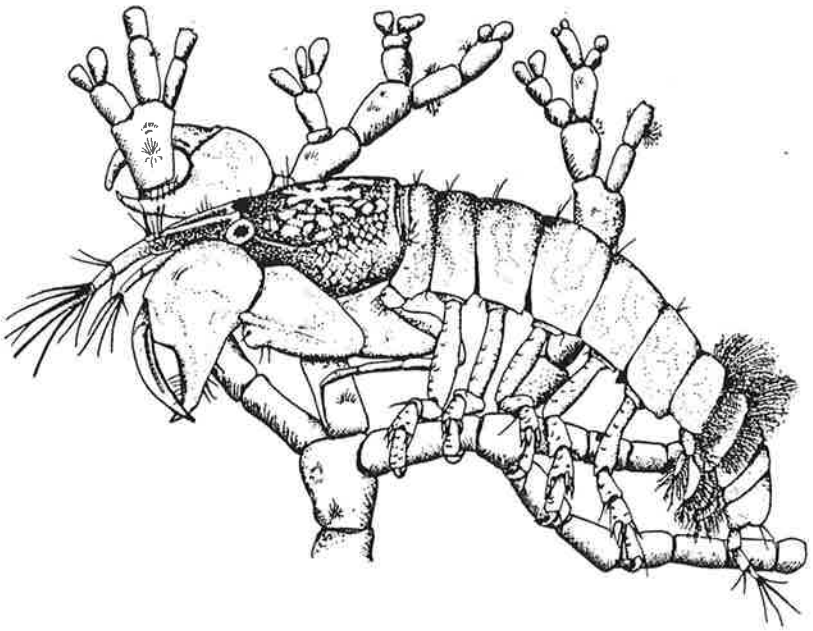
BRITISH SHALLOW-WATER TANAIDACEA

E.B.S.A. TAXONOMIC WORKSHOP ON THE 'SMALL CRUSTACEA'.

U.C.N.W. Bangor, April 1988.



Tanais dulongii - after Johnson & Attramadal (1982)

CONTENTS

I. REVISED CLASSIFICATION OF BRITISH SHALLOW-WATER TANAIDACEA.

SUBORDER APSEUDOMORPHA

Family APSEUDIDIDAE

Genus *Apseudes* Leach, 1814

A. talpa (Montagu, 1808)
A. latreilli (Milne-Edwards, 1828)
A. spinosus (M. Sars, 1858)
A. grossimanus Norman, 1886

Genus *Sphyrapus* Norman & Stebbing, 1886

S. malleolus Norman & Stebbing, 1886

SUBORDER TANAIDOMORPHA

Family TANAIDAE

Genus *Tanais* Latreille, 1831

T. dulongii (Audouin, 1826)

Genus *Parasinelobus* Sieg, 1980

P. chevreuxi (Dollfus, 1898)

Family LEPTOCHELIIDAE

Genus *Heterotanais* Sars, 1882

H. oerstedi (Kroyer, 1842)

Genus *Leptochelia* Dana, 1849

L. savignyi (Kroyer, 1842)

Family ANARTHRURIDAE

Subfamily Leptognathiinae

Genus *Leptognathia* Sars, 1882

L. breviremis (Lilljeborg, 1864)
L. paramanca Lang, 1958 * see footnote (1.)

Genus *Pseudoparatanais* Lang, 1973

P. batei (Sars, 1882)

Genus *Tanaopsis* G.O. Sars, 1896

T. graciloides (Lilljeborg, 1864)

Subfamily Akanthophoreinae

Genus Akanthophoreus Sieg, 1986

A. gracilis (Kroyer, 1842)

Genus Araphura Bird & Holdich, 1984

A. brevimanus (Lilljeborg, 1864)
A. filiformis (Lilljeborg, 1864)

Genus Haplocope G.O. Sars, 1882

H. angusta G.O. Sars

Genus Leptognathiopsis Holdich & Bird, 1986

L. attenuata Holdich & Bird, 1986

Genus Subulella Holdich & Bird, 1986

S. scotti Holdich & Bird, 1986

Subfamily Anarthrurinae

Tribe Agathotanaini

Genus Agathotanais Hansen, 1913

A. ingolfi Hansen, 1913

Tribe Anarthrurini

Genus Anarthrura Sars, 1882

A. simplex Sars, 1882

Family TYPHLOTANAIDAE

Genus Typhlotanais Sars, 1882 * see footnote 2.

T. s.str. aequiremis (Lilljeborg, 1864)
T. brevicornis (Lilljeborg, 1864)
T. microcheles Sars, 1882
T. tenuicornis Sars, 1882
T. pulcher Hansen, 1913

Family PSEUDOTANAIDAE

Subfamily Pseudotanainae

Genus Pseudotanais Sars, 1882

Subgenus Pseudotanais

P. forcipatus (Lilljeborg, 1864)
P. jonesi Sieg, 1977

Family NOTOTANAIDAE

Genus *Tanaissus* Norman & Scott, 1906

T. elongatus Jones & Holdich, 1983
T. lilljeborgi Stebbing, 1881

Footnotes:

1. *Leptognathia* has been re-diagnosed by Sieg (1986). Apart from *L. breviremis*, and the Antarctic species *L. breviremoides* Sieg most other species almost certainly do not belong in this genus.

2. *Typhlotanais* has also been re-diagnosed by Sieg (1986) and the whole genus needs revision. Only *T. aequiremis* (the type species) certainly belongs here. *T. microcheles* probably belongs in the genus *Paratyphlotanais* Kudinova-Pasternak.

II. RECENT CHANGES IN CLASSIFICATION RELEVANT TO BRITISH TANAIDACEA

In recent papers (Sieg 1986a, b) many revisions of familial and generic classification have been carried out. The structure of the articulation between the cheliped and cephalothorax, and the armament of the pereopods are the principal character-fields upon which this revision has been based.

The most important changes concern the families Agathotanaidae, Anarthruridae and Leptognathiidae. In effect, only the Anarthruridae stands as a distinct family, the others being reduced to subfamilial or tribal level. The family Leptognathiidae has been split into two subfamilies and, in addition, the genus Typhlotanais has been made the basis of the new family Typhlotanaidae. These alterations, as they affect 'British' tanaidaceans, are summarised below:

ANARTHRURIDAE

Subfamily Leptognathiinae [formerly in Leptognathiidae]: Leptognathia, Pseudoparatanais, Tanaopsis.

Subfamily Akanthophoreinae [formerly in Leptognathiidae]: Akanthophoreus, Araphura, Haplocope, Leptognathiopsis, Subulella.

Subfamily Anarthrurinae

Tribe Agathotanaini [formerly the Agathotanaidae]: Agathotanais

Tribe Anarthrurini [formerly the Anarthruridae]: Anarthrura

TYPHLOTANAIDAE [formerly in Leptognathiidae]

Typhlotanais

References:

1. (familial changes, re-diagnosis of Leptognathia, establishment of genus Akanthophoreus):

Sieg, J. 1986a. Tanaidacea (Crustacea) von der Antarktis und Subantarktis. II. Tanaidacea gesammelt von Dr. J.W. Wagele wahrend der Deutschen Antarktis Expedition 1983. Mitteilungen aus dem Zoologischen Museum der Universitat Kiel, II, (4): 1-80

2. (re-diagnosis of Typhlotanais and establishment of related Peraeospinosus):

Sieg, J. 1986b. Crustacea Tanaidacea of the Antarctic and the Subantarctic. Antarctic Research Series 45.

III. PRELIMINARY COMMENTS ON THE ZOOGEOGRAPHY OF THE BRITISH SHALLOW-WATER TANAIDACEA

The following table presents a provisional zoogeographic classification of the British shallow-water Tanaidacea. No assertions are made about the principal region of distribution because of a lack of comparative data. However, the classification Boreal/Lusitanian does imply that those species may be primarily Lusitanian.

Almost half (48%) of the British fauna appears to be endemic to the Boreal province, with 41% also occuring in the Lusitanian provinc, and a smaller proportion (17%) in the Arctic region. In general, the warmer waters to the south of the British Isles have a much greater potential for high species richness, especially since the families Tanaidae, Leptocheliidae and Aspseudidae are much better represented in warm-temperate and tropical waters.

Thirteen Boreal species are not as yet recorded in shallow British waters, although some do occur at shallow-slope depths off Scotland, Ireland and France. The West-European shelf and shallow-slope fauna extends from the Norwegian fjords to the Bay of Biscay. The latter area is a major zone of transition between the Boreal and Lusitanian provinces. In the North, the Wyville-Thomson Ridge is a dramatic zoogeographic boundary for tanaidaceans.

Because of the Lusitanian influence in the south-west of the British Isles, some species from that province may remain unrecorded. Likely candidates for inclusion in the British list are given in the last section.

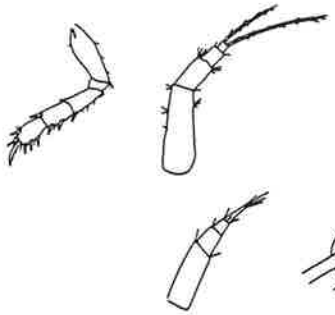
Provisional Zoogeographic Classification of British Shallow-water Tanaidacea

ARCTIC/BOREAL	BOREAL	BOREAL/LUSITANIAN	ARCTIC/BOREAL/LUSITANIAN
Akanthophorous gracilis	Heterotanais oerstedi	Apseudes grossimanus	Apseudes spinosus agg.
Typhlotanais aequiremis	Agathotanais ingolfi	Apseudes latreilli	Pseudoparatanais batei
Pseudotanais forcipatus	Anarthrura simplex	Apseudes talpa	
	Haplocope angusta	Sphyrapus malleolus	
	Leptognathia breviremis	Parasinelobus chevreuxi	
	Leptognathia paramanca	Tanais dulongii	
	Leptognathiopsis attenuata	Leptochelia savignyi	
	Subulella scotti	Araphura brevimanus	
	Typhlotanais microcheles	Araphura filiformis	
	Typhlotanais pulcher	Tanaopsis graciloides	
	Typhlotanais tenuicornis		
	Tanaissus elongatus		
	Tanaissus lilljeborgi		
	Pseudotanais jonesi		

IV. A KEY TO THE BRITISH SHALLOW-WATER TANAIDACEA.

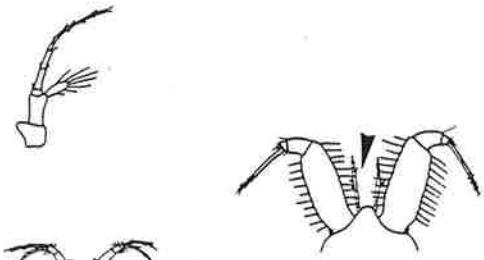
1. Pereopod 1 powerfully built and fossorial, propodus flattened. Antennule biflagellate. Male with single genital cone on pereonite 6 ..... [Apseudidae] 2

   Pereopod 1 similar to pereopods 2-6. Antennule uniflagellate. Male with two genital cones on pereonite 6 6



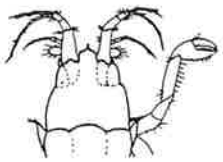
2. Antenna with setose scale arising from second peduncular article ..... [Apseudes] 3

   Antenna without scale..... ..... Sphyrapus malleolus



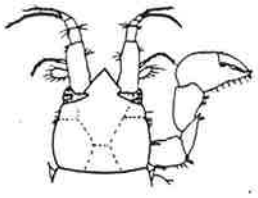
3. Rostrum parallel-sided with rounded apex and spiniform tip; epistomal spine absent ..... A. latreilli

   Rostrum not as above; epistomal spine present 4



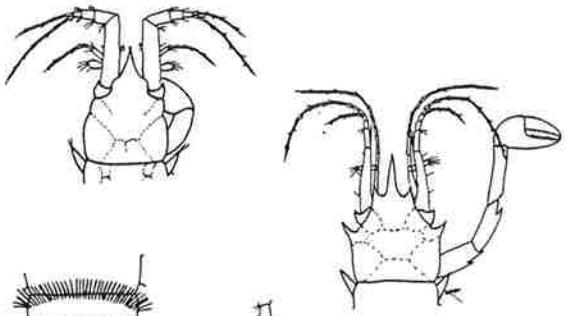
4. Rostrum broadly triangular, ventrally keeled and depressed at apex, margin minutely serrated . A. talpa

   Rostrum long, with acute apical projection 5



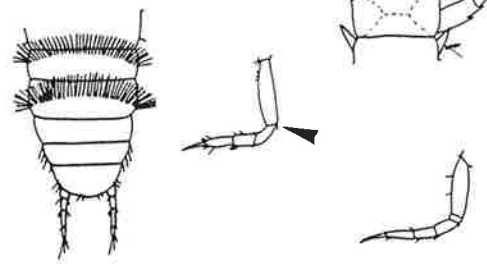
5. Rostrum deflexed, with broad base and upwardly-turned lateral lobes ..... A. spinosus

   Rostrum tridentate, central spine longer than the laterals ..... A. grossimanus



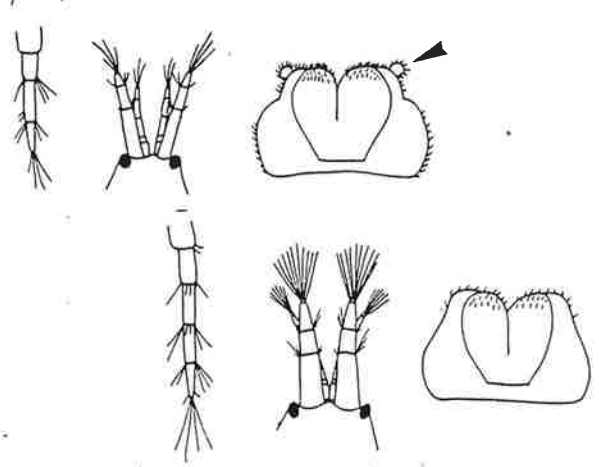
6. Pleon with transverse rows of setae. Ischium of pereopods absent ..... [Tanaidae] 7

   Pleon without setal rows. Ischium present 8



7. Uropods 3-articled. Tip of antennule with 'few' setae. Outer lobe of labium with antero-lateral projections ..... Tanais dulongii

   Uropods 4-articled. Tip of antennule with many setae. Outer lobe of labium without projections ..... Parasinelobus chevreuxi



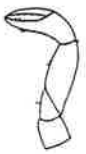
8. Uropod endopod 4 to 7-articled. Eyes present ..... [Leptocheliidae] 9
NB. Beware Pseudoparatanais batei

Uropod endopod 1 or 2-articled. Eyes absent, except for P. batei 10

9. Antenna with strong ventral spine on second article. Exopod of uropod 1-articled. Pereopods 3-5 almost square ..... Leptochelia savignyi

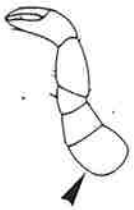
Antenna without ventral spine on second article. Uropod exopod 2-articled. All pereonites distinctly shorter than broad ..... Heterotanais oerstedi

10. Cheliped basis articulating directly to cephalothorax, without obvious 'pseudocoxa'. Uropods and antennae degenerate ... Agathotanais ingolfi

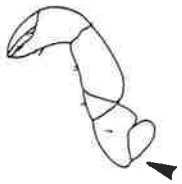


Cheliped basis articulating with cephalothorax on superomedial margin, or with prominent 'pseudocoxa' 11

11. Cheliped with prominent 'pseudocoxa' ..... Anarthrura simplex



Cheliped articulating via superomedial margin of basis ... 12

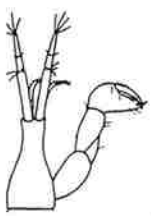


12. Eyes present Pseudoparatanais batei

Eyes absent 13

13. Antennule 3-articled and body elongate 14

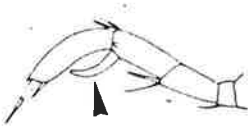
Antennule 4-articled, if 3-articled body short and broad 20



14. Cephalothorax distinctly narrowed behind antennules. Dactylus and unguis of pereopods 4-6 fused. Chela broad ..... [Tanaissus] 15

Cephalothorax not as above. Dactylus and unguis distinct. Chela narrow ..... [Typhlotanais] 16

15. Carpus of pereopods 2-3 with large scythe-like spine. Pereonites 4-5 longer than broad [NB. only males known at present] .... T. **elongatus**



Carpus of pereopods 2-3 without scythe-like spines. Pereonites 4-5 as long as broad ... T. **lilljeborgi**

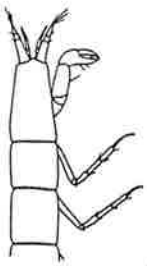
16. Pereonite 1 longer than cephalothorax ..... T. **pulcher**

Pereonite 1 shorter than cephalothorax 17

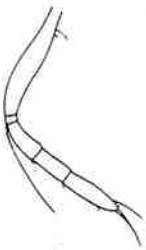
17. Cephalothorax twice as long as broad 18

Cephalothorax just longer than broad 19

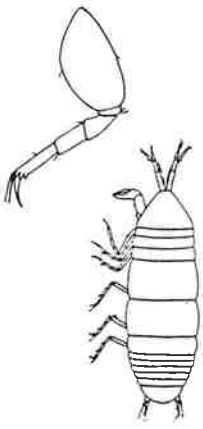
18. Pereonite 1 much shorter than the others. Carapace with acutely produced rostrum ... T. **microcheles** NB. Beware T. tenuimanus



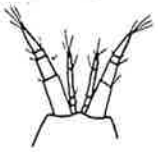
Pereonite 1 not shorter than others. Rostrum not as above ..... T. **brevicornis**



19. Pereopods 1-3 with long seta from ischium. Basis of pereopods 4-6 only slightly swollen ..... T. **tenuicornis**



Pereopods 1-3 without long seta. Basis of pereopods 4-6 extremely swollen ..... T. **aequiremis**



20. Antennule 4-articled 21

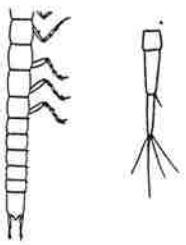
Antennule 3-articled, body short and broad ..... [Pseudotanais] 29

21. Terminal spine of cheliped propodus bifid; dactylus of chela fits between two teeth of propodus. Propodus of pereopod 1 longer than carpus and merus together .... Tanaopsis graciloides

Chela and pereopod 1 propodus not as above 22

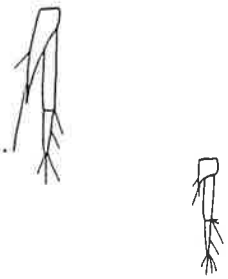
22. Exopod of uropod not distinctly defined from basis or absent ... 23

Exopod of uropod distinctly articulated 25



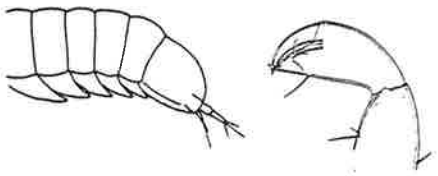
23. Pleon and pleotelson together as long as pereonites 6-3 inclusive. Exopod of uropod absent .... Leptognathia paramanca

Pleon short. Exopod of uropod represented by a projection from the basis ..... [Araphura] 24



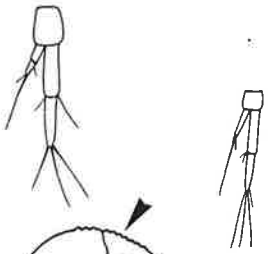
24. Uropod exopod a pointed projection nearly as long as the proximal article of the endopod .... A. brevimanus

Uropod a short knob-like projection with three setae .... A. filiformis



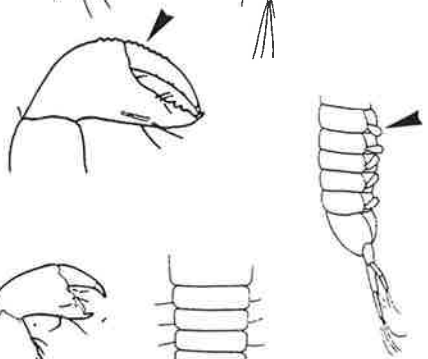
25. Body stout. Pleonites with distinct ventral processes. Chela with one inferior seta .... Leptognathia breviremis

Body slender. Pleonites without processes. Chela with two inferior setae 26



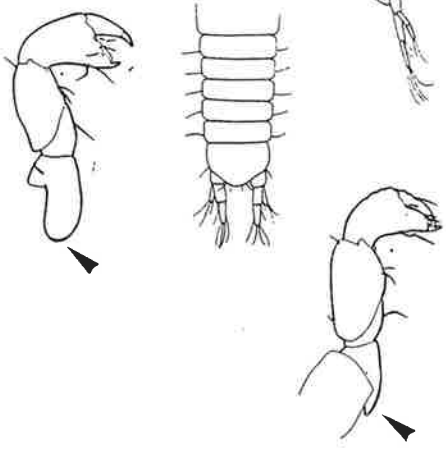
26. Uropod exopod 2-articled 27

Uropod exopod 1-articled 28



27. Superior margin of cheliped dactylus serrate. Pleopods of female setiferous Akanthophoreus gracilis

Cheliped dactylus smooth. Pleopods of female without setae .... Haplocope angusta



28. Cheliped basis with large rounded posterior process. Pleon with angular epimera each with a long seta ... Leptognathiopsis attenuata

Cheliped basis with small angular posterior process. Pleonal epimera indistinct, with setae only on pleonite 5 ..... Subulella scotti

29. Pleopods absent in female. Male (7-articled antennule) with 2-articled uropod endopod and 1-articled exopod ... *P. forcipatus*

Pleopods present in female. Male with 3-articled uropod endopod and 2-articled exopod ..... *P. jonesi*

V. POTENTIAL ADDITIONS TO THE BRITISH SHALLOW-WATER LIST

Results from recent investigations and previous studies suggest that several more tanaidacean species may be found in British shallow-waters. Because of this potential, drawings of the following species are appended:

Typhlotanais proctagon Tattersall, 1904. Originally recorded on the Irish slope at depths of 364-586m by Tattersall (1904, 1905), recent records extend its distribution from the southern Bay of Biscay to the North Feni Ridge at depths 480-1400m. It is distinguished from T. aequiremis by its more slender uropods and large spine on the merus of pereopods 2-3.

Typhlotanais tenuimanus (Lilljeborg, 1864). Previously known from the Norwegian coast at 92-915m, recent records are from the Hebridean Slope to the approaches to the Straits of Gibraltar at depths 610-1180m. Superficially similar to T. microcheles, this species has almost square pereonites 2-4, no slender spines on the merus and carpus of pereopods 4-6, and has a prominent ventral meral spine on pereopods 2-3.

Typhlotanais variabilis Hansen, 1913. Known from the 'cold' Norwegian Sea area at 160-1394m, recent records attributable to this species are from North Feni Ridge to the southern Bay of Biscay, at depths of 463-2175m. The body shape is characteristic, as are the cuticular 'ridges' on the pereonites, and the uropod exopod which is as long as the endopod.

Collettea cylindrata (G.O. Sars, 1882). An apparently cosmopolitan and eurybathic species, the most relevant previous records are from the Norwegian coast; recent records include some from the West-European slope at depths as shallow as 350m.

Tanaella unguicillata Norman & Stebbing, 1886. Originally described from a specimen collected by H.M.S. 'Porcupine' from near the Great Sole Bank at a depth of 176m, recent records are from the Hebridean Slope to the southern Bay of Biscay at 1080-2246m. It is distinguished from the similar T. ochracea (which is abyssal in distribution) by its conical pleotelson and diastema on the cheliped fixed finger.

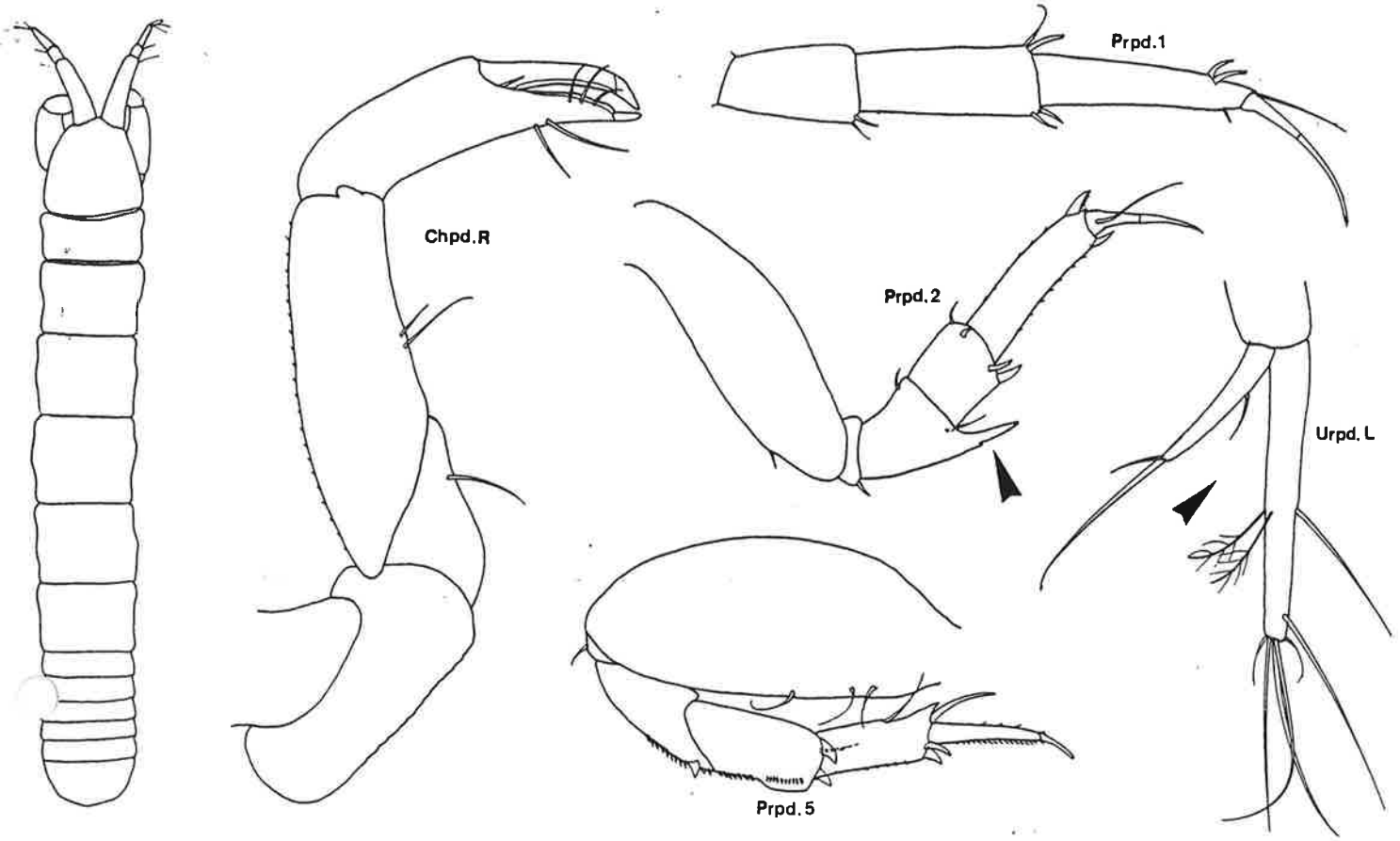
Leptognathia dentifera G.O. Sars, 1896. Previously known from the Norwegian coast at depths of 60-670m, there are also some dubious records from the Pacific Ocean at 4895-6225m. It is characterised by the spurs on the uropod bases. There is a group of other, similar species, including Leptognathia uncinata Hansen. It belongs in the Akanthophoreinae, possibly in the genus Akanthophoreus. It could be found in northern and Scottish waters.

Cryptocopoides arcticus (Hansen, 1886). Yet another apparently cosmopolitan and eurybathic species, recent records include some from the West-European slope at depths as shallow as 862m. It might be found in at shallower depths in northern British waters.

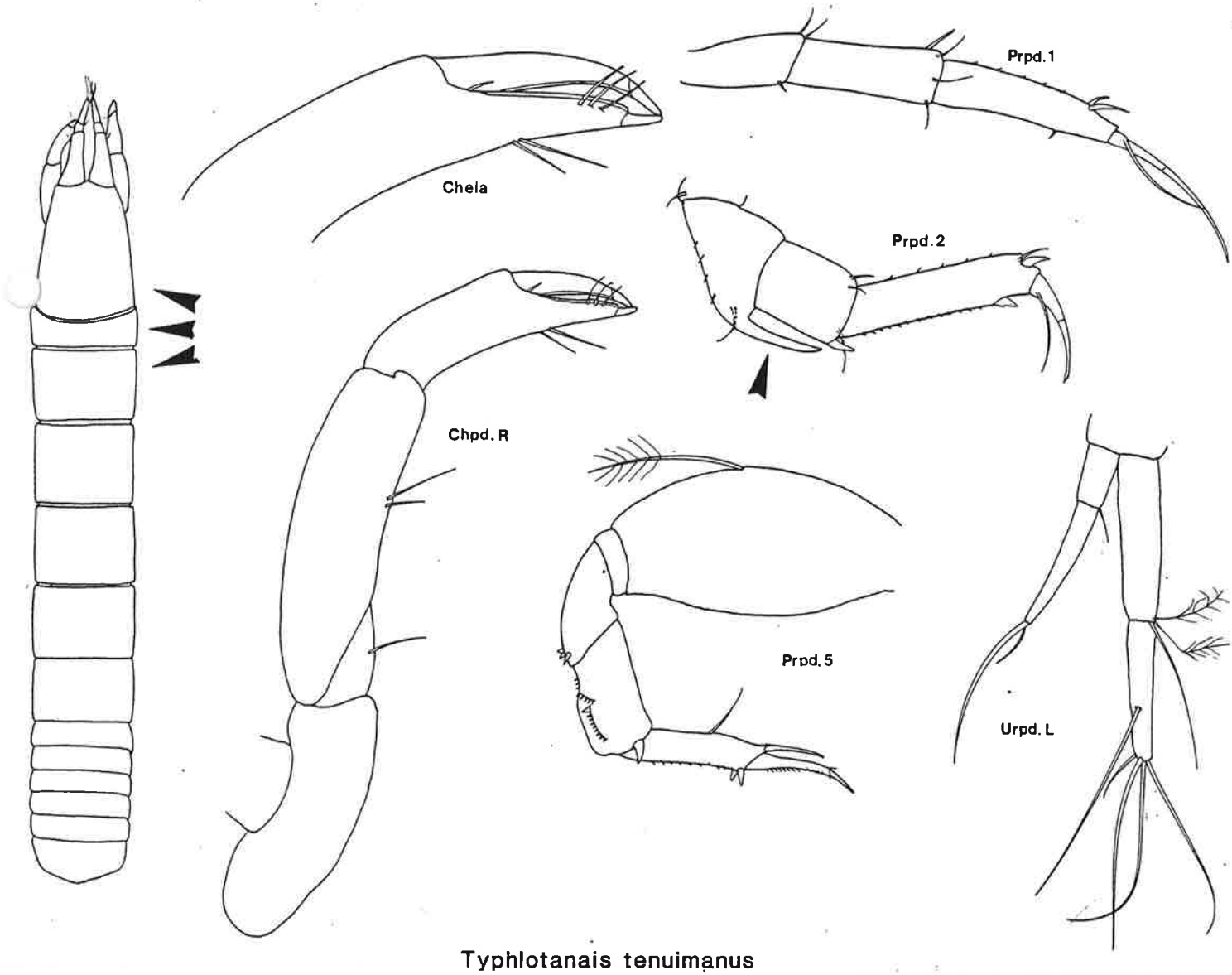
Cryptocope abbreviata (G.O. Sars, 1868). Known previously from the Danish and Norwegian coasts at 60-1250m, there are two recent records from the Hebridean Slope at 1028-1101m. It might be found in deep Scottish sea-lochs.

Pseudotanais (Pseudotanais) mediterraneus G.O. Sars, 1882. Recorded from the Mediterranean at 36-54m, and recently found in French waters off Brittany at 110m. A Lusitanian species (?) which may turn up in south-western British waters. The combination of eyes, presence of pleopods, completely fused maxilliped endites and spiniform mandible molar processes distinguish this taxon from the other two British species.

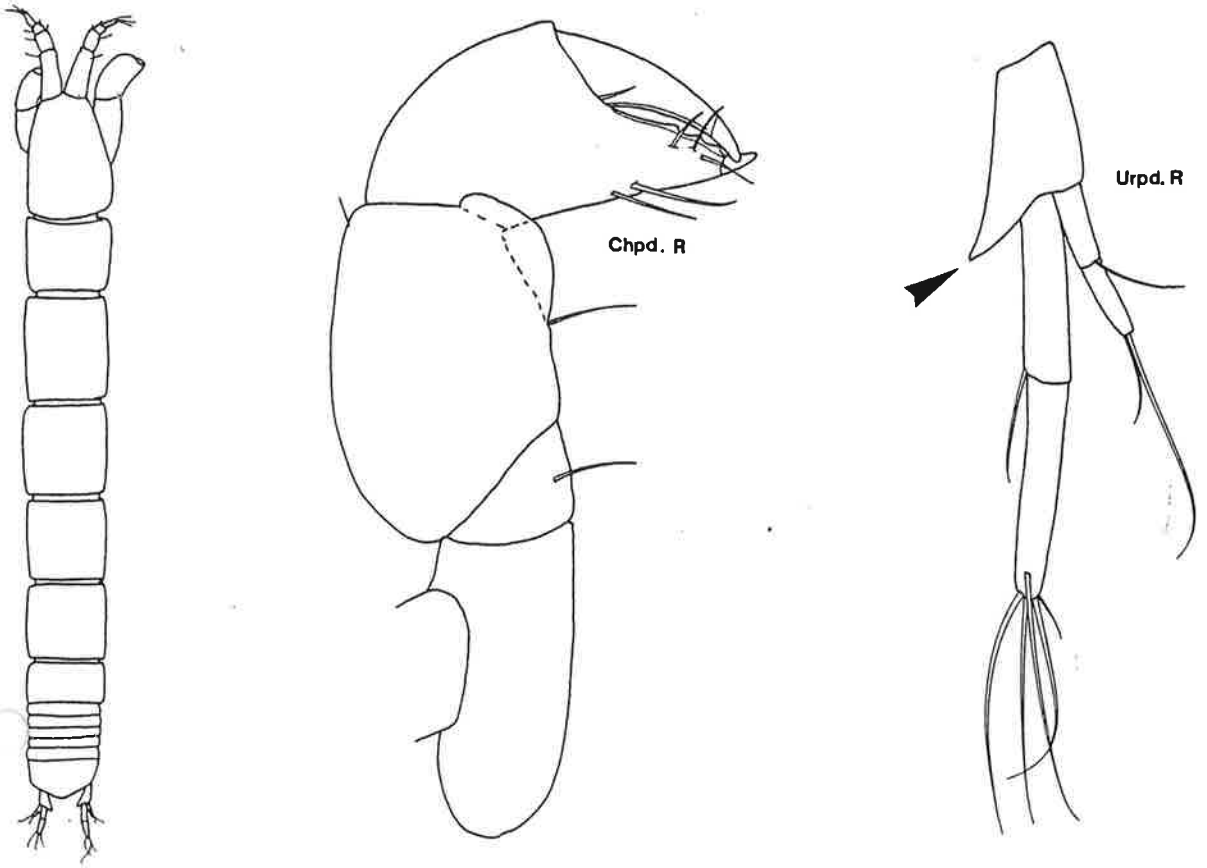
Pseudotanais (Akinthotanais) similis Sieg, 1977. Since the original description was based on material collected off the Brittany coast at 20m, it could be the first Akinthotanais species to be recorded in British waters, most likely in the south-west. This subgenus is distinguished by the simple inferior spine on the carpus of pereopods 2-6 - in the subgenus Pseudotanais it is 'blade' or 'leaf-like'.



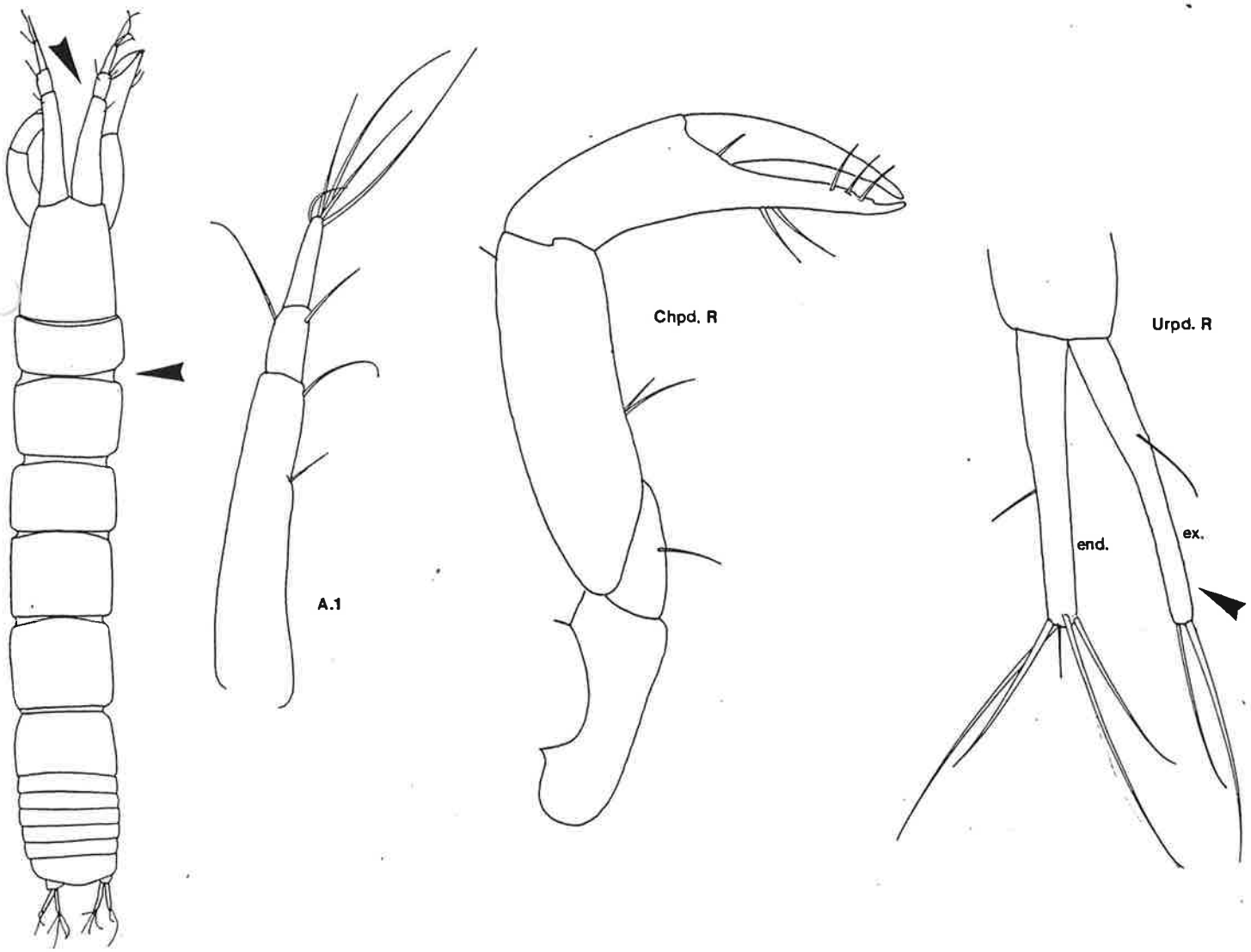
Typhlotanais proctagon



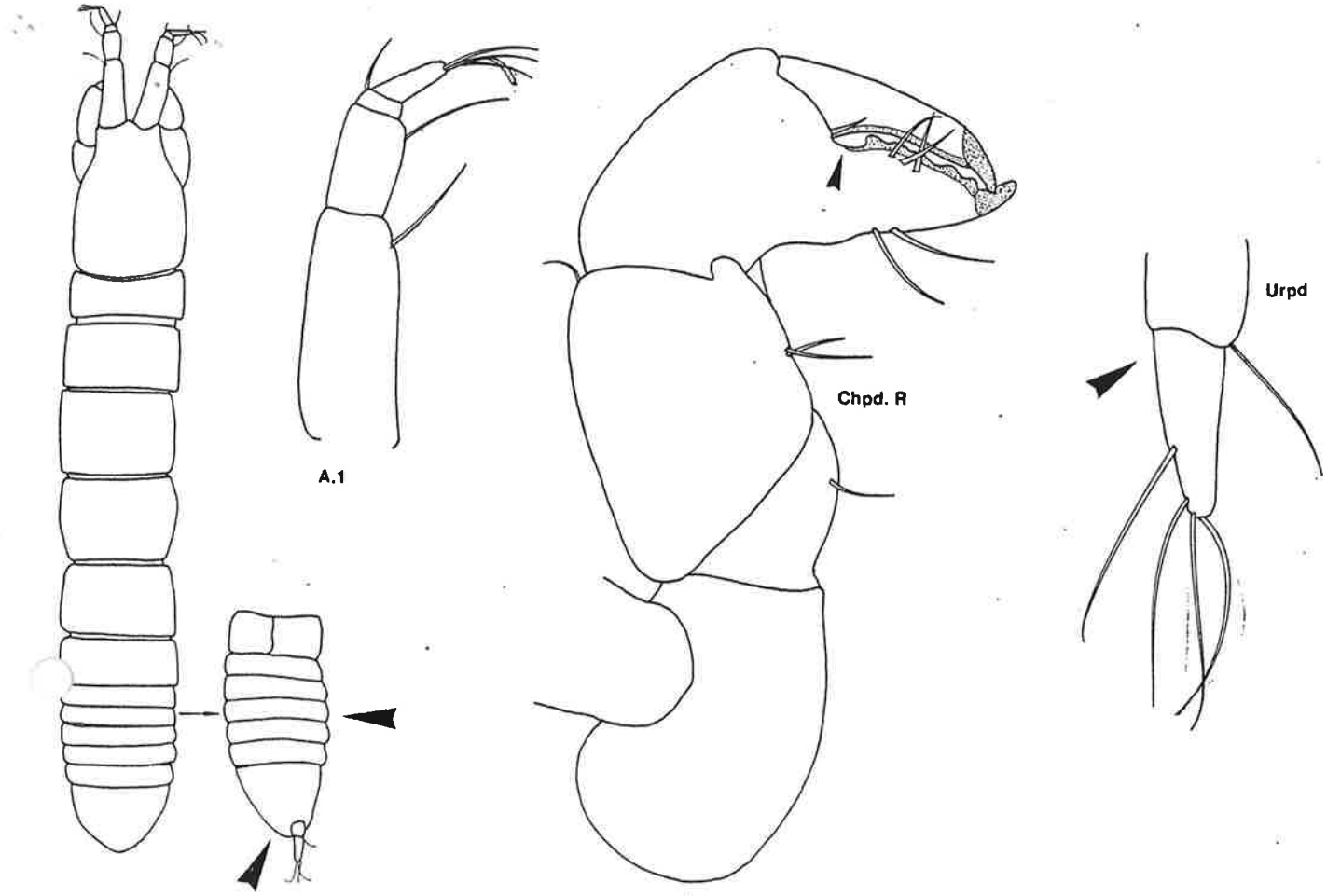
Typhlotanais tenuimanus



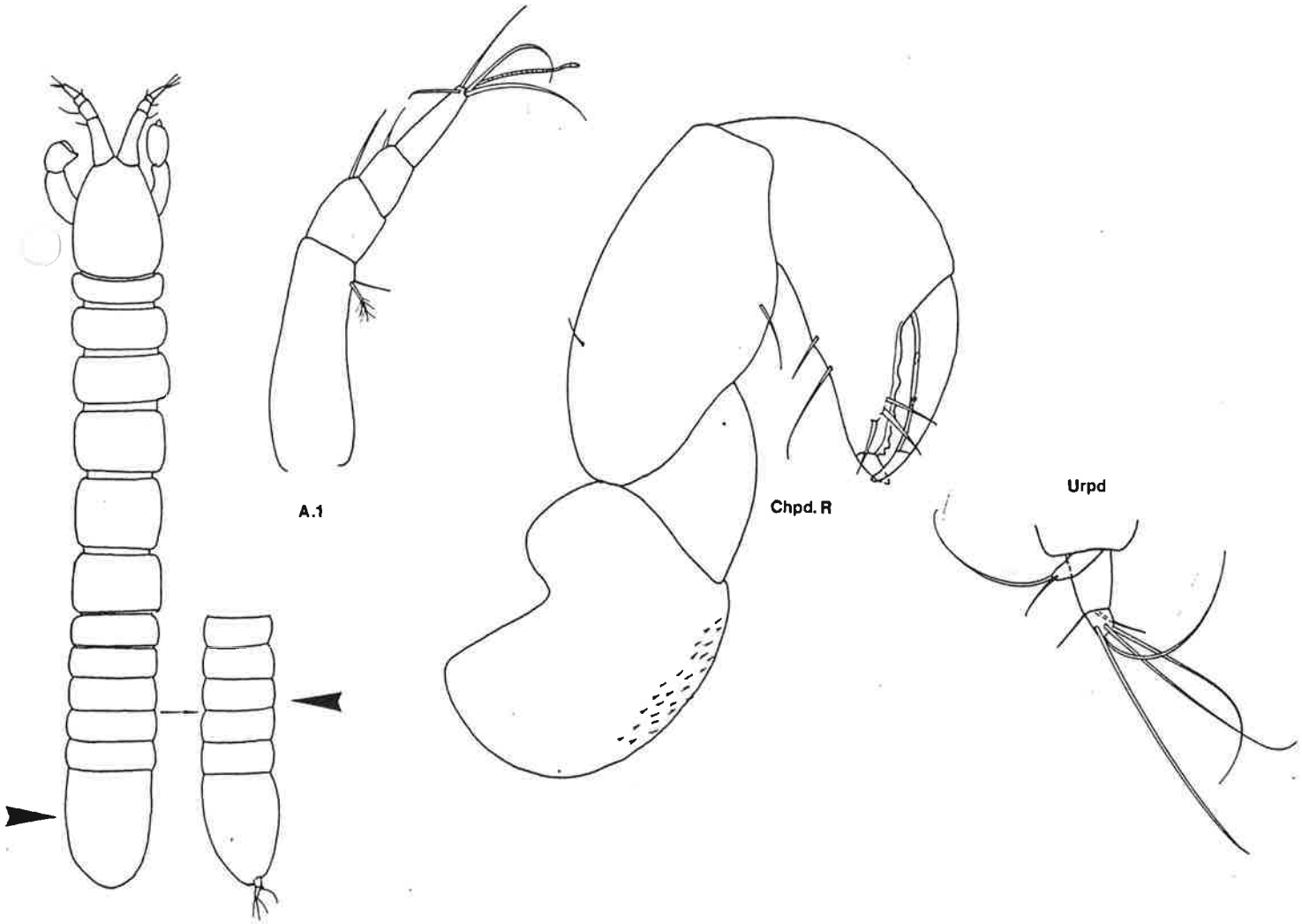
Leptognathia dentifera



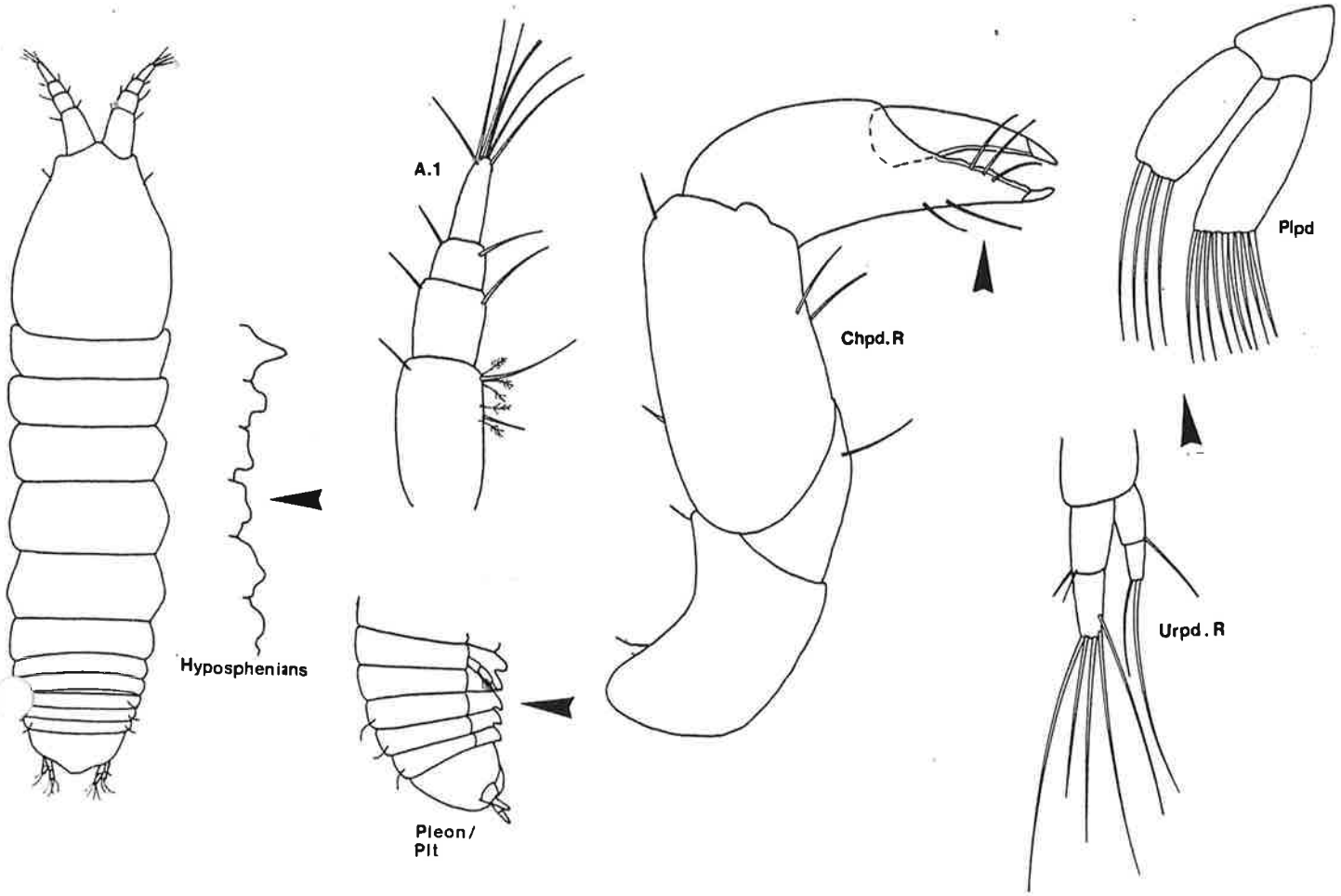
Typhlotanais variabilis



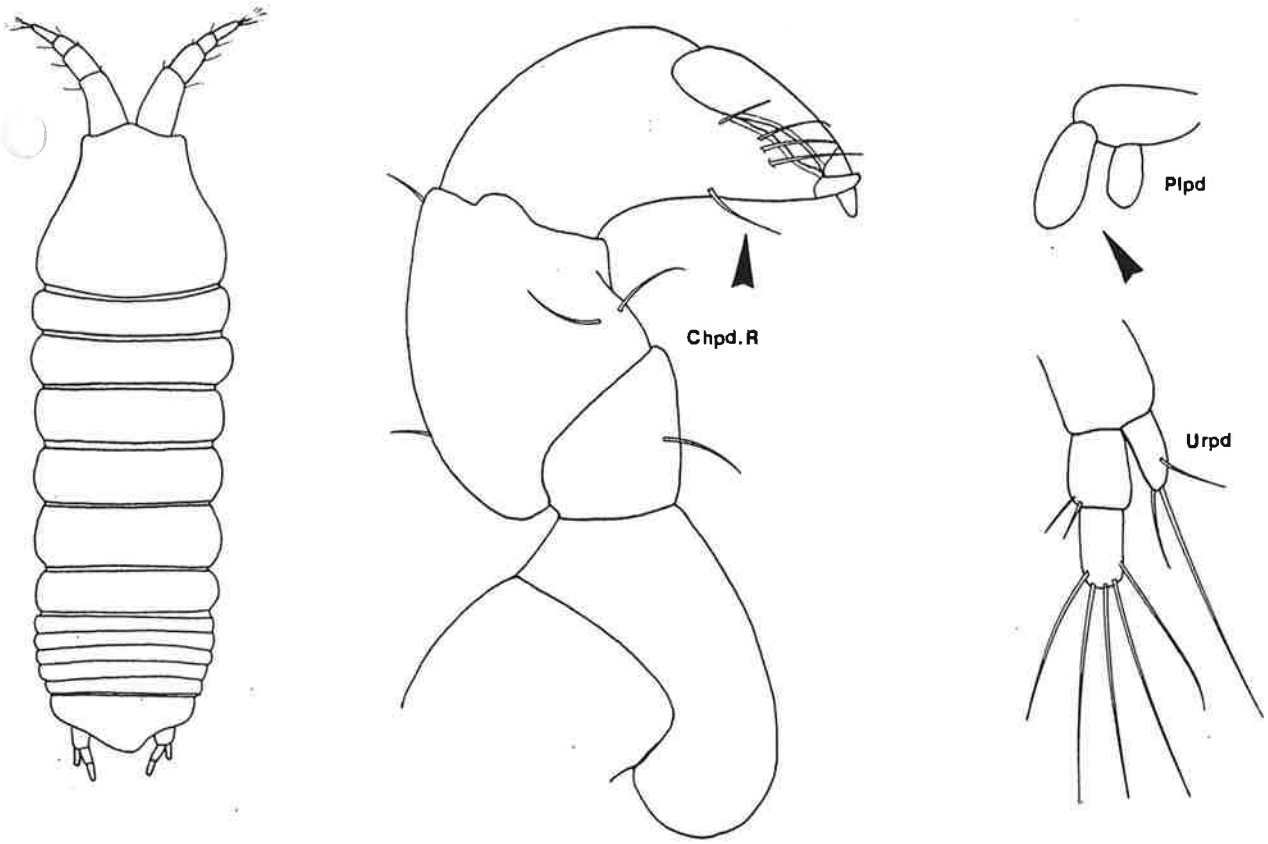
Tanaella unguicillata



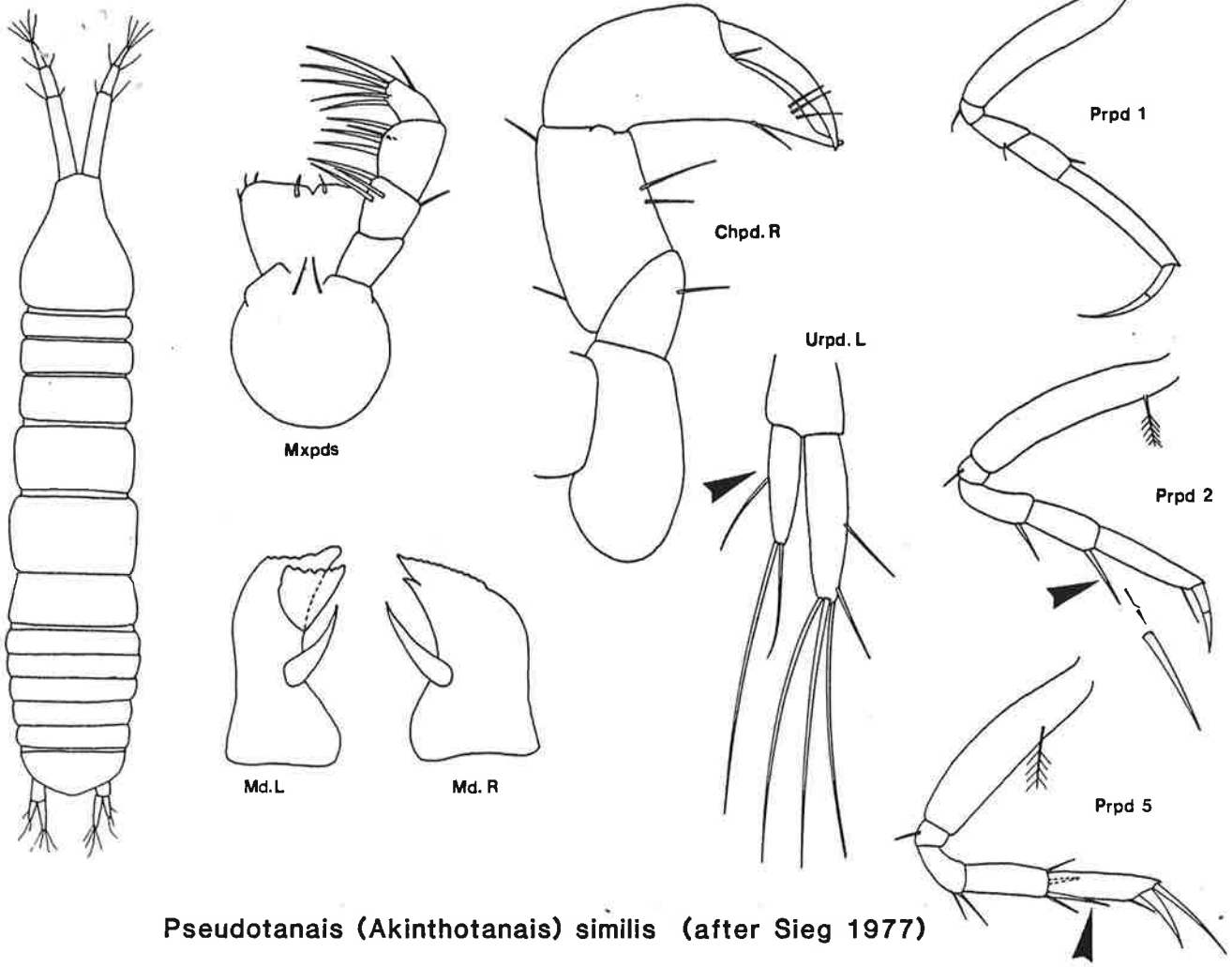
Collettea cylindrata (after Lang 1971)



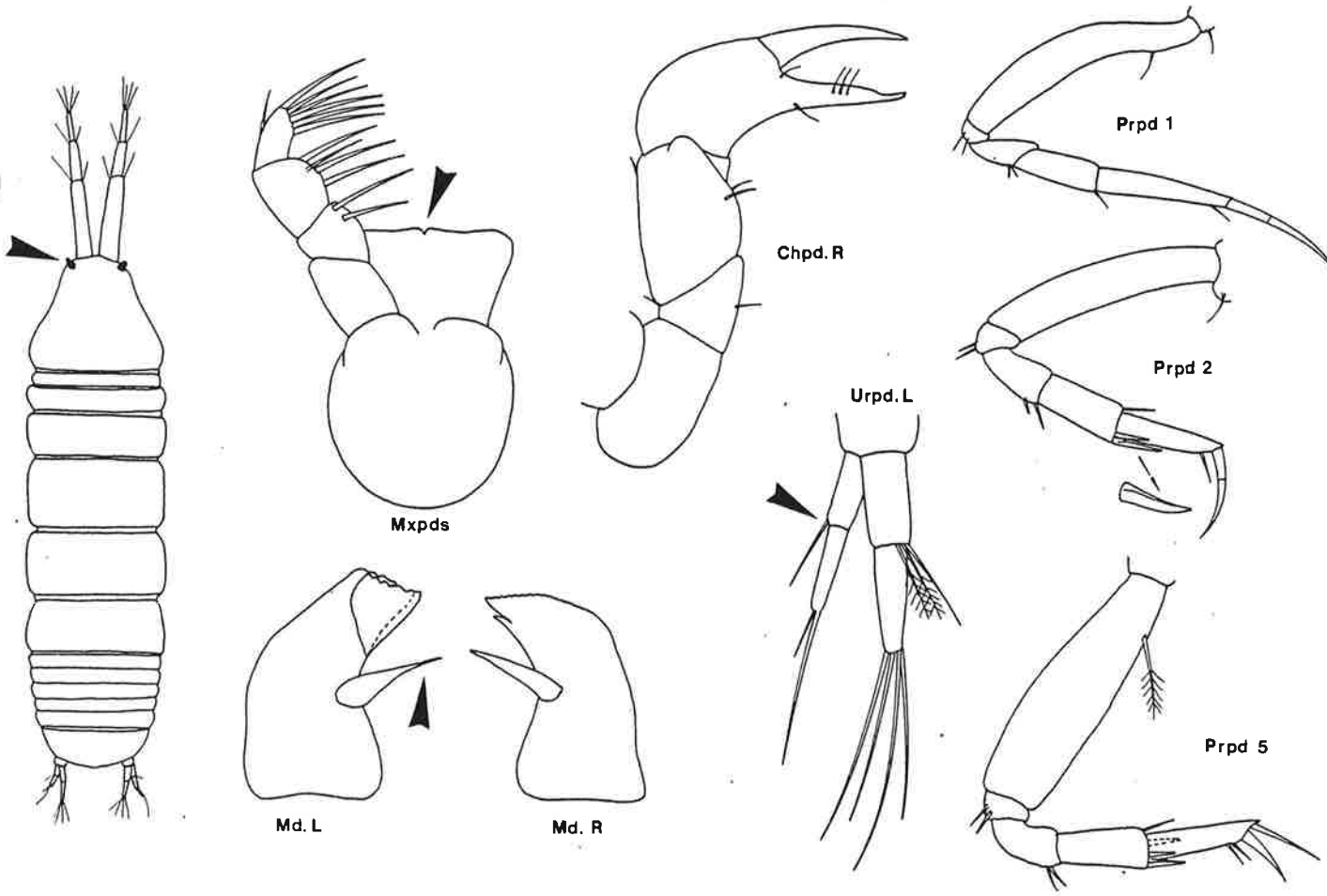
Cryptocopoides arcticus (after Hansen 1913 and Sieg 1977)



Cryptocope abbreviata (after Sieg 1977)



Pseudotanais (Akinthotanais) similis (after Sieg 1977)



Pseudotanais (Pseudotanais) mediterraneus (after Sieg 1977)