INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE

EXPLORATION HYDROBIOLOGIQUE

DU

LAC TANGANIKA

(1946-1947)

RÉSULTATS SCIENTIFIQUES

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EPHEMEROPTERA

par GEORGES DEMOULIN (Bruxelles)

FREELIVING NEMATODES

by ARWED H. MEYL (Bad Godesberg)

BRUXELLES
1956

EPHEMEROPTERA

PAR

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EPHEMEROPTERA

Au cours de l'exécution de son programme, la Mission d'Exploration Hydrobiologique du lac Tanganika a été amenée à récolter des larves et des adultes d'Éphémères, qui ont été déposés à l'Institut royal des Sciences naturelles de Belgique.

Comme on le verra, ce matériel comprend — et cela se conçoit, étant donné le but de la Mission — surtout des formes lacustres. Quelques prélèvements dans divers affluents du lac Tanganika ont cependant fourni également des formes intéressantes.

On trouvera ici la description des diverses espèces récoltées et une brève discussion de leurs caractères écologiques. L'iconographie a été réalisée à l'aide d'un microprojecteur, à partir de préparations microscopiques de pièces disséquées tout autant que d'exemplaires *in toto*.

Famille **POLYMITARCYIDAE.**

Sous-famille CAMPSURINAE.

Genre POVILLA Navás, 1911.

Povilla adusta Navás, 1911.

L'adulte de cette espèce est bien connu. La larve, par contre — si les hydrobiologistes africains la reconnaissent par comparaison avec ses sœurs orientales — n'a, à ma connaissance, jamais été décrite ni figurée.

Larve (fig. 1). — Ressemble fortement à celle de *P. corporaali* Lestage (cfr Ulmer, G., 1939, figs 193-208). Sa description détaillée sera de ce fait inutile.

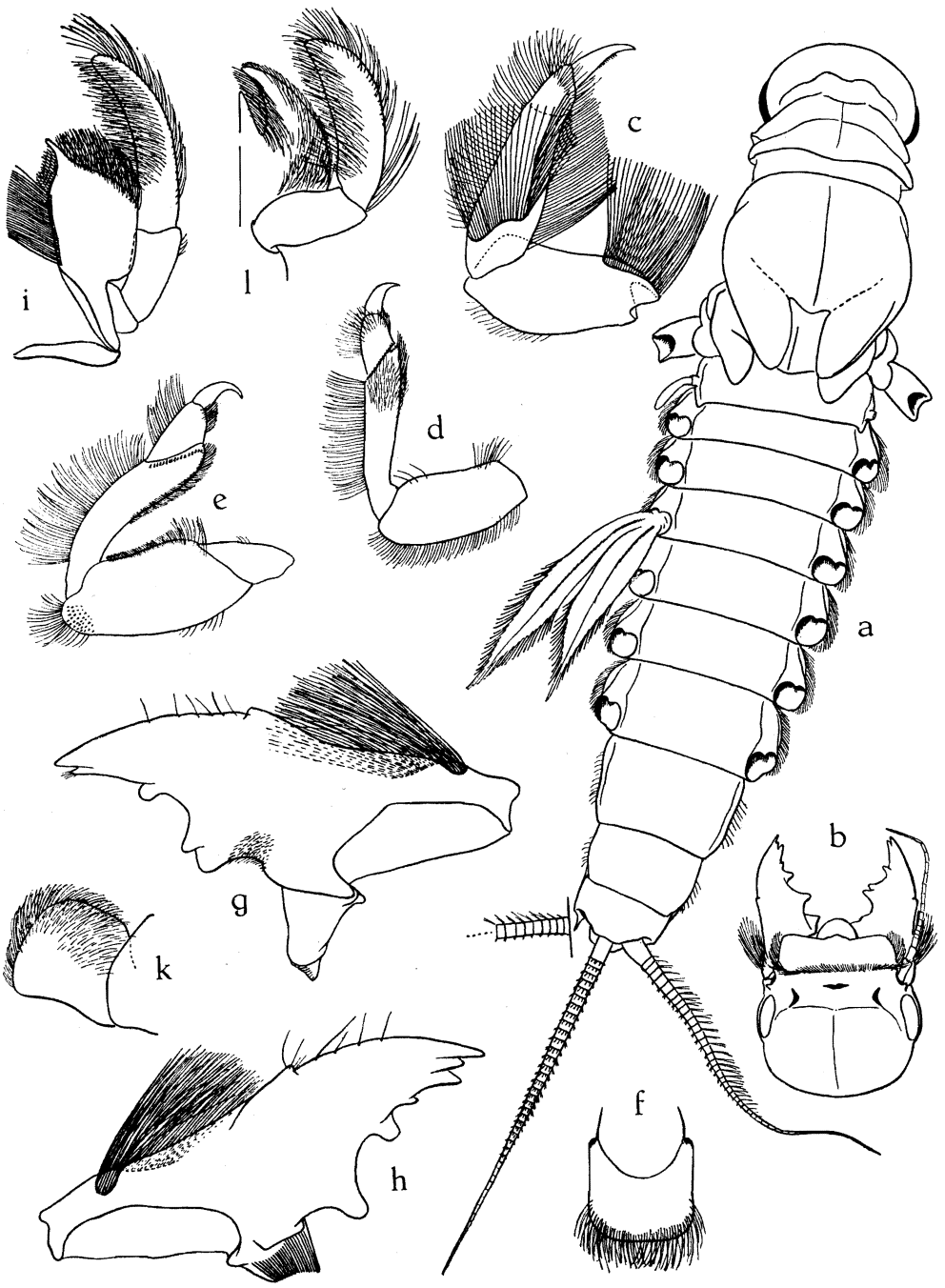

FIG. 1. — *Povilla adusta* NAVAS, larve.

a : Vue générale dorsale, pattes et trachéobranchies (sauf la 1re et la 4e gauches) non figurées, × 8 env. — *b* : Tête, vue antérodorsale, × 14. — c, d, e : Pattes I, II, III, × 14. — f, g, h, i, k, l : Labre, mandibules, maxille, hypopharynx, labium, × 24 (le labium et l'hypopharynx représentés seulement pour moitié).

Je renvoie à la figure 1 pour certains détails. On notera particulièrement la disposition de certains poils sur les pattes et les pièces buccales, constituant des pinceaux filtreurs qui ont été étudiés au point de vue fonctionnel par R. HARTLAND-ROWE (1953). La disposition des pattes est assez particulière : les antérieures se placent dans un plan vertical parallèle au corps, de chaque côté de la tête, avec les hanches rapprochées, parallèles, et rabattues sous le mésothorax; les pattes médianes sont dressées perpendiculairement au mésothorax, avec leurs hanches séparées; enfin, les pattes postérieures se dressent le long de l'abdomen sans toucher les trachéobranchies, et leurs hanches, largement séparées, débordent de part et d'autre du métathorax.

Matériel. — Congo belge : 5 larves, 5 km au large d'Albertville, du port au SSE du pier, 9.XII.1946; 59 larves, en partie dans leur fourreau, 2 miles au large d'Albertville, 10.XII.1946 (les fourreaux soyeux de ces larves se trouvent à l'intérieur de coquilles brisées de Gastéropodes); 11 larves, baie de Tembwe, à 300 m de la rive du fond (à la lumière électrique), 14-15.XII.1946; 1 ♀, Moba, à 200 m à l'Est de l'estacade, 26-27.XII.1946; 23 larves, baie de Burton, dans le fond de la baie, 10 km de la côte ouest, depuis Musabah jusqu'à proximité de la rivière Mutambala, 22.I.1947 (creusant une branche d'arbre); 3 larves, baie de Burton, à 10 km de la côte ouest, depuis les parages de la rivière Mutambala vers le Nord, 22.I.1947; 10 larves, dans des fourreaux de soie en mélange avec des débris de coquilles de Gastéropodes, 1 km de la côte entre Albertville et le camp Jacques, 3.II.1947; environ 130 larvules, mêmes localité et date; 231 ♂♂, 46 ♀♀, Albertville, 20 h, 18.II.1947. Tanganyika Territory : 7 larves, Karema, 500 à 1.000 m de la rive, du Nord de la rivière Ifume jusqu'au Sud du village, 22.XII.1946; 8 larvules, Edith Bay, à 300 m du rivage, 23.XII.1946; 1 larve, 10-15 km au large de l'embouchure de la Malagarasi, 25.I.1947; 3 larves, baie de Karago, dans la baie, 25.I.1947; 1 larve, à 500 m au large de l'embouchure de la rivière Ifume, 15-16.II.1947; 23 ♂♂, 142 ♀♀, baie au Sud de la Malagarasi, à la pointe sud du delta et devant la rivière, 24.II.1947; 3 larvules, au large de la baie de Karago et par le travers du cap, à 1 km de la côte, 24.II.1947; 1 ♀, 1 larve, delta de la Malagarasi, le long des rives et dans les petites baies, 25.II.1947; 55 ♂♂, 10 ♀♀, baie de Kirando, 11.III.1947; 3 larves, baie de Utinta, 500 m de la rive, 4.IV.1947. En outre, 18 larves dans une branche perforée de galeries, sans localité ni date.

Remarque. — La larve de cette espèce, très abondante dans ses stations, présente les mêmes caractéristiques écologiques que celle de l'espèce orientale *P. corporaali* LESTAGE. Elle paraît susceptible de causer de sérieux dégâts dans les bois immergés. L'espèce est connue, au Congo belge, surtout des grands lacs et grands cours d'eau de la partie orientale du pays. Elle semble manquer dans la cuvette centrale, où elle est remplacée par *Ephoron savignyi* (EATON), autre Polymitarcyide à larve fouisseuse.

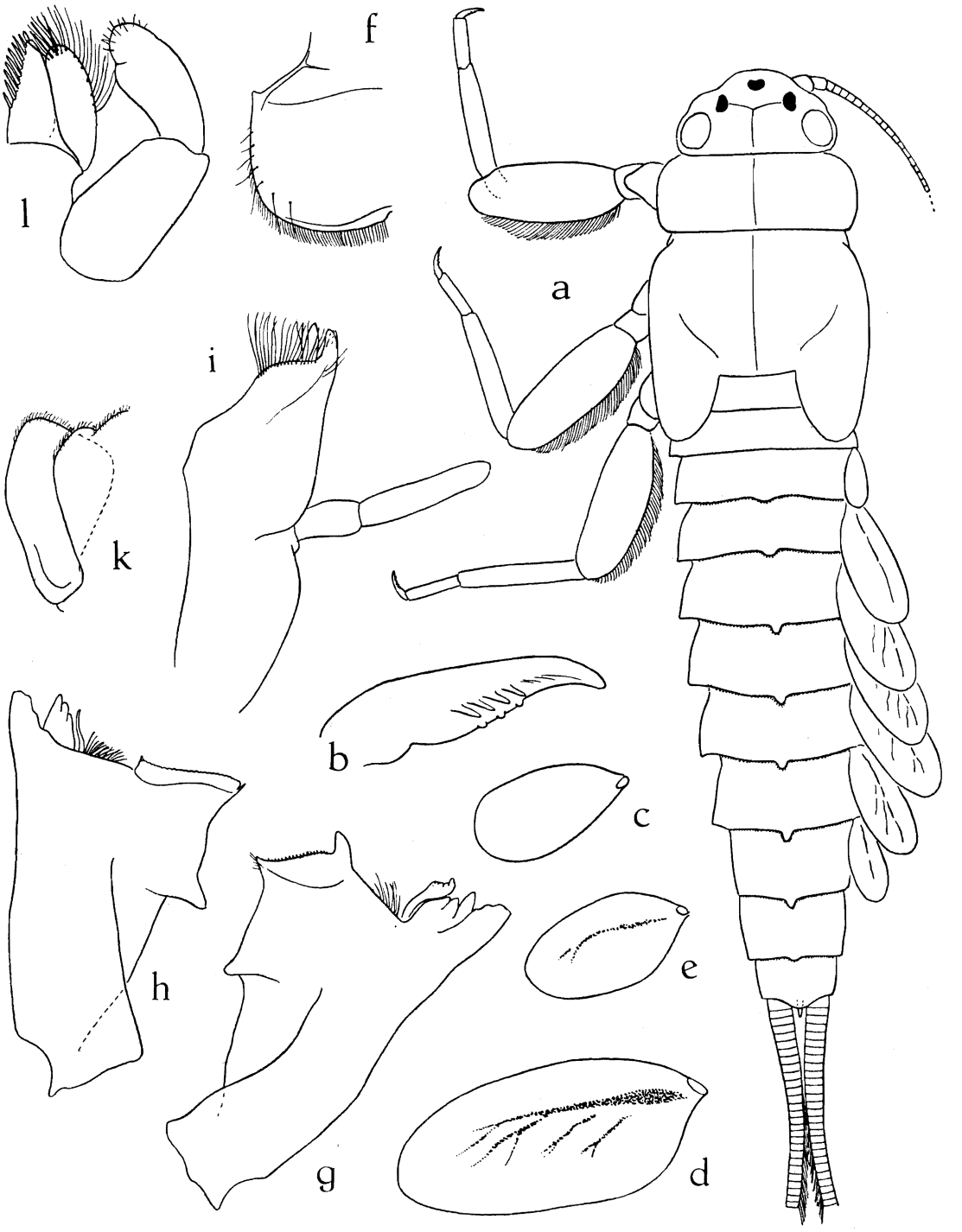

FIG. 2. — *Acentrella* sp., larve.

a : Vue générale dorsale, antennes et trachéobranchies gauches et pattes droites non figurées, cerques tronqués, × 26. — b : Ongle I, × 265. — c, d, e : Trachéobranchies I, IV, VII, × 62. — f, g, h, i, k, l : Labre, mandibules, maxille, hypopharynx, labium, × 135 (le labre, l'hypopharynx et le labium représentés seulement pour moitié).

Famille **BAËTIDAE.**

Genre ACENTRELLA Bengtsson, 1912.

Acentrella sp.

Larve (fig. 2). — Ressemble à la forme décrite par D. E. Kimmins du Nyasa sous le nom de *Acentrella* sp. A. En diffère toutefois par divers détails structuraux : forme du pronotum, du palpe labial, des dents unguéales, etc. Il y a des calus médio-tergaux sur le bord postérieur des segments abdominaux II-IX.

Coloration générale blanc brunâtre, plus foncée sur le dos. Tête et tergites thoraciques marbrés de brun. Pattes à genoux et extrémité des tarses rembrunis. Abdomen à bord postérieur des tergites brun; en outre, sur chaque segment, une paire de macules brunes arrondies peu nettes, parfois mieux visibles sur V-VI et surtout sur II-III. Trachéobranchies blanches, à trachées marquées de brun-noir. Cerques blanc jaunâtre.

Longueur du corps (exemplaires immatures) : 5,5 mm; des cerques latéraux : 3 mm.

Matériel. — Congo belge : 2 larves, rivière de Mwerazi, 3.IV.1947. Je rapporte aussi à cette espèce 2 larves prises aux environs de la baie de Kolobo, en montagne, dans le ruisseau Kauchu, sous les pierres, 3.I.1947; elles sont de couleur blanchâtre, avec le bord postérieur des tergites abdominaux brun. L'une d'elles porte, sur les urotergites II-III, les macules brunes, ici très nettes, signalées dans la description ci-dessus.

Remarque. — Comme rappelé plus haut, des larves analogues, dépourvues de paracerque et portant une série médio-dorsale de calus abdominaux, ont été décrites par D. E. Kimmins (1955) du Nyasaland. L'adulte, nécessaire pour pouvoir juger de l'exactitude de la position générique (1), n'est malheureusement pas connu. Le genre *Acentrella* n'avait pas encore été cité du Congo belge.

Genre BAËTIS Leach, 1815.

Baëtis sp. A.

Larve (fig. 3). — Morphologie externe banale pour le genre. Je renvoie à l'iconographie pour les différents détails anatomiques.

Tête brune, éclaircie de jaunâtre extérieurement aux trois ocelles simples; entre ces derniers et les yeux composés, des vermiculations transverses brun foncé. Antennes brunâtres, ocelles et yeux gris-noir.

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(1) On sait que le genre *Acentrella* devra probablement tomber en synonymie de *Baëtis* Leach.

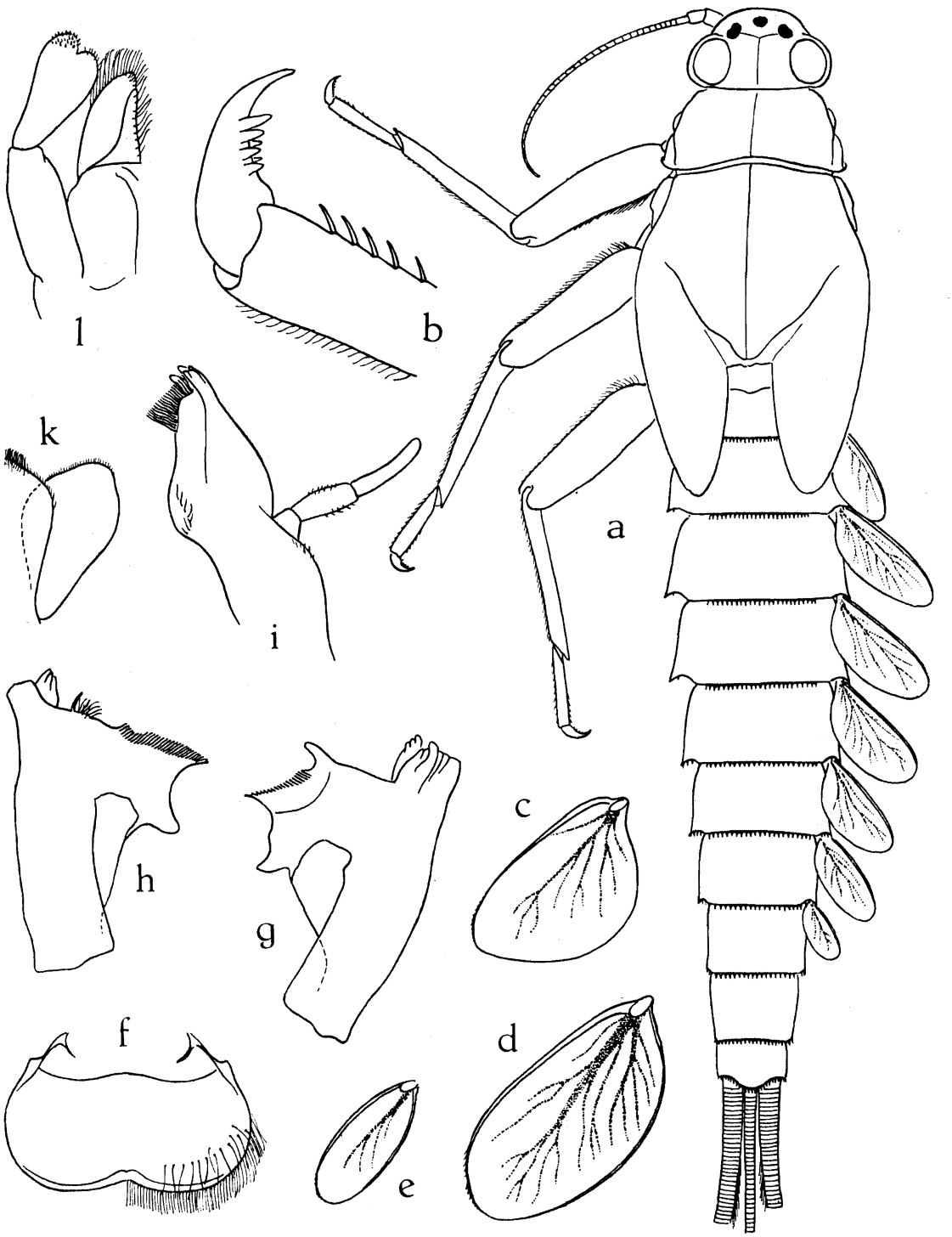


FIG. 3. — *Baëtis* sp. A : larve.

a : Vue générale dorsale, antenne et pattes droites et trachéobranchies gauches non figurées, cerques tronqués, × 15. — b : Ongle I, × 110. — c, d, e : Trachéobranchies I, IV, VII, × 35 env. — f, g, h, i, k, l, : Labre, mandibules, maxille, hypopharynx, labium, × 65 (le labium, l'hypopharynx et la ciliation du labre représentés seulement pour moitié).

Pronotum brunâtre, maculé et vermiculé de brun foncé. Mésonotum de même; métanotum brun.

Pattes brun jaunâtre; bord dorsal des fémurs et apex des tarses brun foncé, et surface des fémurs portant une grande macule irrégulière brunâtre.

Abdomen brun jaunâtre au-dessus, les segments médians un peu plus foncés. Sur chaque tergite, une paire de macules virgulaires divergentes : elles constituent une figure en accent circonflexe près du bord antérieur du segment I; sur les urites suivants, elles diminuent progressivement de taille, s'arrondissent et se rapprochent de plus en plus du bord postérieur. A partir du VI^e ou du VII^e segments, ces macules sont précédées par une autre paire de taches moins nettes. Paratergites bruns, éclaircis de jaunâtre.

Trachéobranchies blanchâtres, à bord externe et moitié du bord interne bruns; trachéation brunâtre.

Cerques et paracerque brunâtres.

Longueur du corps : 11,5 mm; des cerques latéraux : 6 mm; du paracerque : 3 mm.

Matériel. — Congo belge : 2 larves, rivière Koki, 5 km en amont de Mulange, 1.X.1947.

Remarque. — Des larves de *Baëtis* ont déjà été signalées du Congo belge, par J. A. Lestage (1917). Le seul adulte connu de ce pays est une ♀ subimago, spécifiquement indéterminable, du Kivu (Demoulin, G., 1956).

Baëtis sp. B.

Larve (fig. 4). — Morphologie externe également de type banal. On verra l'iconographie pour les détails structuraux.

Coloration générale brun jaunâtre. Ocelles noirs, yeux composés gris-noir.

Tergites thoraciques à peine perceptiblement maculés de brun plus foncé. Articulations fémoro-tibiales et tibio-tarsales, ainsi que l'apex des tarses et les ongles bruns.

Sur la majorité des tergites abdominaux, une ombre en arc de cercle, joignant les deux angles postérieurs et tangente au milieu du bord antérieur; cette ombre diffuse plus ou moins sur le milieu du tergite.

Trachéobranchies blanchâtres, marges étroitement brunâtres; trachées peu marquées.

Cerques et paracerque jaunâtres, à ciliation brune.

Longueur du corps : 6,5 mm; des cerques latéraux : 4 mm; du paracerque : 3,5 mm.

Matériel. — Congo belge : 10 larves, environs de la baie de Kolobo, en montagne, dans le ruisseau Kauchu, sous les pierres, et à l'embouchure du ruisseau, 3.I.1947; 2 larves (dont une mature), rivière de Mwerazi, 3.IV.1947.

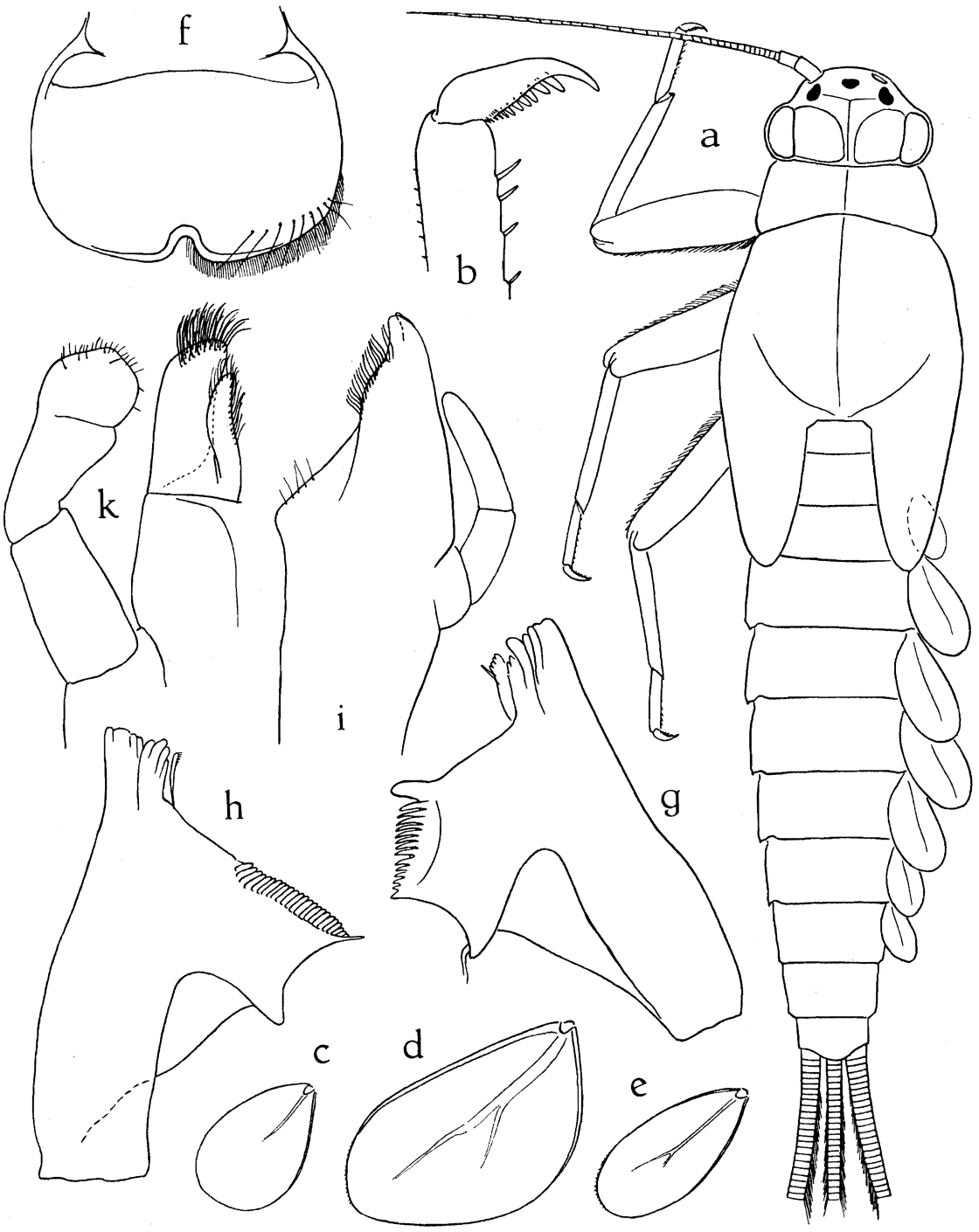


FIG. 4. — *Baëtis* sp. B : larve.

a : Vue générale dorsale, antennes et pattes droites et trachéobranchies gauches non figurées, × 20. — b : Ongle I, × 115. — c, d, e : Trachéobranchies I, IV, VII, × 46. — f, g, h, i, k : Labre, mandibules, maxille, labium, × 115 (le labium et la ciliation du labre représentés seulement pour moitié).

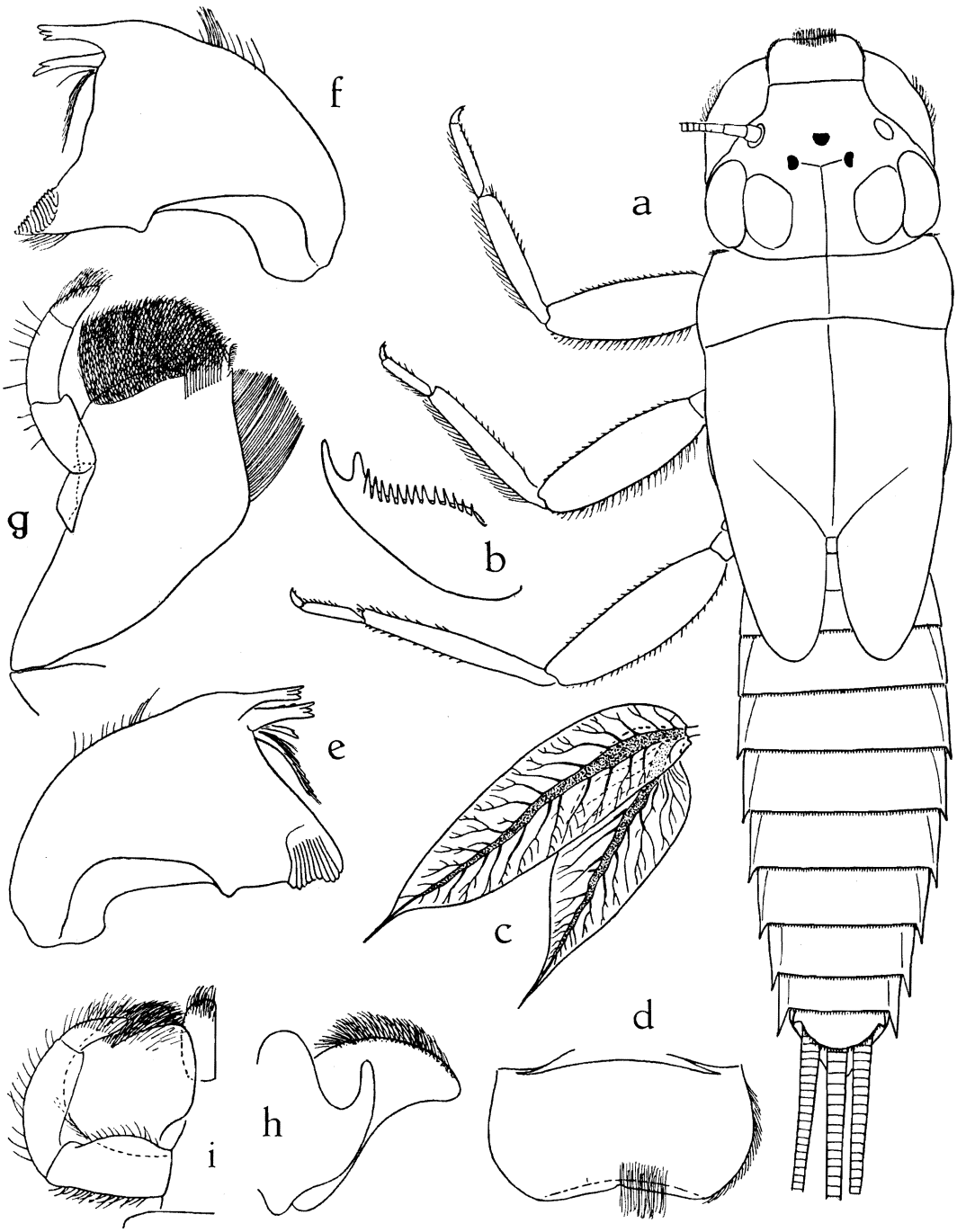


FIG. 5. — *Adenophlebia* sp., larve.

a : Vue générale dorsale, antennes, trachéobranchies et pattes droites non figurées, cerques tronqués, × 15. — b : Ongle I, × 160. — c : Trachéobranchie IV, × 32. — d, e, f, g, h, i : Labre, mandibules, maxille, hypopharynx, labium, × 42 (le labium, l'hypopharynx et la ciliation du labre représentés seulement pour moitié).

Genre CLOËON Leach, 1815.

Cloëon sp.

Matériel. — Congo belge : 17 larvules spécifiquement indéterminables, étang de Kaluwe, sur la crête d'Ubwari, transversale Baraka-Rumonge, 18.IV.1947.

Famille **LEPTOPHLEBIIDAE.**

Genre ADENOPHLEBIA Eaton, 1884.

Adenophlebia sp.

Larve (fig. 5). — Correspond bien au type morphologique décrit d'Afrique du Sud (K. H. Barnard, 1932). Les paratergites abdominaux III-IX sont cependant nettement mieux étirés en épines. Le labre ne porte qu'une très petite émargination médio-antérieure, dépourvue de dents. Autres pièces buccales et ongles de type normal.

L'ensemble du corps est brun. Tête éclaircie de jaunâtre autour des yeux composés (non compris la portion dorsale dédoublée chez le ♂) et devant l'ocelle médian.

Abdomen brun clair, avec, sur les tergites, des macules foncées analogues à celles figurées par K. H. Barnard (loc. cit., fig. 33) chez *A. péringueyella* Lestage.

Longueur du corps : 10 mm; des cerques et paracerque : 10 mm.

Matériel. — Congo belge : 1 larve, rivière Samba, montagnes Muhilas, 3.X.1947.

Remarque. — Du Congo belge, on connaît *A. burgeoni* Navás, *A. elegantula* Navás et *A. infuscata* Navás. Les deux premières espèces sont citées du Katanga et du Haut-Uele; la troisième provient du Kivu.

Genre ADENOPHLEBIODES Ulmer, 1924.

Sous-genre HYALOPHLEBIA Demoulin, 1955.

Adenophlebiodes (**? Hyalophlebia**) sp.

Larve (fig. 6). — Dans l'ensemble, cette larve correspond bien avec les données fournies par R. S. Crass (1947) pour son genre *Euphlebia*, que G. F. Edmunds (1953) a mis en synonymie de *Adenophlebiodes* Ulmer (²). Elle en diffère toutefois par quelques détails structuraux. Le corps apparaît nettement plus élancé. Le labre est trapézoïdal, à bords latéraux divergents vers

(²) *Sensu stricto !*

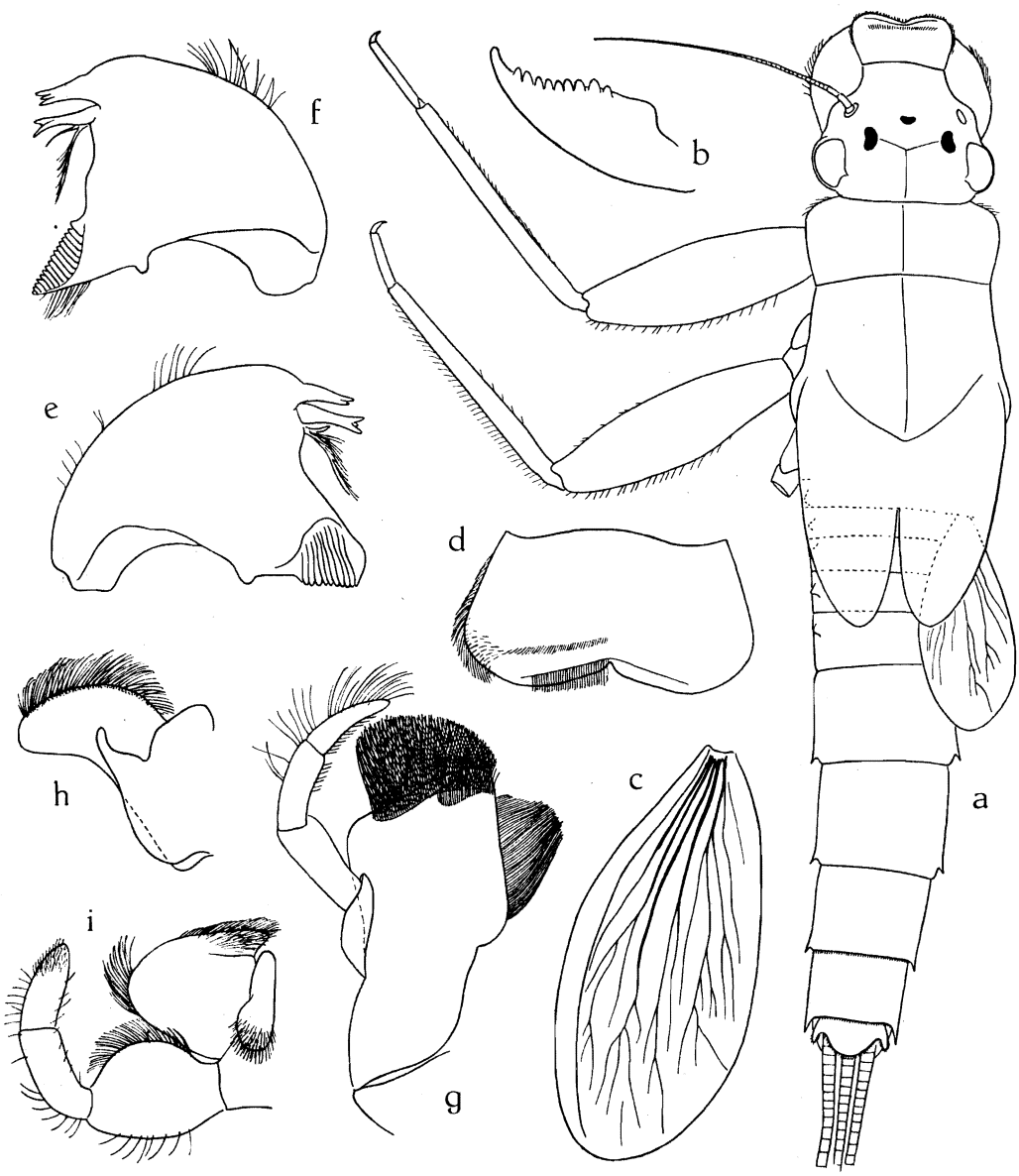


FIG. 6. — *Adenophlebiodes* (? *Hyalophlebia*) sp., larve.

a : Vue générale dorsale, antenne et pattes droites, patte III et trachéobranchies gauches non figurées, cerques tronqués, × 11. — b : Ongle I, × 150. — c : Trachéobranchie I, × 22. — d, e, f, g, h, i : Labre, mandibules, maxille, hypopharynx, labium, × 32 (le labium, l'hypopharynx et la ciliation du labre représentés seulement pour moitié).

l'avant. Les ongles sont moins allongés, et leurs dents internes moins nombreuses, plus grosses et émoussées, la subapicale pas différente des autres. L'abdomen est plus long et moins déprimé; les six premiers segments (branchifères) sont comparativement plus ramassés, leur longueur totale atteignant seulement presque le tiers de l'entièreté de l'abdomen [chez *A. bicolor* (Crass), la proportion dépasse 1/2]. De ce fait, les trachéobranchies II-VI sont complètement cachées par la trachéobranchie operculaire I (qui est d'ailleurs plus allongée et apparemment non ciliée à sa périphérie). Notons que toutes ces trachéobranchies s'attachent, non pas sur l'angle postérieur des urites, mais à moitié de leur longueur; celles des segments II-VI, mal conservées, paraissent bien être de type classique pour le genre.

Coloration générale brune.

Longueur du corps : 12,5 mm; des cerques et paracerque : 15 mm.

Matériel. — Congo belge : 1 larve, rivière Gongwa, Ouest de Kabinba, 29.I.1947.

Remarque. — Certains caractères structuraux de cette larve, tels par exemple ceux des ongles, ont généralement, chez les *Leptophlebiidae*, une valeur taxonomique de rang au moins subgénérique. Il s'ajoute que, dans le cas présent, les ailes subimaginales ébauchées dans les ptérothèques mésothoraciques ne montrent aucun indice d'une teinte plus foncée dans la moitié basilaire que dans la moitié distale. C'est pourquoi, à titre d'hypothèse, je range cette larve dans le sous-genre *Hyalophlebia* Demoulin. De celui-ci, on connaît deux espèces : *A.* (*H.*) *dentifera* (Navás), de Stanleyville; et *A.* (*H.*) *seydeli* (Navás), d'Élisabethville.

Genre FULLETA Navás, 1930.

Fulleta dentata Navás, 1930.

Matériel. — Congo belge : 4 ♂♂, 1 subimago ♂, Albertville, 20 h, 18.II.1947; 340 subimagos ♂♂, Albertville, au pier, dans les rochers du pier et des ateliers C.F.L., 18-20.III.1947.

Genre FULLETOMIMUS Demoulin, 1956.

? Fulletomimus ? marlieri Demoulin, 1956.

Larve (fig. 7). — Aspect général de *Euthraulus* Barnard. Diffère cependant en plusieurs points. Labre plus large que le clypeus, trapézoïdal, à bords latéraux divergents vers l'avant.

Pronotum trois fois aussi large que long. Abdomen à segments III-IX porteurs d'épines paratergales nettes, augmentant de taille du premier au dernier, et celles des urites VIII et IX dédoublées. 3e article du palpe maxillaire aussi long que le 2e, et de même au palpe labial.

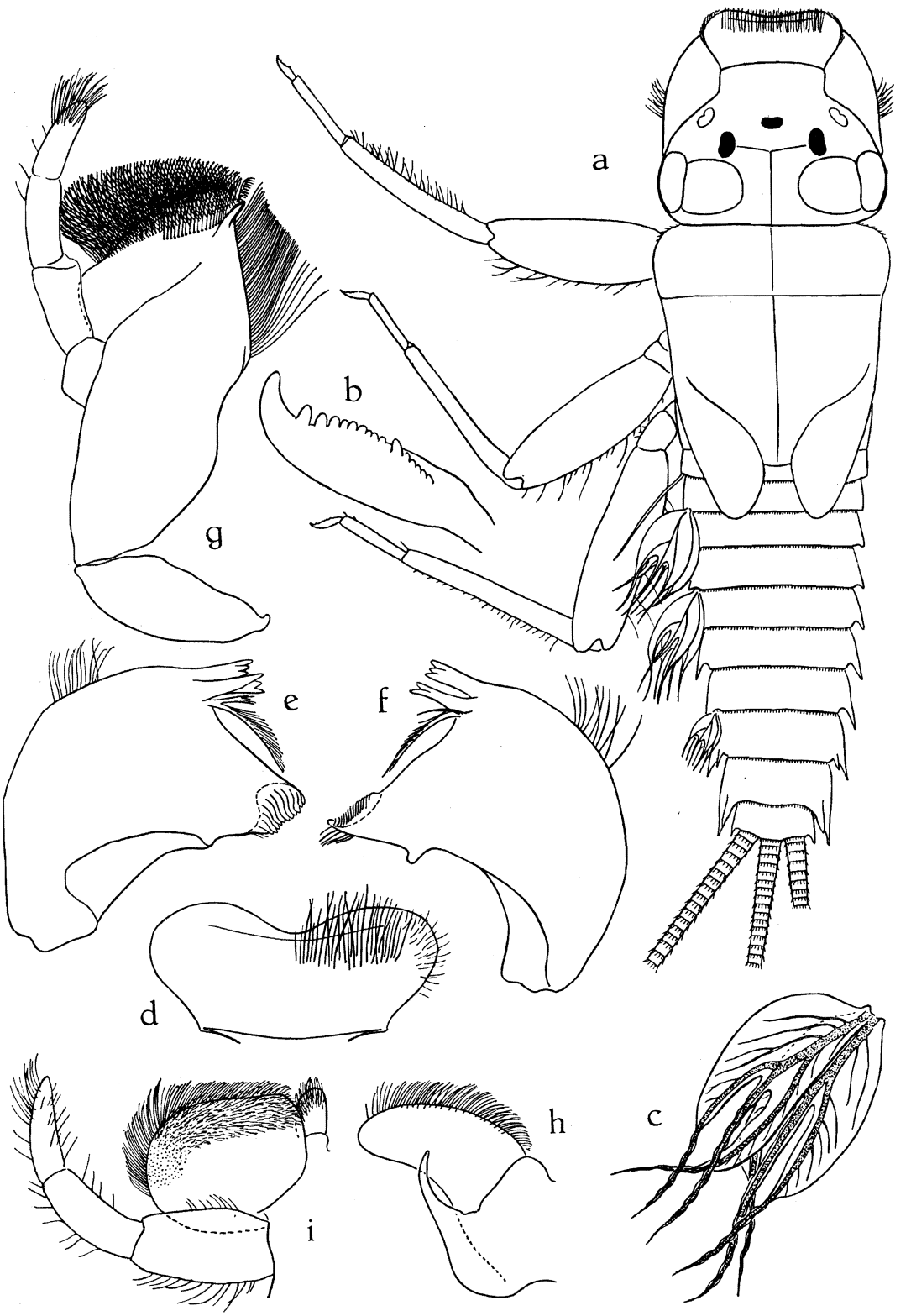


FIG. 7. — ? *Fulletomimus* ? *marlieri* DEMOULIN, larve.

a : Vue générale dorsale, antennes, pattes droites, trachéobranchies (sauf la 1re, la 2e, la 4e et la 7e) non figurées, cerques tronqués, × 30 env. — b : Ongle I, × 265. — c : Trachéobranchie IV, × 73. — d, e, f, g, h, i : Labre, mandibules, maxille, hypopharynx, labium , × 73 (le labium, l'hypopharynx et la ciliation du labre représenté seulement pour moitié).

Coloration générale brun jaunâtre; pattes avec des bandes transverses médiane et apicale sur les fémurs; maculation abdominale inapparente, sauf dans les angles latéro-postérieurs des tergites où l'on distingue un dessin indéfini brunâtre foncé.

Longueur du corps : 4,6 mm; des cerques latéraux : 5,5 mm; du paracerque : 10 mm.

Matériel. — Congo belge : 17 larvules, à 1 km de la côte, entre Albertville et le camp Jacques, 3.II.1947. Tanganyika Territory : 2 larvules, au large de la baie de Karago et par le travers du cap, à 1 km de la côte, 24.II.1947. En outre, 1 larve, sur une branche perforée de galeries, dans le lac (sans localité ni date).

Remarque. — Au premier abord, on serait tenté de placer ces larves dans le genre *Euthraulus* Barnard, dont le générotype *Eu. elegans* Barnard, d'Afrique du Sud, est connu à l'état larvaire. Les adultes de deux autres espèces, *Eu. curtus* Kimmins et *Eu. bugandensis* Kimmins, proviennent d'Afrique orientale anglaise. D'authentiques *Euthraulus*, spécifiquement indéterminés, ont été récemment cités d'Uvira, sur le lac Tanganika (Demoulin, G., 1956).

Cependant, les différences décrites ci-dessus incitent à voir, dans les larves d'Albertville et de Karago, un genre distinct, bien que voisin d'*Euthraulus*. C'est ce qui m'a amené à y chercher les stades jeunes possibles du genre *Fulletominus* Demoulin et à les rapporter provisoirement à *F. marlieri* Demoulin, décrit d'Uvira également. On notera aussi que ces larves sont lacustres, alors que celles connues des *Euthraulus* vivent en rivières bien qu'elles puissent supporter un séjour en eau calme.

Famille **HEPTAGENIIDAE.**

Genre AFRONURUS Lestage, 1924.

Afronurus sp.

Larve (fig. 8). — Ressemble beaucoup à celle de *A. péringueyi* (Esben-Petersen). Tête à bords latéraux parallèles; épines aplaties de la face dorsale des fémurs I arrondies à l'apex, celles des fémurs II et III pointues. Cependant, les trachéobranchies du VII[e] urite, tout en ne montrant qu'une trachée centrale, sont ovalaires et dépourvues de fibrilles trachéolaires. Les ongles des tarses ne portent que 3 petites dents subapicales au bord interne.

Longueur du corps : 11 mm.

Matériel. — Congo belge : 49 larves, rivière Gongwa, à l'Ouest de Kabimba, 29.I.1947; 3 larves, rivière de Mwerazi, 3.IV.1947; 2 larves, bras secondaire de la rivière Koki, à Mulange, 1.X.1947; 4 larves, rivière Samba, mon-

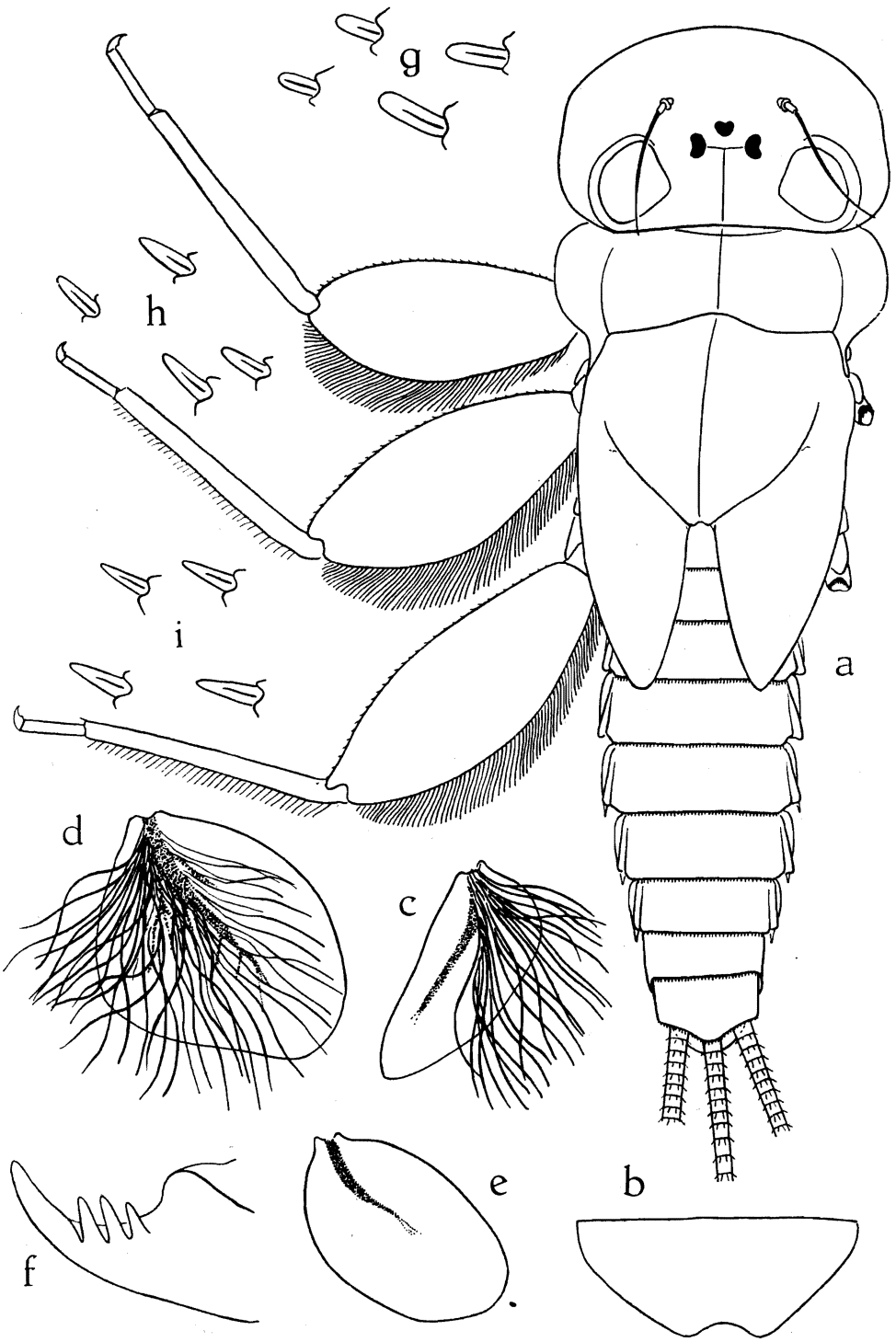


FIG. 8. — *Afronurus* sp., larve.

a : Vue générale dorsale, × 14. — b : Plaque génitale ventrale, × 38. — c, d, e : Trachéobranchies I, IV, VII, × 38. — f : Ongle III, × 200. — g, h, i : Poils aplatis de la face dorsale des fémurs I, II, III, × 200.

tagnes Muhilas, 3.X.1947; 19 larves, près de la baie de Kolobo, en montagne, dans le ruisseau Kauchu sous les pierres, et à l'embouchure du ruisseau, sur la plage, 3.I.1947.

Remarque. — Les deux espèces d'*Afronurus* d'Afrique du Sud, *A. péringueyi* (Esben-Petersen) et *A. harrisoni* Barnard, sont connues à l'état larvaire. Deux autres espèces ont été décrites au stade adulte : *A. collarti* (Navás), du Congo belge et d'Abyssinie, et *A. ugandanus* Kimmins, de l'Uganda.

Famille **CAENIDAE.**

Genre CAENIS Stephens, 1835.

Caenis cincta sp. n.

♂ imago (en alcool). — Genitalia : cfr fig. 9 i.

Tête brun jaunâtre, avec front et une bande transverse entre les ocelles latéraux d'un brun-noir parsemé de points arrondis translucides. Yeux composés brun-noir foncé. Ocelles gris à cerne noir. Antennes blanchâtres, rembrunies au niveau de l'articulation pédicelle-funicule.

Thorax brun jaunâtre. Pronotum à bord antérieur fortement rembruni; une macule irrégulière brunâtre le long de chaque bord externe, une bande paramédiane de même teinte, divergente de sa symétrique, et une macule irrégulière de chaque côté, devant le milieu de chaque moitié de bord postérieur. Méso- et métanotums à sutures brun foncé; les sclérites faiblement ombrés de brunâtre, surtout le prescutum et le scutellum mésothoraciques dans leur région médiane. Ventre et flancs jaunâtres, les pleures étroitement rembrunies autour des hanches.

Pattes jaunâtres; sur la partie dorso-apicale des fémurs, une macule brun foncé. A la patte I, cette macule s'étire vers la base, et le fémur est brunâtre.

Ailes hyalines, avec C, SC et R^1 gris pourpré brunâtre.

Abdomen jaunâtre. Sur chaque hémitergite, devant le bord postérieur, une paire de macules brunâtres, dont l'externe est paratergale. Cette maculation est à peine visible sur les segments III à VI; elle est plus nette sur VII, VIII et IX dont le bord postérieur est également brunâtre. Sur I et II, les macules s'étirent transversalement, constituant sur chaque segment une bande transverse très nette, de telle sorte que l'insecte semble porter une double ceinture foncée. Sternites incolores, la macule foncée des paratergites visible par transparence.

Genitalia jaunâtres. Cerques blanchâtres unicolores.

Longueur du corps : environ 3 mm; de l'aile I : 2,3-2,5 mm.

♀ imago (en alcool). — Dans l'ensemble, plus foncée que le ♂ imago. Tête plus noirâtre. Thorax plus ombré, surtout sur les pleures. Abdomen à maculation tergale plus nette, bien moins effacée sur les segments III-VI. Pattes à fémurs ombrés sur le bord externe (dorsal) au milieu et à l'apex; de même près de la base du tibia.

Longueur du corps : 3-4 mm; de l'aile I : 2,5-3 mm.

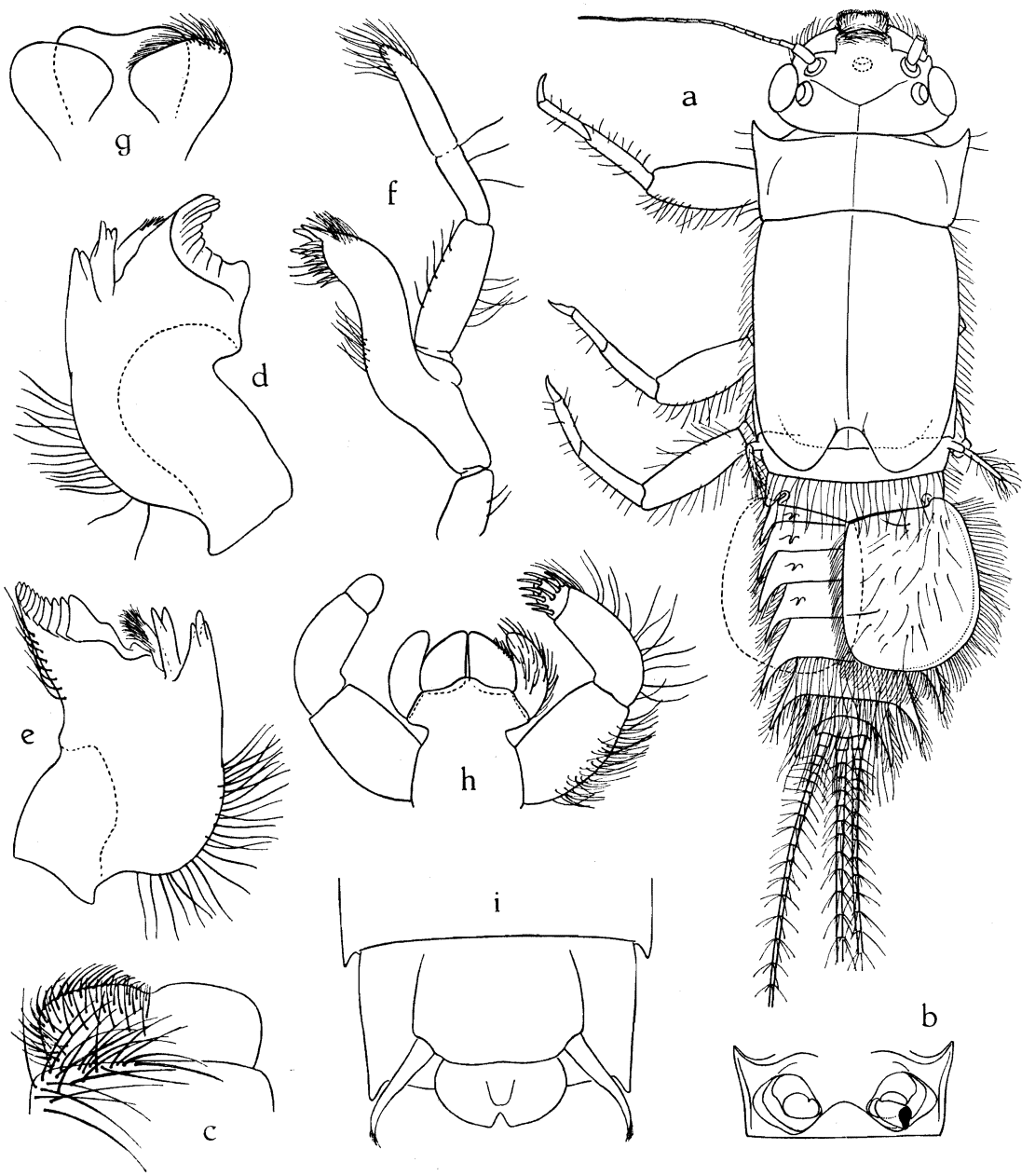


FIG. 9. — *Caenis* sp. A, larve (a-h) et *Caenis cincta* n. sp., ♂ imago (i).

a : Vue générale dorsale, antenne et pattes droites et trachéobranchies gauches non figurées, cerques tronqués, × 26. — b : Prosternum, × 26. — c, d, e, f, g, h : Labre, mandibules, maxille, hypopharynx, labium, × 125 (ciliation du labre, de l'hypopharynx et du labium représentée seulement pour moitié).

i : Genitalia ♂, vue ventrale.

♂ et ♀ subimagos (en alcool). — Colorés comme le ♂ imago, plus ternes et plus opaques.

Matériel. — Tanganyika Territory : 1 ♂ holotype, 1 ♀ allotype; 61 ♂♂, 3 ♀♀, 75 subimagos ♂♂, 32 subimagos ♀♀ paratypes; Edith Bay, tour de la baie, 15.II.1947, éclosion massive à 17 h 45.

Caenis sp. A.

Larve (fig. 9a-h). — Ocelles latéraux contigus aux yeux composés; ceux-ci sublatéraux. L'ocelle médian non observé (figuré hypothétiquement). Antennes à scape court, pédicelle deux fois aussi long que large; funicule de 20 articles, le premier un peu plus long que la moitié du pédicelle.

Pièces buccales de type classique. Labre transverse, émarginé au milieu du bord antérieur; face dorsale couverte de soies raides (on en trouve de semblables, plus grandes, sur la partie apicale du clypeus). Mandibules avec canines pluridentées; des soies minces sur la moitié basilaire du bord externe. Maxilles allongées; de fines soies à la base de la lacinia et à l'apex de la galea; trois fortes dents apicales, accompagnées d'une rangée de fortes épines. Palpe maxillaire de trois articles, le 2e plus court que le 1er et le 3e, ceux-ci subégaux; articulation entre 2 et 3 incomplète. Hypopharynx trilobé, à lobe médian largement émarginé au bord antérieur; lobes latéraux bordés distalement de cils courbes. Labium à glosses subtriangulaires; paraglosses courbes, couvertes de longs cils. Palpe labial triarticulé, les deux premiers articles subégaux, le 3e court; 1er article élargi, cilié extérieurement; 2e article également cilié, mais moins abondamment, et coudé à la base, 3e article porteur d'épines raides.

Prothorax transverse, à bords latéraux légèrement divergents à partir de l'arrière, et à angles antérieurs étirés vers l'avant en larges épines. Mésothorax allongé, à bords latéraux subparallèles; ptérothèques courtes, arrondies, libres jusqu'aux tornus. Métathorax très court, à bord postérieur pratiquement droit.

Pattes relativement courtes, à fémur légèrement déprimé et élargi; tibia étroit, un peu plus court; tarse plus court encore, avec ongle apparemment inerme. Des cils épars sur les tarse et tibia, ainsi qu'au bord postérieur du fémur (aussi au bord antérieur du fémur III).

Abdomen à segments relativement courts. Bord postérieur des urotergites I, III, IV, V, VII et VIII pratiquement droit. Sur le tergite II, il est étiré en angle obtus et surplombe nettement le tergite III. Bord postérieur du tergite IX échancré en demi-cercle; celui du tergite X légèrement bombé en son milieu. Paratergites des urites III à IX étirés en longue épine dirigée latéro-postérieurement, et augmentant de taille du IIIe segment au VIIIe, plus courte sur le IXe. Tergite X à paratergites à peine marqués.

Système trachéobranchial de type classique.

Des cils minces bordent latéralement le thorax et les segments abdominaux, ainsi que les trachéobranchies operculaires; ces dernières en portent également sur leur face dorsale. Enfin, il y a de longs cils raides sur le bord postérieur des tergites abdominaux I, VII et VIII.

Cerques longs, avec des cils verticillés aux articulations.

Coloration brun jaunâtre clair. Ocelles cernés de noirâtre; yeux composés brun noirâtre. Ébauche de nervation des ptérothèques mésothoraciques brun noirâtre. Une paire de macules latérales de même teinte sur le premier urotergite.

Longueur du corps : 4 mm; des cerques latéraux et paracerque : au moins 1,6 mm (brisés).

Matériel. — Congo belge : 1 larve, à 5 km au large d'Albertville, du port au SSE du pier, 9.XII.1946. Forme rampante, capturée apparemment sur le fond (elle accompagnait quelques larves de *Povilla adusta* Navas).

Caenis sp.

Matériel. — Congo belge : 53 larvules en mauvais état, spécifiquement indéterminables, à 1 km de la côte, entre Albertville et le camp Jacques, 3.II.1947.

*
* *

On trouvera, résumées dans le tableau ci-dessous, les remarques susceptibles d'être faites sur les conditions écologiques des diverses espèces citées dans ce petit travail.

Tableau des stations et des espèces, classées par biotopes et dates.

N° de la station	Pays (1)	Date	Biotope	Profondeur maximum en mètres	Larves de	Adultes de
			LAC TANGANIKA.			
1	C.B.	9.XII.1946	5 km de la rive	15	*Caenis* sp. A. *Povilla adusta*	— —
5	C.B.	10.XII.1946	2 miles de la rive	15	*Povilla adusta*	—
15	C.B.	14.15.XII.1946	300 m de la rive	5–30	*Povilla adusta*	—
30	T.T.	22.XII.1946	500-1.000 m de la rive	5–10–20–100	*Povilla adusta*	—
33	T.T.	23.XII.1946	300 m de la rive	20	*Povilla adusta*	—
36	C.B.	27.28.XII.1946	200 m de la rive	13–16	—	*Povilla adusta*
79	C.B.	22.I.1947	10 km de la rive	5	*Povilla adusta*	—
80	C.B.	22.I.1947	10 km de la rive	40	*Povilla adusta*	—
88	T.T.	25.I.1947	10-15 km de la rive	3–5–10–50	*Povilla adusta*	—
89	T.T.	25.I.1947	Baie	5–8	*Povilla adusta*	—
103	C.B.	3.II.1947	1 km de la rive	7	*Povilla adusta* ? *Fulletomimus* ? *marlieri* *Caenis* sp.	— — —

(1) C.B. : Congo Belge. T.T. : Tanganyika Territory.

N° de la station	Pays (1)	Date	Biotope	Profondeur maximum en mètres	Larves de	Adultes de
121	T.T.	15.II.1947	Baie	18–20–60	—	*Caenis cincta*
125	T.T.	15.16.II.1947	500 m de la rive	27	*Povilla adusta*	—
142	T.T.	24.II.1947	1 km de la rive	6–15	*Povilla adusta* ? *Fulletomimus* ? *marlieri*	— —
143	T.T.	24.II.1947	Baie	6	*Povilla adusta*	*Povilla adusta*
145	T.T.	25.II.1947	Delta	0,3–2	*Povilla adusta*	*Povilla adusta*
164	T.T.	11.III.1947	Baie	10–12	—	*Povilla adusta*
180	C.B.	18-20.III.1947	Rive du lac	2–4,5	—	*Fulleta dentata*
226	T.T.	4.IV.1947	500 m de la rive	15	*Povilla adusta*	—
			EAU COURANTE.			
48	C.B.	3.I.1947	Ruisseau	—	*Acentrella* sp. *Baëtis* sp. B *Afronurus* sp.	—
97	C.B.	29.I.1947	Rivière	—	*Adenophlebiodes* sp. *Afronurus* sp.	—
223	C.B.	3.IV.1947	Rivière et torrent	—	*Acentrella* sp. *Baëtis* sp. B *Afronurus* sp.	—
362	C.B.	1.X.1947	Rivière	—	*Baëtis* sp. A.	—
363	C.B.	1.X.1947	Bras secondaire de rivière	—	*Afronurus* sp.	—
365	C.B.	3.X.1947	Rivière	—	*Adenophlebia* sp. *Afronurus* sp.	—
			EAU STAGNANTE.			
253	C.B.	18.IV.1947	Étang	1–2	*Cloëon* sp.	—

Comme on le voit, le lac Tanganika proprement dit constitue, pour la larve de *Povilla adusta* NAVAS, un milieu particulièrement propice, où elle doit trouver en abondance les matières ligneuses dont elle se nourrit. Elle se rencontre pratiquement partout.

On pouvait également s'attendre à trouver dans le lac des larves de *Caenis*, déjà signalées d'ailleurs d'autres grands lacs africains. L'espèce décrite sous le nom de *Caenis* sp. A. est assez intéressante, en ce qu'elle présente des structures morphologiques dont les rapports avec le milieu où on l'a trouvée restent à clarifier.

Quant à la larve attribuée hypothétiquement à *Fulletomimus marlieri* DEMOULIN, elle représente un des rares Leptophlébiides vivant dans les lacs de grande étendue.

Citons seulement pour mémoire les *Cloëon* sp., dont la présence dans un étang est tout ce qu'il y a de classique.

Enfin, les rivières plus ou moins torrentueuses offrent une association *Acentrella-Baëtis-Afronurus* qui est la réplique exacte de l'association *Baëtis-Ecdyonurus* de nos rivières européennes à cours rapide et fond de galets et de gravier. Les *Adenophlebia* et *Adenophlebiodes* doivent y tenir la place des *Habrophlebia* et *Habroleptoides* paléarctiques.

FREELIVING NEMATODES

BY

ARWED H. MEYL (Bad Godesberg)

FREELIVING NEMATODES

The nematodes described in this paper were collected by the « Exploration Hydrobiologique du Lac Tanganika » organized by the « Institut Royal des Sciences Naturelles de Belgique », 1946-1947. My thanks are due to Professor Dr. V. VAN STRAELEN, Director of the Royal Institute of Natural Science of Belgium and President of the « Comité de coordination pour les recherches hydrobiologiques au lac Tanganika », who kindly delivered me the collected material of freeliving nematodes for its determination. It would not have been possible to proceed with my studies with such ease, were it not for the excellent condition of the preserved material being fixed in 3 % formalin.

The obtained results are of special value because all habitats are well defined regarding locality, ecological factors and other faunistic elements. Though undoubtfully the species found are representing only a certain sector of the total nematode fauna inhabiting the Tanganyika lake, the yield of these investigations is of highest value not only as to taxonomy but also with regard to ecology and zoogeography of African freshwater nematodes.

Samples and habitats.

No. (1)	Date of sample taken	Locality	Species found
33	23.XII.1946	Edith-Bay, from the river, the small pond and the rocks of the cape	1 ♀ *Actinolaimus schuurmans-stekhoveni* n. sp.
103	3.II.1947	1 km from the beach between Albertville and Camp Jaques	1 ♀ *Trilobus graciloides* aff. DADAY, 1 ♀ *Dorylaimus stagnalis* DUJARDIN, 2 ♀♀, 1 ♂ *Metactinolaimus leloupi* n. g. n. sp.
—	12.II.1947	Tembwe pond	1 ♀ *Plectus sambesii* MICOLETZKY, 1 ♀ *Monachromadora monhysteroides* W. SCHNEIDER, 1 ♀, 1 ♂ *Actinolaimus tenuis* W. SCHNEIDER
121	14.II.1947	Edith-Bay, tower of the bay.	1 ♀ *Actinolaimus taylori* n. sp.

No. (1)	Date of sample taken	Locality	Species found
—	16.II.1947	Karema, Ifume-river	1 ♀, 4 ♂♂, 7 juv. *Actinolaimus straeleni* n. sp., 1 ♀ *Actinolaimus tenuis* var. *brevicaudatus* W. SCHNEIDER
—	27.III.1947	Mpulungu, swamp at the bay	1 ♀ *Dorylaimus acris* THORNE
—	3.IV.1947	Mwerazi-river, from the waterfall	2 ♀♀ *Monhystera mwerazii* n. sp.
—	9.IV.1947	Rumonge, Mtossi river	1 ♀ *Dorylaimus stagnalis* DUJARDIN
260	24.IV.1947	Bangwe, border of the pond between Kigoma and Ujiji	1 ♀ *Mononchus allgéni* n. sp., 4 ♀♀ *Dorylaimus flavomaculatus* v. LINSTOW, 3 ♀♀, 2 ♂♂ *Actinolaimus tenuis* W. SCHNEIDER
—	10.V.1947	Bottom of Burton-Bay	1 ♀ *Actinolaimus omer-cooperi* aff. FILIPJEV
507	22.VI.1947	Katana, Fomulac-parc, boggy entrance of harbour	41 ♀♀, 25 ♂♂, 60 juv. *Chrysonema luettichaui* n. sp.
508	22.VI.1947	Mayuza, 5 km south of Katana, thermal spring	1 ♀, 1 juv. *Chrysonema luettichaui* n. sp., 3 ♀♀, 2 ♂♂, 2 juv. *Dorylaimus conurus* THORNE
—	17.VII.1947	Camp Jaques, swamp	1 ♀, 1 ♂, 1 juv. *Actinolaimus tenuis* W. SCHNEIDER
340	14.VIII.1947	Kibumbu river	14 ♀♀, 28 ♀, 13 ♂♂, 15 ♂, 105 juv. *Actinolaimus straeleni* n. sp., 109 ♀♀, 26 ♀, 52 ♂♂, 21 ♂, 260 juv. *Actinolaimus tenuis* W. SCHNEIDER
—	16.VIII.1947	Kioko Nyumbah, boggy pond	1 ♂, 2 juv. *Actinolaimus straeleni* n. sp.
—	17.VIII.1947	Kioko Nyumbah, boggy pond	2 ♀♀, 3 juv. *Ironus macramphis* SCHUURMANS STEKHOVEN and TEUNISSEN, 3 ♂♂, 17 juv. *Actinolaimus straeleni* n. sp.
345	17.VIII.1947	Boggy pond at Kioko Nymbah, called « Ludjingi »	15 ♀♀, 18 ♂♂, 20 ♂, 61 juv. *Actinolaimus straeleni* n. sp.
—	23.XI.1947	Lambo Kilela, thermal spring	1 ♂ *Dorylaimus stagnalis* DUJARDIN

(1) The numbers, if indicated, refer to : LELOUP, E., 1949, *Exploration Hydrobiologique du lac Tanganika (1946-1947). Résultats scientifiques. Relevé des stations*, vol. II, fasc. 1.

CLASSIFICATION OF THE FOUND SPECIES.

Subclass **APHASMIDIA** CHITWOOD and CHITWOOD, 1933.

Order CHROMADORIDA CHITWOOD, 1933.

Suborder MONHYSTERINA (FILIPJEV, 1929), CHITWOOD and CHITWOOD, 1937.

Superfamily **PLECTOIDEA** CHITWOOD and CHITWOOD, 1937.

Family **PLECTIDAE** CHITWOOD and CHITWOOD, 1937.

Genus PLECTUS BASTIAN, 1865.

Plectus sambesii MICOLETZKY, 1916.

Superfamily **MONHYSTEROIDEA** CHITWOOD and CHITWOOD, 1937.

Family **MONHYSTERIDAE** CHITWOOD and CHITWOOD, 1937.

Genus MONHYSTERA BASTIAN, 1865.

Monhystera mwerazii n. sp.

Suborder CHROMADORINAE (FILIPJEV, 1929), CHITWOOD and CHITWOOD, 1937.

Superfamily **CHROMADOROIDEA** CHITWOOD and CHITWOOD, 1937.

Family **CYATHOLAIMIDAE** CHITWOOD and CHITWOOD, 1937.

Genus MONACHROMADORA W. SCHNEIDER, 1937.

Monachromadora monhysteroides W. SCHNEIDER, 1937.

Order ENOPLIDA CHITWOOD, 1933.

Suborder ENOPLINA CHITWOOD and CHITWOOD, 1937.

Superfamily **ENOPLOIDEA** CHITWOOD and CHITWOOD, 1937.

Family **IRONIDAE** CHITWOOD and CHITWOOD, 1937.

Genus IRONUS BASTIAN, 1865.

Ironus macramphis SCHUURMANS STEKHOVEN and TEUNISSEN, 1938.

Superfamily **TRIPYLOIDEA** CHITWOOD and CHITWOOD, 1937.

Family **TRIPYLIDAE** CHITWOOD and CHITWOOD, 1937.

Genus TRILOBUS BASTIAN, 1865.

Trilobus graciloides aff. DADAY, 1916.

Family **MONONCHIDAE** CHITWOOD and CHITWOOD, 1937.

Genus MONONCHUS BASTIAN, 1865.

Mononchus allgéni n. sp.

Suborder DORYLAIMINA (CHITWOOD, 1933), CHITWOOD and CHITWOOD, 1937.

Superfamily **DORYLAIMOIDEA** THORNE, 1934.

Family **DORYLAIMIDAE** DE MAN, 1876.

Subfamily **DORYLAIMINAE** FILIPJEV, 1918.

Genus CHRYSONEMA THORNE, 1929.

Chrysonema luettichaui n. sp.

Genus DORYLAIMUS DUJARDIN, 1845.

Dorylaimus acris THORNE, 1939.

Dorylaimus conurus THORNE, 1939.

Dorylaimus flavomaculatus VON LINSTOW, 1876.

Dorylaimus stagnalis DUJARDIN, 1845.

Subfamily **ACTINOLAIMINAE** THORNE, 1939.

Genus ACTINOLAIMUS COBB, 1913.

Actinolaimus omer-cooperi aff. FILIPJEV, 1931.

Actinolaimus schuurmans-stekhoveni n. sp.

Actinolaimus straeleni n. sp.

Actinolaimus taylori n. sp.

Actinolaimus tenuis W. SCHNEIDER, 1935.

Actinolaimus tenuis var. *brevicaudatus* W. SCHNEIDER, 1935.

Genus METACTINOLAIMUS n. g.

Metactinolaimus leloupi n. sp.

TAXONOMY AND ECOLOGY OF THE FOUND NEMATODES

Plectus sambesii Micoletzky, 1916.
(Plate I, Fig. 1, 2.)

1 ♀ : L = 0,468 mm; a = 20,0; b = 4,0; c = 6,5; V = 43,9 %.

This species seems to be closely related to *Plectus rhizophilus* De Man, 1880, differing from it in the more posterior located amphids and in the slightly longer mouth cavity. Since the single female found corresponds exactly with the descriptions by H. Micoletzky, 1916 (pp. 157-158, t. III, fig. 4, *a-b*) and L. A. de Coninck, 1935 (pp. 257-259, figs. 8-10) I do not hesitate to identify my specimen with *P. sambesii*.

Locality. — Tembwe pond, 12.II.1947 together with *Monachromadora monhysteroides* W. Schneider, 1937 and *Actinolaimus tenuis* W. Schneider, 1935.

This species is already known from the Sambesi-falls and from thermal springs, Belgian Congo. All *Plectus*-species are probably feeding on bacteria and small protozoans. They occur in soil as well as in fresh-water sites.

Monhystera mwerazii n. sp.
(Plate I, Fig. 3, 4.)

♀ (type) : L = 0,56 mm; a = 31,0; b = 4,3; c = 5,1; V = 67,0 %.

Type locality. — Mwerazi river, from the waterfall.

♀ (paratype) : L = 0,53 mm; a = 24,0; b = 4,0; c = 5,3; V = 68,0 %.

Not without doubt this *Monhystera* is quoted as a new species. Since we do not know very much about the variability of the common diagnostic characters within that genus, — such as absolute length, relative measurements, length of cephalic bristles, location of amphids and vulva, — it must remain uncertain if all hitherto described species can be considered as valid ones. Those difficulties are increased by the frequent lack of males with this genus

and the scarcely prominent characters of the females. A revision of *Monhystera* will become a hard work because of the lacking exactness of former descriptions and figures. Studies on an extensive and homogenous material of the closely related genus *Theristus* gave evidence to the fact that the variability within this group must be greater than we usually believe.

Body evenly tapering in front so that the lip width at level of cephalic setae is 65 % of the body diameter at the end of the esophagus. From the level of the cardia the body width is increasing to the greatest body diameter in the middle, there measuring 2 ½ times the width of the lip region. At level of the vulva the body is only somewhat less broad than at the cardia and the anal width occupies only the diameter of the lip region. Cuticle with its outer layer smooth, the inner layer rather coarsely striated, especially on the tail. Series of submedian rather long setae are scattered from the head end to the tail. Head rounded, lips amalgamated, lip-papillae obscure. The head is armed with ten setae, the longer ones reaching almost half the corresponding width. Walls of vestibule not cuticularized. The circular amphids are located at a distance of 1 ⅓ lip widths posterior to the front end. The diameter of the amphids is about ⅓ the corresponding body width. Esophagus without peculiarities, almost cylindrical, slightly swollen at its end, there measuring 57 % of the body width. Cardia heart-shaped. Gonad outstretched, posterior branch absent, without a rudimentary receptacle seminis. Intestine light with few brownish granules, rectum short. Tail uniformly tapering to the slightly swollen end, which is about 35 % the anal body diameter broad. The tip is formed by a short excretory tube being in connection with the tail glands. No eggs and sperms observed.

Diagnosis. — A species of the genus *Monhystera* Bastian, 1865, most closely related to *M. agilis* De Man, 1880, but differing in (1) absolute length (0,9-1,2 mm against 0,5-0,6), (2) length of cephalic setae (3) shape of tail (*M. agilis* possesses no swollen tail end). Also closely related to *M. villosa* Bütschli, 1873, with the following differences : (1) absolute length, (2) position of vulva, (3) width of amphids, (4) length of cephalic setae.

Locality. — See type-locality.

Monhystera-species feed on bacteria and diatomeae and are living in soil as well as in freshwater and marine habitats.

Monachromadora monhysteroides W. Schneider, 1937.

(Plate I, Fig. 5, 6.)

1♀ : L = 0,325 mm; a = 20,0; b = 6,6; c = 3,2; V = 51,2 %.

Though there is only a single female available belonging beyond doubt to the peculiar genus *Monachromadora* and probably to the species *monhysteroides*, I found some differences regarding the type-description by

W. SCHNEIDER (1937, p. 69, figs. 18, *a-c*). Head at level of dorsal tooth 6,5 μ broad that is 38 % of the body width at the end of the esophagus. Lips could not be observed but very minute papillae seem to be present. The mouth cavity resembles that of the type, but in addition to the dorsal and subventral small teeth in front, another most delicate toothlike projection arises midway the parallel walled mouth cavity on the subdorsal side. Also by use of the highest oil immersion objective no amphid-like structure could be observed. The cuticle is absolutely smooth and lateral fields seem to be absent. Besides the mentioned third tooth my specimen differs in the structure of the bulb, since rather small but well differentiated valves could be seen which are absent with the type of W. SCHNEIDER. Finally the esophagus is shorter in the original specimen (b = 6,6 against 5-5,9); therefore the bulb of my female found occupies almost one fourth of the entire neck length.

Locality. — Tembwe pond, 12.II.1947.

Monachromadora monhysteroides is new for Africa. W. SCHNEIDER found the original form in Sumatra and Java (Indonesia) from freshwater sites.

Ironus macramphis SCHUURMANS STEKHOVEN and TEUNISSEN, 1938.
(Plate II, Fig. 7, 8, 9.)

♀♀ : L = 1,8-2,2 mm; a = 73-78; b = 5,0-5,6; c = 9,0-9,4; V = 46,7-47,7 % (n = 3); Egg = 130 μ; 20 μ.

The original diagnosis by J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN (1938, pp. 96-97, fig. 52, *a-e*) is based on the width of the amphid opening (55 % of the corresp. diameter) and on the teeth being stronger developed than commonly. Though I am rather doubtful if those differences are of such great a value to seperate that form from most closely related known species (which have been certainly confused by many authors due to the apparently great variability of the tail-length !), I made up my mind to identify the females found with *Ironus macramphis*. The found specimens seem to be at least identical with J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN's form. Unfortunately these authors did not figure the shape of the tail. With my specimens the latter differs from *Ironus ignavus* and other closely related species in being uniformly conical to ¾ of its total length (see fig. 9). Its relative length occupies 13-14 times the anal body diameter. Gonad paired and reflexed (G_1 = 13-15 %, G_2 = 13-14 % of total body length), nerve ring at 35 %, amphid 62 % of corresponding width. Lip region to body width at end of esophagus = 1 : 2,5.

Locality. — Kioko Nyumba, boggy pond, 17.VIII.1947.

I. macramphis was found by J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN in forest soil from the National Parc Albert. *Ironus*-species prefer habitats of high moisture and their food-habits are probably carnivorous.

Trilobus graciloides aff. DADAY, 1910.

(Plate I, Fig. 10; Plate II, Fig. 11.)

1 ♀ : L=1,39 mm; a=31,5; b=5,0; c=9,5; V=49,0 %; G_1 and G_2 = 15 %.

Since is is not absolutely certain that the single female found really belongs to the species *T. graciloides*, some figures may be given and the most important characters quoted.

Cuticle minutely annulated but lacking longitudinal striae; with series of fine sublateral setae beginning at level of amphids to almost end of tail. The proper tip of the tail without setae. Head bearing ten short cephalic setae, the longer ones measuring about one fourth of the body width at that region. Amphids pocket-like, small, located at the end of the buccale capsule. The latter with heavily cuticularized walls. The location of the small teeth of the postbuccal pockets is typical and corresponds with I. N. FILIPJEV's figure of that species (1931, p. 433, fig. 1, *a-d*). The specimen found differs, however, from the type in (1) possessing obvious sublateral series of setae (J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN, 1938, p. 77 indicate in their fig. 40 *c* that those setae are present !) and in (2) the slightly other shape of the tail (the posterior part of the tail with the type species is more or less flagellum-like). Nevertheless there seems to be no good reason to deny the identity with *Trilobus graciloides* E. DADAY, 1910.

Locality. — 1 km from the coast between Albertville and Camp Jaques among *Dorylaimus stagnalis* and *Metactinolaimus leloupi*.

Trilobus graciloides was originally found by E. DADAY in East-Africa, then by I. N. FILIPJEV (1931) in Abyssinian freshwater sites. W. SCHNEIDER (1935) described it from the Sudan (supplement, p. 18), J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN (1938) from the National Albert Parc and recently C. ALLGÉN (1952) from Teleki Tarn (British East Africa). It seems to be as widespread in Africa as *T. gracilis* BASTIAN, 1865 in Europe. *Trilobus*-species are predacious nematodes.

Mononchus (Mononchus) allgéni n. sp.

? Syn. *Mononchus* sp. ALLGÉN, 1933.

(Plate II, Fig. 12, 13, 14.)

1 ♀ (type) : L=2,02 mm; a=38,8; b=5,3; c=12,9; V=54,9 %.

Type locality. — Bangwe, border of the pond between Kigoma and Ujiji.

C. ALLGÉN described 1933 (p. 312, fig. 1) a juvenile *Mononchus* sp. from sedge roots near Boma (Congo district) which seems to be identical with the adult female of sample No. 260 (see type locality), though the very meagre description of that author and the lack of a figure of the specimen's head makes

the identification somewhat doubtful. On the other hand the proportions of the mouth cavity as given by ALLGÉN and the shape of the tail of both species are similar.

Body only slightly tapering in front. Lip-width occupying exactly one half of the greatest body diameter. Cuticle absolutely smooth. Lips not so prominent as in other related species, offset by a faint depression. Mouth cavity three times as long as broad with moderately cuticularized walls. The big dorsal tooth is arising at the end of the anterior third of the mouth cavity. In addition to this dorsal tooth two very small and blunt subdorsal projections are located almost on the bottom of the mouth cavity. Amphid at level of the tip of the big dorsal tooth. Esophagus without peculiarities, the nerve ring at about 30 %. Rectum 1 ⅐ anal body diameter long. Gonad paired, symmetrical ($G_1 = 14{,}4$ %, $G_2 = 13{,}8$ %), each branch to about 50-60 % reflexed. Egg = 117 µ : 39 µ. The anterior ⅔ of the tail is uniformly tapering, the last ⅓ cylindrical. End of tail with excretory pore located in the middle of the rounded end of the tail. Glands in tandem-position. The whole tail measures 5 anal body widths.

Diagnosis. — *Mononchus allgéni* n. sp. is closely related to *M. radiatus* COBB, 1917, but differing from that species in the longer tail (c = 12,9 against c = 20 of a juvenile specimen. Young long-tailed nematodes, however, always possess longer tails than adults). Also related to *M. teres* COBB, 1917, but with differences in the shape of the mouth cavity and length of tail.

Locality. — See type locality. Sample No. 260, among *Dorylaimus flavomaculatus* VON LINSTOW, 1876 and *Actinolaimus tenuis* W. SCHNEIDER, 1935.

M. allgéni might be considered as a genuine African species.

The specific name is given in honour of Dr. C. ALLGÉN, Eslöv, Sweden, who found that most closely related *Mononchus* sp. All *Mononchus*-species are predacious, feeding mostly on small nematodes.

Chrysonema luettichaui n. sp.

(Plate II, Fig. 15; Plate III, Fig. 16, 17, 18, 19, 21, 22; Plate IV, Fig. 20.)

♀♀ (n = 20) : L = 3,0-3,5 mm; a = 67-86; b = 6,5-8,0; c = 21,0-29; V = 32-40 %.

Type ♀. — L = 3,14 mm; a = 73,3; b = 6,7; c = 21,0; V = 38,1 %; G_1 = 13,6 %; G_2 = 15,0 %; Egg = 100 : 26 µ.

Type locality. — Katana, Fomulac Garden, swampy soil near harbour entrance. Sample No. 507.

♂♂ (n = 15) : L = 2,7-3,2 mm; a = 68-82; b = 6,3-7,3; c = 140-175.

Type ♂. — L = 2,99 mm; a = 71,8; b = 6,6; c = 164,3; 21 supplements.

Type locality. — See type ♀.

Body tapering uniformly in front, the lip width at level of inner circlet of head papillae being ⅓ as broad as the body diameter at the end of the esophagus. Body widest at vulva. Cuticle very thin without longitudinal striae (at both sides of the lateral field the delicate marks of eight muscular attachments can be observed) but bearing extremely delicate transverse striae especially at level of spear. Head continuous with neck contour, lips being even in front not conspicuous. Inner circlet of cephalic papillae closely approximated to the outer circlet. A circular muscle ring surrounds the entrance to the vestibule widening the pharynx to a well visible space reaching to the double guiding ring. Amphids stirrup-shaped with their sensilla-pouches directly posterior to them. Amphid-apertures being one half as broad as the lip width at level of inner circlet of head papillae. Spear in both sexes 21-22 μ long i.e. about 1,5 times the lip region width, its aperture occupying scarcely more than ⅓ of total length (36-37 %). The spear is ¼ of the lip width broad and possesses a double guiding ring. Spear extensions about the length from head end to the end of the spear (retracted), surrounded by spindle-shaped muscle-bundle which is offset from the esophagus proper by a deep constriction. Esophagus in its anterior half moderately wide, at its beginning about 10 μ broad, expanding to 15-16 μ only at level of nerve ring (encircling the esophagus at 26-28 % of total esophageal length from head end) narrowed to 11 μ. Posterior to the nerve ring the esophagus widens to about 20 μ. There is no distinctive point where the proper expansion begins but at about 53-55 % of total length a break in the musculature and a thickening in the lining of the esophageal tube. The last third of the esophagus is almost uniformly thick (30 μ). Cardia heart-shaped, slightly longer than broad. The intestine is filled with golden coloured granules. Female gonads approximately symmetrical, opposed, and mostly to 40 % reflexed. The posterior branch is always a little longer than the anterior one. Vulva transverse. All adult females contained sperms. Eggs 92-109 μ : 26-30 μ, no more than 2 eggs in the uterus. Prerectum distinctly offset from intestine, 5,2 to 6,2 times as long as the rectum. The latter occupying twice the anal body diameter. Female tail 6-7 anal widths long, uniformly tapering to the rounded end. A little posterior to the anal opening two papillae are located. Male similar to female in structure of head and neck. Testes paired, opposed. With several specimens the anterior branch was found reflexed to 1,3 % total body length. Sperms spindle-shaped, 10-11 μ long. Male tail bearing 20-22 ventromedian, contiguous, flattish supplements, the series beginning at about two spicula lengths anterior to anal opening. 12-14 subventral papillae are present, 3 between adanal pair of papillae and beginning of supplement series, 5-6 in height of supplements, the others located almost on to the end of the prerectum, which is 13 anal body widths (=10 corresponding body diameters) long. The extension of the supplement series occupies about 95-100 μ. Spicules slender, arcuate, 40-44 μ long with very short and delicate lateral guiding pieces. Male tail bluntly conoid to hemispherically rounded with six rather obvious postanal papillae.

Diagnosis. — A new species of the genus *Chrysonema* THORNE, 1929, with the above mentioned characters, differing from *Chr. aurum* THORNE, 1929, in (1) shape of tail, (2) total length, (3) structure of spear, (4) sexuality (*Chr. aurum* seems to be a parthenogenetic form). From *Chr. thorni* FILIPJEV, 1931, in (1) length, (2) amphid, (3) male supplements, (4) shape of tail, from *Chr. abyssinica* FILIPJEV, 1931, in (1) total lentgh, (2) length and shape of esophagus (b=12,3), (3) structure of spear, etc.

Locality. — (1) see type locality, (2) Mayuza, 5 km south of Katana, thermal springs.

Species of this genus have been reported from soil about roots of alpine plants, Colorado, U.S.A., by G. THORNE (1929) and from freshwater sites in Abyssinia by I. N. FILIPJEV (1931). Probably *Chrysonema*-species are feeding on plant roots or algae, perhaps on diatomeans, what might be concluded from the golden coloured contents of the intestine. It also seems that this genus is widespread in Africa though it will not be restricted to that continent.

The specific name is given in honor of my best friend CHARLES VICTOR VON LUETTICHAU, M. A., Alexandria (Va.), U.S.A.

Dorylaimus acris THORNE, 1939.

(Plate III, Fig. 23; Plate IV, Fig. 24.)

1 ♀ : L=1,79 mm; a=34,0; b=4,9; c=5,6; V=^{15,5} 46,0 ^{14}.

Though only a single specimen was found there is no doubt that it belongs to THORNE's species *D. acris* (1939, p. 30, Pl. III, fig. 15). The lip region measures almost ⅕ of the body width at the end of the esophagus and the lips are completely amalgamated. The head is set off from the neck by a slight depression. Amphids ½ of the lip width, cup-shaped. Spear 1,5 lip widths long and ¼ as broad, its aperture 40 % of the total spear length, with a double guiding ring. Rectum 1,5 anal body diameters, prerectum 2 rectum-lengths long. Tail typical: in its anterior ⅛ conical, then more uniformly tapering to the filiform end. Esophagus near 50 % gradually expanded. Cardia 1,5 times longer than broad. Eggs twice their width long. No sperms observed.

Locality. — Mpulunga, swamp near the bay.

This species was hitherto found only by G. THORNE (1939) near the edge of the Bread Run-river, Leesburg, Virginia, U.S.A. It is new for Africa. Food habits unknown, probably feeding on plant roots and algae.

Dorylaimus conurus THORNE, 1939.

(Plate IV, Fig. 25, 26, 27.)

♀♀ (n=3) : L=1,66-1,87 mm; a=40-45; b=4,4-4,9; c=6,3-6,6; V=45%; G_1=15-17 %; G_2=16-20 %.

♀♀ (n=2) : L=1,4, 1,6 mm; a=40; b=4,0; c=78.

The specimens found correspond in all details with G. THORNE's type (1939, p. 29, Pl. II, figs. 12-12 *b*) except for the length of the female tail which is somewhat shorter with G. THORNE's specimens from Potomac River, U.S.A. As to the difference of « c » ♂ (78 against 125) the relative length of the male tail of the Tanganyika specimens occupies about ⅔ anal body diameters and the location of the postanal papillae is the same. There seems to be little doubt that also W. SCHNEIDER (1935, pp. 7-9, figures lacking) had found this species from the collection of P. A. CHAPPUIS, though he stated that the cuticle bears longitudinal striae which might have been confused with internal striae due to the muscle attachments. However, it was already suggested by W. SCHNEIDER himself that the extreme variability of the found specimens indicates several varieties. Only the study of the spear-structure, length of prerectum and rectum supplies good diagnostic characters. Therefore I think it necessary to give an abbreviated description of the Tanganyika specimens :

Cuticle smooth. Lip region twice as high as broad, set off by slight depression and occupying ¼ of the width of body at level of cardia. Cephalic papillae moderately prominent. Amphid-aperture half of the lip width broad. Spear twice the lip region width long and ¼ as broad, the aperture being a bit more than ⅓ (35 %) of the total spear length. Gonads paired and reflexed. Rectum two anal body diameters long, prerectum twice the rectum length. Esophagus widenend by gradual expansion posterior to 50 %. Female tail uniformly tapering to the end which is pointed. Male with 23-24 flat supplements, partly adjacent, partly spaced, the series beginning about 1,5 spicula lengths posterior to anal opening. 10-11 submedian papillae present. Spicules 40 μ long, with small lateral guiding pieces. Six postanal papillae present.

Locality. — Mayuza, 5 km south of Katana, thermal spring, among *Chrysonema luettichaui* n. sp.

D. conurus was originally reported by G. THORNE from mud of the riverside, Potomac River, Washington D.C., U.S.A. This species is new for Africa. Food habits like those of the preceeding species.

Dorylaimus flavomaculatus VON LINSTOW, 1876.

(Plate IV, Fig. 28, 29, 30, 31.)

♀♀ (n=4) : L=1,69-2,04 mm; a=56,0-62,8; b=4,3-4,8; c=13,6-16,2; V=45,1-47,7 %.

This species is distinctive because of the four yellow spindle-shaped bodies being located around the spear extensions. Due to the preservation in 4 % formalin the colour has been extracted but the spindles could still be clearly observed.

Body very slender, lip region width ⅓ of body diameter at level of cardia. Female tail rather uniformly tapering to the filiform end which is not sharply

pointed with these Tanganyika specimens. Cuticle smooth, apparently also without the most delicate transverse striae. Lateral field ¼ of the corresponding body diameter. Lip region almost continuous with neck contour, lips obscure, corresponding exactly with the figure by G. THORNE and H. H. SWANGER (1936, p. 59, Pl. XII). Spear 1,5 times the lip width long and about ⅙ as broad, the aperture being ⅓ of the total spear-length. Guiding ring with the Tanganyika specimens rather delicate, often appearing as if only being simple. Amphids somewhat more anterior than usual, at level of the very slight depression of the lip region, occupying with its opening 60 % of the lip width. The spindle shaped bodies are about as long as the spear. Esophagus at 30-32 % of its total length surrounded by the nerve ring, at 54-56 % gradually expanded to about ⅔ of the corresponding diameter. Cardia glandular and uncommonly long, its length being equal to one body width. Intestine filled with yellow granules, the single cells being very distinctive. Prerectum 1,75-2,0 rectum-lengths, rectum 1,75-2 anal body diameters long. The prerectum is clearly offset from the intestine. Gonad paired, reflexed (G_1 = 12-13 %, G_2 = 13-14 %), eggs 85-100 µ : 21 µ.

Locality. — Bangwe, border of the pond between Kigoma and Ujiji, among *Mononchus allgéni* mihi and *Actinolaimus tenuis* W. SCHNEIDER, 1935.

D. flavomaculatus is a widespread freshwater species which had been several times reported not only from Europe but also from Africa : H. MICOLETZKY (1916, pp. 167-168), South-Africa; I. N. FILIPJEV (1931, p. 436), Abyssinia; W. SCHNEIDER (1935, p. 19), Western French Africa.

Dorylaimus stagnalis DUJARDIN, 1845.

1 ♀ : L = 2,82 mm; a = 48,2; b = 4,8; c = 6,8; $V = {}^{13,5}\ 44,2\ {}^{14,7}$.

1 ♂ : L = 4,3 mm; a = 31,8; b = 4,3; c = 84,1.

Both specimens, found at different sites, correspond well with the detailed description by G. THORNE and H. H. SWANGER (1936, pp. 40-42). The male found possessed 39 preanal supplements and 32 submedian papillae.

Localities. — The single young female was found in sample No. 103 (1 km from the coast between Albertville and Camp Jaques) among *Trilobus graciloides* aff. DADAY, 1910 and *Metactinolaimus leloupi* mihi. The one male came from a thermal spring near Lambo Kilela.

D. stagnalis is known from all continents and was also often reported from Africa, for example recently by the author of this paper (MEYL, 1955, p. 136) from the psammon of the Tanganyika-lake. Food habits probably predacious.

Dorylaimus stagnalis aff. DUJARDIN, 1845.
(Plate V, Fig. 32.)

1 ♀ : L = 3,47 mm; a = 47,7; b = 6,3; c = 6,0; V = 36,6 %.

Since only a single female was found, I hesitate to describe a new species, the specimen being most closely related to *D. stagnalis*. On the other hand the latter species is one of the widest-spread and most frequent forms which according to the various descriptions might be characterized by an uncommon great range of variability. Before natural variability is not cleared up thoroughly, one should principally stick to G. THORNE and H. H. SWANGER's neotype-description (1936, pp. 40-42) of specimens from the Potomac River, Washington, D.C. I am convinced that a remarkable part of the numerous *D. stagnalis* found does not really belong to that species.

Body shape like that of the type. Cuticle with 32 wings. Lips offset by slight depression. Amphid-opening ⅔ (66 %) of the lip width broad. Spear 2,5 times as long and ¼ as broad as lip region diameter. Spear aperture exactly 36 %. Cuticle at level of spear aperture almost as thick as spear width. Esophagus at about 43 % gradually expanded, nerve-ring at 26 %. Cardia as long as broad. Prerectum 9 times the length of rectum, the latter occupying 1,25 anal body diameters. Tail long, (580 μ = 18 anal widths), uniformly tapering to the flagellum-like end. Gonads almost symmetrical, the anterior branch somewhat longer. Egg : 98 : 39 μ, only one present in G_2.

Locality. — Rumonge, river Mtossi. No other species within the sample.

Actinolaimus omer-cooperi aff. FILIPJEV, 1931.
(Plate V, Fig. 33.)

1 juv. ♀ : L = 3,23 mm; a = 68,1; b = 4,8; c = 14,5; V = ?.

Only a single young female of this interesting species was found in the collection. Therefore I am not quite sure about its specific identity. Because of the following characteristics, however, it was considered as most closely related.

Cuticle smooth [as indicated by I. N. FILIPJEV (1931, p. 439) in his original description]. Lip region continuous with neck contour. Amphid-opening smaller than usually, i.e. about 30 % of the lip width (after I. N. FILIPJEV ⅔ !). Spear 1,6 lip region diameters long and almost ⅙ as broad, the aperture occupying about 30 % (against 25 % after G. THORNE, 1939, p. 76). Rectum 1,5 anal widths long, prerectum 4,8 times rectum length. Esophagus at 42 % gradually expanded. Tail rather uniformly tapering to the filiform end.

Unfortunately only this single specimens from the entire material could be thought identical to I. N. FILIPJEV's species, though as to the spear structure

and to the cuticle important diagnostic details should have been reviewed. Neither W. SCHNEIDER (1935, p. 14) nor J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN (1938, pp. 134-135) had given details regarding those characters. Moreover the specimens found by J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN certainly do not belong to *A. omer-cooperi* (see the following species !).

Locality. — Burton Bay, on the bottom of the lake. No other species in this sample.

Actinolaims must be considered as predacious nematodes feeding mainly on other nemas and small animals.

Actinolaimus schuurmans-stekhoveni n. sp.

Syn. : *A. omer-cooperi* FILIPJEV of SCHUURMANS STEKHOVEN and TEUNISSEN, 1938.

(Plate V, Fig. 34.)

1 ♀ : L = 2,04 mm; a = 35,0; b = 4,0; c = 11,7; $V = {}^{18,4}45,9{}^{22,5}$.

A comparison between I. N. FILIPJEV's original description and figure of *A. omer-cooperi* (1931, p. 439, figs. 4, *a-b*) and the specimen found by J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN (1938, pp. 134-135, figs. 75, A-C) gives evidence that there exist many essential differences. I recently stated this fact (1955, p. 138) and consider it necessary to give the specimen from the Albert Parc a new name. The latter species differs from that of I. N. FILIPJEV in (1) cuticular structure (I. N. FILIPJEV states on p. 439 « cuticle smooth » whereas the refound *Actinolaimus* bears « 25-30 longitudinal winglike striae »), (2) in the shape of the head (*A. omer-cooperi*'s head is continuous with neck contour if observed in a position that one amphid can be seen in total), whereas the specimens compared with being likewise drawn, however, have the head clearly set off by a slight constriction or at least deep depression), (3) in the width of amphid-aperture (after I. N. FILIPJEV 28 % of lip region, diameter, the figure 75 A by J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN shows such one of about 37 %), (4) in the distinctivness of lip papillae (being obscure with I. N. FILIPJEV's species and rather prominent with the specimens compared). As to the structure of the spear neither I. N. FILIPJEV nor J. H. SCHUURMANS STEKHOVEN and R. J. H. TEUNISSEN stated exactly the length of its opening.

The single female found at locality No. 33 seems to be identical with the type of the National Albert Parc, because it bears on the cuticle 24 longitudinal striae, possesses a spear of about 1,2 lip region diameters with an aperture of ⅖ of the spear length and having the head offset by a slight constriction. The amphid aperture occupies 33 % of the lip width, the onchia seem to be blunter than usual and the rectum is 1,5 anal body diameters long and the prerectum reaches to four rectum lengths. The esophagus is gradually expanded at about 50 %, surrounded by the nerve-ring at 30 %. The lateral field of the cuticle measures 30 % of the corresponding body width and bears delicate transverse striae. Tail uniformly attenuated, seven anal diameters long.

Locality. — Edith Bay, from the small pond, no other species observed.

The specimens found by the above mentioned authors came from forest-soil on Mount Sesero, Belgian Congo.

The specific name is given in honour of Prof. Dr. J. H. SCHUURMANS STEKHOVEN, Deventer, the Netherlands.

Actinolaimus straeleni n. sp.

(Plate V, Fig. 36, 37, 38; Plate VI, Fig. 35, 39, 40, 41; Plate VII, Fig. 42.)

♀♀ (n=20) : L=4,1-5,5 mm; a=65-80; b=5,0-5,8; c=16-20; V=24-30 %.

Type ♀ : L=5,02 mm; a=70,0; b=5,6; c=20,0; V=26,9 %; G_1=7,4 %, G_2=42,3 %.

Type locality. — River Kibumbu, sample No. 340.

♂♂ (n=30) : L=2,4-4,6 mm; a=55-70; b=4-5; c=145-208.

Type ♂ : L=4,13 mm; a=60,0; b=5,0; c=173,7; supplements : 7-8-6.

Type locality. — See type ♀.

Body slender, in both sexes from the cardia to the beginning of the prerectum almost cylindrical. Lip width about half the body diameter in carida-region. Cuticle up to 5 µ thick, delicately transverse striated and bearing 24 longitudinal striae reaching from spear-end to almost tail-end. Lateral field ⅕ of corresponding body width. Cuticle with many pores which often end on the surface of the cuticle as papillae-like elevations, being irregularly scattered from the neck to the tail. Head almost continuous with neck contour, the trilobed lips with their inconspicuous papillae are in no way prominent. Vestibule corrugated pharynx with heavily cuticularized walls and the usual sharp and foreward pointing four onchia. Spear gliding in a double guiding ring. Spear itself massive, 1 ⅓ lip region diameters long and ⅕ as broad, its aperture occupying exactly ½ the total spear-length. Amphids stirrup-shaped, their slit-like openings 40 % of the lip width, being located slightly posterior to the tips of the onchia. The esophagus proper is distinctly set off from the weakly muscular tissue which surrounds the heavily cuticularized spear-extensions. The esophagus begins with a relatively narrow tube of 43 % of the corresponding diameter (=75 % of lip width), is narrowing at level of nerve-ring (which encircles the esophagus at about 25-27 % of the total esophageal length from head end) to 30 % of corresponding body diameter and is expanding from that point gradually to 60 % of body width at cardia-region. From somewhat anterior 50 % of esophageal length (44-45 %) the proper expansion takes place which is, however, in no way distinctive. Shortly anterior to this expansion (marked by a lent-like thickening of the lining) a great nucleus is located. The cardia is twice as long as broad without peculiarities. The female prerectum measures

5-6 times the rectum length and is obviously set off from the intestine. The rectum is 1,8-2 anal body widths long. Female gonad paired, the anterior branch very short (5-8 % of entire body length), reflexed, serving as a receptacle seminis. The posterior branch is extremely long (30-43 % body length), reflexed to about 50 %. Vulva transverse, vagina extending to ⅖ the corresponding body width. Eggs : 65-85 μ : 30-38 μ, several females having up to 40 eggs in G_2. Female tail attenuated to the flagellum-like end. Slightly posterior to the anal opening two papillae are located. Male in structure of head and neck similar to female. The testes begin at 30 % of the body length from head end. The copulatory apparatus is rather complicated, resembling somewhat that of *A. radiatus* Cobb, 1913. The supplements proper consist of three fascicles, the most anterior being reduced, possessing within the cuticle-elevation only two or three delicate innervations. The other both groups are compound of several adjacent papillae with marked innervations. With 30 specimens the average number of those papillae was in the first (closest to anal opening) bundle 6,4 (5-8) and in the second 7,4 (6-9). Between both the non-reduced groups further 7-13 (mostly 8-9) cone-shaped, vetromedian supplements are located. This is the most distinctive character of this new species. In addition to these fascicles and connecting papillae several series of auxiliary papillae are arranged from the anus to the beginning of the prerectum. Anterior to the adanal pair a subventral series of 7-10 papillae are arising on both sides of the ventromedian line : three to four pairs between the adanal pair and first fascicle, two or three on both sides on the first and second group and mostly one or two at level of the third, reduced group. A second series is arranged submedian, consisting of 14-16 rather stout papillae from midway anus and first group to beginning of the prerectum. Both series, the subventral and the submedian ones are continued to the tail, where they appear as postanal papillae. 7-8 subdorsal, prominent and rather uniformly spaced papillae are located from about tail-end to one corresponding body diameter posterior to the « reduced group ». The bluntly conoid tail is bearing in lateral view 10-12 postanal papillae, all being very prominent. The 70-78 μ long, slender, arcuate spicules have 19 μ long, small, lateral guiding pieces, the anterior half of which is narrowed ending in a blunt tip.

Diagnosis. — A species of the genus *Actinolaimus* Cobb, 1913, closely related to *A. radiatus* Cobb, 1913, but differing in (1) arrangement of supplements, (2) aperture of the spear, (3) structure of esophagus, etc. Also related to *A. africanus* Filipjev, 1929, but differing among others in (1) cuticular structure and (2) arrangement of supplements (after C. Allgén, 1933).

Localities. — Karema, river Ifume. Kibumbu-river (sample No. 340). Kioko-Nyumba, boggy pond. The same location but sample No. 345.

The specific name is given in honour of Prof. Dr. V. Van Straelen, Honorary Director of the Royal Institute of Natural Science of Belgium.

Actinolaimus taylori n. sp.
(Plate V, Fig. 43.)

1 ♀ (juv.) (type) : L = 3,729 mm; a = 32,0; b = 4,0; c = 13,5; V = 43,8 %.

Type locality. — Sample No. 121, Edith Bay, near tower of the bay.

Body widest at vulva, tapering in front and behind. Lip width about ¼ of the body diameter at level of the end of the esophagus. Cuticle thick, with many pores and about 32 longitudinal striae which disappear midway neck and near the anus. Lip region not interfering neck contour. Lip papillae a bit more prominent than in other related species. Amphid-aperture slit-like, ⅓ of corresponding body diameter, sensillae located directly at the base of the stirrup-shaped amphid. Vestibule corrugated, pharynx with heavily cuticularized walls and armed with four foreward pointing onchia. Guiding ring double, massive. Spear extremely long, occupying exactly 2,6 lip widths, its aperture 38 % of its total length. The base of the spear is ¼ as broad as the lip region. Esophagus expanded gradually at about 50 % of its length to 1,5 times the width at height of body anterior to nerve-ring. The latter surrounds the esophagus at 28 % total esophageal length from head-end. Cardia 1 ¼ as long as broad, heart-shaped. The gonad was not yet developed with this specimen, but it seemed to be paired. Prerectum 3 times the length of the rectum which is about 2 anal body diameters long. Tail uniformly attenuated to the pointed end.

Diagnosis. — Species of the genus *Actinolaimus* Cobb, 1913, differing from all other known species in the extremely long spear. The only species with a similar long spear is *A. michaelseni* Steiner, 1916. The spear length of that form is only two lip region diameters and the pharynx is much less cuticularized.

The specific name is given in honour of Prof. Dr. A. L. Taylor, principal nematologist in charge, Beltsville, U.S.A.

Actinolaimus tenuis W. Schneider, 1935.
(Plate VI, Fig. 44; Plate VII, Fig. 45, 46, 47; Plate VIII, Fig. 48.)

♀♀ (n = 20) : L = 2,6-3,0 mm; a = 54-64; b = 5,1-5,8; c = 12-14; V = 38-45 %; G_1 = 11-16 %; G_2 = 20-27 %; Egg : 60-84 : 27-32 µ.

♂♂ (n = 10) : L = 2,1-2,6 mm; a = 55-66; b = 4,0-4,7; c = 115-147.

I believe that I have refound W. Schneider's species *A. tenuis* though the author's meagre description does not permit a final decision. W. Schneider (1935, pp. 14-15) stated that in comparison to *A. omer-cooperi* Filipjev, his adult females are smaller, but this difference does not seem to be great enough. The spear of his species is only measuring 21 µ in length but W. Schneider did not indicate its proportion to the width of the lip region. I found the spear being

1,5 times longer than the lip diameter at level of papillae, which is similar to *A. omer-cooperi*. However, differences exist in (1) spear-aperture (*A. omer-cooperi* after FILIPJEV about ¼ of the spear length, against 45-50 % with *A. tenuis* regarding the specimens found in this collection), (2) in the spear being somewhat more slender with the species compared, (3) in the width of the amphid-aperture which was not stated by W. SCHNEIDER (after THORNE in *A. omer-cooperi* ⅔ and according to the figure by FILIPJEV 26% of the lip width, against 50% with my specimens), (4) in the prerectum-length of the female (*A. tenuis* mihi =4-5 times the rectum length, *A. omer-cooperi* 6-7 times the rectum length). The cuticle is smooth. Nerve-ring at 30%. Esophagus near 50 % of its length expanded (gradually). Male testes begin at 30 % of total body length from head end. Male prerectum extends to seven corresponding body diameters from anus. Spicules 50-55 μ. Male supplementary organs in 3 fascicles, the most anterior being always rudimentary. The first group with 5-7 (generally 6), the second group with 6-7 (generally 6) innervated papillae. Between these fascicles or « groups » either none or one respectively seldom two single, small papillae are (irregularly spaced) located. 12-14 submedian papillae are present on both sides of the ventromedian line. Male tail rounded, not always uniformly shaped (from almost hemispherical to bluntly conoid), provided with 5-6 postanal, rather obscure papillae.

The probably related species *Actinolaimus frostae* ALLGÉN (1952, pp. 149-151) is so meagerly figured and unsufficiently described, — especially the spear structure and the « peculiarities » of the pharynx, — that one could either take it for a synonym to *A. tenuis* W. SCHNEIDER or shift it to the « species inquirenda ». On the other hand, *A. tenuis* could be very closely related (if not identical) with *A. hutchinsoni* FILIPJEV, 1931. But I. N. FILIPJEV described the position of the vulva at 69 % and also G. THORNE (1939, p. 75) apparently approved of it. Nevertheless I. N. FILIPJEV stated in the text of his description : « The vulva is situated near the middle of the body » and according to the given key of a 1950 μ long female the vulva lies at 43,8 %.

Localities. — Tembwe pond. Bangwe, pond between Kigoma and Ujiji, sample No. 260. Camp Jaques, swamp. Kibumbu-river, sample No. 340.

Actinolaimus tenuis var. **brevicaudatus** W. SCHNEIDER, 1935.

(Plate VII, Fig. 49.)

1 ♀ : L=2,83 mm; a=60,0; b=5,1; c=20,8; V=45,5 %; G_1 (with 4 eggs) =18,3 %; G_2 (with 8 eggs)=34,3 %; Egg : 52-78 μ : 32 μ.

As to this variety the validity seems to be doubtful. I have only found a single female in the collection which might correspond with W. SCHNEIDER's variety because that author stated that all other characteristics, — with the exception of the length of the tail, total length and relative width of the body, — correspond with *A. tenuis* W. SCHNEIDER, 1935.

Body slender, the width of the lip region occupies 40 % of the body diameter at level of cardia. Cuticle smooth without visible transverse striae or longitudinal wings. Lip region continuous with neck contour, vestibule corrugated. Amphid-opening 50 % of the lip-width. Spear 1,4 times as long and ⅕ as broad as head diameter, its aperture being exactly 50 % of the total spear length. Onchia pointing foreward with sharp tips. Esophagus at 28 % surrounded by the nerve-ring and at about 50 % gradually expanded. Cardia almost twice as long as broad, conical. Gonad paired, the anterior branch slightly longer than posterior one, both reflexed to about ⅗ of their length. Vulva typical. Rectum 1 ⅓ anal body diameters long, prerectum 6,5 rectum lengths. Tail uniformly tapering to the finely pointed end.

I am not quite sure whether this female found is only representing an extreme form within the range of the natural variability of *A. tenuis* W. Schneider or a valid species. With the exception of the tail-length (which might be broken and healed !) there is no real diagnostic feature in comparison with *A. tenuis* W. Schneider.

Locality. — Karema, Ifume-river.

METACTINOLAIMUS n.g.

For the genus *Actinolaimus* further division is without doubt necessary. This fact was already stated by G. Thorne (1939, p. 71). Unfortunately the descriptions are often lacking essential diagnostic dates such as cuticular structure, aperture of the spear, number and position of the subventral papillae. On the other hand highly variable dates such as absolute length of the body, length of female tail or even the number of the papillae within the supplement fascicles caused descriptions of new species. Though without doubt critical studies of literature alone are not appropriate for exact taxonomic work, there are at least three groups within the genus *Actinolaimus* for which new genera have to be erected.

1. Species which possess mural denticles in addition to the usual four onchia :

A. filipjevi W. Schneider, 1935,
A. micoletzkyi W. Schneider, 1935,
A. microdentatus Thorne, 1939,
A. striatus Thorne, 1939.

I propose for those species the new generic name

PARACTINOLAIMUS

the type species being *Paractinolaimus micoletzkyi* (W. Schneider) n. c.

2. Species without the usual large onchia but pharynx with cuticularized longitudinal ribs :

A. tobleri MENZEL and MICOLETZKY, 1925.

The new generic name

ACTINOLAIMOIDES

is proposed for these forms and the type species becoming therefore *Actinolaimoides tobleri* (MENZEL and MICOLETZKY, 1925) n. c.

3. Species possessing a cuticularized pharyngeal frame-work consisting of the amalgamated four onchia, in place of more or less foreward pointing, sharp teeth (onchia).

For these forms the new genus

METACTINOLAIMUS

is erected, the type species thus becoming *Metactinolaimus kreisi* n. nov. n. c. (see the following description of *Metactinolaimus leloupi* !).

As we do not know the males of all other described *Actinolaimus*-species, it seems to be not appropriate to propose a further division into species with males possessing supplement fascicles and with males having a more or less continuous series of ventromedian papillae-like organs. The value of such a division is doubtful moreover, since apparently there are occurring intermediate forms.

Metactinolaimus leloupi n. sp.

(Plate VII, Fig. 52; Plate VIII, Fig. 50, 51, 53, 54, 55.)

♀♀ (n=2) : L=1,8-2,0 mm; a=31-32; b=3,8-3,9; c=12,9-14,5; V=47,2-48,3 %.

♀ (type) : L=2,08 mm; a=32,0; b=3,8; c=14,5; V=48,3 %.

Type locality. — 1 km from the beach, between Albertville and Camp Jaques, sample No. 103.

♂ (type) : L=1,44 mm; a=23,1; b=2,9; c=74,0.

Type locality. — See ♀.

Body of both male and female moderately tapering in front, the lip width being about 35 % of the greatest body diameter or 38 % of the body width at the end of the esophagus. Cuticle smooth, apparently lacking transverse or longitudinal striae. Lateral field ⅕ of the body diameter. Cuticle rather thick with lateral pores. Lips almost continuous with neck contour, set off by a very shallow depression. Lip-papillae rather obscure, arranged in the usual two

circlets. Amphid-apertures slitlike and half the lip width broad. Their sensillae located directly at the base of the shield-like organs. Mouth opening circular and corrugated. The walls of the pharynx and the vestibule are heavily cuticularized. In place of the usual large, four onchia the species shows a cuticularized ring-shaped frame-work, consisting of the amalgamated onchia, typically for the genus. Spear uncommonly short reaching only to 82 % (♂) resp. 60-66 % (♀) of the lip width. The aperture occupies 60-65 % of the spear length. The spear is ⅕-⅙ as broad as the diameter of the lip region. Guiding ring double. The spear extensions are surrounded by a spindle-like muscle-bundle which is well offset by a sharp constriction from the esophagus, and begins already at level of the guiding ring. Esophagus to 46 % of its total length (from head end) a moderately slender tube, — at 26 % crossed by the nerve-ring, — then gradually expanded to 2,5 times the original width but without forming a bulb. Cardia conical ,hardly longer than broad. Intestine rather well tesselated. Female prerectum twice the rectum length, the latter almost 2 times the analwidth long. The female with two symmetrical ovaries of about 20 % of total body length long, generally reflexed to as much as ⅓ of their length. Eggs 65-70 : 40 μ, 1-2 ripe eggs in each uterus. The two females found contained sperms. Female tail attenuated, 5-6 anal body diameters long with finely pointed end. The papillae located shortly posterior to the anal opening. Head and neck of the male are of the same structure as those of the female. Male gonad begins at 37 % of body length from head end. The sperms are spindle-shaped with longitudinal ridges, 8-10 μ long and about 2,5 μ thick. Male prerectum extends past supplements so that it occupies 4-5 times the body width. Three elevated, compound supplements are present, the anterior one being rudimentary without marked innervations. The other two ventromedian groups consist of 7-8 minute, contiguous papillae. On each side of those groups 2-3 subventral papillae without ampullae-like innervations can be observed. In addition to those subventral papillae still six almost submedian located papillae are present. They are irregularly arranged between the anal opening and the rudimentary fascicle. Spicules 58 μ long, gubernaculum lacking. Lateral guiding pieces obscure and very short. Male tail rounded to bluntly conoid, with five papillae.

Diagnosis. — Species of the genus *Metactinolaimus* n. g., differing from the most closely related species *M. kreisi* nom. nov. n. c. [=*Actinolaimus tripapillatus* Kreis, 1932, nec *Actinolaimus tripapillatus* (Daday, 1905) Steiner, 1916], in (1) length of body (1,8-2,0 mm against 4-9 mm), (2) in the length of the spear (1,3 lip widths against 66-82 %), (3) in position of the vulva (23-35 against 48 %), etc.

The specific name is given in honour of Dr. E. Leloup, Brussels, chief of the Tanganyika-Mission, 1946-1947.

As to *Actinolaimus tripapillatus* (Daday, 1905) Steiner, 1916, it was recently stated by I. Andrássy (1954, p. 140), who reviewed the type material of Daday that *Dorylaimus tripapillatus* Daday, 1905, was the same species as *Actinolaimus*

radiatus Cobb, 1913. The right name should be therefore : *Actinolaimus tripapillatus* (Daday, 1905) Steiner, 1916 (this species was transferred to the genus *Actinolaimus* by Steiner and not by Micoletzky, 1921, as I. Andrássy believes). On the other hand I am quite sure that the specimens found by H. A. Kreis from the Paraguayan Chaco (1932, pp. 87-89, figs. 11 A-K) which he thought identical with E. Daday's Actinolaimus, have to be recognized as valid species. H. A. Kreis had found 102 specimens, of which 49 had been measured and investigated. There is no good reason to doubt the statements by H. A. Kreis.

RÉSUMÉ.

Dans les échantillons recueillis au cours de l'« Exploration Hydrobiologique du Lac Tanganika », expédition entreprise par l'Institut royal des Sciences naturelles de Belgique en 1946-1947, se trouvaient 962 individus (262 ♀♀, 180 ♂♂, 520 juv.), comprenant 10 genres, 17 espèces et une variété; 7 espèces sont nouvelles pour la science. Le genre *Actinolaimus* Cobb a été divisé en 4 genres, c'est-à-dire en *Actinolaimus* Cobb, 1913, *Paractinolaimus* n. g., *Actinolaimoides* n. g. et *Metactinolaimus* n. g.

Toutes les espèces appartiennent à la classe des *Aphasmidia* Chitwood, 1933. Ce fait est d'autant plus remarquable qu'il confirme l'hypothèse de B. G. Chitwood (1951, p. 617) que les Nématodes marins et dulcicoles font partie des *Aphasmidia* en raison de leur structure cuticulaire.

Des travaux sur la faune africaine ont déjà fait connaître la moitié des espèces trouvées. Seul, le genre *Monachromadora* W. Schneider connu exclusivement en Indonésie, est nouveau en Afrique. Les espèces les plus nombreuses sont de la super-famille des *Dorylaimoidea*. Le genre *Chrysonema* Thorne, qu'elle renferme, semble plus abondant que dans les autres continents.

C'est également le cas pour la sous-famille des *Actinolaiminae* Thorne, les découvertes faites en Afrique le prouvent. Ce groupe est très riche non seulement en espèces, mais aussi en individus.

Parmi les genres récoltés, dix (y compris *Dorylaimus stagnalis* Dujardin, 1845) sont carnivores probablement à cause du caractère limnétique de l'habitat.

On a toujours constaté que, par suite de nouvelles recherches, les espèces, trouvées dans un seul continent, occupent aussi d'autres continents. Le problème des genres et des espèces géographiquement restreints reste donc ouvert. Sans aucun doute, il y a des genres et des espèces indigènes. Mais il est difficile de dire, avant des études approfondies de la faune des Nématodes libres, quelles espèces sont autochtones, et lesquelles sont rares, malgré leur extension.

LITERATURE.

(Papers marked by an asterisk * contain descriptions of nematodes from Africa.)

* Allgén, C., 1933, *Über einige freilebende Nematoden aus dem Niederkongo.* (Zool. Anz., *103*, pp. 312-320.)

* — 1935, *Das Männchen des Actinolaimus africanus* Filipjev. (Folia Zool. et Hydrobiol., *VIII*, pp. 33-35.)

* — 1952, *Über einige freilebende Süsswasser-Nematoden von Mt. Kenya (Brit. Ostafrika). Ein kleiner Beitrag zur Kenntnis tropischer Nematoden.* (Arkiv för Zoologi, *3*, pp. 139-157.)

Andrássy, I., 1954, *Über einige von Daday beschriebene Nematoden-Arten.* (Zool. Anz., *152*, pp. 138-144.)

Chitwood, B. G., 1951, *North American marine nematodes.* (Texas J. Sci., *3*, pp. 617-672.)

* Coninck, L. A. de, 1935, *Contribution à la connaissance des nématodes libres du Congo Belge. I. Les nématodes libres des marais de la Nyamuamba (Ruwenzori) et des sources chaudes du mont Banze (Lac Kivu).* (Rev. Zool. Bot. Afr., *26*, pp. 211-326.)

* Daday, E., 1910, *Untersuchungen über die Süsswasser-Mikrofauna Deutsch-Ostafrikas.* (Zoologica, *23*, pp. 1-314.)

* — 1910, *Beitrage zur Kenntnis der Mikrofauna des Nils.* (Sitzber. Kais. Akad. Wiss. Wien, Math. Naturw. Kl., *119*, pp. 537-589.)

* Filipjev, I. N., 1929, *Two new species of Actinolaimus from South Africa.* (Ann. and Mag. Nat. Hist., *10*, pp. 433-439.)

* — 1931, 21. *Report on Freshwater Nematoda. Mr.* Omer-Cooper's *Investigation of the Abyssinian Freshwaters (Hugh Scott Expedition).* (Proc. Zool. Soc. London, *2*, pp. 429-443.)

Goodey, T., 1951, *Soil and Freshwater Nematodes.* London.

Kreis, H. A., 1932, *Freshwater nematoda from the Paraguayan Chaco.* (J. Linn. Soc. London, *38*, pp. 283-294.)

* Meyl, A. H., 1955, *Nematoden aus dem Psammon des Tanganyika-Sees.* (Zool. Anz., *155*, pp. 135-138.)

* Micoletzky, H., 1916, *Süsswasser-Nematoden aus Südafrika. Ergebnisse einer botanischen Forschungsreise.* (Denkschr. Kais. Akad. Wiss. Wien, Math. Naturw. Kl., *92*, pp. 149-171.)

* — 1925, *Zur Kenntnis freilebender tropischer Nematoden aus Surinam, Trinidad und Ostafrika.* (Zool. Anz., *64*, pp. 1-28.)

* Pierantoni, U., 1915, *Sopra una nuova nematode di Bu-Gheilan (Tripolitania)* Dorylaimus lybicus *n. sp.* (Ann. Mus. Zool. R. Univ. Napoli, *4*, pp. 1-4.)

* SCHNEIDER, W., 1935, *Freilebende Nematoden : Voyage de* CH. ALLUAUD et P. A. CHAPPUIS *en Afrique occidentale française.* (Arch. Hydrobiol., *28*, pp. 1-20.)

— 1937, *Freilebende Nematoden der Deutschen Limnologischen Sundaexpedition nach Sumatra, Java und Bali.* (Arch. Hydrobiol. Suppl. 15, Tropische Binnengewässer, *7*, pp. 30-108.)

* SCHUURMANS STEKHOVEN, J. H., 1936, *Nouvelles recherches sur les nématodes parasites de plantes au Congo Belge.* (Bull. Mus. roy. d'Hist. nat. de Belgique, *12*, pp. 1-16.)

* — 1944, *Nématodes libres de l'Eau douce.* (Exploration du Parc National Albert. Mission H. DAMAS [1935-1936], fasc. *9*, pp. 1-31.)

* — 1951, *Nématodes saprozoaires et libres du Congo Belge.* (Mém. Inst. roy. Sc. nat. de Belgique *39*, pp. 1-77.)

* SCHUURMANS STEKHOVEN, J. H. and MAWSON, P., 1954, *Freeliving nematodes mostly from Asia.* (Arkiv för Zoologi, *7*, pp. 273-279.)

* SCHUURMANS STEKHOVEN, J. H. and TEUNISSEN, R. J. H., 1938, *Nématodes libres terrestres.* (Exploration du Parc National Albert, Mission G. F. DE WITTE [1933-1935], fasc. *22*, pp. 1-220.)

* STEINER, G., 1916, *Beiträge zur geographischen Verbreitung freilebender Nematoden.* (Zool. Anz., *46*, pp. 311-347.)

* — 1916, *Nematoda. Beiträge zur Kenntnis der Land- und Süsswasserfauna Deutsch-Südwestafrikas.* (Hrsg. v. W. MICHAELSEN, Lfg. *4*, pp. 377-411.)

* — 1926, *Parasitic nemas on peanuts in South Africa.* (Z. f. Bakt. Parasitkde., *67*, pp. 351-365.)

THORNE, G., 1929, *Nematodes form the summit of Long's Peak, Colorado.* (Trans. Amer. micr. Soc., *48*, pp. 181-195.)

— 1939, *A monograph of the nematodes of the superfamily* Dorylaimoidea. (Capita Zoologica, *8*, pp. 1-261.)

THORNE, G. and SWANGER, H. H., 1936, *A monograph of the nematode genera* Dorylaimus DUJARDIN, Aporcelaimus *n. g.*, Dorylaimoides *n. g. and* Pungentus *n. g.* (Capita Zoologica, *6*, pp. 1-156.)

PLATE I

EXPLANATION OF PLATE I.

(All figures drawn with the aid of the camera lucida.)

FIG. 1. — *Plectus sambesii* MICOLETZKY : head and neck of ♀.

FIG. 2. — Id. : ♀ tail.

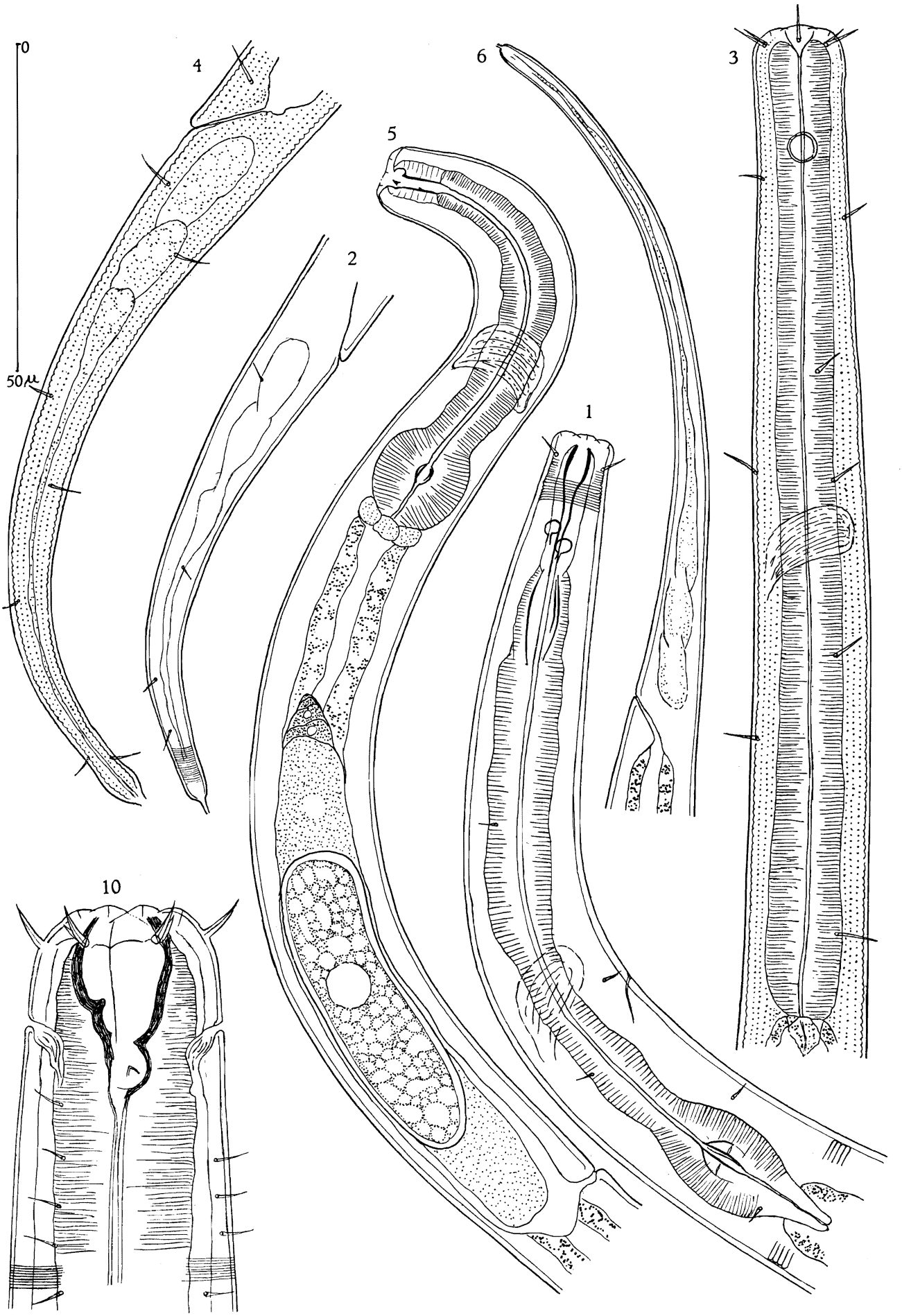
FIG. 3. — *Monhystera mwerazii* n. sp. : head and neck of ♀.

FIG. 4. — Id. : ♀ tail.

FIG. 5. — *Monachromadora monhysteroides* W. SCHNEIDER : anterior part of the ♀ body.

FIG. 6. — Id. : ♀ tail.

FIG. 10. — *Trilobus graciloides* aff. DADAY : ♀ head.



A. H. MEYL. — Freeliving Nematodes.

PLATE II

EXPLANATION OF PLATE II.

(All figures drawn with the aid of the camera lucida.)

FIG. 7. — *Ironus macramphis* SCHUURMANS STEKHOVEN and TEUNISSEN : ♀ head and anterior part of the neck.

FIG. 8. — Id. : region of the vulva and egg.

FIG. 9. — Id. : ♀ tail.

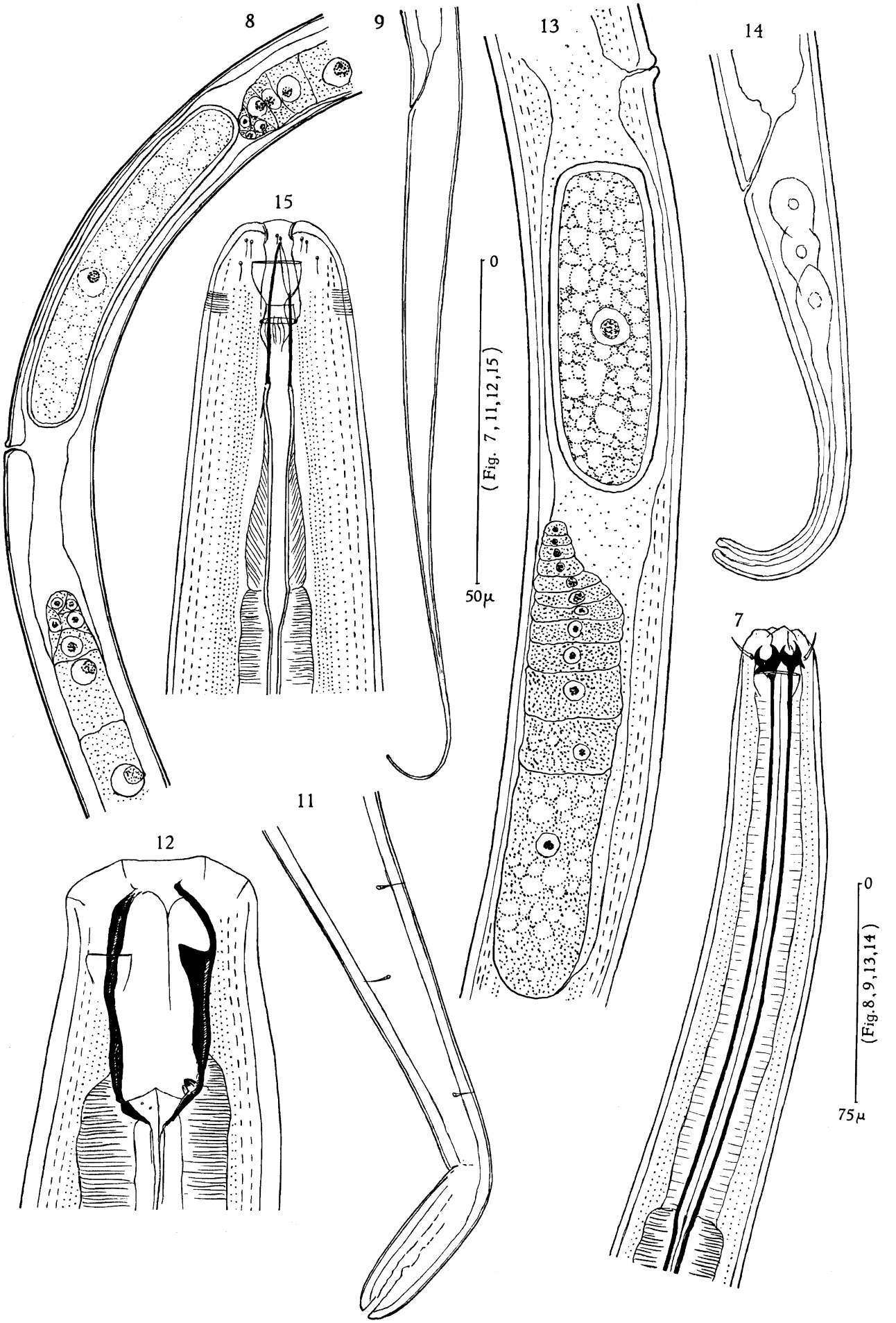
FIG. 11. — *Trilobus graciloides* aff. DADAY : ♀ tail-end.

FIG. 12. — *Mononchus allgéni* n. sp. : ♀ head.

FIG. 13. — Id. : posterior branch of the gonad with egg.

FIG. 14. — Id. : ♀ tail.

FIG. 15. — *Chrysonema luettichaui* n. sp. : ♀ head to the end of the spear extensions.



A. H. MEYL. — Freeliving Nematodes.

PLATE III

EXPLANATION OF PLATE III.

(All figures drawn with the aid of the camera lucida.)

FIG. 16. — *Chrysonema luettichaui* n. sp. : ♀ head and neck.

FIG. 17. — Id. : vulvular region and egg.

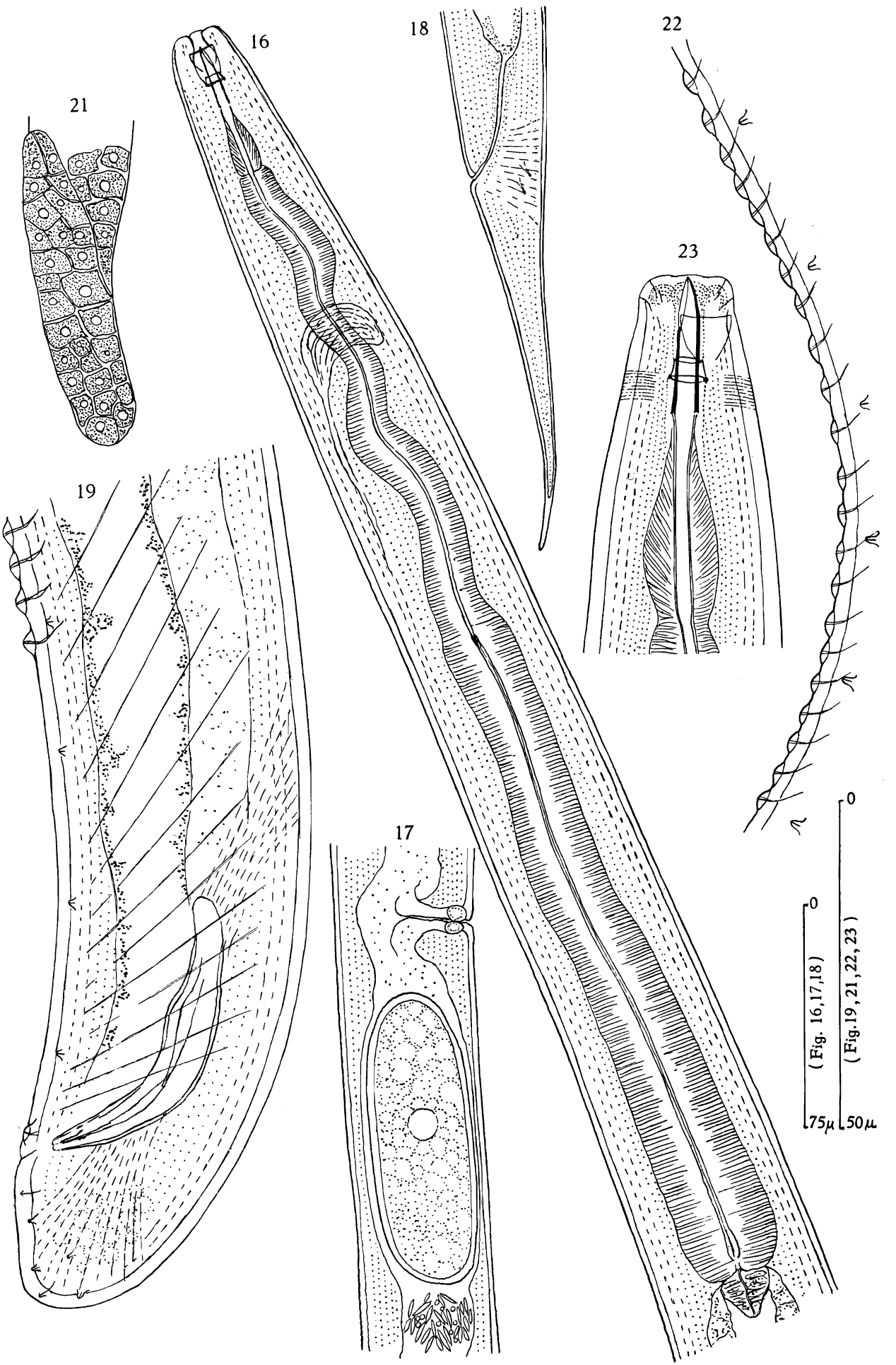
FIG. 18. — Id. : ♀ tail.

FIG. 19. — Id. : ♂ tail and beginning of supplement series.

FIG. 21. — Id. : reflexed part of the ♂ gonad.

FIG. 22. — Id. : supplement series.

FIG. 23. — *Dorylaimus acris* THORNE : ♀ head to the end of spear extensions.



A. H. MEYL. — Freeliving Nematodes.

EXPLANATION OF PLATE IV.

(All figures drawn with the aid of the camera lucida.)

FIG. 20. — *Chrysonema luettichaui* n. sp. : posterior part of ♂ body with the copulatory apparatus.

FIG. 24. — *Dorylaimus acris* THORNE : ♀ tail.

FIG. 25. — *Dorylaimus conurus* THORNE : ♀ head to the end of spear-extensions.

FIG. 26. — Id. : ♀ tail.

FIG. 27. — Id. : ♂ supplement series.

FIG. 28. — *Dorylaimus flavomaculatus* VON LINSTOW : ♀ head to the end of the spear-extensions.

FIG. 29. — Id. : cardia-region.

FIG. 30. — Id. : rectum and prerectum of ♀.

FIG. 31. — Id. : tail end of ♀.

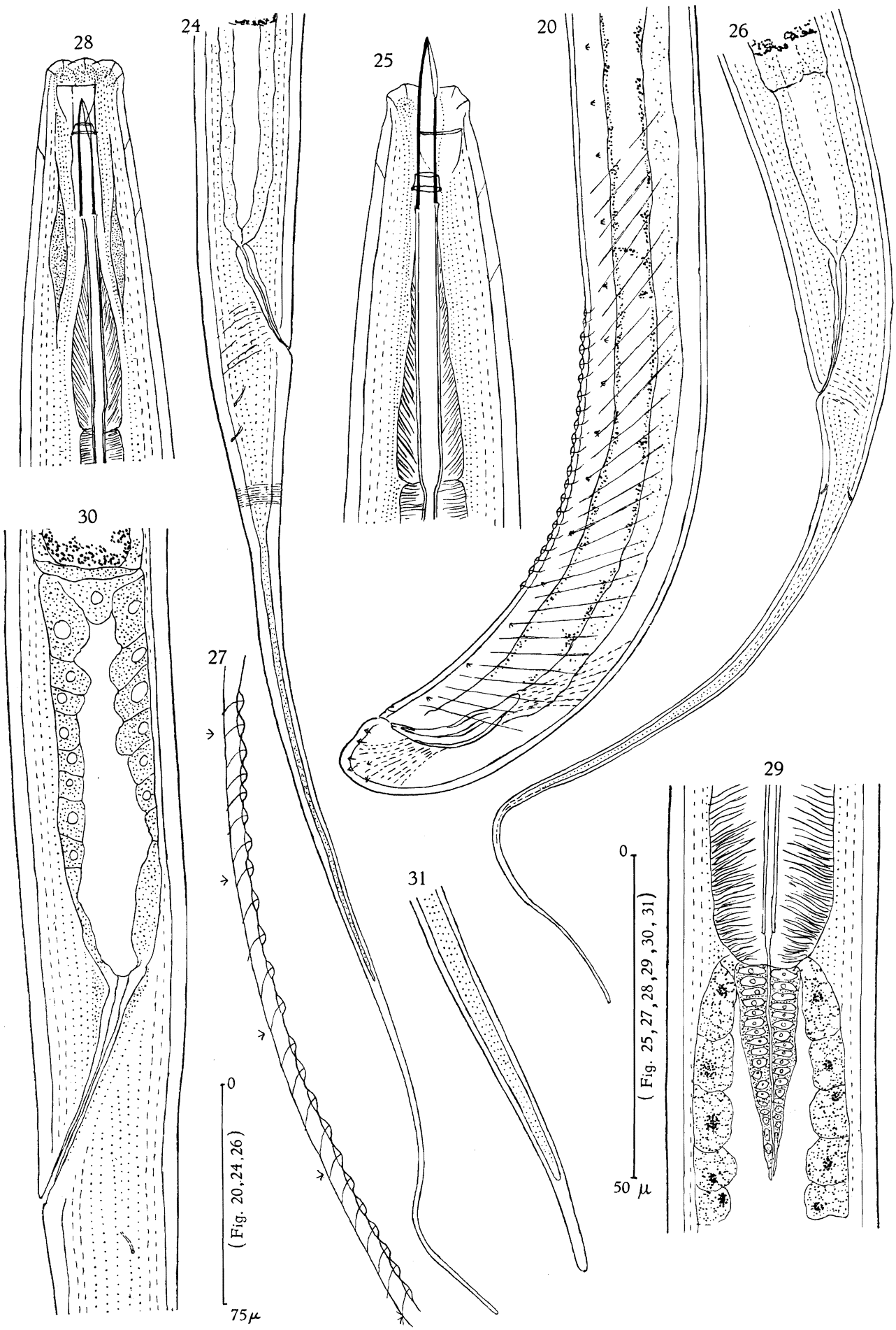


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PLATE V

EXPLANATION OF PLATE V.

(All figures drawn with the aid of the camera lucida.)

FIG. 32. — *Dorylaimus stagnalis* aff. DUJARDIN : ♀ head.

FIG. 33. — *Actinolaimus omer-cooperi* aff. FILIPJEV : ♀ head.

FIG. 34. — *Actinolaimus schuurmans-stekhoveni* n. sp. : ♀ head.

FIG. 36. — *Actinolaimus straeleni* n. sp. : region of the esophagus from the nerve-ring to the beginning of the gradual expansion.

FIG. 37. — Id. : two eggs in the uterus.

FIG. 38. — Id. : ♀ tail.

FIG. 43. — *Actinolaimus taylori* n. sp. : ♀ head.

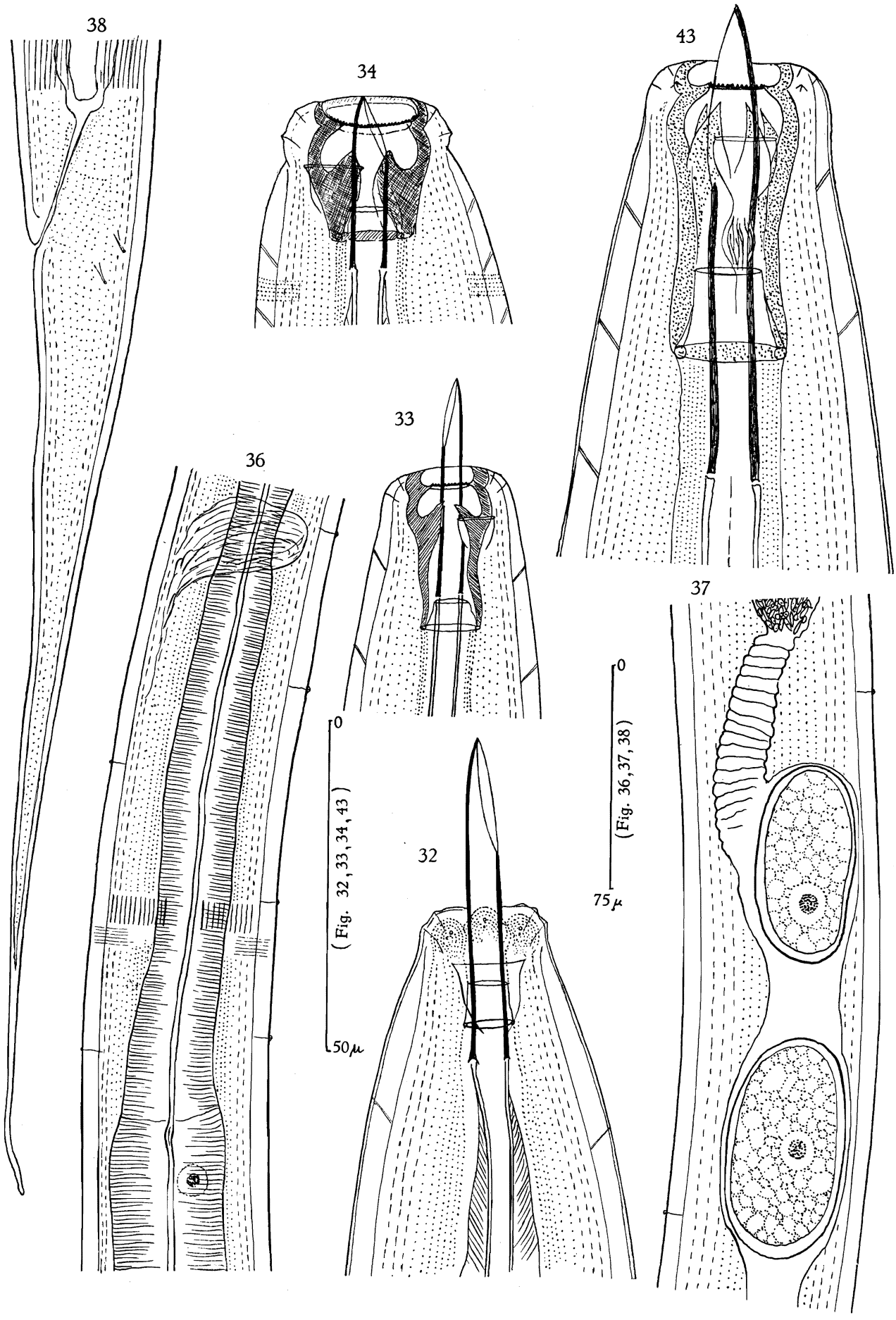

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PLATE VI

EXPLANATION OF PLATE VI.

(All figures drawn with the aid of the camera lucida.)

FIG. 35. — *Actinolaimus straeleni* n. sp. : ♀ head.

FIG. 39. — Id. : posterior part of the ♂ body with copulatory apparatus and tail.

FIG. 40. — Id. : ♂ tail and spicular apparatus.

FIG. 41. — Id. : supplementary organs of a ♂ with 12 papillar organs between first and second fascicle.

FIG. 44. — *Actinolaimus* tenuis W. SCHNEIDER : ♀ head.

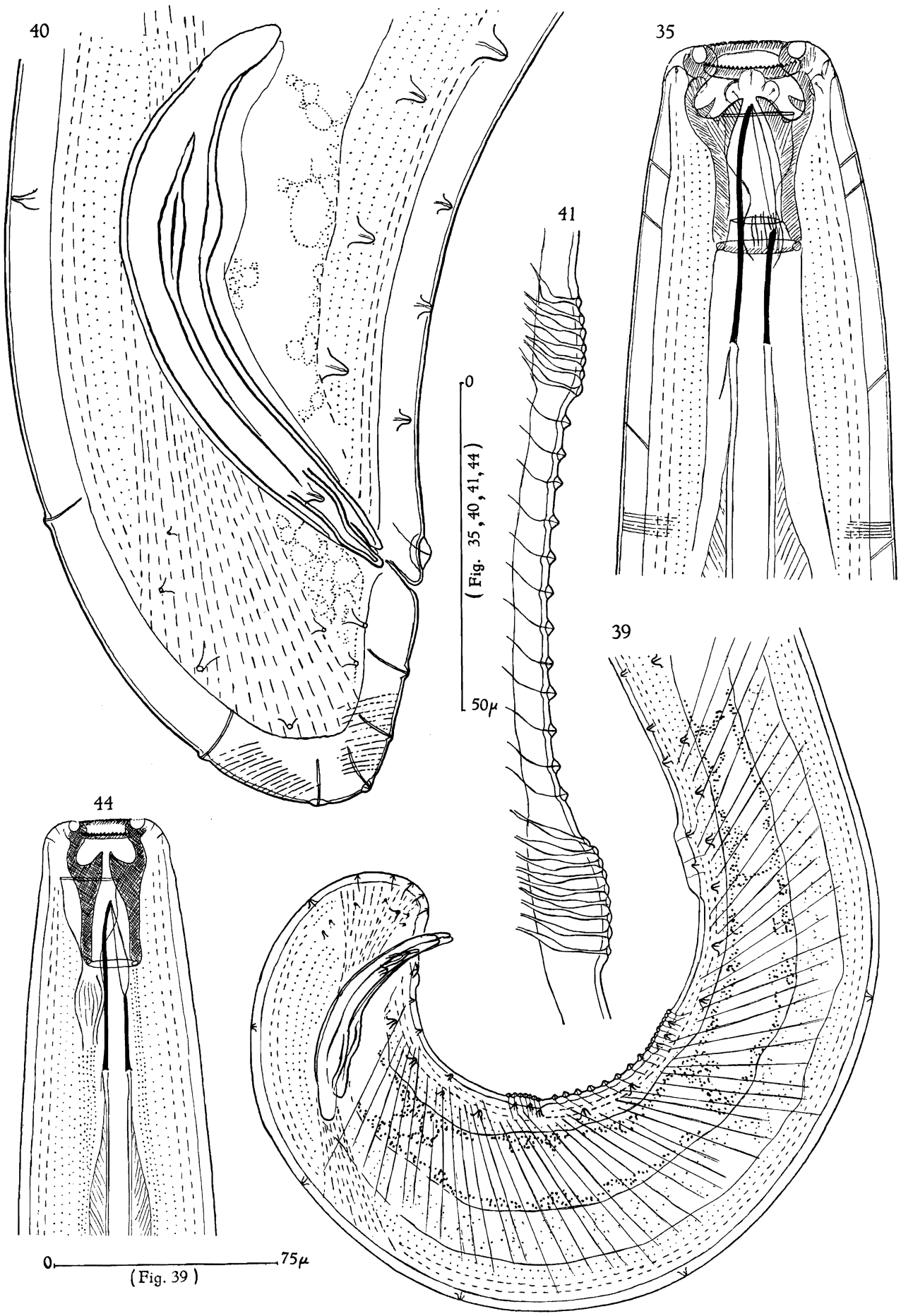

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PLATE VII

EXPLANATION OF PLATE VII.

(All figures drawn with the aid of the camera lucida.)

FIG. 42. — *Actinolaimus straeleni* n. sp. : supplementary organs of a ♂.

FIG. 45. — *Actinolaimus tenuis* W. SCHNEIDER : ♀ tail.

FIG. 46. — Id. : posterior part of the ♂ body from the beginning of the prerectum to the tail end.

FIG. 47. — Id. : head of a moulting young ♂ (notice the slightly smaller spear-aperture of the original spear!).

FIG. 49. — *Actinolaimus tenuis* var. *brevicaudatus* W. SCHNEIDER : ♀ tail.

FIG. 52. — *Metactinolaimus leloupi* n. g. n. sp. : head contour of a ♀ with spear and amphid.

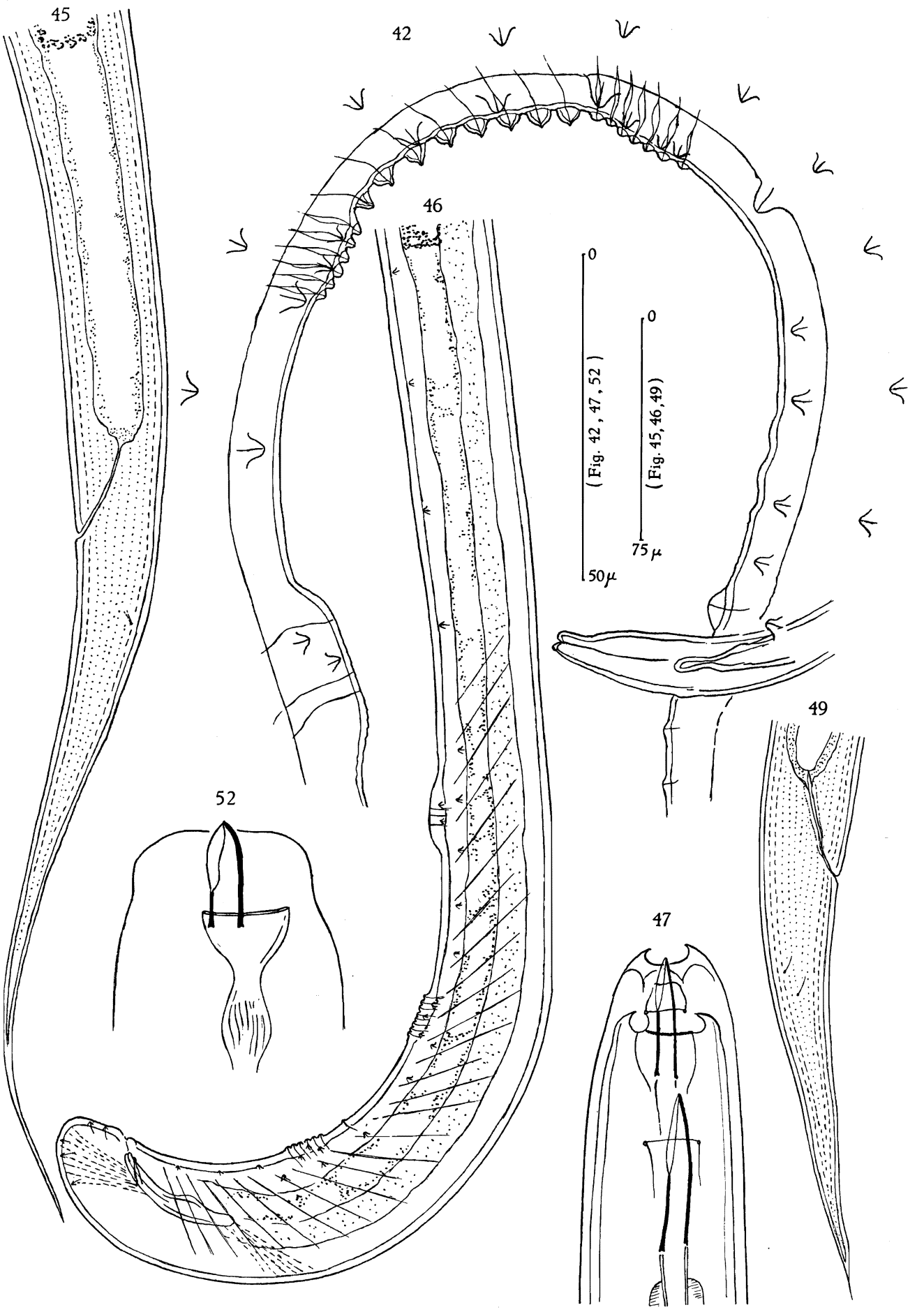

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PLATE VIII

EXPLANATION OF PLATE VIII.

(All figures drawn with the aid of the camera lucida.)

FIG. 48. — *Actinolaimus tenuis* W. SCHNEIDER : tail of a moulting ♂.

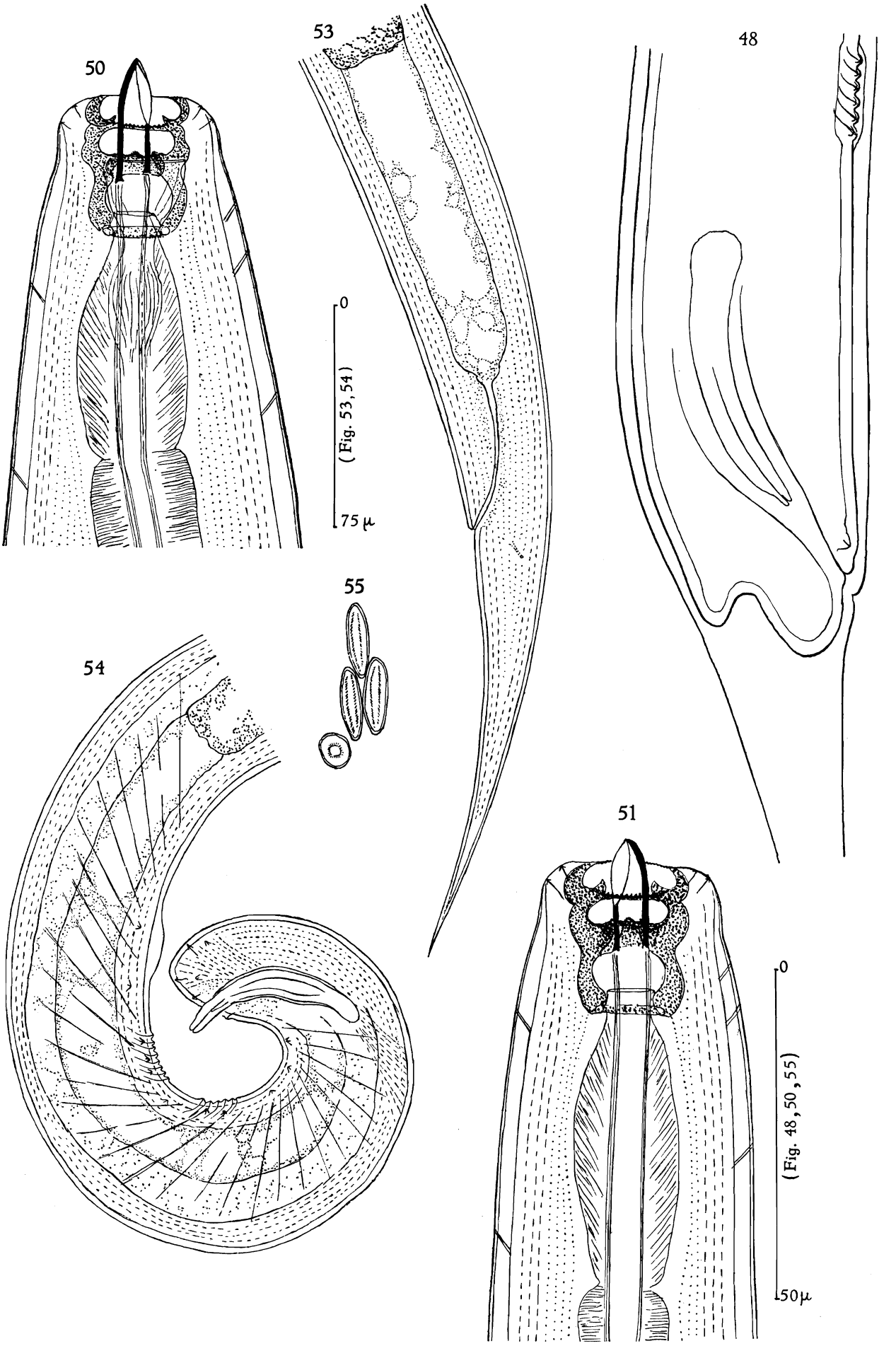
FIG. 50. — *Metactinolaimus leloupi* n. g. n. sp. : ♂ head to the end of spear-extensions.

FIG. 51. — Id. : ♀ head.

FIG. 53. — Id. : ♀ tail.

FIG. 54. — Id. : posterior part of the ♂ body from the beginning of the prerectum to tail-end.

FIG. 55. — Id. : sperms.



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