filter. -- See PHARYNGEAL FRINGE.

concentric rows of fimbriae. -- See PHARYNGEAL FRINGE.

connecting arch ("arc de liaison"). -- See LATERAL ORAL BAR.

crests. -- See crests of the pharynx.

crests of the pharynx. -- When viewed in cross section, the larval culicid pharynx is crescentic in shape with the lateral arms curving dorsad. The lateral recesses or walls of the crescent have been termed the "crests of the pharynx" by Thompson (1905, 171) and many later authors. (Syn.: elliptic flat ring, Johannsen 1903, 413; pharyngeal crests, Thompson 1905, 172; lateral crests, Imms 1907, 297; pharyngeal spinose ring, Sautet 1935, 98; crests, Christophers 1960, 289; lateral arms, Jones 1960, 462.)

DORSAL FRINGE (DF). -- In many culicid larvae (Christophers 1960, 290), one of the pharyngeal fringes borne dorsal to the laterodorsal pharyngeal sclerite in the lateral margin of the pharynx. A primary dorsal fringe is borne on the mediodorsal pharyngeal sclerite; secondary dorsal fringes arise from the walls of the pharynx dorsal to the primary dorsal fringe.

dorsal median sclerite of the pharyngeal filter. -- See MEDIODORSAL PHARYNGEAL SCLERITE.

DORSAL ORAL BRUSH (DOB). -- In many culicid larvae, a fringe or covering of hair-like cuticular processes located on or near the dorsal oral sclerite at the dorsal margin of the mouth.

DORSAL ORAL SCLERITE (DOS). -- In many culicid larvae, a small crescentic plate located just inside the mouth on the midline of the dorsal wall of the pharynx; this area often bears a fringe or covering of hair-like processes, the dorsal oral brush. (Syn.: transverse crescentic sclerite, Thompson 1905, 171; crescentic sclerite of pharynx roof, Thompson 1905, in Fig. 33; crescent, Christophers 1960, 289; upper oral sclerite, Chaudonneret 1962, 477.)

dorsal pharyngeal plate. -- See roof of pharynx.

DORSAL PHARYNGEAL SCLERITE (DPhS). -- In many culicid larvae, one of a pair of laterally symmetrical, roughly lunulate plates of the dorsal wall of the pharynx. (Syn.: dorsal plate, Thompson 1905, the pair of sclerites, 171; roof of the pharynx, Thompson 1905, the pair of sclerites, 171; longitudinal sclerite, Thompson 1905, in part, 172; chitinous plate, Imms 1907, 297; rigid plates, Imms 1907, 297; median membranous portion, Farnsworth 1947, the pair of sclerites, 144; dorsal wall of the pharynx, Farnsworth 1947, the pair of sclerites, 147; dorsal plates, Christophers 1960, 289; medial dorsal sclerite of the pharyngeal filter, Chaudonneret 1962, 486.)

dorsal plate. -- See DORSAL PHARYNGEAL SCLERITE and roof of pharynx.

dorsal plates. -- See DORSAL PHARYNGEAL SCLERITE.

dorsal surface. -- See roof of pharynx.

dorsal wall of the pharynx. -- See DORSAL PHARYNGEAL SCLERITE.

elliptic flat ring. -- See crests of the pharynx.

external sclerotized pharyngeal ring. -- See LATERODORSAL PHARYNGEAL SCLERITE.

filaments. -- See PHARYNGEAL FRINGE ELEMENT.

filter-bearing rib of pharynx. -- See MEDIODORSAL PHARYNGEAL SCLERITE and MEDIOVENTRAL PHARYNGEAL SCLERITE.

filter brushes. -- See PHARYNGEAL FRINGE.

filter combs. -- See MEDIODORSAL PHARYNGEAL SCLERITE, MEDIOVENTRAL PHARYNGEAL SCLERITE, PRIMARY DORSAL FRINGE, and PRIMARY VENTRAL FRINGE.

filter combs of the pharynx. -- See MEDIODORSAL PHARYNGEAL SCLERITE, MEDIOVENTRAL PHARYNGEAL SCLERITE, PRIMARY DORSAL FRINGE, and PRIMARY VENTRAL FRINGE.

filter comb teeth. -- See PHARYNGEAL FRINGE ELEMENT.

filtering combs. -- See PHARYNGEAL FRINGE.

fimbriae. -- See PHARYNGEAL FRINGE ELEMENT.

fimbriations. -- See PHARYNGEAL FRINGE ELEMENT.

floor of the pharynx. -- See floor of pharynx.

floor of pharynx. -- A descriptor used by Christophers (1960, 290; see Fig. 4) to identify that part of the larval culicid pharynx lying ventral to and including the lateroventral pharyngeal sclerite. (Syn.: ventral surface, Cook 1944, 43; floor of the pharynx, Christophers 1960, 290.)

fringes. -- See PHARYNGEAL FRINGE.

groups of setae. -- See PHARYNGEAL FRINGE.

hairs. -- See PHARYNGEAL FRINGE ELEMENT.

inner sclerotized pharyngeal ring. -- Used by Farnsworth (1947, 147) to designate a band of cuticle which corresponds to the membranous cuticle connecting the bases of the elements of a secondary dorsal fringe; having the appearance of a ring-like sclerite in the light microscope.

lamellae. -- See MEDIODORSAL PHARYNGEAL SCLERITE and MEDIOVENTRAL PHARYNGEAL SCLERITE.

lateral arms. -- See crests of the pharynx.

lateral crests. -- See crests of the pharynx.

lateral dorsal sclerite of the pharyngeal filter. -- See LATERODORSAL PHARYNGEAL SCLERITE.

LATERAL ORAL BAR (LOB). -- See Part IX (Laffoon and Knight 1973, 46). (Syn. in addition to those listed in Part IX: apodeme supporting pharynx wall, Thompson 1905, in Fig. 33; short apodemes, Thompson 1905, 170; spiral osselet, Crawford 1933, 30; chitinous clasp ("Chitinspangen"), Schremmer 1949, 211; pharyngeal lip clasps ("Pharynxlippenspangen"), Schremmer 1949, 213; chitinous ridges ("Chitinleisten"), Schremmer 1940, in part, 406; chitinous frames, Schremmer 1950, in part, 406; chitinous arch of the mouth angle, Chaudonneret 1962, 483; connecting arch ("arc de liaison"), Chaudonneret 1962, 485.)

lateral plates. -- See LATERODORSAL PHARYNGEAL SCLERITE.

LATERODORSAL PHARYNGEAL SCLERITE (LDPhS). -- In many culicid larvae (Chaudonneret, 1962, 476), one of a pair of laterally symmetrical, often indefinite laminae of the pharynx which articulate with the lateral oral bars anteriorly and bear the insertions of the lateral dilators of the pharynx. (Syn.: chitinous ridges ("Chitinleisten"), Raschke 1887, in part, 12; rod-like thickening of the intima, Imms 1907, 297; chitinous rod-like thickening, Imms 1907, 317; "cartilaginous" band, Crawford 1933, 30; external sclerotized pharyngeal ring, Farnsworth 1947, 147; lateral plates, Christophers 1960, 289; lateral dorsal sclerite of the pharyngeal filter, Chaudonneret 1962, 477; latero-dorsal sclerite of the pharyngeal filter, Chaudonneret 1962, 486.)

latero-dorsal sclerite of the pharyngeal filter. -- See LATERODORSAL PHARYNGEAL SCLERITE.

LATEROVENTRAL PHARYNGEAL SCLERITE (LVPhS). -- In many culicid larvae, one of a pair of laterally symmetrical, usually indefinite laminae located immediately ventral to the laterodorsal pharyngeal sclerites in the lateral walls of the pharynx. The sclerites are more heavily sclerotized and more clearly delimited posteriorly. One of the sclerites is homologous with the sclerite labelled "sflv" in Fig. 13 of Chaudonneret (1962, 484). It is believed that Chaudonneret intended to call the "sflv" the "latero-ventral sclerite of the pharyngeal filter."

longitudinal sclerite. -- See DORSAL PHARYNGEAL SCLERITE.

lower oral plate. -- See VENTRAL ORAL SCLERITE.

medial dorsal sclerite of the pharyngeal filter. -- See DORSAL PHARYNGEAL SCLERITE.

medial ventral sclerite of the pharyngeal filter. -- See VENTRAL PHARYNGEAL SCLERITE.

median membranous portion. -- See DORSAL PHARYNGEAL SCLERITE.

median sclerotized pharyngeal ring. -- See MEDIODORSAL PHARYNGEAL SCLERITE.

median ventral sclerite of the pharyngeal filter. -- See MEDIOVENTRAL PHARYNGEAL SCLERITE.

MEDIODORSAL PHARYNGEAL SCLERITE (MDPhS). -- In many culicid larvae, one of a pair of prominent, dorsoventrally flattened, crescentic rib-like thickenings located immediately mesal and/or slightly dorsal to the laterodorsal pharyngeal sclerites in the lateral walls of the pharynx; bearing the primary dorsal fringes. (Syn.: chitinous ridges ("Chitinleisten"), Raschke 1887, in part, 12; lamellae, Johannsen 1903, in part, 413; subsidiary bands, Crawford 1933, in part, 30; chitinous rays, Crawford 1933, in part, 30; median sclerotized pharyngeal ring, Farnsworth 1947, 147; filter combs, Schremmer 1949, in part, 210; filter combs of the pharynx, Schremmer 1949, in part, 211; chitinous arches, Schremmer 1949, 212; riblike thickenings, Snodgrass 1959, in part, 21; ribs, Snodgrass 1959, in part, 21; filter-bearing rib of pharynx, Snodgrass 1959, in part, 33; dorsal median sclerite of the pharyngeal filter, Chaudonneret 1962, 486; rods, Clements 1963, in part, 36.)

MEDIOVENTRAL PHARYNGEAL SCLERITE (MVPhS). -- In many culicid larvae, one of a prominent pair of dorsoventrally flattened, crescentic rib-like thickenings located immediately mesal and/or slightly ventral to the lateroventral pharyngeal sclerites in the lateral walls of the pharynx; bearing the primary ventral fringes. (Syn.: chitinous ridges ("Chitinleisten"), Raschke 1887, in part, 12; lamellae, Johannsen 1903, in part, 413; subsidiary bands, Crawford 1933, in part, 30; chitinous rays, Crawford 1933, in part, 30; filter combs, Schremmer 1949, in part, 210; filter combs of the pharynx, Schremmer 1949, in part, 211; chitinous arches, Schremmer 1949, 212; riblike thickenings, Snodgrass 1959, in part 21; ribs, Snodgrass 1959, in part, 21; filter-bearing rib of pharynx,

Snodgrass 1959, in part, 33; median ventral sclerite of the pharyngeal filter, Chaudonneret 1962, 486; rods, Clements 1963, in part, 36.)

MOUTH (M). -- See Part II (Knight and Laffoon 1970, 71). In culicid larvae, the opening into the pharynx from the preoral cavity; situated in the anterior region of the head between the palatum and the labiohypopharynx.

ORAL SENSORIUM (OS). -- In general, an innervated cuticular structure occurring in the area of the mouth. In culicid larvae, a pair of peg-like sensoria occur laterally on either side of the mouth near the cibarial bars. (Syn.: sensilla, Chaudonneret 1962, 486.)

ORAL SPINES (OSp). -- In predatory culicid larvae, the spiniform processes or outgrowths which line the ventral margin of the mouth and typically project into the pharynx; may be homologous in part with the ventral oral brush (medially) and the pharyngeal fringes (laterally) found in many non-predatory species; apparently aid in securing the prey.

oval plate. -- See **VENTRAL ORAL SCLERITE.**

pharyngeal combs. -- See **PHARYNGEAL FRINGE.**

pharyngeal crests. -- See crests of the pharynx.

pharyngeal filter. - Used by Chaudonneret (1962, 477) to refer to the system of pharyngeal fringes (rows of hair-like cuticular processes) borne by the lateral walls of the pharynx which strain food particles from the current produced by the expansion and contraction of the pharynx. (Syn.: straining apparatus ("Reusenapparat"), Raschke 1887, 12; sieve, Johannsen 1903, 413; pharyngeal filter apparatus, Snodgrass 1959, 21.) See **PHARYNGEAL FRINGE.**

pharyngeal filter apparatus. -- See pharyngeal filter.

PHARYNGEAL FRINGE (PhF). -- In many culicid (Christophers 1960, 290) and certain other nematoceros larvae, one of a number of rows of hair-like cuticular structures situated in the lateral recesses of the pharynx which collectively function to retain food particles in the pharynx. In culicid larvae, primary fringes are borne on the inner edges of the mediodorsal and medioventral pharyngeal sclerite. (Syn.: groups of setae, Imms 1907, 317; row of bristles, Salem 1931, 410; concentric rows of fimbriae, Cook 1944, 43; rows of fimbriations, Cook 1944, 48; rows of bristles, Farnsworth 1947, 144; comb of setae of the pharyngeal filter, Vaillant and Delhom 1956, 249; brush of fine hairs, Snodgrass 1959, 21; filter brushes, Snodgrass 1959, 23; fringes, Christophers 1960, 289; filtering combs, Jones 1960, 462; pharyngeal combs, Clements 1963, 36.)

PHARYNGEAL FRINGE ELEMENT (PhFE). -- In many culicid and certain other nematoceros larvae, one of the fine, often distally branched, hair-like cuticular processes comprising a pharyngeal fringe. (Syn.: hairs, Raschke 1887, 12; straining hairs ("Reusenhaare"), Raschke 1887, 30; cilia, Johannsen 1903, 413; bristle-like setae, Imms 1907, 297; spines of the ring, Sautet 1935, 98; pharyngeal spines, Sautet 1935, 99; fimbriae, Cook 1944, 43; fimbriations, Cook 1944, 46; setae, Farnsworth 1947, 145; filter comb teeth, Schremmer 1949, 217; filaments, Christophers 1960, 290; pharyngeal hairs, Pucac 1965, 62.)

pharyngeal hairs. -- See PHARYNGEAL FRINGE ELEMENT.

pharyngeal lip clasps ("Pharynxlippenspangen"). -- See LATERAL ORAL BAR.

pharyngeal roof. -- See roof of pharynx.

pharyngeal spines. -- See PHARYNGEAL FRINGE ELEMENT.

pharyngeal spinose ring. -- See crests of the pharynx.

PHARYNX (Ph). -- See Part II (Knight and Laffoon 1970, 72). In most culicid and certain other nematoceros larvae, the lateral walls of the pharynx bear a set of fringes which function to retain food particles.

plate of the ventral oral valve. -- See VENTRAL ORAL FRINGE.

posterior angle [of the pharynx]. -- The larval culicid pharynx narrows posteriorly where the various pharyngeal sclerites converge and this part of the organ projects dorsally. Christophers (1960, 289) referred to this part of the pharynx as the "posterior angle."

PRIMARY DORSAL FRINGE (PDF). -- In many culicid larvae, a prominent row of fine, usually distally branched, hair-like cuticular processes borne on the inner edge of a mediodorsal pharyngeal sclerite. (Syn.: filter combs, Schremmer 1949, in part, 210; filter combs of the pharynx, Schremmer 1949, in part, 211.)

PRIMARY VENTRAL FRINGE (PVF). -- In many culicid larvae, a prominent row of fine, usually distally branched, hair-like cuticular processes borne on the inner edge of a medioventral pharyngeal sclerite. (Syn.: filter combs, Schremmer 1949, in part, 210; filter combs of the pharynx, Schremmer 1949, in part, 211.)

riblike thickenings. -- See MEDIODORSAL PHARYNGEAL SCLERITE and MEDIOVENTRAL PHARYNGEAL SCLERITE.

ribs. -- See MEDIODORSAL PHARYNGEAL SCLERITE and MEDIOVENTRAL PHARYNGEAL SCLERITE.

rigid plates. -- See DORSAL PHARYNGEAL SCLERITE.

rod-like thickening of the intima. -- See LATERODORSAL PHARYNGEAL SCLERITE.

rods. -- See MEDIODORSAL PHARYNGEAL SCLERITE and MEDIOVENTRAL PHARYNGEAL SCLERITE.

roof of pharynx. -- A descriptor used by Christophers (1960, 290; see Fig. 3) to identify that part of the larval culicid pharynx lying dorsal to and including the laterodorsal pharyngeal sclerite. (Syn.: dorsal plate, Thompson 1905, at least in part, 171; dorsal surface, Cook 1944, 43; dorsal pharyngeal plate, Cook 1944, 55; pharyngeal roof, Christophers 1960, 289.)

roof of the pharynx. -- See DORSAL PHARYNGEAL SCLERITE.

row of bristles. -- See PHARYNGEAL FRINGE.

rows of bristles. -- See PHARYNGEAL FRINGE.

rows of fimbriations. -- See PHARYNGEAL FRINGE.

SECONDARY DORSAL FRINGE (SDF). -- In many culicid larvae, one of usually one to 3 rows of hair-like cuticular structures borne by the walls of the pharynx between the lateral edge of a dorsal pharyngeal sclerite and a mediodorsal pharyngeal sclerite; the bases of the fringe elements are connected by a strip of membranous cuticle which gives the fringe the appearance of arising from a sclerite.

SECONDARY VENTRAL FRINGE (SVF). -- In many culicid larvae, one of usually 2 to 4 rows of hair-like cuticular structures borne by the walls of the pharynx ventral to the medioventral pharyngeal sclerite. It is uncertain whether or not 2 fringes arise directly from (in anopheline) or closely oppose (in culicines) the sides of the ventral pharyngeal sclerite. The bases of the fringe elements are connected by a strip of membranous cuticle which gives the fringe the appearance of arising from a sclerite.

sensilla. -- See ORAL SENSORIUM.

setae. -- See PHARYNGEAL FRINGE ELEMENT.

sflv. -- See LATEROVENTRAL PHARYNGEAL SCLERITE.

short apodemes. -- See LATERAL ORAL BAR.

sieve. -- See pharyngeal filter.

spines of the ring. -- See PHARYNGEAL FRINGE ELEMENT.

spiral osselet. -- See LATERAL ORAL BAR.

straining apparatus ("Reusenapparat"). -- See pharyngeal filter.

straining hairs ("Reusenhaare"). -- See PHARYNGEAL FRINGE ELEMENT.

subsidiary bands. -- See MEDIODORSAL PHARYNGEAL SCLERITE and MEDIOVENTRAL PHARYNGEAL SCLERITE.

transverse crescentic sclerite. -- See DORSAL ORAL SCLERITE.

upper oral sclerite. -- See DORSAL ORAL SCLERITE.

VENTRAL FRINGE (VF). -- In many culicid larvae (Christophers 1960, 290), one of the pharyngeal fringes borne ventral to the lateroventral pharyngeal sclerite in the lateral margin of the pharynx. A primary ventral fringe is borne on the medioventral pharyngeal sclerite; secondary ventral fringes arise from the walls of the pharynx ventral to the primary ventral fringe.

VENTRAL ORAL BRUSH (VOB). -- In many culicine and perhaps some anopheline larvae, a covering of flexible hair-like cuticular processes located on the posterior margin of the ventral oral sclerite; apparently functioning to clean the mandibular sweepers and to retain food particles in the pharynx.

VENTRAL ORAL FRINGE (VOF). -- In many culicid larvae, usually one or 2 rows of flattened, hair-like filaments located at the ventral margin of the mouth between the ventral oral sclerite and the labiohypopharynx; often borne on or forming a flap of cuticle in culicines. (Syn.: plate of the ventral oral valve, Chaudonneret 1962, 486.)

VENTRAL ORAL SCLERITE (VOS). -- In many culicid larvae, a small rounded plate located just inside the mouth on the midline of the floor of the pharynx at about the level of the dorsal oral sclerite; usually bearing a covering of flexible, hair-like processes, the ventral oral brush, along its posterior border. (Syn.: oval plate, Christophers 1960, 289; lower oral plate, Chaudonneret 1962, 483.)

VENTRAL PHARYNGEAL SCLERITE (VPhS). -- In many culicid larvae, a narrow band of sometimes lightly sclerotized cuticle which extends along the lateroventral margin of the pharynx from the anterior part of the ventral oral sclerite. The sclerite may or may not bear one or 2 of the secondary ventral fringes. In many cases, one or 2 fringes appear to arise close to either side of the sclerite but not directly from it. (Syn.: medial ventral sclerite of the pharyngeal filter, Chaudonneret 1962, 486.)

ventral surface. -- See floor of pharynx.

Fig. 75. *Aedes (Ochlerotatus) taeniorhynchus* (Wiedemann). Pharynx of fourth stage larva.

- a. Ventral aspect of dorsal half of pharynx.
- b. Dorsal aspect of ventral half of pharynx.
- c. Interolateral aspect of the ventral pharyngeal fringes at position of arrow (in Fig. 75b) when pharynx is expanded.

Fig. 76. *Toxorhynchites (Toxorhynchites) brevivalpis* Theobald. Dorsal aspect of ventral part of the pharynx with attached labiohypopharynx of fourth stage larva.

ABBREVIATIONS

*CB	= cibarial bar	OS	= oral sensoria
DOB	= dorsal oral brush	OSp	= oral spines
DOS	= dorsal oral sclerite	PDF	= primary dorsal fringe
DPhS	= dorsal pharyngeal sclerite	PVF	= primary ventral fringe
**LbHy	= labiohypopharynx	PhFE	= pharyngeal fringe element
LDPHS	= laterodorsal pharyngeal sclerite	SDF	= secondary dorsal fringes
LOB	= lateral oral bar	SVF	= secondary ventral fringes
LVPhS	= lateroventral pharyngeal sclerite	VOB	= ventral oral brush
MDPHS	= mediodorsal pharyngeal sclerite	VOF	= ventral oral fringe
MVPhS	= medioventral pharyngeal sclerite	VOS	= ventral oral sclerite
		VPhS	= (area of) ventral pharyngeal sclerite

*Defined in Part IX (Laffoon and Knight 1973, 35).

**Defined in Part XII (Harbach and Knight 1977, 341).

Fig. 75

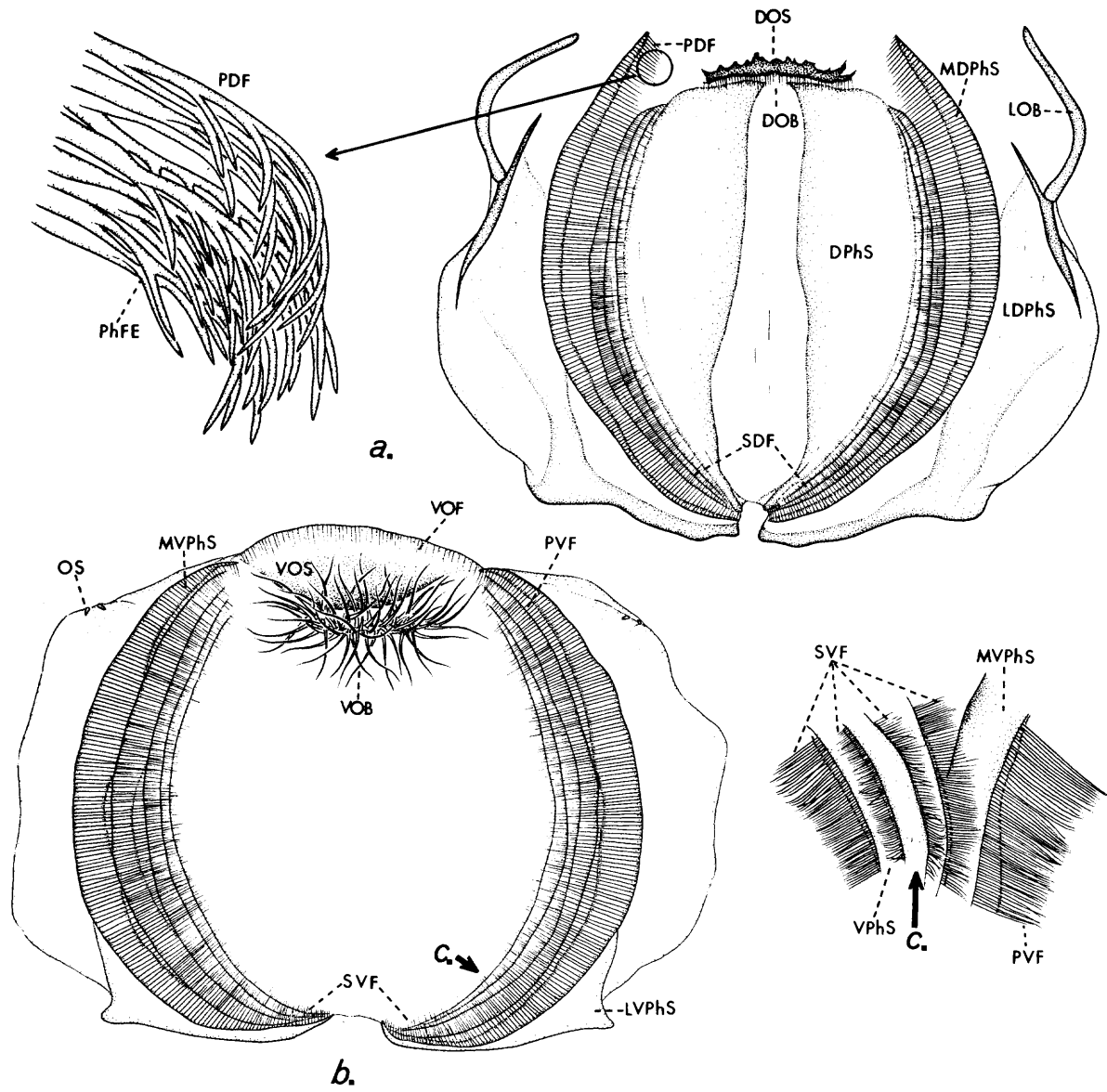
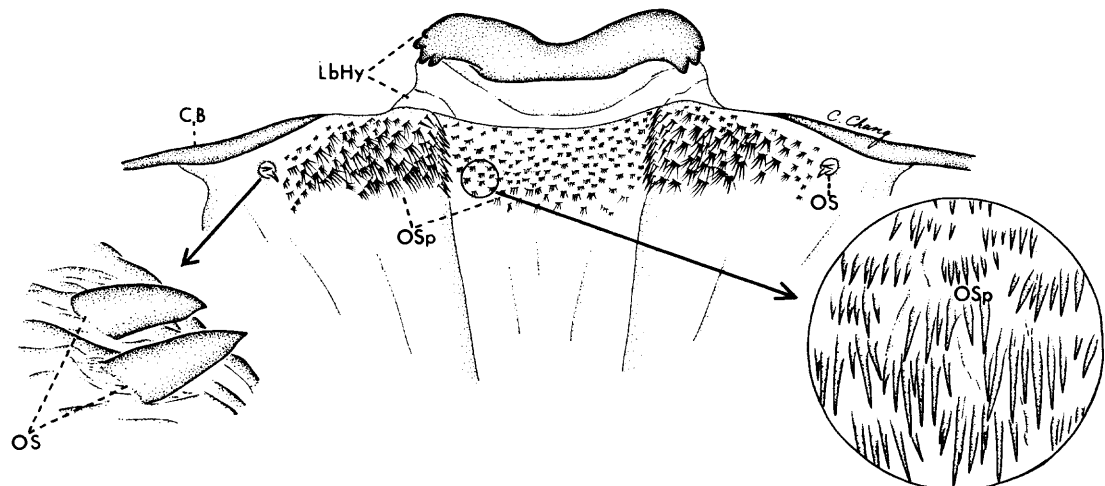


Fig. 76



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