THE ANNALS

AND

MAGAZINE OF NATURAL HISTORY.

[THIRD SERIES.]

No. 74. FEBRUARY 1864.

XIII.—*List of the British Pycnogonoidea, with Descriptions of several new Species.* By GEORGE HODGE *.

[Plates XII. & XIII.]

No complete list of the British Pycnogons has appeared, and such information as we possess is scanty and scattered. It is difficult to account for this neglect, as these animals possess considerable interest, both in their life-history and their peculiarly degraded physiological features.

An examination of such records as I have been able to consult has enabled me to compile a list of twenty-two species—the total number recorded as British. With two exceptions (that of a *Phoxichilidium* by Mr. Gosse, and a *Phoxichilidium* and a *Nymphon* by myself), no new species have been published since Harry Goodsir's and Dr. Johnston's time: the former described seven species, principally from the Frith of Forth; it is possible, however, that two or three of them might not sustain a very critical examination. The list, as it now stands, contains

13	species of	*Nymphon*,
2	„	*Pallene*,
4	„	*Phoxichilidium*,
1	„	*Pasithoë*,
1	„	*Phoxichilus*,
1	„	*Pycnogonum*,

making in all 22 species, including the 4 which were recorded in my Report of the Pycnogons obtained last year, during the

* Communicated by the author, having been read at the British Association Meeting at Newcastle-on-Tyne, August 1863.

dredging expedition to the Dogger Bank, under the auspices of the British Association.

I have now to increase this list by the addition of ten species, seven of which are new to science, and three new to Britain.

The new species are contained in the following genera :—

Ammothoa, a genus not before represented by any British form.

Achelia, a new genus which I found it necessary to establish.

Pallene and *Phoxichilidium*.

The genus *Ammothoa* is in some respects like *Nymphon*, the most decided difference being the greater number of joints of the palpi, *Ammothoa* possessing eight*, whilst *Nymphon* has only five. The footjaws in *Nymphon* are always as long as or longer than the rostrum; in *Ammothoa* they are much shorter.

I have two new species to describe, for which the specific names of *brevipes* and *longipes* are proposed.

Ammothoa brevipes (Hodge). Pl. XII. figs. 1–4.

Limbs short and robust, furnished with moderately long, strong spines. Rostrum conical, with the apex truncate. Footjaws nearly two-thirds the length of the rostrum; palpi equal in thickness throughout,—if anything, slightly thicker at the free end. Oculiferous tubercle terminating in a pointed wart directed backwards. Abdomen long, slightly tapering.

Several specimens have occurred on the Durham coast, from deep water. Length $\frac{4}{100}$ of an inch.

Ammothoa longipes (Hodge). Pl. XII. figs. 5, 6.

Animal slender. Rostrum stout, as long as the thorax, tapering to a blunt point. Palpi long and slender, the four terminal joints of equal length. Footjaws long; fingers destitute of teeth. Oculiferous tubercle slightly tapering.

A single specimen from Polperro. Length $\frac{7}{100}$ of an inch.

Achelia is distinguished by the possession of two pairs of palpi—one pair long and slender, the other short and stout. The genus may be thus characterized :—

Antennæ two-branched, one pair long and slender, eight-jointed; the other pair short and stout, two-jointed, and produced immediately in front of the oculiferous tubercle.

In some respects this genus agrees with a form possessing two pairs of palpi, which Kröyer named *Zetes*; it may, however, at once be distinguished by the very different character of the

* The foreign forms are said to possess nine.

rostrum,—*Zetes* being much elongated and seated upon a sort of stalk, *Achelia* being short and stout.

I have three species of this genus to describe, for which the specific names of *echinata*, *hispida*, and *lævis* are proposed.

Achelia echinata (Hodge). Pl. XII. figs. 7–10.

Animal robust, with moderately long legs, furnished with strong spines produced from little eminences upon the limbs and body. The oculiferous tubercle is directed forwards, and terminates in a little point directed backwards. Inner palpi of the same length as the oculiferous tubercle; the outer longer than the rostrum. Colour fine sienna to a pale straw.

This species has been found at the Channel Islands, the Isle of Man, and upon the Durham coast. It is by no means uncommon from low tide to a few fathoms. Length $\frac{7}{100}$ of an inch.

Achelia hispida (Hodge). Pl. XIII. fig. 11.

Animal robust, hairy. Limbs long, first four joints much stouter than the others. Thorax much produced in front. Inner palpi large and stout, with a circlet of little spines at the base and at the top of the first joint; outer palpi longer than the rostrum. Oculiferous tubercle scarcely reaching beyond the origin of the inner palpi.

Several specimens from Polperro. Length $\frac{9}{100}$ of an inch.

Achelia lævis (Hodge). Pl. XIII. fig. 12.

Animal robust. Limbs smooth and regular in form, with a few small hairs scattered over them, principally on the femoral and tarsal joints. Inner palpi rather long, slender; outer palpi as long as the rostrum. Oculiferous tubercle small, produced considerably behind the inner palpi.

Several specimens from Polperro. Length $\frac{9}{100}$ of an inch.

Phoxichilidium virescens (Hodge). Pl. XIII. figs. 13–15.

Rostrum stout, slightly thickened in the middle, truncate at the apex. Footjaws slender, and closely approximated at their origin, each finger with 6–8 teeth. Legs moderately long. Colour pea-green.

Several specimens from Polperro. Length $\frac{7}{100}$ of an inch.

This species might at first sight be mistaken for *Phoxichilidium olivaceum* (Gosse); but the closely approximated footjaws at once show its distinct character.

Pallene pygmæa (Hodge). Pl. XIII. figs. 16 & 17.

Thorax robust. Legs long and slender, constricted at the joints, last joint falciform, with a strong toothed shoulder at the base; two strong spines on the sixth joint. Rostrum short, stout. Footjaws closely approximated. Oculiferous tubercle moderately long. Abdomen stout.

This species was taken by Mr. Spence Bate in the neighbourhood of Plymouth, so far back as 1853, and by him noticed in a paper of that year, read before the British Association at Hull. It was, however, neither named nor described, his remarks bearing upon the larval stages of these animals. I have also taken a single specimen upon the Durham coast. Length $\frac{1}{100}$ of an inch.

The three species new to Britain all belong to the genus *Nymphon*. They were described by Kröyer in Gaimard's Scandinavian 'Voyage.' One species (*Nymphon Strömii*) has been taken in Shetland by the Rev. A. M. Norman; the other two (*Nymphon mixtum* and *N. longitarse*) have been taken by myself on the Durham coast.

The following list contains all the species at present recorded as inhabiting the British seas:—

Nymphon, *Fabricius.*
—— gracile, *Leach.*
—— grossipes, *Fabricius.*
—— femoratum, *Leach.*
—— pictum,
—— giganteum, *Johnston.*
—— longitarse, *Kröyer.*
—— mixtum, *Kröyer.*
—— Strömii, *Kröyer.*
—— hirtum, *Fabricius.*
—— brevitarse, *Kröyer.*
—— Johnstoni, *Goodsir.*
—— spinosum, *Goodsir.*
—— pellucidum, *Goodsir.*
—— simile, *Goodsir.*
—— minutum, *Goodsir.*
—— brevirostre, *Hodge.*
Ammothoa, *Dana.*
—— brevipes, *Hodge.*
—— longipes, *Hodge.*
Achelia, *Hodge.*
—— echinata, *Hodge.*
—— hispida, *Hodge.*
—— lævis, *Hodge.*
Pallene, *Johnston.*
—— brevirostris, *Johnston.*
—— circularis, *Goodsir.*
—— pygmæa, *Hodge.*
Phoxichilidium, *M.-Edwards.*
—— coccineum, *Johnston.*
—— globosum, *Goodsir.*
—— olivaceum, *Gosse.*
—— petiolatum, *Kröyer* (Pallene attenuata, *Hodge*).
—— virescens, *Hodge.*
Pasithoë, *Goodsir.*
—— vesiculosa, *Goodsir.*
Phoxichilus, *Latreille.*
—— spinosus, *Montagu.*
Pycnogonum, *Fabricius.*
—— littorale, *Ström.*

There can be little doubt that a careful examination of the species found on various parts of our coast would add many new forms to this list, especially amongst the smaller species.

Whilst most departments of marine zoology have made rapid strides within the last few years, our knowledge of the Pycnogons has scarcely advanced. No doubt this is owing, in a great measure, to the difficulty of determining the species, in consequence of there being no complete list. It is hoped that the foregoing may in some degree supply this want, and lead to these animals being better known and understood.

EXPLANATION OF THE PLATES.

Plate XII.

Fig. 1. *Ammothoa brevipes.*
Fig. 2. Ditto, footjaw.
Fig. 3. Ditto, tarsus, &c.
Fig. 4. Ditto, side view.
Fig. 5. *Ammothoa longipes.*
Fig. 6. Ditto, tarsus, &c.
Fig. 7. *Achelia echinata.*
Fig. 8. Ditto, side view.
Fig. 9. Ditto, rostrum, palpi, and oculiferous tubercle.
Fig. 10. Ditto, tip of false foot of female.

Plate XIII.

Fig. 11. *Achelia hispida.*
Fig. 12. *Achelia lævis.*
Fig. 13. *Phoxichilidium virescens.*
Fig. 14. Ditto, footjaws.
Fig. 15. Ditto, tarsus, &c.
Fig. 16. *Pallene pygmæa.*
Fig. 17. Ditto, tarsus, &c.

XIV.—*On the Climbing Habits of* Anabas scandens. By Capt. Jesse Mitchell, of the Madras Government Central Museum.

The following remarks on the *Anabas scandens* will be found at page 295, vol. iii., of the Rev. J. G. Wood's 'Illustrated Natural History,' published by Messrs. Routledge & Co. last year:—

"Some writers say this fish is capable of climbing palm-trees in search of the water that lodges between the bases of the dead leaves and the stem; but this account is now held unworthy of belief."

My object in writing this paper is to show that this account is not unworthy of belief, and that, however strange and unnatural it may appear, the *Anabas scandens* does in reality ascend palm-trees; but I am not prepared to say that it goes in search of water. Yet who knows? The fish may be enough of an epicure to prefer the pure rain-water to the muddy water found in the pools and streams after heavy monsoon rain; for it is at such times it is said to take this wonderful journey. But to my evidence.

A short time ago I was putting up a few freshwater fish to be

1. *Epibranchs*, which have them on the back (*Doris*, *Glabellina*, &c.).
2. *Peribranchs*, which have them round the mantle (*Tritonia*, *Glaucus*, *Scyllæa*, *Plocamocera*, &c.). The *Eolidæ* would be allied to both the Epibranchs and Peribranchs.
3. *Hypobranchs* (the Inferobranchs of Cuvier). The *Thetydes* would approximate all three Orders.
4. *Pleurobranchs*, which have the branchiæ on the side (*Pleurobranchus*, *Pleurobranchidium*, *Laniogera*, &c.). The Pleurobranchs lead both to the Stegibranchs by their small test, and to the bulk of the Endobranchs by the pectinated form of the branchiæ.

II. The order of STEGIBRANCHS (*στέγη*, a roof) would include four divisions:—

1. *Stegibranchs* proper, corresponding to the Tectibranchs of Cuvier (without the Pleurobranchs) and to the Scutibranchs of the same author.
2. *Cyclobranchs*, corresponding with Cuvier's group.
3. *Heteropod Stegibranchs* (Heteropoda of Cuvier), which, if we take *Carinaria* as the type, have the heart and branchiæ within a small shell. The shelless Heteropoda must be left with *Carinaria*.
4. The *Ianthinæ*, which have their branchial laminæ half concealed by the shell, and which, like the Heteropoda, deserve to be separated on account of their curious appendage. Their pectinated branchiæ also form a transition from the Stegibranchs to the Endobranchs.

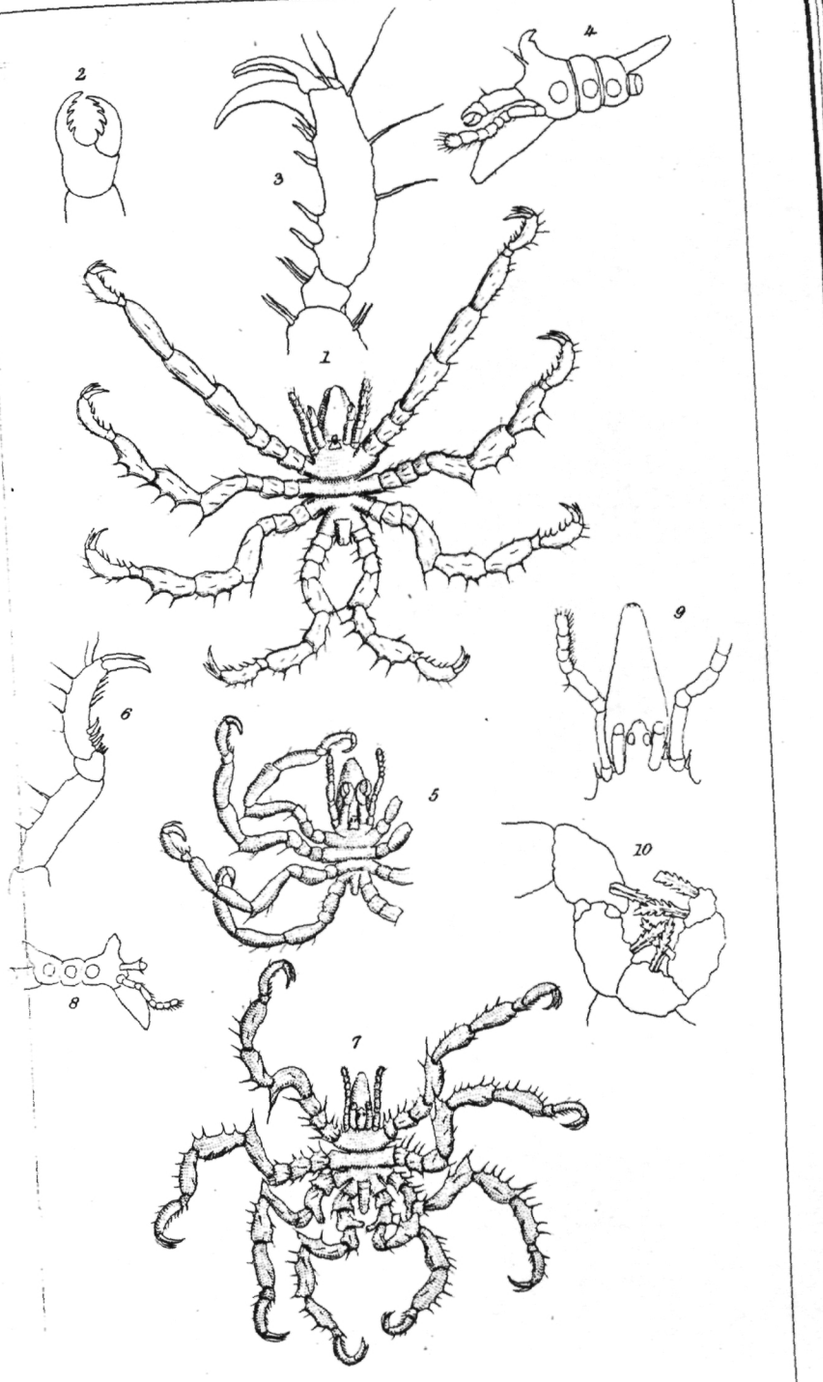
III. The order of ENDOBRANCHS would correspond with the Pectinibranchs and Tubulibranchs of Cuvier. They may be divided into *Turbinata* and *Tubulata*.

1. The *Turbinata* (the old Pectinibranchs) might retain the old Cuvierian subdivisions, or the much more natural division of De Blainville into Siphonobranchs and Asiphonobranchs.
2. The *Tubulata* are the old Tubulibranchs.

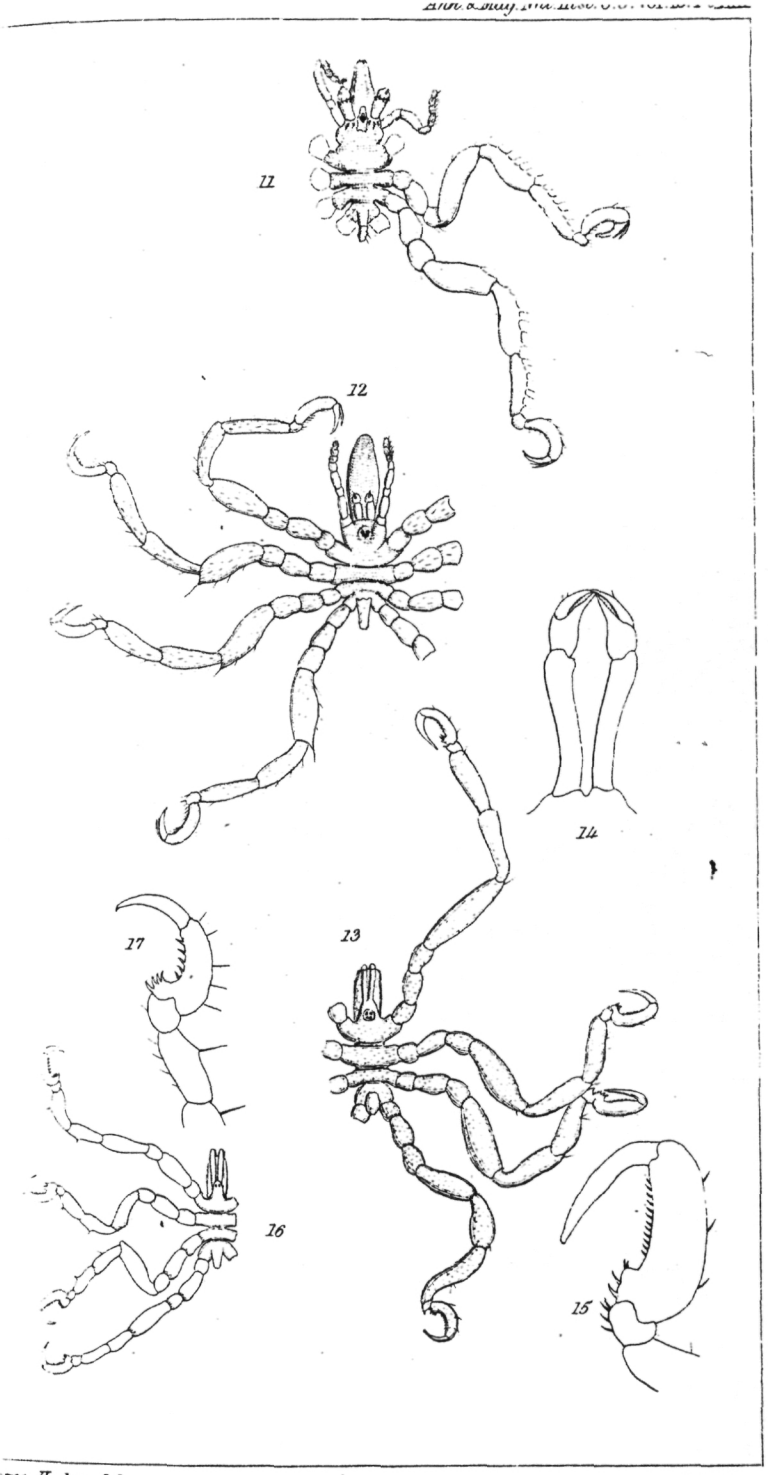
Comptes Rendus, Nov. 16, 1863, p. 826.

Fucus anceps, Ward & Harvey.

"Notwithstanding all that has been said *pro* and *con*, I have now to inform you that the Kilkee *Fucus* is neither *F. distichus* nor yet *F. fuscatus*, nor yet any species known to Prof. Agardh, from whom I have just received a specimen of the true *F. distichus* of the elder Agardh; and so, being constrained to give it a name, I propose to call it *Fucus anceps*, Ward & Harvey; and I request you to make known this *alias* to all to whom you have (on my authority) given the wrong name. This *Fucus* seems to combine the characters of the ribbed and ribless species, and therefore it may with propriety be named *F. anceps*."—*Prof.* J. H. HARVEY *to Dr. Gray*, Dec. 26, 1863.



Geo. Hodge del. J. Basire sc.



...rge Hodge del.

J. Basire sc.