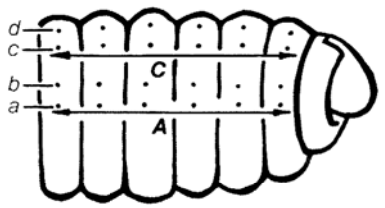
A, B, C, D These single capital letters refer to the meridians of longitude passing anteroposteriorly along the apertures of the respective setal follicles. Thus, *A* represents a line along the *a*, the most ventrally located setal follicles.



AA, BB, CC, DD See setal formula.

acinus (Fr. *acine* m.) A sac-like termination of a branched gland.

aclitellate adults (Fr. *adultes sans clitellum, antéclitellienne* f.) These are prereproductive individuals without a clitellum but in which genital markings are obvious. The second number in the age classification formula (q.v.) refers to such individuals.

adiverticulate (Fr. *sans diverticule*) Without diverticula, and usually referring to spermathecae.

aestivation (Fr. *estivation* f., *anhydrobiose*) A period of inactivity, or dormancy, resulting from unfavourable moisture conditions.

age classification formula A series of numbers following a binomen (usually three or four numbers) separated by dashes indicating the number of: juveniles—aclitellate adults—clitellate adults—postclitellate adults in a collection. If there are no postclitellate adults in the collection the final zero is omitted from the formula. See juveniles, aclitellate adults, clitellate adults, postclitellate adults.

amphigony See amphimixis.

amphimixis (Fr. *amphimixie* f.) Reproduction involving fertilization of an ovum by a sperm. In megadriles the same as biparental reproduction. Cf. parthenogenesis.

anal segment See periproct.

anastomosis (Fr. *anastomose* f.) Cross connections of ducts, branches of organs, or, more usually, of blood vessels.

anthropochore (Fr. *anthropochore*) Transported by man, usually unintentionally. Cf. peregrine.

aortic arch See hearts.

asetal (Fr. *sans soies*) Without setae. Cf. peristomium, periproct.

atrial gland (Fr. *glande atriole* f.) Glandular tissue associated with a cleft or coelomic invagination containing the male pore.

blood glands (Fr. *glandes sanguines* f.) Follicles clustered in the pharyngeal region, supposed to function in the production of haemoglobin and blood corpuscles.

brain (Fr. *cerveau* m.) See cerebral ganglion.

buccal cavity (Fr. *cavité buccal* f.) (**bc**) The first region of the alimentary canal, between mouth and pharynx (Fig. 2).

C. Abbreviation for circumference (in German publications replaced by U). See setal formula.

caecum (Fr. *caecum* m.) A blind diverticulum or pouch from the alimentary canal.

calciferous gland (Fr. *glande de Morren, glande calcifére* f.) (**cag**) Whitish gland that secretes calcium carbonate and opens into the gut via the oesophageal pouches. In Lumbricidae, it is generally found in segments x–xiv.

castings (Fr. *déjections de surface* f., *turricules* m.) Faeces, the voided earth and other waste matter that are commonly deposited on the surface of the ground. Not all species, however, form their casts above the ground.

cephalization (Fr. *céphalisation* f.) The loss of metameric uniformity at the anterior end of the body.

cerebral ganglion (Fr. *ganglion cérébral* m.) (**cg**) Concentrated nerve cells above the alimentary canal that function as a simple brain (Fig. 2).

cf. (*confer*) Compare.

chaeta See seta.

chloragogen cells (Fr. *cellules chloragogues* f.) (**chl**) Cells surrounding the alimentary canal; their function is uncertain but is attributed to excretion and regeneration in the literature (Fig. 3).

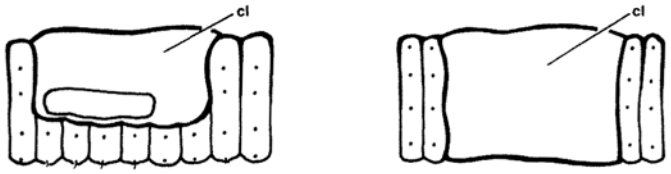
cingulum See clitellum.

circumpharyngeal connective (Fr. *connectif circumpharyngien* m.) (**cpc**) Nerve collar, between cerebral ganglion and ventral nerve ganglion (Fig. 2).

clitellate adult (Fr. *adulte avec clitellum, clitellienne* f.) Those individuals with

developed clitellum and genital markings. The third number in the age classification formula (q.v.) refers to these individuals.

clitellum (Fr. *clitellum* m.) (**cl**) A regional epidermal swelling where gland cells secrete material to form the cocoon. There are two types recognizable. An annular clitellum or cingulum (Fr. *anneau* m.) encircles the body whereas a clitellum that encompasses only the dorsal and lateral parts of the body is referred to as a saddle (Fr. *selle* f.). The convention xxvi, xxvii–xxxii, xxxiii means that the clitellum is generally found on segments xxvii–xxxii, but may in some individuals overlap onto segments xxvi and/or xxxiii.



SADDLE ANNULAR

In the case of *Eisenia rosea* the clitellum has been termed flared. This ventral flared condition is easily recognizable.

FLARED NON-FLARED

coelom (Fr. *cavité coelomique, coelome* f.) (**clm**) The body cavity between the body wall and the alimentary canal (Fig. 3).

congeneric (Fr. *congénère*) Belonging to the same genus.

copulation (Fr. *accouplement* m., *copulation* f.) Sexual union, mating.

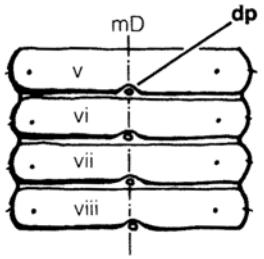
crop (Fr. *jabot* m.) (**cr**) A widened portion of the digestive system that lacks the muscularity of the gizzard, in Lumbricidae anterior to the gizzard and posterior to the oesophagus (Fig. 2).

cuticle (Fr. *cuticule* f.) (**cut**) A thin, non-cellular, colourless, transparent outer layer of the body wall. See iridescence 2.

diapause (Fr. *diapause* f.) An obligatory resting stage in development.

digitiform (Fr. *digitiforme*) Finger-shaped.

dorsal pore (Fr. *pore dorsal* m.) (**dp**) Small single intersegmental apertures in the mid-dorsal line (mD) leading to the coelomic cavity (Fig. 3). The convention first dorsal pore 5/6 means that the dorsal pore is found in the intersegmental furrow between segments v and vi.



dorsal vessel (Fr. *vaisseau dorsal* m.) (**dv**) A major blood vessel located above the dorsal surface of the alimentary canal (Figs. 2, 3).

ectal Outer, external, toward the body wall.

egg sac See ovisac.

endemic (Fr. *endemique*) Restricted to a certain region or part of a region, native. Cf. exotic, indigenous.

ental Inner, internal, away from the body wall.

epidermis (Fr. *epiderme* m.) (**epi**) The outer cellular layer of the body wall, which secretes a protective cuticle (Fig. 3).

epilobic (Fr. *epilobique*) See prostomium.

eq. Equatorial, see mL.

euryoecious (Fr. *euryoeciques*) Having a wide range of habitat tolerance.

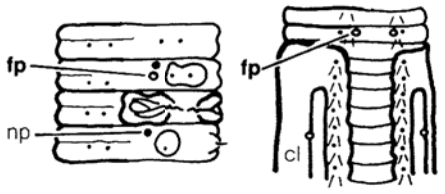
exoic (Fr. *exoique*) Opening to the exterior through the epidermis, referring to the excretory system.

exotic (Fr. *exotique*) Introduced, foreign. Cf. endemic, indigenous.

facultative (Fr. *facultatif*) Conditional, having the power to live under different conditions. Cf. obligatory.

female ducts Gonoducts. See oviducts.

female pores (Fr. *pores femelles* m.) (**fp**) The external openings for the oviducts on segment xiv (Lumbricidae) and ventrad of the mid-lateral line. They are usually more difficult to see than the male pores.



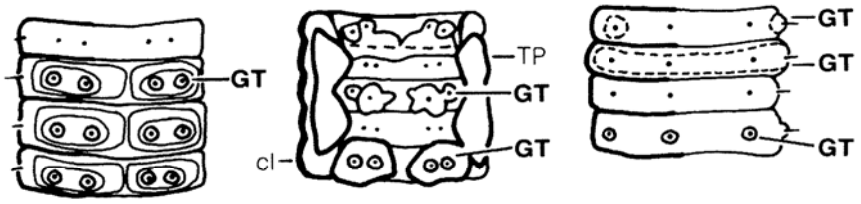
fide On the authority of, or with reference to publication, to a cited published statement.

flared clitellum (Fr. *clitellum évassé* m.) See clitellum.

genital markings (Fr. *mamelons antiarrheniques, mamelons periarrheniques* m.) (**GM**) Glandular swellings, pits or grooves of the epidermis. See genital tumescences.

genital setae (Fr. *soies genitales* f.) (**GS**) See setae.

genital tumescences (Fr. *papille puberculienne* f.) (**GT**) In Lumbricidae, areas of modified epidermis (glandular swellings) without distinct boundaries and through which follicles of genital setae open.



girdle See clitellum.

gizzard (Fr. *gésier* m.) (**g**) The muscularized portion of the digestive system, in Lumbricidae, anterior to the intestine and posterior to the crop (Fig. 2).

gonopore (Fr. *gonopore* m.) See male pores, female pores.

hearts (Fr. *coeurs* m.) (**h**) The enlarged, segmental, pulsating connectives of the blood system between the ventral and one or two other longitudinal trunks (e.g., dorsal and/or supra-oesophageal) (Fig. 2).

hemerobiont A species dependent on human culture.

hemerodiaphore A species indifferent to the influence of human culture.

hemerophile A species favoured by human culture.

hemerophobe A species averse to the influence of human culture.

hibernation (Fr. *hibernation* f.) A period of inactivity or dormancy resulting from unfavourable temperature conditions.

holandric (Fr. *holandrique*) The condition where the testes are restricted to segments x and xi, or a homoeotic equivalent.

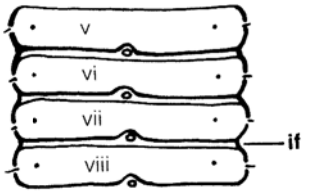
holoic (Fr. *holonéphridique*) The condition of having a pair of stomate, exoic nephridia in each segment of the body except the first and last.

homoeotic (Fr. *homoeotique*) The condition of having glands or organs in a segment(s) where they do not normally occur. Refers principally to intraspecific variation.

indigenous (Fr. *indigène*) Belonging to a locality, not imported, native. Cf. endemic, exotic.

in litt. (*in litteris*) In correspondence.

intersegmental furrow (Fr. *sillon intersegmentaire* m.) (**if**) The boundary between two consecutive segments; the area where the epidermis is thinnest and where, in pigmented species, colour is lacking.



iridescence (Fr. *irisation, iridescence* f.) In the context of earthworm biology this refers to 1) the appearance of sperm aggregated on the male funnels (q.v.), or 2) the appearance of cuticular colour as a result of refracted light.

juveniles (Fr. *larves* f.) Those individuals with no recognizable genital markings such as the clitellum, tubercula pubertatis, tumescences, etc., i.e., in the life stage between hatching and the appearance of genital markings. The first number in the age classification formula (q.v.) refers to these individuals.

lamella (Fr. *lamelle* f.) Any thin plate- or scale-like structure.

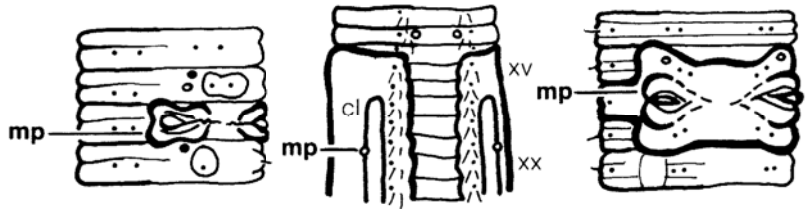
mD (Fr. *médio-dorsale*) Mid-dorsal line.

mL (Fr. *médio-latérale*) Mid-lateral line.

mV (Fr. *médio-ventrale*) Mid-ventral line.

male funnel (Fr. *entonnir mâle* m.) (**mf**) The enlargement of the ental end of a sperm duct with a central aperture through which sperm pass into the lumen of the duct on their way to the exterior. Sperm may temporarily aggregate on the funnels, prior to entering the ducts, their presence being indicated by iridescence (q.v.).

male pores (Fr. *pores mâles* m.) (**mp**) The external openings for the male ducts through which sperm are liberated during copulation. In Lumbricidae they are usually conspicuous near the mL on segment xv; any variation is noted in the diagnosis.



male sterility (Fr. *sterilité mâle* f.) Often cited as evidence for parthenogenesis (q.v.) and may be indicated by the following: 1) adult retention of juvenile testes, 2) adults with juvenile seminal vesicles and no evidence of sperm, 3) the absence at maturity of iridescence on the male funnels, indicating that there are no mature sperm aggregations, 4) the absence of similar iridescences in the male ducts and/or spermathecae, and 5) the absence of externally adhesive spermatophores. These criteria will only suggest male sterility in any given individual and many cases of repeated evidence are required before a species can be considered male sterile or parthenogenetic.

megadrile (Fr. *mégadrile* m.) Sensu Gates (1972c: 29) and Reynolds and Cook (1977), this term is synonymous with terrestrial oligochaetes. There is some morphological basis for the megadrile/microdrile division of the Oligochaeta (cf. Gates, 1972c). Brinkhurst (*in* Brinkhurst and Jamieson, 1971: 104) employs microdrile as a major heading when discussing the aquatic oligochaetes. In general, these old terms are used to describe terrestrial and aquatic oligochaetes without any systematic judgments.

mesial (Fr. *medial*) In the middle vertical or longitudinal plane.

metamere (Fr. *metamere* m.) A segment.

moniliform (Fr. *moniliforme*) Arranged like a string of beads.

monotypy (Fr. *monotypie* f.) The situation arising when a genus-group taxon is established with only one originally included species; or when a family-group taxon is established with only one originally included genus.

morph (Fr. *forme* f., *morph* f.) A group of individuals that share a common anatomy resulting from degradations, deletions, or other changes from structure of the ancestral amphimictic population caused by reproductive isolation. Such isolation usually comes about as a result of parthogenesis.

Morren's gland See calciferous gland.

mouth (Fr. *bouche* f.) (**m**) The anterior opening to the alimentary canal located in the peristomium.

mouth cavity See buccal cavity.

muscular tube See nephridial bladder.

nearctic (Fr. *néarctique*) A zoogeographical region including Canada, the United States, Greenland, and northern Mexico.

neotype (Fr. *neotype* m.) A single specimen designated as the type specimen of a nominal species-group taxon of which the holotype (or lectotype), and all

paratypes or all syntypes are lost or destroyed. Neotypification is the act of selecting a neotype. (For nominal taxon, see taxon.)

nephridial bladder (Fr. *vesicule de la nephridie* f.) (**nb**) The extended portion of the nephridial tube connected to the nephropore (Fig. 3).

nephridial pore See nephropore.

nephridial reservoir See nephridial bladder.

nephridiopore See nephropore.

nephridium (pl. **nephridia**) (Fr. *nephridie* f.) (**n**) The organ for nitrogenous excretion (Figs. 2, 3).

nephropore (Fr. *nephridiopore* m.) (**np**) The external opening of a nephridium (Fig. 3).

nephrostome (Fr. *nephrostome* m.) (**ns**) The ciliated funnel at the ental end of the nephridium (Fig. 3).

obligatory (Fr. *obligatoire*) Limited to one mode of life or action. Cf. facultative.

oesophagus (Fr. *oesophage* m.) (**es**) The portion of the gut between the pharynx (anterior) and crop (posterior), ending in an oesophageal valve (Fig. 2).

omnivorous (Fr. *omnivore*) Eating both animal and plant tissue.

op. cit. (*opere citato*) In the work or article previously cited for this writer (no page cited).

ovary (Fr. *ovaire* m.) (**o**) The organ for ova (egg) production (Fig. 2).

oviducal pores See female pores.

oviduct (Fr. *oviducte* m.) (**od**) The duct carrying the ova from the coelomic funnel to the exterior (Fig. 2).

ovisac (Fr. *ovisac* m.) (**os**) An egg-capsule or receptacle (Fig. 2).

ovum (pl. **ova**) (Fr. *ovule, oeuf* m.) The female germ cell, matured egg-cell.

palaearctic (Fr. *paléoarctique*) A zoogeographical region including all of Europe and the U.S.S.R. to the Pacific Ocean, Africa north of the Sahara Desert, and Asia north of the Himalaya Mountains.

papilla (Fr. *papille* f.) A protruding dermal structure.

parietes (Fr. *pariétes* m.) Walls or sides of structures.

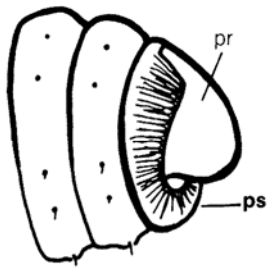
parthenogenesis (Fr. *parthénogénèse* f.) Uniparental reproduction in which the ova develop without fertilization by spermatozoa. Cf. amphimictic.

penial setae (Fr. *soies de la verge* m.) See seta.

peregrine (Fr. *peregrin*) Widely distributed, not necessarily involving man.

periproct (Fr. *pygidium* m.) (**pp**) The terminal (last, caudal) "segment" of the body, without coelomic cavity, asetal.

peristomium (Fr. *peristomium* m.) (**ps**) The first body segment, asetal, and containing the mouth (Fig. 2).



pH (Fr. *pH* m.) An indication of acidity or alkalinity measured as the negative logarithm of the hydrogen-ion concentration, and expressed in terms of the pH scale (0–14) where pH 7 is neutral, less than 7 is acidic, and more than 7 is alkaline. Previously, North American studies employed an aqueous solution to make soil pH readings, and these are the figures given in the text, but variations can occur when the amount of water present in the soil changes as well as when the amount of dissolved gases in this water, e.g., CO_2, changes. To overcome these variations in the pH readings, one of several salt solutions of differing strengths may be employed instead of water, e.g., KCl or $CaCl_2$. (For details, see Peech, 1965.)

pharynx (Fr. *pharynx* m.) (**ph**) The portion of the gut between the buccal cavity (anterior) and the oesophagus (posterior) (Fig. 2).

pinnate (Fr. *penne*) Divided in a feathery manner.

polymorphism (Fr. *polymorphisme* m.) Occurrence of different forms of individuals within the same species.

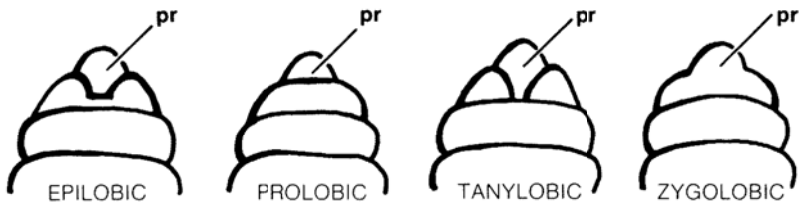
postclitellate adult (Fr. *adulte après clitellum, postclitellienne* f.) Postreproductive individuals without a clitellum but with areas of discolouration in the regions of the clitellum, and with genital markings. If these discolourations

disappear (which is not abnormal), differentiation between aclitellate adults and postclitellate adults may be impossible even after dissection. These individuals have reverted to an aclitellate state and in the future may become clitellate again and be reproductive. The fourth number in the age classification formula refers to these individuals, but if such individuals are not present in the sample then this fourth figure is omitted instead of using a zero.

prostates (Fr. *prostates* f.) In Lumbricidae, the same as atrial glands, and of unknown function.

prostatic pores (Fr. *pores prostatique* m.) See male pores.

prostomium (Fr. *prostomium* m.) (**pr**) The anterior lobe projecting in front of the peristomium and above the mouth. There are four types as seen in dorsal view:



1) Epilobic: tongue of the prostomium partly divides the peristomium. 2) Prolobic: prostomium demarcated from the peristomium without a tongue. 3) Tanylobic: with a tongue that completely divides the peristomium. 4) Zygolobic: prostomium not demarcated in any way.

pseudogamy (Fr. *pseudogamy*) The activitation of ova by a sperm without nuclear fusion and thus without true fertilization.

pygidium See periproct.

pygomere See periproct.

pyriform (Fr. *pyriforme*) Pear-shaped.

quiescence (Fr. *quiescence* f.) A period of inactivity, or dormancy, resulting from an unfavourable environment; cf. aestivation and hibernation.

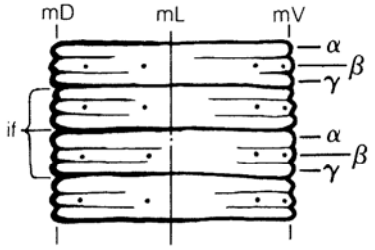
q.v. (*quod vide*) Which see.

ridge of puberty (Fr. *crêtes de puberté* f.) See tubercula pubertatis.

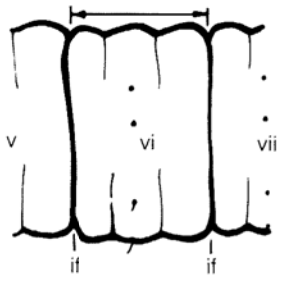
sacculate (Fr. *saccule* m.) Provided with sacculi, small sacs or pouches.

saddle See clitellum.

secondary annulation (Fr. *sillons transversaux* m.) (**sa**) The furrows which occur between the intersegmental furrows (q.v.). These demarcations are only external and are labelled α, β, or γ.



segment (Fr. *segment* m.) A portion of the body, along the anteroposterior axis, between two consecutive intersegmental furrows and the associated septa. Segments are numbered with lower case roman numerals, i, ii, iii, etc., beginning anteriorly with the peristomium as i. The older system and some microdrile workers used upper case numerals, I, II, III, etc.



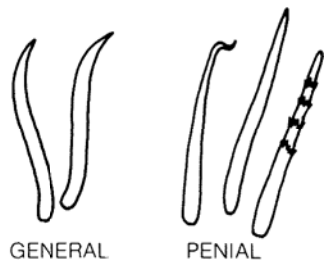
seminal receptacles See spermathecae.

seminal reservoirs See seminal vesicles.

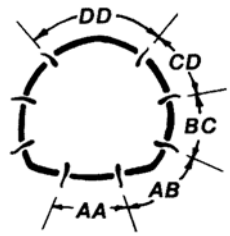
seminal vesicles (Fr. *vésicules séminales* f.) (**sv**) The storage sacs for an earthworm's own sperm until copulation.

septum (pl. **septa**) (Fr. *cloison* f.) (**sep**) The internal partition at intersegmental furrows. Also acts as a supporting membrane for internal organs (Fig. 2).

seta (Fr. *soie* f.) (**s**) A solid rod or bristle secreted by cells at the ental end of a tubular epidermal ingrowth, the setal follicle. Setae are of several types: 1) general: sigmoid shape with pointed outer tip; 2) genital: associated with genital tumescences and/or gonopores, and not sigmoid; 3) penial: associated with the male pores and not sigmoid. Individual setae are referred to as *a, b, c, d,* as shown in the first diagram of this Glossary, *a* being the most ventral and *d* the most lateral of the setae on a particular segment.



setal formula (Fr. *des soies* f.) The distance between the setae, usually measured on segments x and/or xxx, and being an estimate of the space between the *A, B, C,* and *D* meridians (q.v.). The data can be expressed as a ratio (e.g., *AA:AB:BC:CD:DD* = 9:3:6:2:30), as groupings (e.g., *AA>BC<DC, AA=BC*) or in terms of the circumference, C, (e.g., *DD*=1/2C). See also setal pairings.



setal pairings (Fr. *schéma de la disposition des soies*) Setae may be closely paired (Fr. *soies etroitement géminées*), widely paired (Fr. *soies distantes*), or separate (Fr. *soies écartées, soies séparées*).

somatic (Fr. *somatique*) Referring to any portion of the anatomy except the reproductive organs.

sperm (Fr. *spermatozoides* m., *sperme* m.) The male germ cells, fertilizing agent.

sperm ducts See vas deferens.

sperm funnel See male funnel.

sperm sacs See seminal vesicles.

spermathecae (Fr. *spermatheque* f.) (**sp**) The pouches developed in the septa which receive sperm from another individual during copulation; the sperm are stored here until the period of cocoon laying.

spermatophore (Fr. *spermatophore* m.) A capsule of albuminous matter containing a number of sperm.

spermatozoa See sperm.

spermiducal pores See male pores.

stomate (Fr. *stomate*) Referring to open nephridia, i.e., with funnel.

tanylobic (Fr. *tanylobique*) See prostomium.

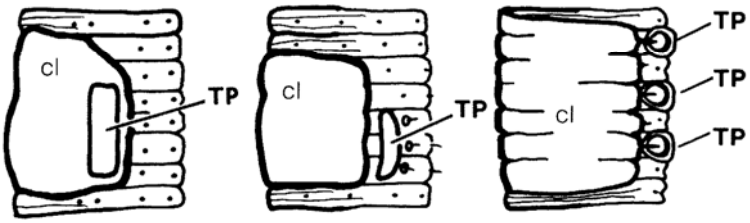
taxon (pl. **taxa**) (Fr. *taxon* m.) Any taxonomic unit such as a particular family, genus, or species. **Nominal taxon:** The taxon, as objectively defined by its type, to which any given name whether valid or invalid applies.

testis (pl. **testes**) (Fr. *testicules* m.) (**t**) The organs for sperm production.

testis sac (Fr. *sac du testicule* m.) Usually a closed off coelomic space containing one or both testes and male funnels of a segment.

trabeculate (Fr. *trabeculaire*) Seminal vesicles that develop as connective tissue proliferations from a septum so as to have numerous irregular spaces that remain inconsiderable until spermatogonia (primitive sperm cells) begin to enter.

tubercula pubertatis (Fr. *puberculum* m.) (**TP**) A glandular swelling appearing near the ventrolateral margins of the clitellum. It is not always present, and it may be continuous or discontinuous, and of varied size and shape.



typholosole (Fr. *typhlosolis* m.) (**typ**) Any longitudinal fold in the gut wall projecting into the gut lumen, usually at mD or mV (Figs. 2, 3).

vas deferens (Fr. *canal deferent* m.) (**vd**) The ducts that carry sperm from the male funnels to the exterior (Fig. 2).

ventral vessel (Fr. *vaisseau ventral* m.) (**vv**) A major blood vessel, located ventral to the alimentary canal and dorsal to the ventral nerve cord (Fig. 2).

vesiculate (Fr. *vesiculeux*) Having a vesicle or small bladder-like sac.

viz. (*videlicet*) Namely.

zygolobic See prostomium.

1-1-1-1 See age classification formula.

1/2 See first dorsal pore.

i, ii, iii See segment.