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22874 AIDGAP
AIDS TO IDENTIFICATION IN DIFFICULT GROUPS OF ANIMALS & PLANTS

SEA SPIDERS
A REVISED KEY TO THE ADULTS OF LITTORAL PYCNOGONIDA IN THE BRITISH ISLES

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ABSTRACT

A fully tested key to species of sea spiders found on, or just below, British seashores is provided. Identification is based on easily visible external features. The introduction includes sections on ecology, structure, reproduction, development and classification.

INTRODUCTION

The Pycnogonida are a group of marine arthropods, often referred to as sea spiders. Their position within the phylum Arthropoda is controversial but it is now considered that they should have class status. They occur commonly on rocky shores which provide a stable substrate for their principal foods—hydroids and bryozans—which are attached either directly to the rock surface or on algae fixed to it. Some species such as *Achelia echinata* are present on the shore throughout the year, whilst others such as *Nymphon gracile* move away from the littoral zone into deeper water during the winter months. Generally, members of the families Acheliidae and Nymphonidae occur higher up the shore than most of the others which only occur near the low water springs. Precise information regarding the diets of individual species is limited, but it is likely that the shape of the proboscis, coupled with the presence or absence of palps and chelifores may limit the range of food taken.

The present key has been confined to the adults because early larval stages are difficult to distinguish from one another; some are carried by the adults. Some later larval stages differ from the adults in the number of legs and composition of other appendages, such as chelifores, which they carry. The chelifores of juvenile *Achelia echinata* have functional chelae in contrast to the atrophied ones present in the adults and juvenile *Endeis* spp. have chelifores which are missing from adults.

Morphology

A "typical" pycnogonid is illustrated in Fig. 1. Most sea spiders have a narrow elongate body which is divided into a number of segments. At the anterior end, there is a head or cephalon with a proboscis, bearing a terminal mouth. On the dorsal side of the cephalon there is a tubercle bearing the eyes, one pair directed forwards and the other pair posteriorly. The first trunk segment is fused with the cephalon and the last segment has an abdomen or anal process, with a terminal anus. In most adults the trunk segmentation is visible externally but in the juveniles of some species this is not the case, and is only partly so in some adults.

The appendages of the adults consist of a pair of palps carrying sense organs for examination of substrate or food, chelifores which may have terminal functional pincers or chelae, used for food gathering or perhaps gripping the substrate, ovigerous legs (ovigers) sometimes confined to the male for carrying eggs released by the female but may also be used for grooming at other times, and four pairs of ambulatory (walking) or natatory (swimming) legs. Some juvenile stages have fewer than four pairs of legs and cannot be identified with

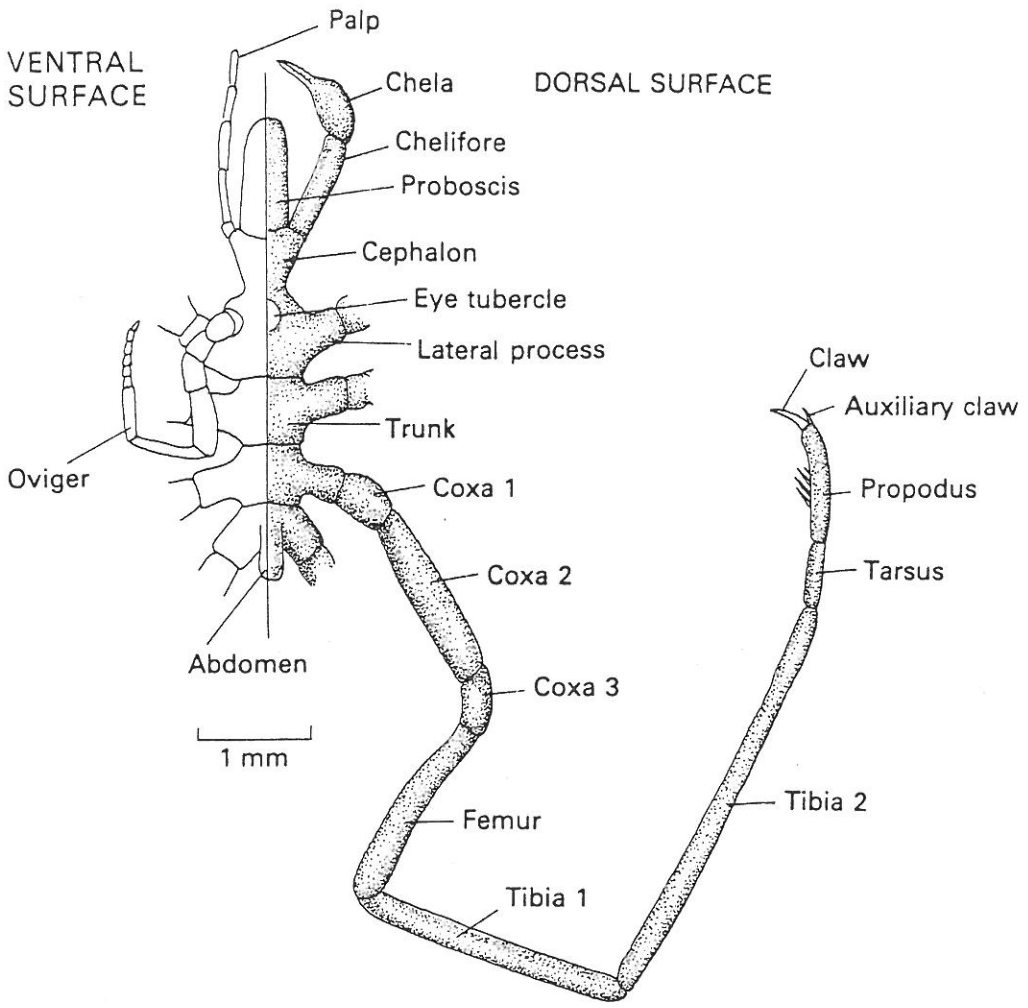


FIG. 1.
A typical Pycnogonid. The right-hand and left-hand sides of the drawing illustrate dorsal and ventral views respectively. As all the walking legs are similar, only one has been shown. The same approach has been used throughout the key.

this key. The adults of some species are without palps or chelifores, or both. In some species the ovigerous legs are present only in the males, whilst in others, although present in females, they are reduced. The terminal segments of the ovigerous legs may bear a number of serrated spines which help them to fulfil their secondary function of cleaning the surface of the body. The primary function is to help the males carry the eggs. Each body segment has a prominent lateral process with which the legs articulate. Each leg consists of three coxae, a femur, two tibiae, a tarsus, a propodus and a terminal claw, sometimes with auxiliary claws associated with it or the propodus.

The relative sizes of the legs in different species vary from being equal in length to the body, as in *Pycnogonum littorale* and species of the genus *Achelia*, to more than six times the body length in species of the genera *Nymphon, Endeis* and in the family Callipallenidae. The propodus is often curved and bears an armature of simple or serrated spines. Attached near the base of the terminal claw is a pair of auxiliary claws in all members of the Acheliidae, Ammotheidae, Nymphonidae, Endeidae and in some members of the Callipallenidae.

The ability to grip the substratum is important since pycnogonids have limited locomotory ability. In some, for example *Pycnogonum littorale*, the propodus, terminal claws and tarsal spines are embedded in the host for anchorage. Some species with longer legs, such as *Nymphon gracile, Callipallene brevirostris* and some members of the Anoplodactylidae, can swim.

Reproduction

Limited observations suggest that at fecundation (egg laying) the male climbs on the female and crawls over her head to lie beneath her, head to tail. As the egg masses are released by the female, the ovigers of the male (see Fig. 1) collect them and form them into balls. Fertilisation is believed to occur as the eggs are released—usually in Spring for most littoral species. Following hatching, the larvae undergo a series of moults and an increasing number of appendages are added during this metamorphosis—the earliest larva (a protonymphon form), will change to a four-legged form, then a six-legged and finally an eight-legged form. The eight-legged larvae are the first stage which may be identifiable with the present key, though it is intended primarily for use with adults.

During the breeding season, females can be identified readily by the presence of eggs in their femurs but, at other times of the year, some species are difficult to sex and may require the presence of both sexes so that the relative lengths of ovigers can be compared.

Collecting

Littoral pycnogonids can most readily be collected by scraping small seaweeds, hydroids, bryozoans and algal holdfasts from the rocks. These should be allowed to stand in bowls of sea water before sorting. Many of the pycnogonids will walk out as the oxygen content of the water falls, and others can be extracted by shaking the material into the water. After sorting, specimens should be narcotised with a few drops of ethyl acetate added to the water and then, after 10–15 minutes, placed in hot Bouins fixative. They can thus be preserved in an extended state and stored in 70% alcohol or mounted on slides with Canada balsam after dehydration with alcohol.

Taxonomy

Hedgpeth (1947) produced an outline classification of the pycnogonids. King and Crapp (1971), and King (1974), published keys to the species which occur in the littoral zone of the British Isles. Subsequently, Fry (1978) has analysed supergeneric relationships and has produced some controversial rearrangements. The present key combines his findings with those of Hedgpeth (1947). Bamber (1982) showed that *Nymphon rubrum* is a junior synonym of the variable species *Nymphon brevirostre*. Doubts still exist regarding the Callipallenidae in British waters but further studies are required before this problem can be solved. Hedgpeth (1948) was of the opinion that *Phoxichilidium tubulariae* is a variety of *P. femoratum* and a growing body of evidence currently supports this. Stock (1974) placed *P. virescens* into the genus *Anoplodactylus* since, in his opinion, it is closer to *A. angulatus* than to any *Phoxichilidium*.

List of Species

The classification used has been derived from King (1974), modified in parts after Fry (1978) and Bamber (1982).

Family Nymphonidae

Nymphon gracile

Nymphon brevirostre = (*Nymphon rubrum*)

Nymphon hirtum

Family Acheliidae

Achelia echinata

Achelia longipes

Achelia laevis
Achelia hispida
Achelia simplex

Family Ammotheidae

Phoxichilidium femoratum = *P. tubulariae*

Family Endeidae

Endeis spinosa = (*E. laevis*) (Renamed after Krapp 1975)
Endeis charbydaea = (*E. spinosa*) (Renamed after Krapp 1975)

Family Pycnogonidae

Pycnogonum littorale

Family Callipallenidae

Callipallene brevirostris
Callipallene emaciata
Callipallene phantoma

Family Anoplodactylidae

Anoplodactylus angulatus
Anoplodactylus pygmaeus
Anoplodactylus petiolatus
Anoplodactylus virescens = (*Phoxichilidium virescens*)

REFERENCES

Bamber, R. N. (1982). Variation in *Nymphon brevirostre* (Hodge), and the status of *N. rubrum* (Hodge) (Arthropoda: Pycnogonida). *Biological Journal of the Linnean Society* **17**: 275–288.

Bouvier, E. L. (1923). *Faune de France. 7 Pycnogonides*. Paris.

Carpenter, G. H. (1905). The marine fauna of the coast of Ireland, part 6. Pycnogonida. *Scientific Investigation of the Fisheries Board, Ireland*, **4**, 1–8.

Crothers, J. H. (ed.) (1966). Dale Fort Marine Fauna (2nd ed.). *Field Studies* **2** (*Suppl.*), 169 pp.

Dohrń, A. (1881). *Die Pantopoden des Golfes von Neapel und der angrenzendedn Meeresabaschnitte*. Eine Monographie. Leipzig. Fauna and Flora des Golfes von Neapel, herausg. con de Zoologischen Station zu Neapel 3 Bd. 4.

Fry, W. G. (1978). A classification within the pyconogonids. *Zoological Journal of the Linnean Society*, **63**: 35–58.

Giltay, L. (1934). Remarques sur le genre *Ammothea* Leach, et description d'une espece nouvelle de la Mer d'Irlands. *Bulletin Musee Histoire naturelle de Belge*, **10**: 1–6.

Hedgpeth, J. W. (1947). On the evolutionary significance of the Pycnogonida. *Smithsonian Miscellaneous Collections*, **106** (18): 1–53.

Hedgpeth, J. W. (1948). The Pycnogonida of the western North Atlantic and Caribbean. *Proceedings of the United States National Museum*, **97** (3216): 157–342.

King, P. E. and Crapp, G. B. (1971). Littoral pycnogonids of the British Isles. *Field Studies*, **3**: 455–480.

King, P. E. (1974). *British Sea Spiders*. Synopses of the British Fauna No. 5. Linnean Society. Academic Press. 67 pp.

Krapp, F. (1975). New records of *Endeis charybdaea* (Dohrn, 1881) (Pycnogonida) in the Atlantic and Mediterranean Seas. *Sarsia*, **59**: 85–94.

Stock, J. H. (1952). Revision of the European representative of the genus *Callipallene* Flynn. *Beaufortia*, **13**: 1–15.

Stock, J. H. (1974). Pycnogonida from the Continental shelf, slope and deep sea of the tropical Atlantic and East Pacific. Biological results of the University of Miami deep-sea expeditions. *Bulletin of Marine Science*, 24 (14): 957–1092.

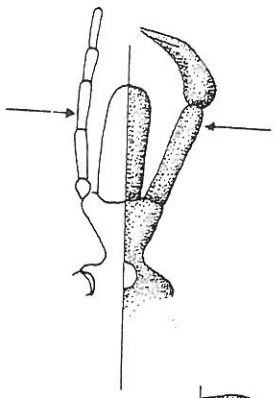
SECTION A

KEY TO FAMILIES OF BRITISH PYCNOGONIDA

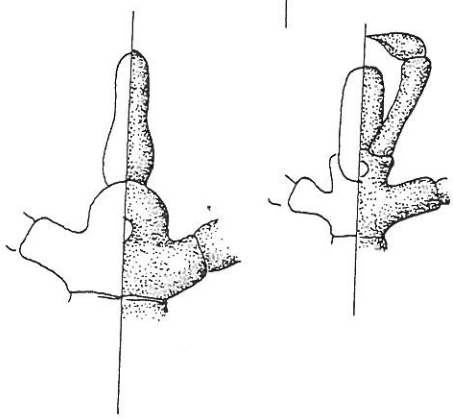
Note: Remember the key has been devised for use with adults. If the animal fails to key out, or if there are obvious discrepancies between the specimen and the descriptions given here, check to see whether it is a juvenile (see p. 495).

Chelifores (see Fig. 1) can be observed from the dorsal surface and palpi from the ventral surface.

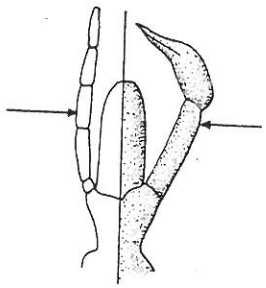
A1 Chelifores and palpi present A2



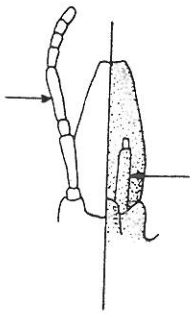
— Chelifores and palpi or palpi alone absent A3



A2 Palpi 5-segmented. Chelae of chelifores conspicuous, over reaching the proboscis . . **Family NYMPHONIDAE**
(Section B: page 500)

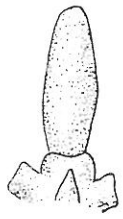


— Palpi 8–9 segmented. Chelae small, chelifores shorter than proboscis. . . . . **Family ACHELIIDAE**
(Section C: page 503)

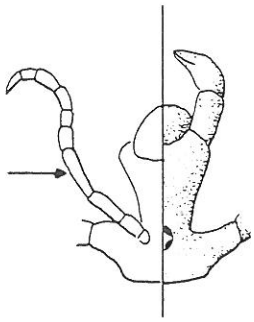


A3 Chelifores present, palpi lacking A4

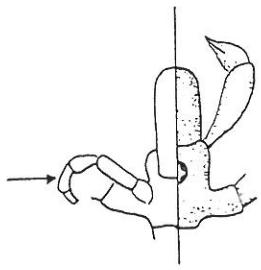
— Both chelifores and palpi lacking A5



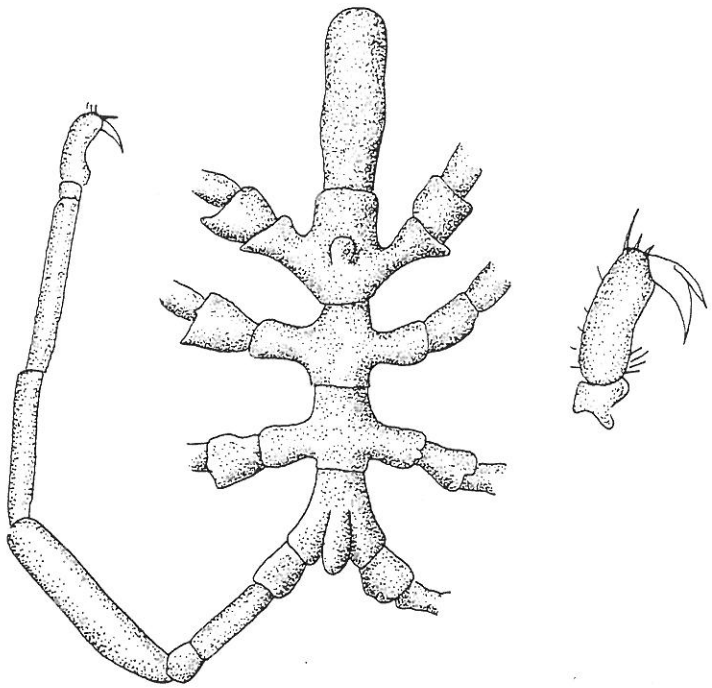
A4 Ovigerous legs 10-segmented in both sexes . . . . . **Family CALLIPALLENIDAE**
(Section G: page 510)



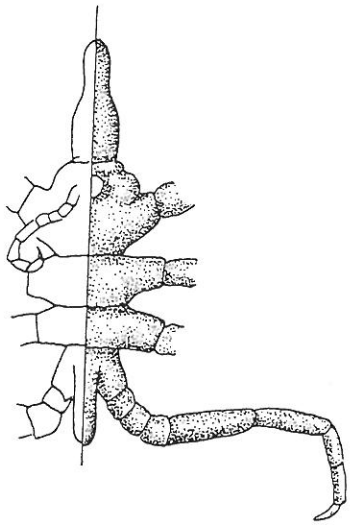
— Ovigerous legs 5–6 segmented in males; absent in females A6



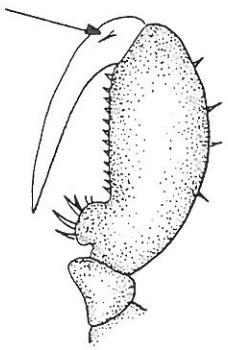
A5 Body slender, legs about twice as long as body. Auxiliary claws present (see Fig. 1). Ovigerous legs 7-segmented (present in male only) . . . . . **Family ENDEIDAE**
(Section E: page 508)



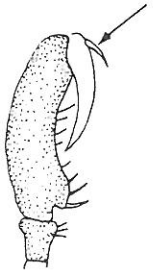
— Body stout, legs short, little longer than the body. Auxiliary claws absent. Ovigerous legs 9-jointed (present in males only) **Family PYCNOGONIDAE**
(Section F: page 509) *Pycnogonum littorale*



A6 Auxiliary claws laterally placed, small compared with the size of the main claw, or absent . . . . . **Family ANOPLODACTYLIDAE**
(Section H: page 513)



— Auxiliary claws dorsally placed, large compared with the size of the main claw . . **Family AMMOTHEIDAE**
(Section D: page 507)

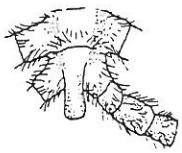


SECTION B

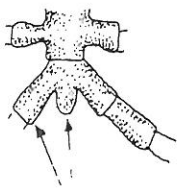
Family NYMPHONIDAE Wilson

Members of this family have a slender body with a relatively short and wide proboscis. Chelifores are two-jointed, having functional chelae with fingers possessing prominent teeth. Palps and ovigerous legs are present in both sexes. Several species have been observed swimming and are amongst the most active pycnogonids. There is considerable controversy regarding the validity of some species.

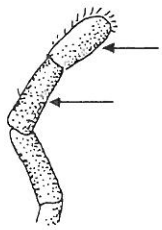
B1 Abdomen longer than the fourth pair of lateral processes. Body and legs covered thickly in hairs . . . . . ***Nymphon hirtum***



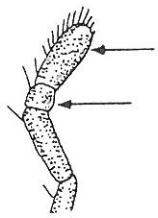
— Abdomen not longer than the fourth pair of lateral processes. Body bare, although the legs may have some spines B2



B2 Terminal and penultimate segments of the palps are equal in length . . . . . ***Nymphon gracile***



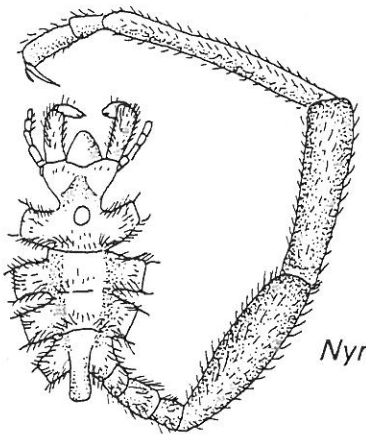
— Terminal segments of the palps are approximately twice as long as the subterminal segments . . . . . ***Nymphon brevirostre***



Confirmatory notes:—

Nymphon hirtum Fabricus 1780

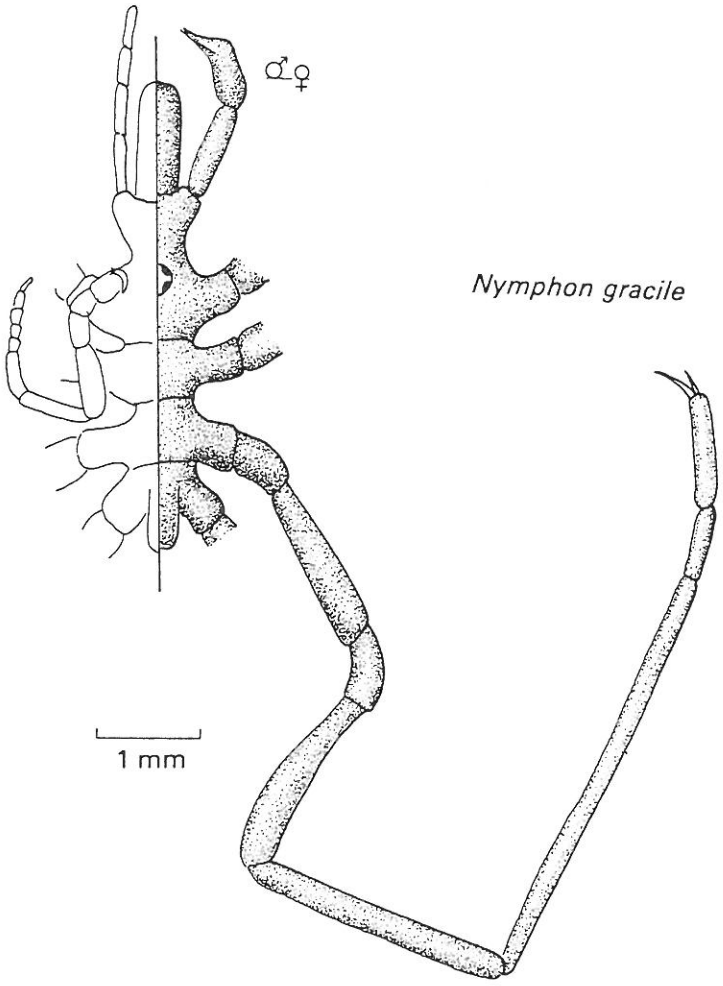
Characteristic of the Arctic and Sub-arctic, more frequently in the sublittoral zone. Length of body from tip of proboscis to abdomen 1 mm. Although usually found in the cold seas of the North Atlantic, Iceland, Greenland and Spitzbergen it sometimes reaches the northern parts of the British Isles and has been recorded in Shetland, Northumberland and Scotland.



Nymphon hirtum

Nymphon gracile Leach 1814

Slender, smooth body 4 mm long with elongate limbs, three or four times as long as the body. Proboscis elongate, twice as long as wide. Terminal and penultimate segments of

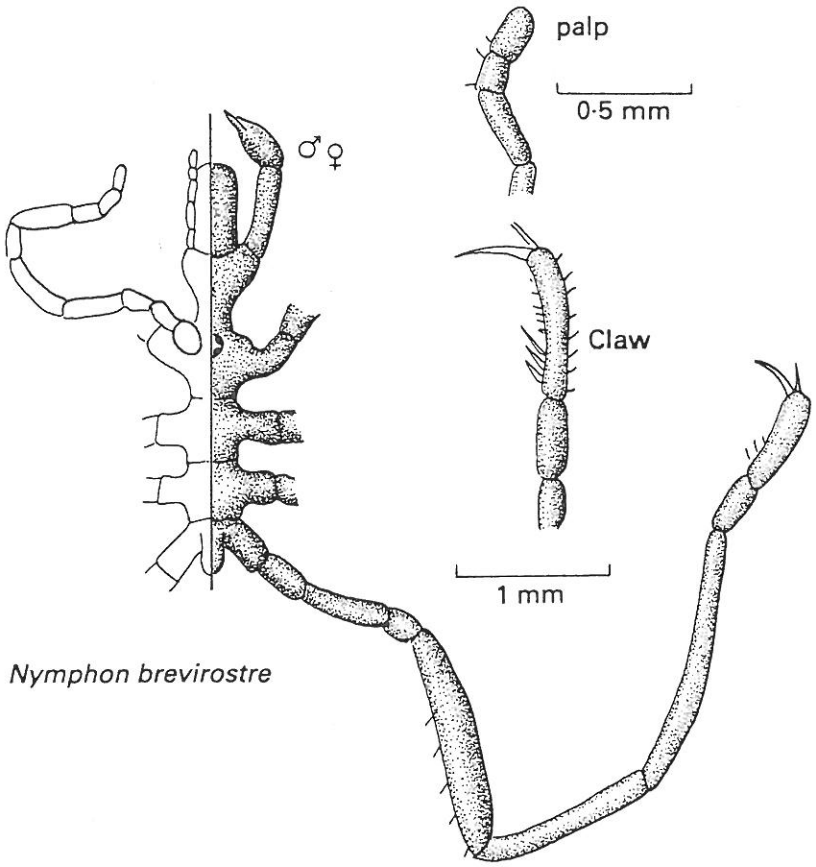


Nymphon gracile

the palps are equal in length. The propodus and tarsus are sub-equal in length and the propodus has a number of spines with three slightly longer ones half way along it. Ovigerous legs are prominent in both sexes and are used to clean the surface of the body. *N. gracile* is a shallow water species around most European Atlantic coasts from Norway to Morocco. Occurs in the littoral zone during the summer months.

Nymphon brevirostre Hodge 1863

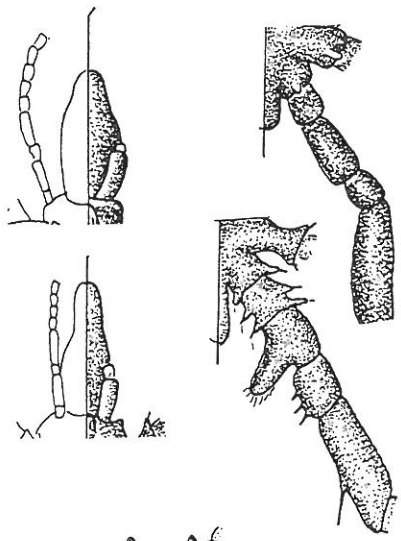
Body 2.5–3.0 mm long. Legs three and a half times as long as the body. Proboscis short and stout. Thoracic segments broader than long. Terminal segments of the palps are longer than the penultimate. Propodus is longer than the tarsus and is slightly bent with a series of spines consisting of a few short spines and three longer ones near its proximal end. Occurs from the Arctic to southern Brittany.



Nymphon brevirostre

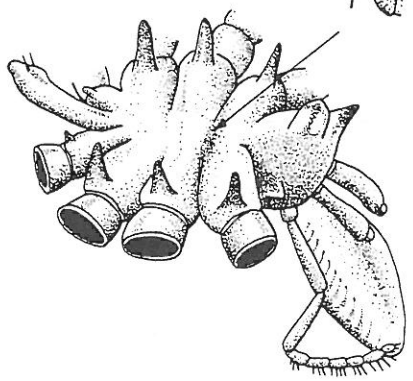
SECTION C
Family ACHELIIDAE

Achelia echinata *and* A. longipes *are clearly defined species, though views differ regarding the generic name of the latter.* A simplex *has only been recorded from the shore of the Isle of Man, Western Ireland and Millport (Giltay, 1934).* A. hispida *seems closely related to* A. longipes *and was described as a variety of that species by Dohrn (1881). A form resembling* A. hispida *was called* A. longipes *by Bouvier (1923). There are sufficient morphological differences however to suggest that they are distinct species. Immature forms of all species have fewer palp segments than the adults, have functional chelae on their chelifores and lack outwardly visible body segmentation. Adult* A. laevis *characteristically lack body segmentation in a manner similar to the juveniles.*

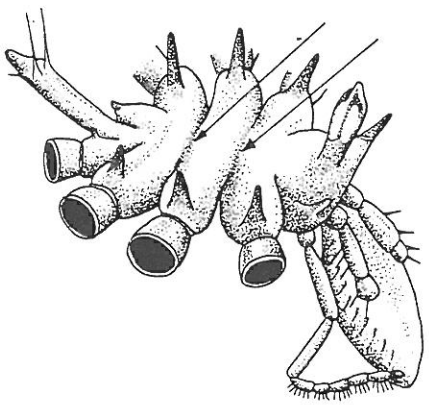


C1 Palps with nine segments. Coxal projections, bearing the genital openings, of the male are small .C2

— Palps with eight segments. Coxal projections prominent on the second coxae of the third and fourth pairs of legs in the male C3



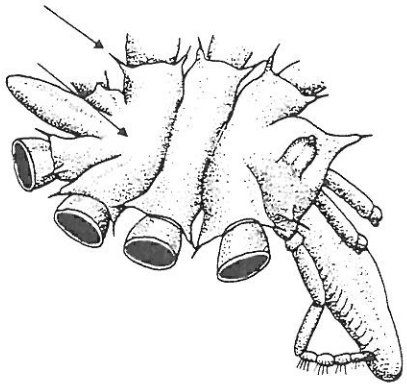
C2 Only one complete suture between the trunk segments. Chelifores at most half as long as the proboscis . . . . . ***Achelia longipes***



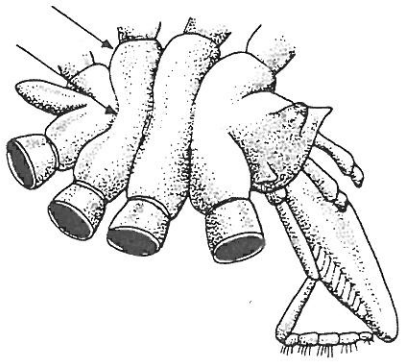
— Two sutures between the trunk segments. Chelifores more than half as long as the proboscis . . . . . .***Achelia hispida***

C3 No articulation or sutures visible on the trunk . . . . . ***Achelia laevis***

— Articulations or sutures separate at least two trunk segments C4



C4 No suture between third and fourth segments. Lateral processes and legs with spine-bearing projections . . . . . ***Achelia echinata***

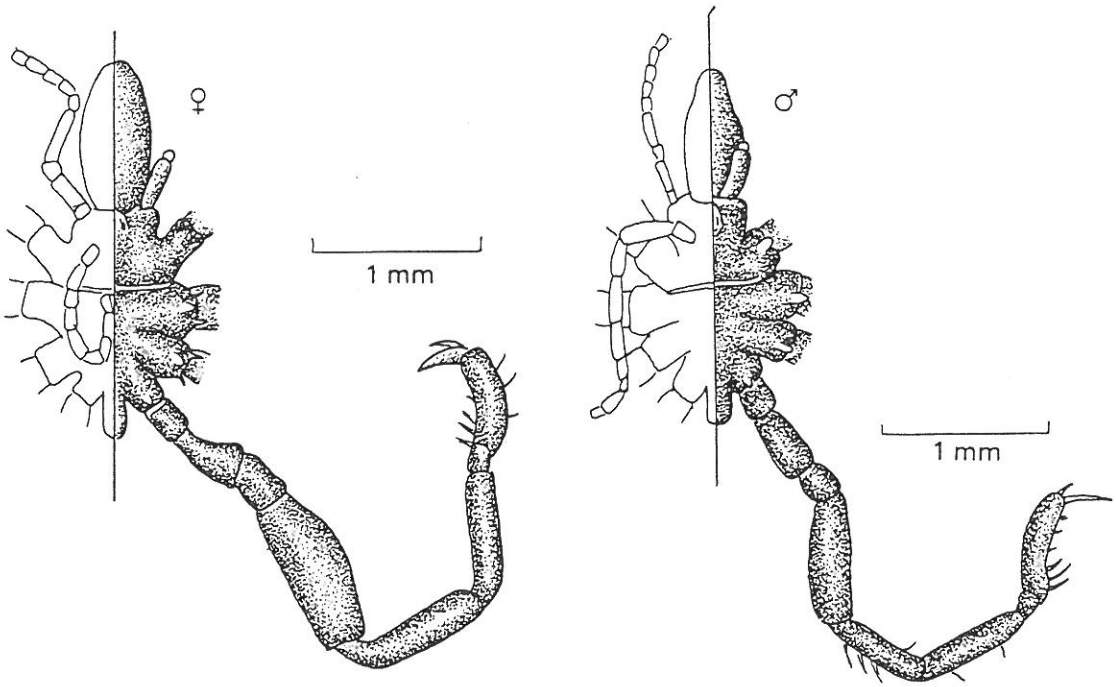


— A feebly distinct suture between third and fourth segments. No spine-bearing projections on lateral processes and legs . . . . ***Achelia simplex***

Confirmatory notes:—

Achelia longipes Hodge, 1864

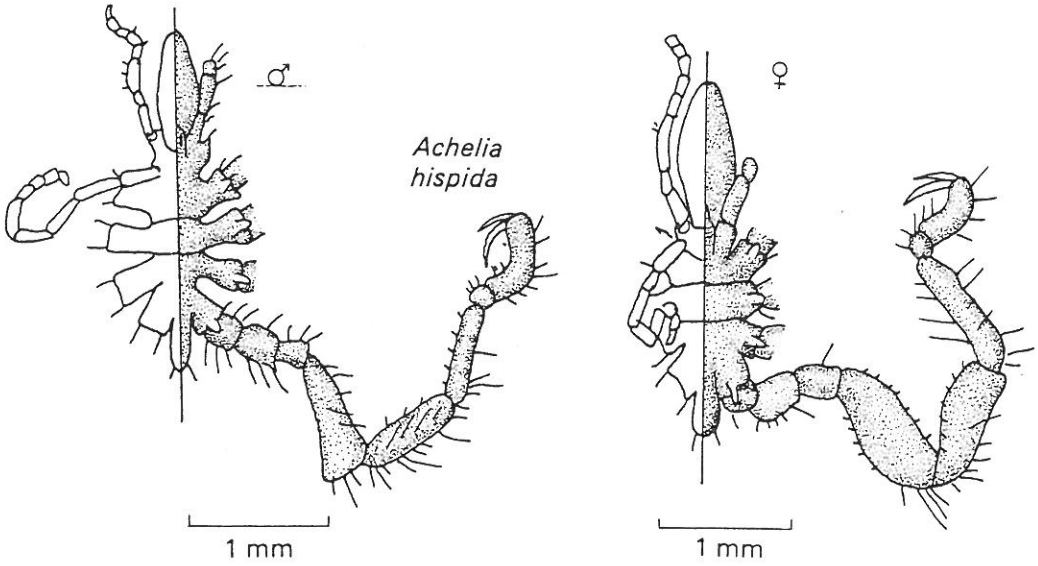
Body approximately 2 mm long and the legs 6 mm. Body smooth, not spiny, and the joint between segments 2 and 3 is frequently indistinct. There is a prominent pointed dorsal tubercle on each lateral projection. The proboscis has its widest point near the middle of its length and the three lips around the mouth, although beak-like, are somewhat blunter than those of *A. echinata*. Palps have nine segments. This species is thought to be more southern in its distribution than *A. echinata*—west coast of Ireland, Plymouth, South Wales, North Wales, East Coast of England.



Achelia longipes

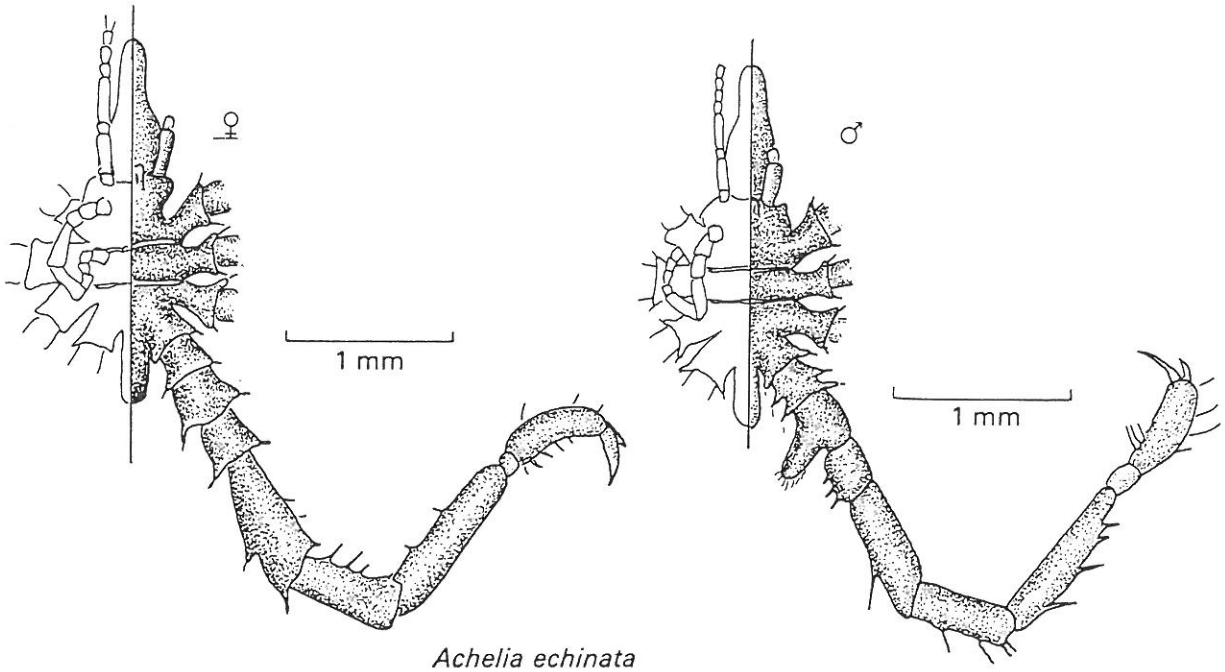
Achelia hispida Hodge, 1864

Body approximately 2.5 mm long. Similar to *A longipes* except that *A. hispida* has more spines. This is more obvious in the males rather than the females. It has two sutures visible on the trunk instead of one as in *A. longipes,* the spines at the front of the cephalon, abdomen and the chelifores are all relatively longer, the male projection and the dorsal protuberances on the processes are longer, the eye tubercle has a different shape and the trunk is longer. Probably a southern species since it has only been recorded from the west coast of Ireland, Pembrokeshire and Lundy Island.



Achelia echinata Hodge 1864

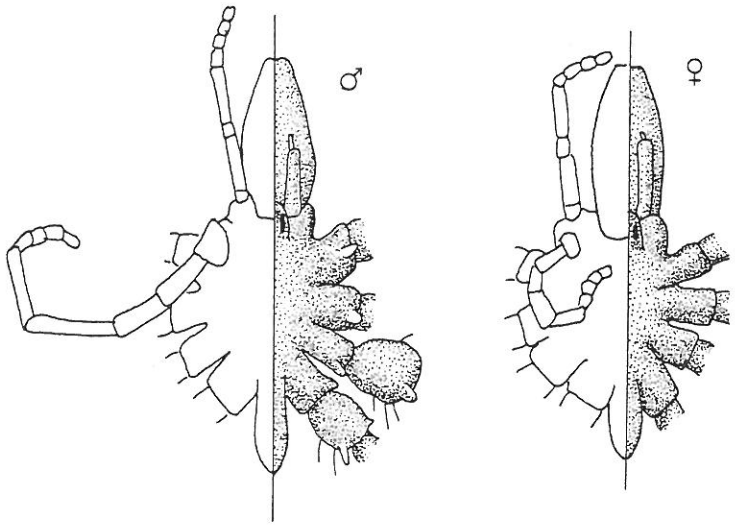
Body 2 mm long. Two distinct sutures visible externally. The proboscis is as long as the body and is broadest one-third of the distance from the proximal end, tapering to the mouth. Palps have eight segments. The legs have a number of spines with, characteristically, one pair on each of the lateral processes and two pairs on each first coxa. These are larger in the male which, in addition, has a prominent projection on the second coxae of the



Achelia echinata

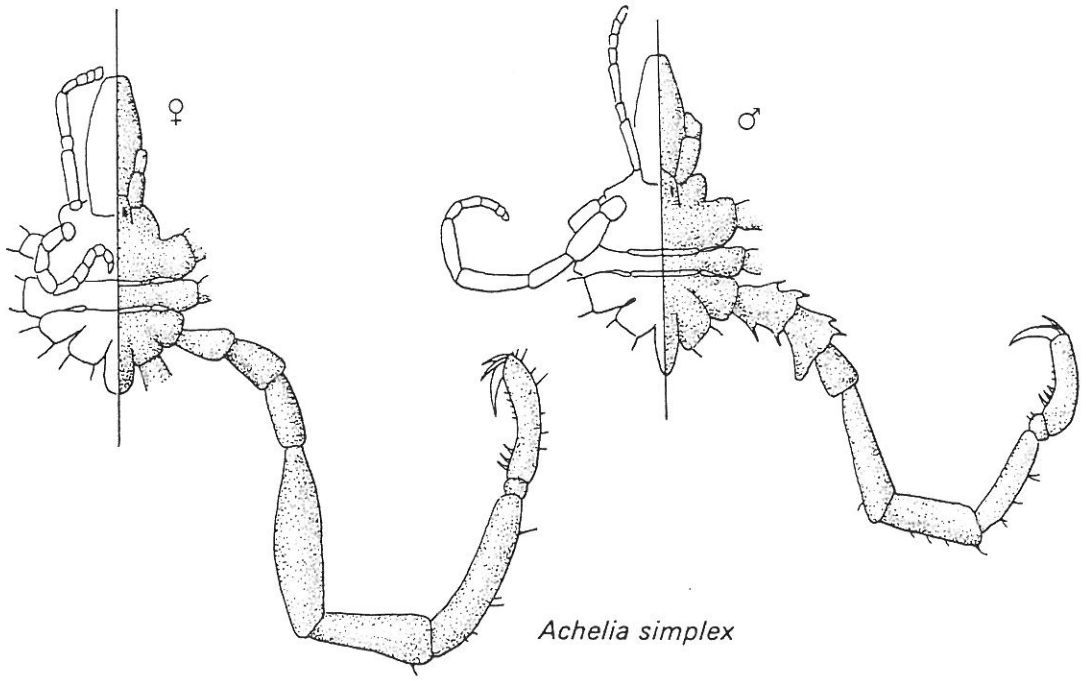
third and fourth pairs of legs. The ovigerous legs have nine segments and are present in both sexes though slightly smaller in the female. The ocular tubercle is sub-conical with a sharp terminal spine. Of wide occurrence around the British Isles.

Achelia laevis Hodge, 1854
Body 1.5 mm long. Slightly smaller than that of other members of the genus in British waters. No visible trunk segmentation. This species has not been recorded frequently but may have a distribution similar to that of *A. echinata*. Many more data are needed.



Achelia laevis

Achelia simplex (Giltay, 1934)
Body 1.0–1.25 mm long. Two sutures visible externally on the trunk between the cephalon and the second segment and a less distinct one between the third and fourth segments. No conspicuous protuberances on the lateral processes of the body segments. The ocular tubercle has a rounded summit. The palps have eight segments and the ovigers ten. Recorded at low water spring tide at Galway, Isle of Man and Millport.



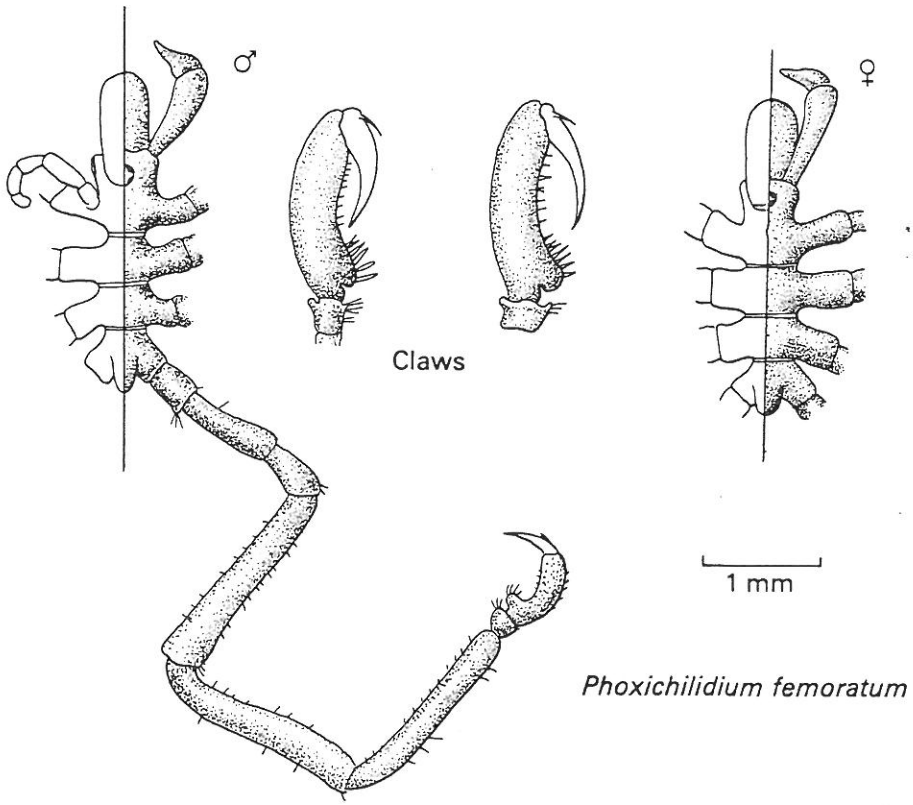
Achelia simplex

SECTION D

Family AMMOTHEIDAE

Originally this family contained the genus Achelia. *This has been placed subsequently in a family of its own and* Phoxichilidium femoratum, *which was previously in the Phoxichilidiidae, an unsatisfactory family because of variation in its members, placed in this one.*

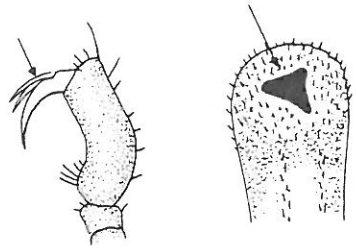
Phoxichilidium femoratum (Rathke, 1799)
Body length 2–3 mm, with legs almost three times as long. The proboscis is cylindrical and almost the same width through its length. Chelifores with chelae reaching beyond the tip of the proboscis. Ovigerous legs with five segments. Cement glands open from a series of depressions along the femur. The abdomen is short, being hardly as long as either of the hind pair of lateral processes. The heel of the propodus is armed with four large single teeth and a pair which are usually smaller. There are well developed, dorsally situated, auxiliary claws present. Widespread in the North Atlantic, from Greenland and Norway to France.



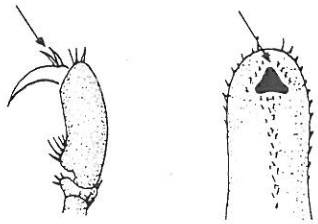
Phoxichilidium femoratum

SECTION E
Family ENDEIDAE

The body is elongate with long legs, each with a well-developed, arched propodus bearing pronounced heel and sole spines. There are well-developed auxiliary claws. In the adult there are no chelifores or palps, though the juvenile six-legged and early eight-legged forms have long, slender chelifores with a small chela at the tip.



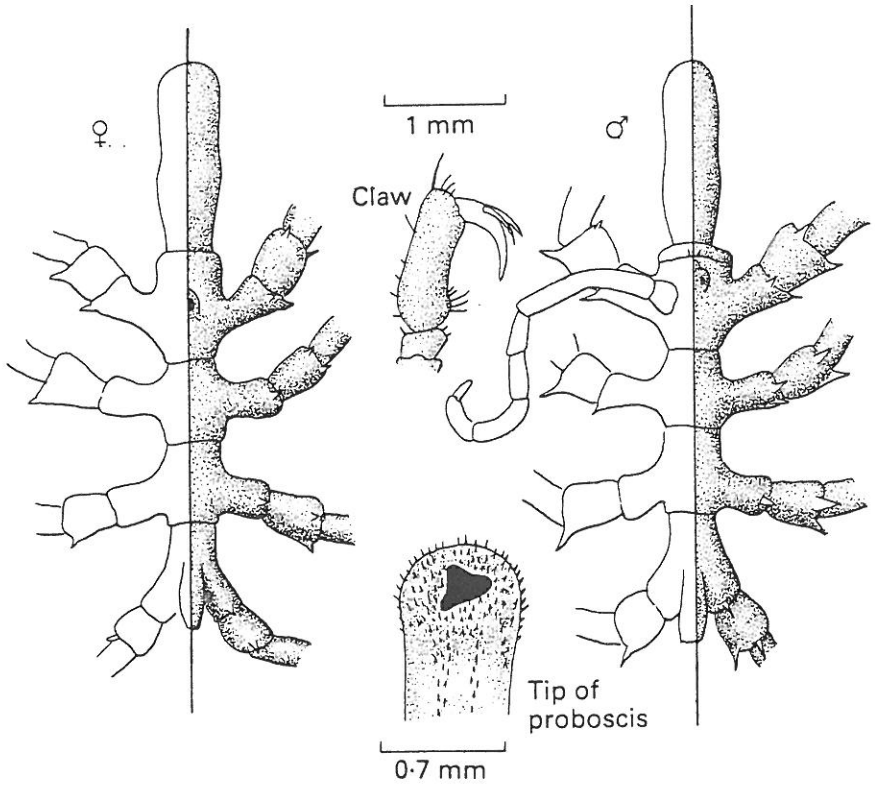
E1 Auxiliary claws at least half as long as main claws. Mouth surrounded by numerous spines ***Endeis charybdaea***



— Auxiliary claws less than half as long as main claws. Mouth with few spines around it . . ***Endeis spinosa***

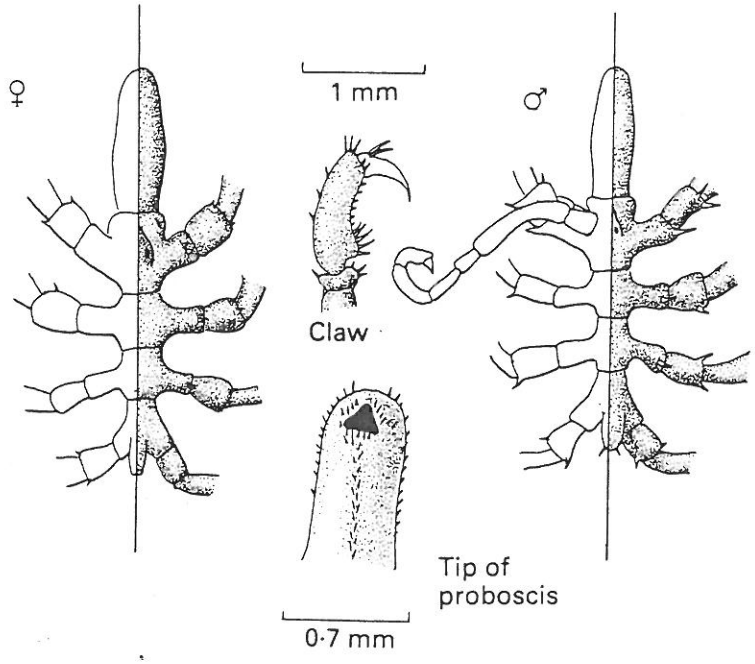
Confirmatory notes:—

Endeis charybdaea (Dohrn, 1881)
Body 5–6 mm long. Proximally, the proboscis is cylindrical and then widens distally producing a swollen region almost halfway along it. At its apex it is oval in cross-section and then tapers slightly before being further enlarged to form a bulbous tip. The mouth is surrounded by concentric rows of irregularly arranged spines. The male has 25–26 cement glands on the femur visible during the period of egg release by the females. Usually occurs in sublittoral zone below 13 m, mainly around S.W. coasts in Britain.



Endeis charybdaea

Endeis spinosa (Montagu, 1808)
Body 3 mm long. Smaller than *E. charybdaea*. The tip of the proboscis is slightly tapered and circular in cross-section, with fewer spines around the mouth. The auxiliary claws are relatively shorter compared with the length of the main claw. Male femurs have 19–20 cement gland ducts. Occurs in the littoral zone and to depths of 12 m in the sublittoral zone. Widespread around the British Isles.



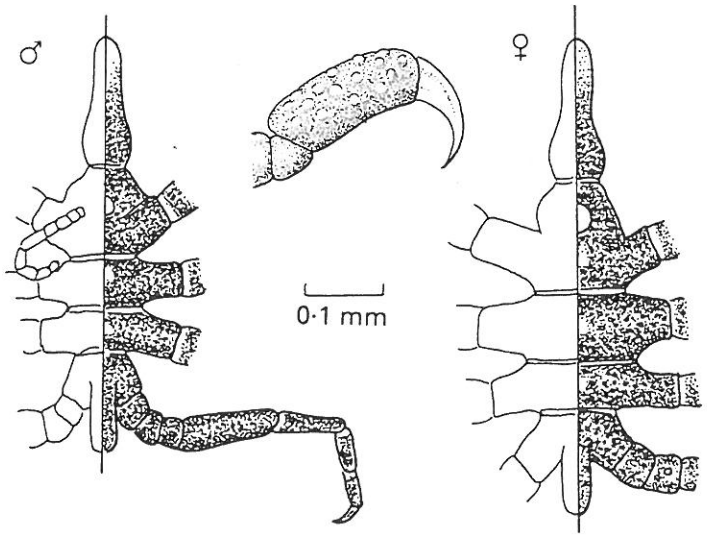
Endeis spinosa

SECTION F

Family PYCNOGONIDAE

Only one species of this family has been recorded from British waters.

Pycnogonum littorale (Ström, 1762)
Body 5 mm long. Sturdy body. No chelifores or palps in either the adults or juveniles, and the 9-segmented ovigerous legs are present only in the males. These appear at an early



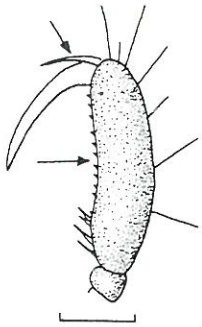
Pycnogonum littorale

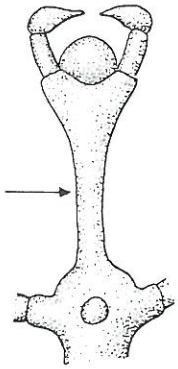
stage of development as buds and as growth proceeds they grow and the number of segments increases. The proboscis is conical and never longer than the trunk. The abdomen is truncate at its posterior end. The legs are slightly shorter than the body and terminate in a claw, but there are no auxiliary claws. The genital apertures are situated on the ventral surface of the second coxae of the hind legs of the male, but on the dorsal surface of the same coxae in females. Widespread around the British Isles.

SECTION G
Family CALLIPALLENIDAE

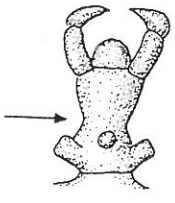
The identification of the European members of this family is very difficult. Stock (1952) reviewed the European representatives of the genus Callipallene, *the only British genus of this family. (There is an unconfirmed record of* Pallenopsis *sp. from Milford Haven (Crothers, 1966)). The characters Stock used were: the shape of the neck, the curvature and armature of the propodus, together with the length of the claw and auxiliary claws and the diameter between, together with the length of, the lateral processes. He divided the genus into three species—* Callipallene brevirostris, C. phantoma *and* C. emaciata. *However, British records are confused and there is some doubt as to which species occur in the British Isles.*

G1. Sole of propodus straight. Auxiliary claws are, at most, half as long as the principal claw, and usually less. "Neck" long and slender with the distal end distinctly set off from the rest . . . . . ***Callipallene phantoma***

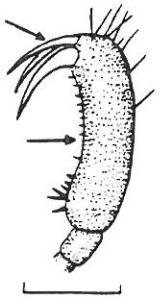




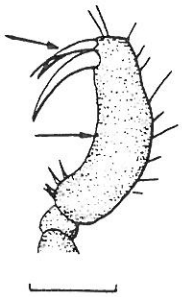
— Sole of propodus curved. Auxiliary claws at least half as long as principal claw and usually more. Neck short G2



G2 Sole of propodus slightly curved. Auxiliary claws more than two-thirds as long as the principal claw . . . . . ***Callipallene brevirostris***

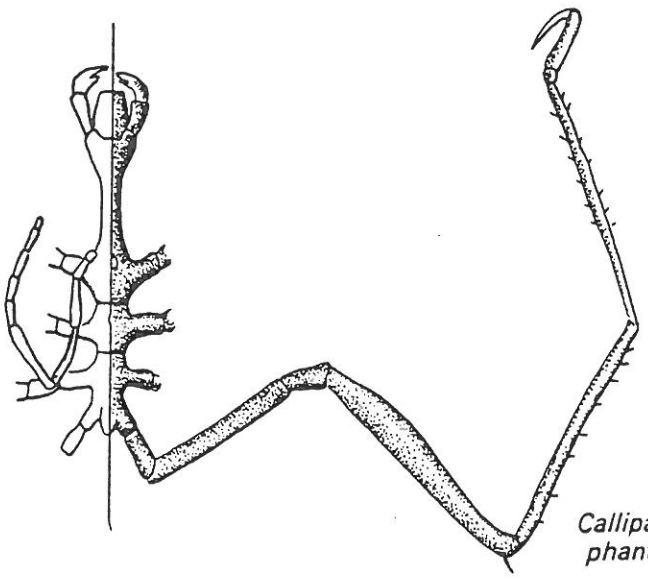


— Sole of propodus strongly curved. Auxiliary claws about half as long as the principal claw. . . ***Callipallene emaciata***



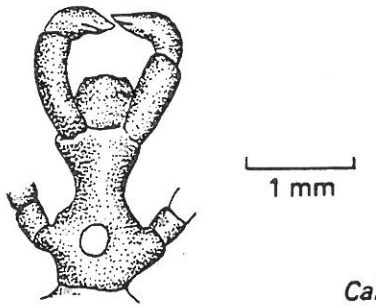
Confirmatory notes:—

Callipallene phantoma (Dohrn, 1881)
Body 2 mm long, a considerable proportion of this being taken up by the neck which is long and narrow but widens considerably at the anterior end. The legs are four times the length of the body. The proboscis is cylindrical in shape with a bluntly rounded distal end. Segment 2 of the trunk is considerably longer than wide. Segments 3 and 4 are fused and there is a short abdomen. The femur is shorter than the tibia on leg 2 but longer than the tibia on leg 1. The ovigerous legs have ten segments which are all short except segments 3, 4 and 5, but with segment 3 shorter than either segments 4 or 5. Widespread around Britain but usually from the sublittoral zone.



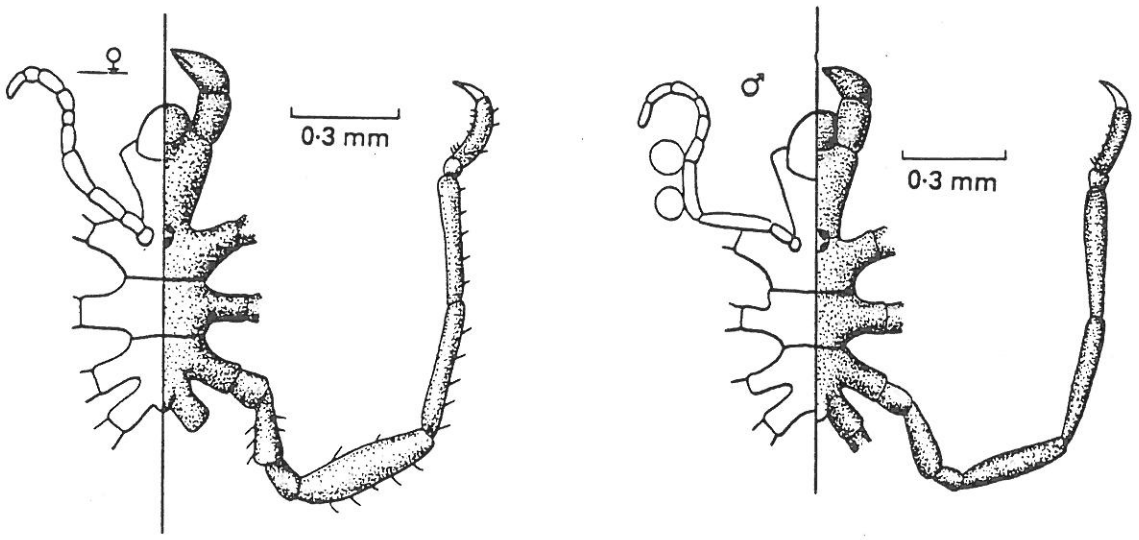
Callipallene phantoma

Callipallene emaciata (Dohrn, 1881)
This species is characterised by its auxiliary claws which are half as long as the principal ones, combined with a strongly curved propodal joint. Incomplete data on distribution, but mainly from southern coasts of Britain.



Callipallene emaciata

Callipallene brevirostris (Johnston, 1837)
Body 1–1.5 mm long; legs four times as long as body. The proboscis is short and rounded at the distal end. The cephalon is long and wider anteriorly. Segment 2 of the trunk is short and wide, segments 3 and 4 are fused and the abdomen is relatively small. The ovigerous legs have ten segments, all short except numbers 3 and 4. This appendage is longer in the male than the female. The femur of the latter sex is proportionately wider than that of the male. Essentially sublittoral but occurs occasionally in the littoral zone. Widespread around Britain.

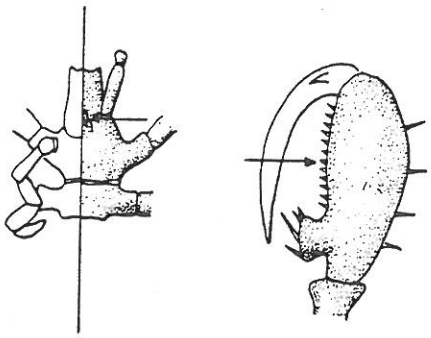


Callipallene brevirostris

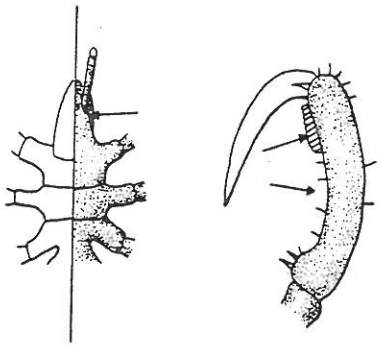
SECTION H

Family ANOPLODACTYLIDAE

H1 Eye tubercle not projecting forwards beyond the cephalon. No dorsal protuberances on the lateral processes. Propodus without a cutting edge—the lamella. Ovigerous legs with five or six segments H2

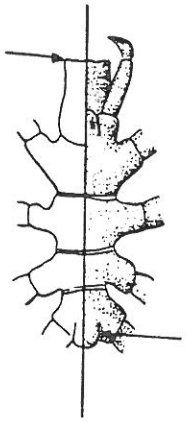


— Eye tubercle projects beyond the cephalon. Protuberances present on the lateral processes. Propodus with a cutting lamella. Ovigerous legs with sex segments H3

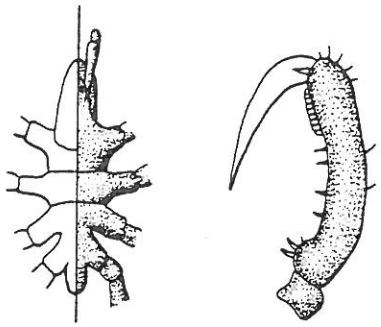


H2 Ovigerous legs with five segments. Proboscis straight at the end with slight angles at the corners. Abdomen slightly longer than the fourth pair of lateral processes. . ***Anoplodactylus virescens***

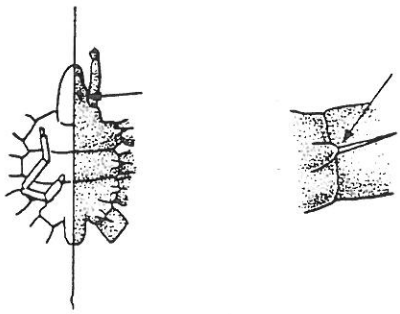
— Ovigerous legs with six segments. Proboscis with conspicuous angles at the corners. Abdomen more than twice the length of the lateral processes of the last trunk segment ***Anoplodactylus angulatus***



H3 Anterior part of the cephalon long and narrow, overhanging the posterior part of the proboscis. Auxiliary claws small and laterally positioned. Protuberances on the lateral processes without a spine at the apex. Cutting lamellae of the propodus short, preceded by 4–6 small teeth . . . . . ***Anoplodactylus petiolatus***

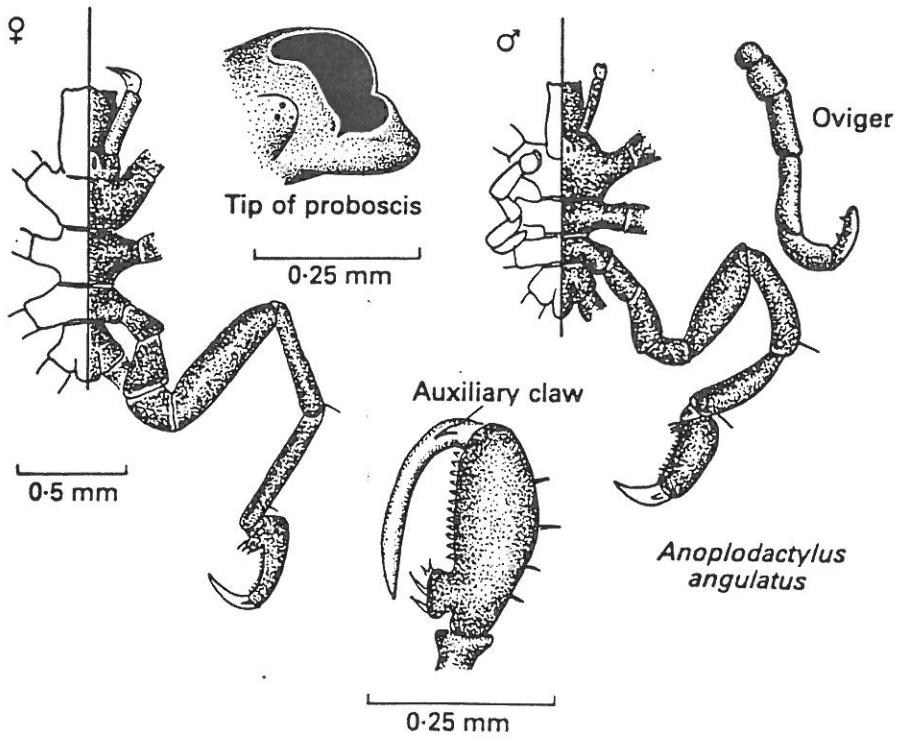


— Cephalon short and wide; does not overhang the proboscis. Auxiliary claws absent. Protuberances on lateral processes with spine at the apex. Cutting lamellae of the propodus long, preceded by 1 or 2 small teeth . . ***Anoplodactylus pygmaeus***



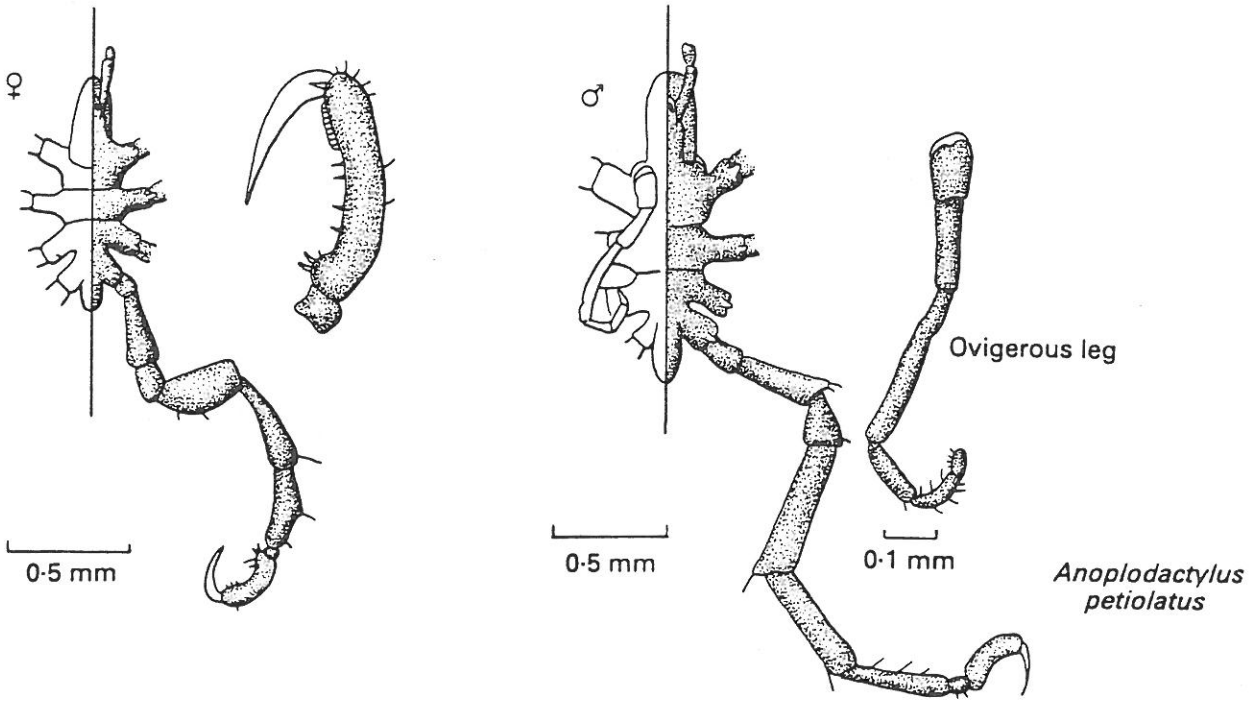
Confirmatory notes:—

Anoplodactylus angulatus (Dohrn, 1881)
Body 1–2 mm long, with legs three times this length. Proboscis broad with conspicuous angles at the distal end, when viewed from the dorsal surface, caused by ventrolateral protuberances. Ovigerous legs with five segments. Cephalon broad, ocular tubercle with a small point. Body segments broad with thick lateral processes. Abdomen more than twice the length of the very short last lateral processes. Propodus with two large teeth and three setae preceding a row of teeth on the sole. Small, laterally placed auxiliary claws on the legs. Mainly found around southwestern coasts of the British Isles.

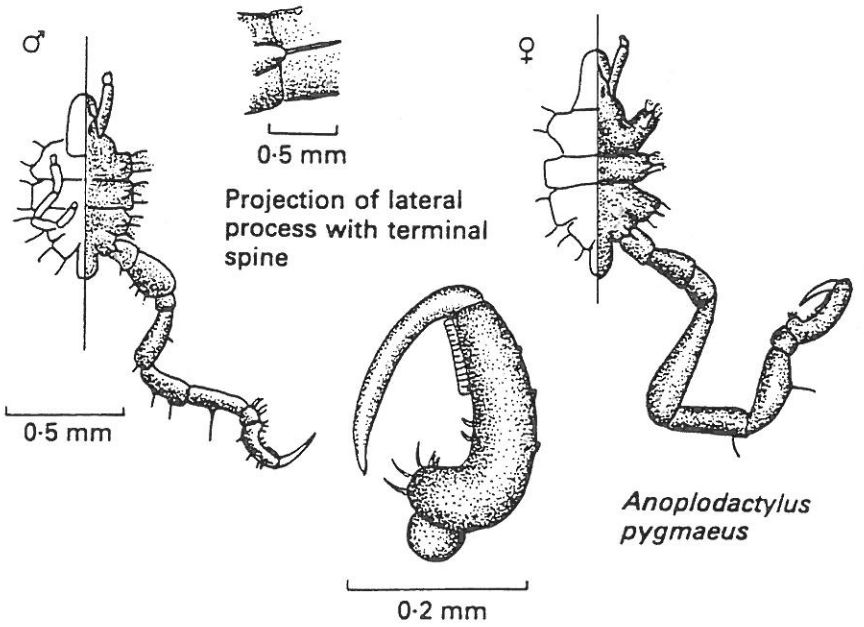
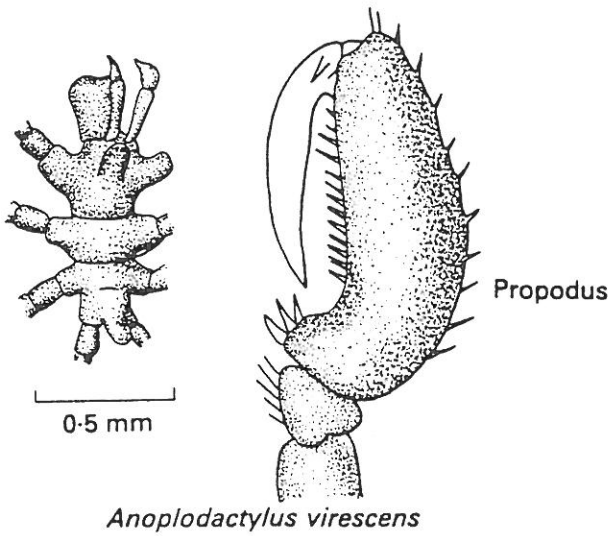


Anoplodactylus petiolatus (Kroyer, 1884)

Slender body 1–1.5 mm. Legs three times as long as the body. Proboscis with a rounded end. Ovigerous legs with six segments. Long "neck", with a long ocular tubercle. The body segments broad with wide lateral processes; abdomen long and narrow, reaching well beyond the last lateral processes which have a dorsal protuberance without a terminal spine. Propodus has two large spines and a smaller pair, with four to six spines and a short cutting lamella on the sole. These are small, laterally placed, auxiliary claws. Widespread distribution.



Anoplodactylus pygmaeus (Hodge, 1864)
Small species with body length 0.7–1 mm. Legs two and a half times as long as the body. Proboscis rounded at the end with a subterminal constriction. Cephalon broad with a long ocular process extending anteriorly. Ovigerous legs with six segments. General shape more compact than *A. petiolatus*. Abdomen approximately twice as long as the last pair of lateral processes. A small dorsal protuberance on each lateral process, each with a terminal spine. The propodus has two spines on the heel and one or two spines, and a long cutting lamella, on the sole. No auxiliary claws. A common shallow-water species from Denmark to the Azores.



Anoplodactylus virescens Hodge, 1864
Body 1 mm long, with legs three times this length. Proboscis bluntly truncate. Ovigers with five segments. Cephalon broad with an extremely blunt ocular tubercle. Body segments broad, with thick lateral processes. The abdomen is a short rounded knob reaching obliquely slightly beyond the very short last lateral processes. The heel of the propodus has two or three large spines and a row of teeth on the sole. The auxiliary claws are small and laterally placed. Mainly southern in distribution.