

A Mosquito Taxonomic Glossary

V. Abdomen (Except Female Genitalia)*

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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. Standardized abbreviations are also suggested. Included in this section is an appendix presenting reasons for the recommendation of terms not presently in common use.

As before, we wish to acknowledge the provision by Dr. H. C. Chapman of the adult mosquito specimens used for the drawings. The drawings were prepared by Mrs. Yvonne Lee.

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

Part IV of this series dealt with terms for the adult thoracic appendages (Knight and Laffoon 1970).

ABDOMEN (Ab). - The third division of the insect body. In mosquitoes, divided into ten apparent segments (I-X).

ABDOMINAL SEGMENT (I-Ab, etc.). - One of the segments or primary divisions of the abdomen.

ABDOMINAL SPIRACLE (Abs). - One of a pair of tracheal orifices on an abdominal segment. In adult mosquitoes, borne anterolaterally on the pleural membrane of abdominal segments I-VII.

AEDEAGUS (Ae). - The central body of the phallosome, presumably serving as the male intromittent organ. In mosquitoes, extremely varied in form. (Syn.: mesosome, phallosome of some authors.)

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anal cone. - See PROCTIGER.

anal lobe (of some authors). - See PROCTIGER. Often applied descriptively to the membranous portion of the proctiger when it is developed lobelike as in Anopheles, Uranotaenia, and Aedeomyia.

anal segment (of many authors). - See PROCTIGER.

apical paraproct. - See PARAPROCT.

apodeme of clasper. - See APODEME OF GONOCOXITE.

APODEME OF GONOCOXITE (AG). - In male mosquitoes, an apodematous continuation of the dorsomesal portion of the gonocoxite; connecting with or adjoining to the parameral apodeme. (Syn.: apodeme of the sidepiece, apodeme of the clasper.)

apodeme of the sidepiece. - See APODEME OF GONOCOXITE.

appendage. - See GONOSTYLAR CLAW.

basal apodeme. - See PARAMERAL APODEME.

basal arm of anal segment. - See VENTRAL ARM OF PARAPROCT.

basal arm of 10th sternite. - See VENTRAL ARM OF PARAPROCT.

basal clasp segment. - See GONOCOXITE.

basal lobe. - See BASAL MESAL LOBE.

BASAL MESAL LOBE (BML). - In male mosquitoes, a lobe of the interbasal fold located basomesally on the gonocoxite, usually more or less connected ventrally with its mate. (Syn.: basal lobe, basal plaque.)

basal paraproct. - See TENTH TERGUM.

basal piece. - See PARAMERAL APODEME.

basal plaque. - See BASAL MESAL LOBE.

basal plate. - See PARAMERAL APODEME.

basal sternal process. - See VENTRAL ARM OF PARAPROCT.

basimere. - See GONOCOXITE.

basistyle. - See GONOCOXITE.

basolateral sclerotization. - See TENTH TERGUM.

bridge. - See DORSAL AEDEAGAL BRIDGE, VENTRAL AEDEAGAL BRIDGE, and NINTH TERGUM.

CERCAL SCLERITE (CS). - Any sclerite forming a part of the cercus. In male mosquitoes specifically applicable to the dorsal more or less distinctly sclerotized area between the paraprocts on the proctiger or to a paired sclerite in the same area. (Syn.: dorsal plate of some authors, epiproct, tenth tergite of some authors.)

CERCAL SETA (CSe). - Any seta on a cercus. All setae on the proctiger of male mosquitoes are considered to be on the part of the proctiger derived from the cercus and thus to be cercal setae, usually one to a few small pairs are present distally, sometimes many are present.

CERCUS (Ce). - A paired segmental appendage of the eleventh abdominal segment, present in most insects. Often articulating with a more anterior segment, particularly when the posterior segments are reduced. In female culicids, prominent and articulated to tergum 10; in male culicids largely membranous, not sharply delimited from adjacent parts of proctiger and with the paraproct representing the main area of sclerotization.

clasp filament. - See GONOSTYLUS.

clasper (of some authors). - See GONOSTYLUS.

CLASPETTE (Cl). - In male mosquitoes, a descriptive term applied to a variably shaped lobe of the interbasal fold arising free at the base of the gonocoxite. (Syn.: harpes, harpago.)

CLASPETTE FILAMENT (CF). - In male mosquitoes, applied to the distal portion of the claspette when this structure is subdivided.

CLASPETTE STEM (CSt). - In male mosquitoes, applied to the basal portion of the claspette when this structure is subdivided.

claw. - See GONOSTYLAR CLAW.

coxite. - See GONOCOXITE.

distimere. - See GONOSTYLUS.

dististyle. - See GONOSTYLUS.

DORSAL AEDEAGAL BRIDGE (DAB). - In male mosquitoes, the dorsal transverse sclerotization connecting the lateral aedeagal plates.

DORSAL ARM (DoA). - In male Culex mosquitoes, the dorsal development of the inner division of the aedeagal lateral plate.

dorsal paramere. - See PARAMERE.

dorsal plate (of some authors). - See CERCAL SCLERITE.

DV/D. - In male Culex, the ratio of the distance between the apices of the dorsal and ventral arms of the inner division of the aedeagal lateral plate (DV) to the distance between the apices of the dorsal arms of both aedeagal lateral plates (D), measured in undissected specimens from the dorsal aspect.

endomere. - See PARAMERE.

epiproct. - See CERCAL SCLERITE.

EXTERNAL APODEME (EA). - In male mosquitoes, an apodematous continuation of the external or lateral sclerotization of the gonocoxite.

GENITALIA. - The abdominal structures involved in reproduction. In mosquitoes, referring to the ninth and tenth (parts of the proctiger may take part in the copulatory process) abdominal segments; in some species, abdominal segment VIII may be sexually differentiated from the preceding ones in one or more details and would in such cases be treated as part of the genitalia. (Syn.: hypopygium, terminalia.)

GONOCOXITE (Gc). - The composite basal unit of a paired segmental appendage of a genital segment; formed mainly from part or all of the coxa but usually with sternal elements involved. Distinguishable in Diptera (possible exception: some female Tipulidae) only on IX of the male. The largest unit of the male terminalia in Culicidae. Dorsal and ventral surfaces may be variously lobed in the culicids, these lobes can be described with appropriate combinations of position adjectives without intent to imply homologies by so doing. (Syn. for male culicid gonocoxite: basal clasp segment, basimere, basistyle, coxite, sidepiece.)

GONOSTYLAR CLAW (GC). - The differentiated, often somewhat spinelike, seta or setae at or near the apex of the gonostylus in some male mosquitoes; not strictly homologous between all species. (Syn., all as applied to gonostylar parts only: spiniform, claw, spine, appendage.)

gonostyle. - See GONOSTYLUS.

GONOSTYLUS (Gs). - The movable appendage attached at or near the apex of a gonocoxite. One-segmented (but sometimes secondarily subdivided) in male Nematocera; absent in most or all female Diptera. (Syn.: clasper of some authors, clasp filament, distimere, gonostyle, style of some authors, telomere, terminal clasp segment, dististyle.)

harpaginal fold. - See INTERBASAL FOLD.

harpago (pl. harpagones). - See CLASPETTE.

harpagonal fold. - See INTERBASAL FOLD.

harpes. - As used in mosquitoes (Felt 1905), this term is equal to CLASPETTE.

hypopygium. - See GENITALIA. C.f. TERMINALIA.

INNER DIVISION (ID). - In Culex males, the most mesal portion of the aedeagal lateral plate; divided into a DORSAL ARM and a VENTRAL ARM in some species.

INTERBASAL FOLD (IF). - In male mosquitoes, applied to the connecting ventromesal largely-membranous projections of the gonocoxites. This fold can be variously structured and is in some cases so ankylosed with the mesal surface of the gonocoxite as to form apparent lobes of that structure. (Syn.: harpagonal fold, harpaginal fold.)

INTERNAL SPINE (InS). - A strong subapical spine arising mesally on the gonocoxite of male Anopheles.

INTERSEGMENTAL MEMBRANE (IM). - The membrane connecting the segments of the body and of the appendages.

LATERAL AEDEAGAL PLATE (LAP). - In male mosquitoes, applied to the lateral sclerotizations of the aedeagus where such form two sclerotized halves of the organ. (Syn.: unci.)

lateral sclerite. - See OPISTHOPHALLIC SCLERITE.

LATEROTERGITE (Lt). - Introduced into use for mosquitoes (Belkin 1962, 552) to refer to the lateral portion of abdominal tergum I when more or less distinctly separated from the median dorsal part, usually not visible from above.

LEAFLETS OF AEDEAGUS (LAe). - In male Anophelinae, the one or more pairs of elongate leaflet-like structures usually occurring at the apex of the aedeagus.

MESAL MEMBRANE (MM). - In the male of some mosquitoes and at least some other Diptera, the membrane in any unsclerotized lacuna on the mesal face of the caudally projecting part of the gonocoxite.

mesosome. - See AEDEAGUS.

ninth sternite. - See NINTH STERNUM.

NINTH STERNUM (IX-S). - The sternum of the ninth abdominal segment. (Syn.: ninth sternite.)

NINTH TERGAL LOBE (IX-TL). - In mosquitoes, any lobe on the ninth tergum. (Syn.: tergal lobe.)

ninth tergite. - See NINTH TERGUM

NINTH TERGUM (IX-Te). - The tergum of the ninth abdominal segment. In mosquitoes usually markedly bilobed, the narrowed portion connecting the lobes is sometimes referred to as a bridge (IX-Br). (Syn.: ninth tergite.)

OPISTHOPHALLIC SCLERITE (OpS). - See OPISTHOPHALLUS. (Syn.: lateral sclerite).

OPISTHOPHALLUS (Op). - In male dixids and mosquitoes, a transverse lobe between the mesal dorsal edges of the two gonocoxites. It is dorsad of the phallosome and lies between the latter and the venter of the proctiger. It is supported on each side by a sclerite (opisthophallic sclerite) articulated with the parameral apodeme. According to Belkin (1968, 9) the opisthophallus has not been previously recognized in Culicidae but is strongly developed in Maorigoeldia and in the subgenus Verrallina of Aedes.

OUTER DIVISION (OD). - In Culex males, the lateral portion of the lateral aedeagal plate; often subdivided into arms or teeth.

PARABASAL SPINE (PSp). In male mosquitoes, applied to one or more distinctive spines located dorsobasally on the gonocoxite of species of Anophelinae.

PARAMERAL APODEME (PaA). - In male mosquitoes, the paired basal supporting sclerotization of the phallosome; lying within the ninth segment and often extending anteriorly into the eighth; articulating with the paramere and usually fusing with the apodeme of the gonocoxite. (Syn.: basal apodeme, basal piece, basal plate.)

parameral plate. - See PARAMERE.

PARAMERE (Par). - In male mosquitoes, a lateral sclerite of the phallosome, interposed between and articulating with the parameral apodeme and the aedeagus. (Syn.: endomere, parameral plate.) (The terms dorsal paramere and ventral paramere are not adopted here; consult appendix.) Homology with structures in other insects uncertain: this is not the paramere of Snodgrass (1959, 69), the parts of which are here called gonocoxite and gonostylus.

PARAPROCT (Ppr). - In certain primitive insects, a paired lateral sclerite of the eleventh (? sometimes tenth) segment near the anus. Sometimes applied in higher insects to sclerites of doubtful homology in a similar position; in male mosquitoes, a paired sclerite occurring laterally on the proctiger and articulating to the tenth tergum, apparently a part of the cercus. (Syn.: apical paraproct, tenth sternite.)

PHALLOSOME (Pha). - In male mosquitoes, applied to all the structures surrounding or enclosing the opening of the male genital duct, i.e., the aedeagus, paramere(s), and parameral apodeme(s). This complex lies between the proctiger, gonocoxites, and sternum IX. Applied by some authors to the aedeagus alone.

PLEURAL MEMBRANE (PMe). - The membrane occurring between the tergum and sternum of a body segment.

PROCTIGER (Pr). - In insects with poorly defined segmentation behind the genital segments, the entire complex formed by the telson and the postgenital segments. In such insects, the telson and segment XI are entirely membranous (with the frequent exception of the cercus). (Syn.: anal segment of many authors, tenth segment of some authors, anal cone (Spielman 1964, 329), anal lobe of some authors.)

sidepiece. - See GONOCOXITE.

spine. - See GONOSTYLAR CLAW.

spiniform. - See GONOSTYLAR CLAW.

STERNITE. - Applied to the parts of a sternum when it is subdivided. Often incorrectly applied to an entire sternum (Snodgrass 1963, 9).

STERNUM (S). - The ventral sclerotization of a segment.

style (of some authors). - See GONOSTYLUS.

SUBAPICAL LOBE (SL). - Descriptive term for any lobe positioned somewhat before the apex of a structure; applicable in male Culex mosquitoes to a mesal or mesodorsal subapical lobe on the gonocoxite. Possibly derived from the inter-basal fold. Often bearing leaflike or other unusual setae (see Belkin 1962, 177 and Fig. 99 for a terminology for these setae).

telomere. - See GONOSTYLUS.

tenth segment (of some authors). - See PROCTIGER.

tenth sternite. - See PARAPROCT.

tenth tergite (of some authors). - See CERCAL SCLERITE.

TENTH TERGUM (X-Te). - The sclerotized parts of the dorsum of the tenth abdominal segment. In male mosquitoes, usually developed as a pair of tergites laterally at the base of the proctiger; often articulating with tergum IX and the parameral apodeme; sometimes confluent with the basal part of the paraprost sclerotization. (Syn.: basal paraprost, basolateral sclerotization.)

tergal lobe. - See NINTH TERGAL LOBE.

TERGITE. - Applied to the parts of a tergum when it is subdivided. Often incorrectly applied to an entire tergum (Snodgrass 1963, 9).

TERGUM (Te). - The dorsal sclerotization of a segment.

terminal clasp segment. - See GONOSTYLUS.

terminalia. - See GENITALIA

unci. - See LATERAL AEDEAGAL PLATE.

VENTRAL AEDEAGAL BRIDGE (VAB). - In male mosquitoes, the ventral transverse sclerotization connecting the lateral aedeagal plates. (Syn.: ventral bridge of mesosome, ventral bridge of phallosome.)

VENTRAL ARM (VA). - See INNER DIVISION.

VENTRAL ARM OF PARAPROCT (VAP). - In male CULEX mosquitoes, a lateral ventrally directed process arising from near the base of the paraprost. (Syn.: basal sternal process, basal arm of 10th sternite, basal arm of anal segment.)

ventral bridge of mesosome. - See VENTRAL AEDEAGAL BRIDGE.

ventral bridge of phallosome. - See VENTRAL AEDEAGAL BRIDGE.

ventral paramere. - See PARAMERE.

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ABBREVIATIONS*

Ab	-abdomen	IX-S	-ninth sternum
Abs	-abdominal spiracle	IX-T	-ninth tergum
Ae	-aedeagus	IX-TL	-ninth tergal lobe
AG	-apodeme of gonocoxite	LAE	-leaflets of aedeagus
BML	-basal mesal lobe	LAP	-lateral aedeagal plate
Ce	-cercus	Lt	-laterotergite
CF	-claspette filament	MM	-mesal membrane
Cl	-claspette	OD	-outer division
CS	-cercal sclerite	Op	-opisthophallus
CSe	-cercal seta	OpS	-opisthophallic sclerite
CSt	-claspette stem	PaA	-parameral apodeme
DAB	-dorsal aedeagal bridge	Par	-paramere
DOA	-dorsal arm	Pha	-phallosome
DV/D	-(aedeagal ratio)	PMe	-pleural membrane
EA	-external apodeme	Ppr	-paraproct
GC	-gonostylar claw	Pr	-proctiger
Gc	-gonocoxite	PSp	-parabasal spine
Gs	-gonostylus	S	-sternum
ID	-inner division	SL	-subapical lobe
IF	-interbasal fold	Te	-tergum
IM	-intersegmental membrane	VA	-ventral arm
InS	-internal spine	VAB	-ventral aedeagal bridge
IX-Br	-bridge of ninth tergum	VAP	-ventral arm of paraproct
		X-Te	-tenth tergum

*Not all used on drawings in this number.

EXPLANATION OF FIGURES

Fig. 27

- a. Aedes (Ochlerotatus) grossbecki Dyar and Knab. Lateral aspect of female abdomen.
- b. A. grossbecki. Lateral aspect of male first and second abdominal segments.
- c. Longitudinal section (diagrammatic) through distal abdominal segments of a male Aedes subsequent to the axial rotation. Sclerotized and unsclerotized membranes are indicated by thick and thin lines respectively. (Redrawn from Edwards 1920,37).

Fig. 28

- a. A. grossbecki. Lateral aspect of male terminal abdominal segments.
- b. A. grossbecki. Ventral aspect of male terminal abdominal segments.
- c. Diagram of DV/D ratio in male Culex, involving the inner division of the lateral aedeagal plate. (Redrawn from Sundararaman 1949, 307).

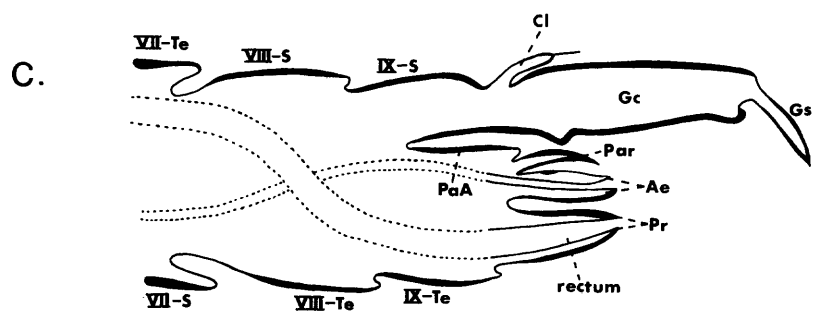
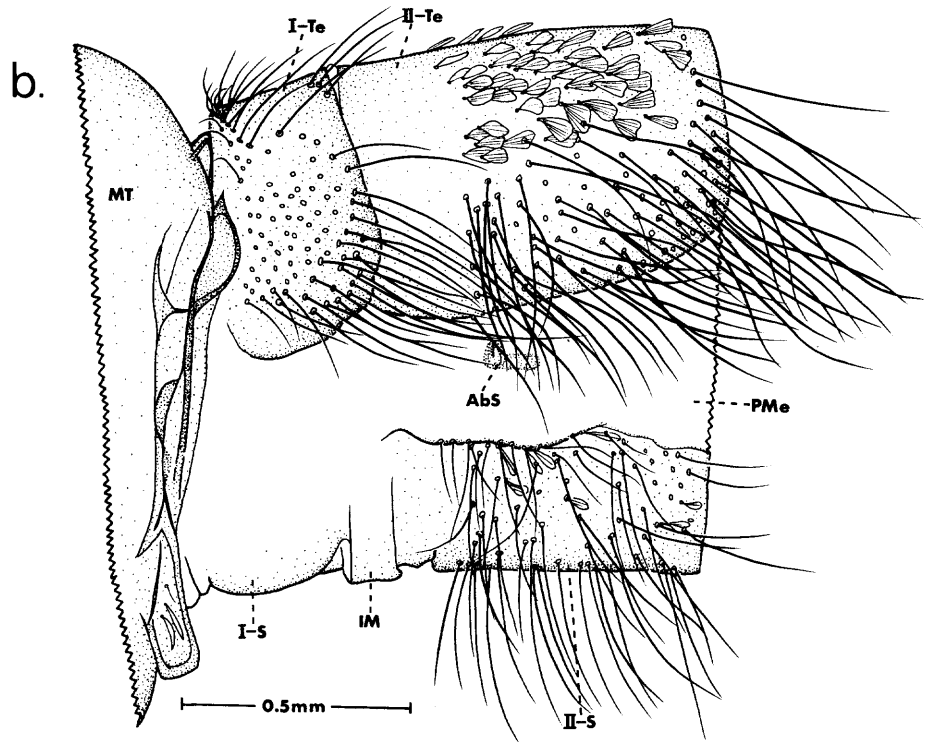
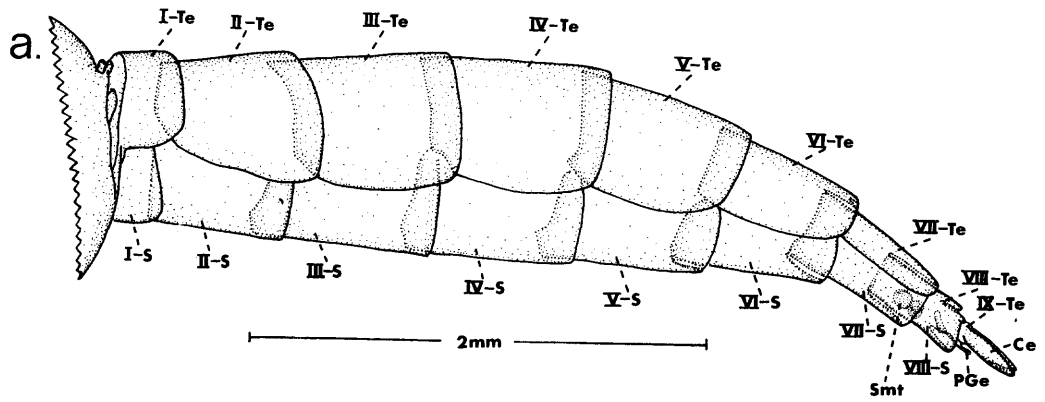
Fig. 29

- a. Aedes (Finlaya) dorseyi Knight. Dorsal aspect of male genitalia.
- b. A. dorseyi. Dorsal aspect of phallosome.
- c. Lateral aspect (diagrammatic) of distal abdominal segments of a male Anopheles. (Redrawn from Ross and Roberts 1943)
- d. Aedes (Ochlerotatus) stimulans (Walker). Dorsal aspect of phallosome (diagrammatic). (Redrawn from Matheson 1944)
- e. A. stimulans. Lateral aspect of phallosome (diagrammatic). (Redrawn from Matheson 1944)

Fig. 30

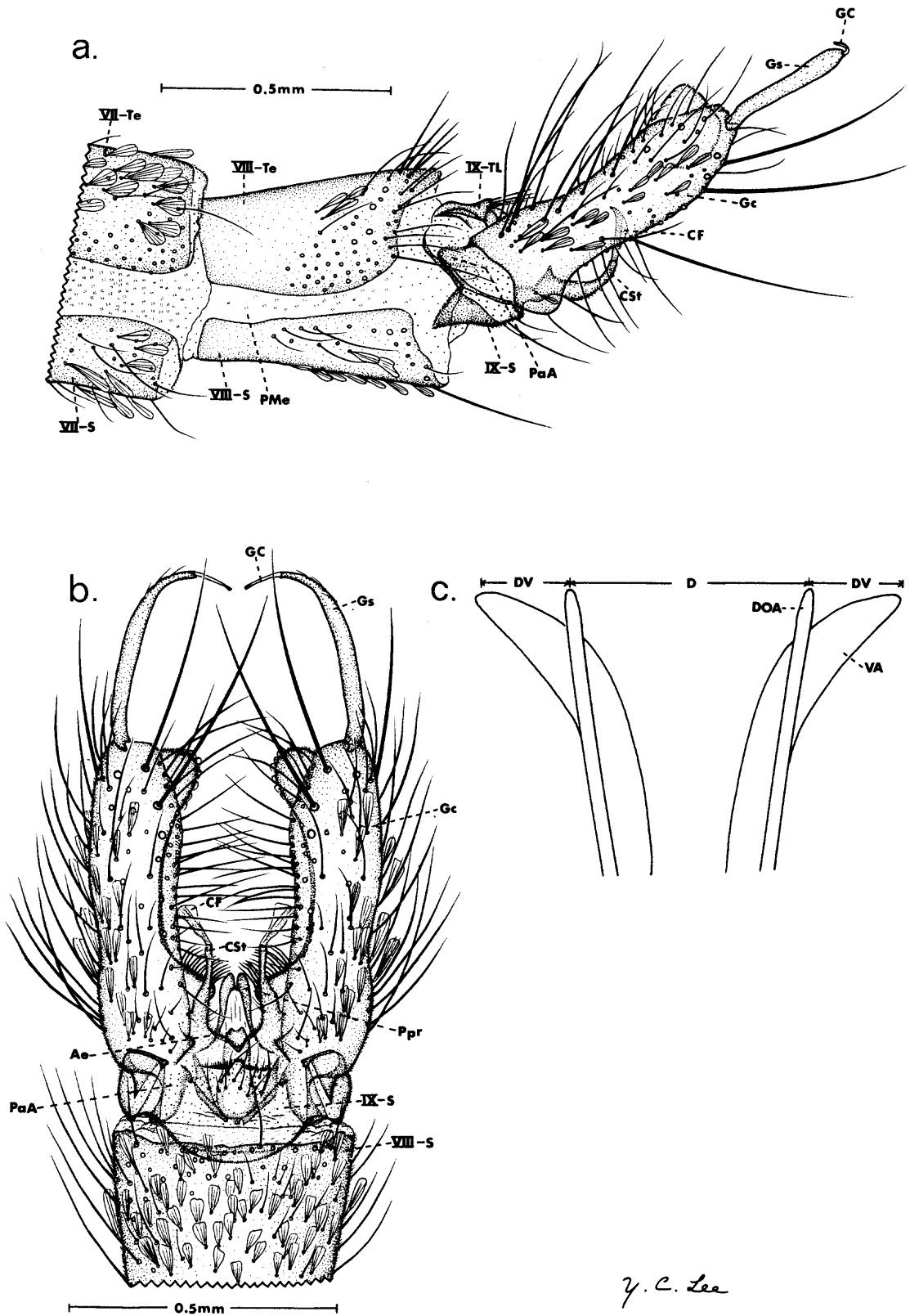
- a. Culex (Culex) pipiens L. Dorsal aspect of male genitalia.
- b. C. pipiens. Ventral aspect of phallosome.
- c. C. pipiens. Dorsal aspect of phallosome.
- d. C. pipiens. Mesal aspect of phallosome (separated through the middle).
- e. C. pipiens. Lateral aspect of phallosome.

Fig. 27



y. C. Lee

Fig. 28



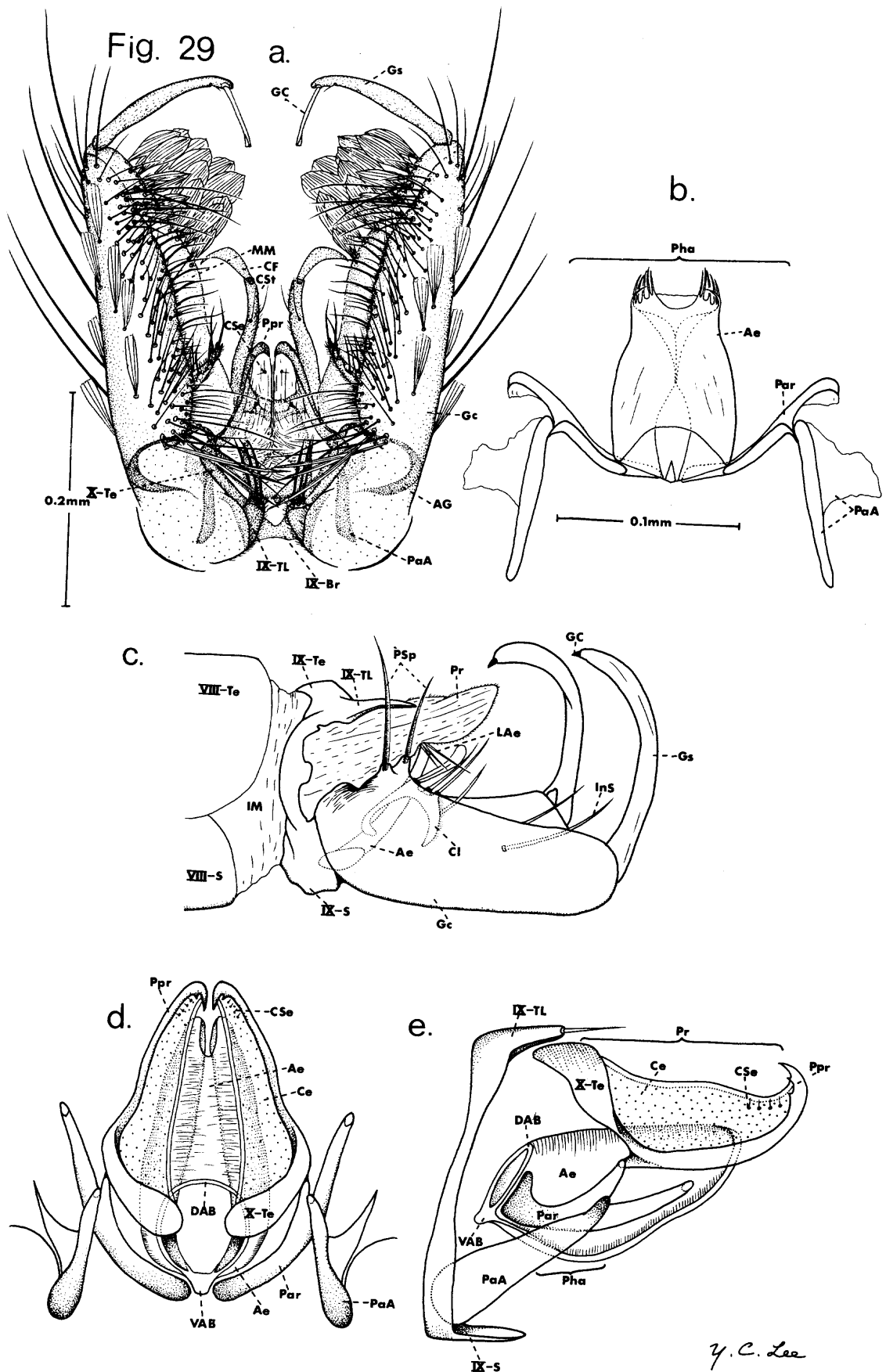
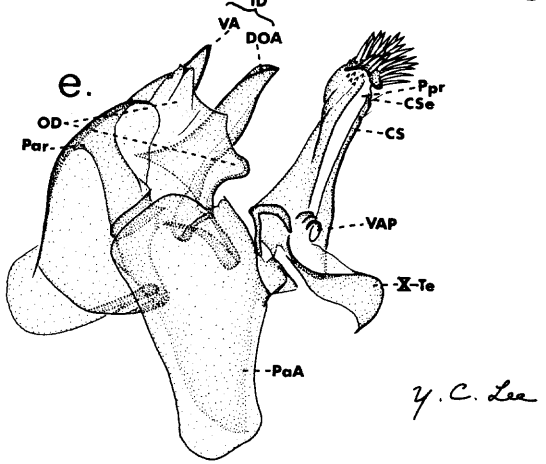
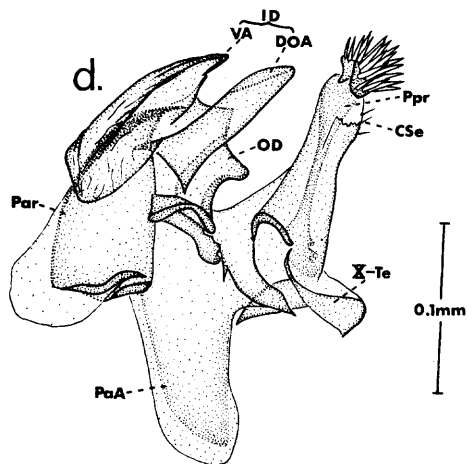
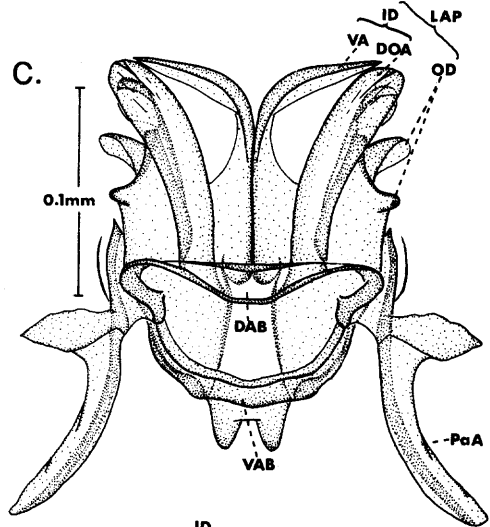
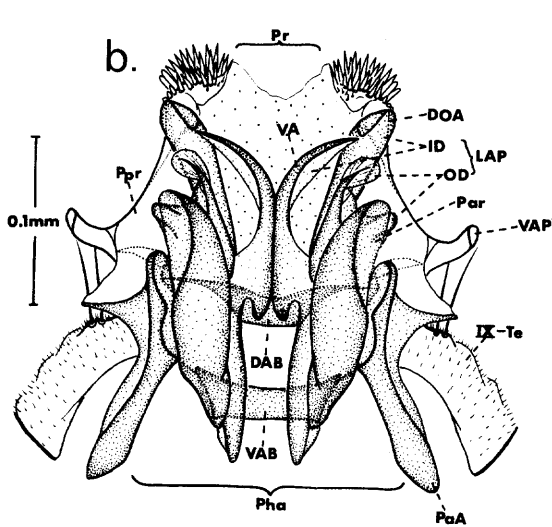
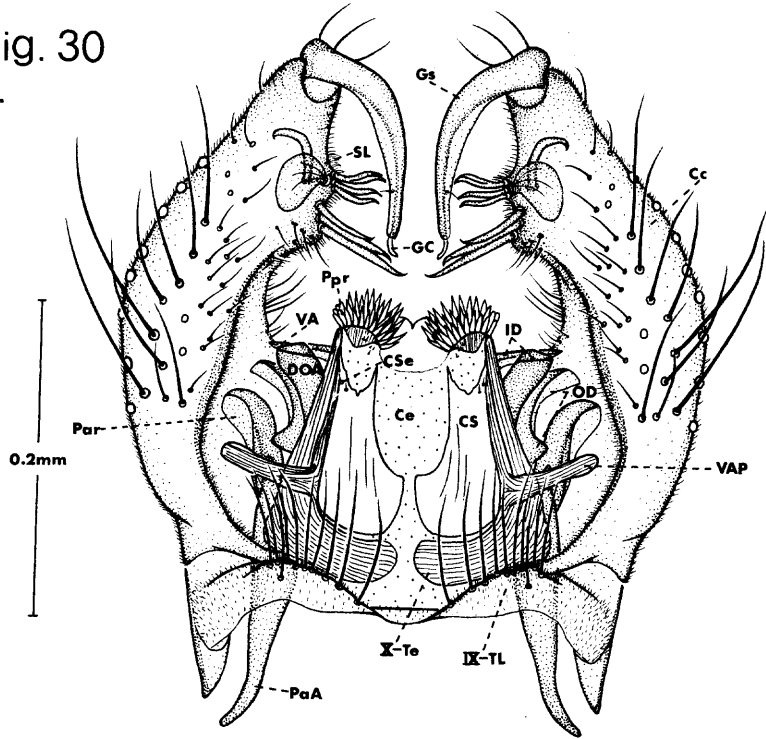


Fig. 30
a.



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APPENDIX

As pointed out in a previous issue, this section is appended for the purpose of explaining the recommendation of terms not presently widely accepted for use with Culicidae.

Genitalia

Because of a wide lack of agreement on the origin of the genital structures of insects, terminology for these parts varies widely throughout the class. Additionally, there is little agreement about structural homologies between the sexes. An outgrowth of these situations has been the development through the years of large numbers of taxon and sex specific terms for genitalic structures.

This situation has been detrimental to the fullest development of evolutionary and phylogenetic concepts. Certainly, in this era of greatly increased insect morphological study and of more refined research techniques, the development of a consistent nomenclature, even if somewhat arbitrary, is a worthwhile goal and should be pursued vigorously. This admonition should be tempered with the observation that uniform nomenclature can probably be developed only for the major parts of the genitalia, since in all insect orders there are numerous secondary developments whose homologies will be extremely difficult to trace, if ever. Undoubtedly, these structures for the foreseeable future must continue to be designated by specialized terms (Snodgrass 1963, 41).

If there can be agreement that the major parts of insect genitalia can be homologized, then which terms should be used? It is generally considered that the best procedure to follow in the development of a morphological terminology is to have it, where information permits, represent the phylogenetic and ontogenetic development of the involved organisms.

One of the oldest concepts and one that has gained wide acceptance at various times since its inception is that insect genitalia have been derived from segmental appendages. The appendicular theory of origin for insect genitalia has been supported by a long list of workers (Smith 1969). As originally developed, it held that the genital appendages (gonopods) were derived from the endopodites or exopodites of the coxopodites and/or telopodites and thus were serially homologous with the limbs of other segments.

Subsequently, this theory was modified to allow for the genital appendages being composite structures evolved from the combination of the coxopodites and mesally-adjacent segmental papillae which primitively bore the openings of the paired coelomoducts. This was essentially the origin ascribed to the genital appendages by Snodgrass (1935). Apparently, Snodgrass found it increasingly difficult to make the appendicular theory work, even in its modified form, because he later (Snodgrass 1963) left it entirely, saying "...a leg origin of the genitalia has never been demonstrated or even supported by any concrete evidence. The post-embryonic origin of the primary lobes and their median position behind the sternum of the ninth abdominal segment are in strong contrast to the true limb vestiges seen in the embryonic abdomen." As a counter proposal, he developed the theory that the primordial genitalia of the male divided laterally to form a median phallic lobe (mesomere) and paired lateral lobes (parameres) and the latter secondarily divided in the higher orders into the basimere (basistyle) and telomere (distimere). Homologues in the female were not specifically sought as Snodgrass did not feel that corresponding organs of one sex were necessarily homologous with their apparent counterparts in the other sex.

Matsuda (1958) developed the concept that the external insect genitalia are integumental outgrowths of the sterna.

Recent preliminary investigations by Smith (1969) appear to support the conclusion that external insect genitalia are a complex of limb bases (principally), adjacent sternites, and coelomoducal ampullae, and that the gonopods of both sexes of ectognathous insects are homologous structures. This, then, finds all of the principal theories advanced to date to be correct, at least in part.

We have elected to follow the line of thought developed by Smith (1969), a position which is certain to be unpopular since a largely appendicular theory of origin for insect genitalia, when applied to the Culicidae, requires the replacement of several commonly used terms.

DORSAL, VENTRAL - The 180° rotation of the complex of anal and genital parts occurring caudad of the seventh abdominal segment in the male a few hours after emergence has created much confusion in the morphological and taxonomic literature. In an effort to solve this, the terms "tergal" and "sternal" have sometimes been used. We believe this usage to be equally confusing because considerable portions of the genitalia are neither tergal nor sternal in origin. Consequently, we advocate using the terms "dorsal" and "ventral" and specifying that these are used in the prerotation sense, in other words, with their true morphological connotation.

GENITALIA - This term has been used in place of "terminalia" because there are other terminal points on the insect body and also because it is difficult to state definitely which of the terminal structures do not somewhere in Culicidae play a role in the copulatory act.

GONOCOXITE - As stated above, we have elected to accept the modified appendicular theory of origin for the insect genitalia. When this is done the term gonocoxite becomes a logical choice for the basal segment of the male "clasper". A long line of insect morphologists have previously supported, in one fashion or another, the theory that the structure under discussion here is a gonopod and have given it names to indicate that it is basically a coxa, a coxite, or a coxopodite. It is quite likely that the gonocoxite includes parts of structures other than the coxa (see Smith 1969). In this case, since the "ite" suffix means "part", it is an appropriate name, as only a portion of the coxa is involved. A completely definitive term may never be possible as the true composition of this structure will quite possibly never be known. At any rate, it would be extremely difficult to come up with a morphological term using word elements presently in use for genitalic structures that could tell the story without being ludicrously cumbersome. Either the term coxite or gonocoxite have been used in mosquito morphological discussions by Marshall (1938), Edwards (1941), Matheson (1944), and Christophers (1960) and both terms have been widely used outside of the Culicidae.

GONOSTYLUS - The substitution of this term for distimere was made necessary for the same reason that gonocoxite was substituted for basimere. Gonostyle was applied specifically to mosquitoes at least as early as 1924 (Freeborn 1924, 191).

PARAMERAL APODEME - This structure was apparently first commented on in mosquitoes by Edwards (1920) who selected "basal plate" as its name. This term has been widely used since. "Basal apodeme", apparently first used by Christophers and Barraud (1923, 830), more correctly defines this structure but still leaves its location unidentified. "Basal piece", introduced by Belkin (1962), also lacks in definitiveness, as does "endomere" (Crampton 1942, 92). Since this structure is a proper apodeme, serving as a fulcral point to the paramere for the rotation of the aedeagus into a copulatory position, the term "parameral apodeme" would seem to be a highly definitive term. This term has been used for Diptera by van Emden and Hennig (in Tuxen 1956, 116).

PARAMERE - When one or more arms are present dorsally, these have sometimes in the past been called dorsal parameres and the remainder of the paramere, the ventral paramere (Belkin, 1962). We recommend instead that these structures be called arms, for example the "dorsal arm of paramere".

TERGUM - We have followed Snodgrass (1963,7) in using this term to indicate a major plate of the dorsum, and in using "tergite" for a division of a tergum.

STERNUM - This term is used for the same reason as given for "tergum". Similarly, sternite is used to indicate a division of a sternum.

VENTRAL ARM OF PARAPROCT - Freeborn (1924) introduced this term and it still remains more definitive than the ones proposed subsequently.

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ERRATA

Part 4, Mosq. Syst. Newsletter 2(4). Fig. 25. The sex of the figured legs was not indicated. All are male except h. Fig. 26 b: Cells R₁ and R₃ are incorrectly labeled; should be R₃ and R₅.