

series III the only significant difference is that between the sub-series IIIb and IIIc ( $P < 0.05$ ), but again a significant correlation exists between increase of the dose and decrease of the body-weight ( $P < 0.01$ ).

These findings show that reserpine has a noxious action on duck embryos, and it is of particular interest to note that older embryos are more sensitive to this action than younger ones. This indicates that reserpine acts on a factor which, with increasing age, becomes of increasing importance to life. Since the drug is known to bring about changes in metabolic processes<sup>4,5</sup>, it might be that it acts on some enzyme system. However, further work is needed to elucidate this problem.

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J. VAN LIMBORGH  
F. VAN MEENEN

Department of Anatomy and Embryology,  
State University of Utrecht,  
The Netherlands.

<sup>1</sup> Adams, A. E., and Hirschinson, V., *Anat. Rec.*, **134**, 699 (1959).

<sup>2</sup> Limborgh, J. van, and Arnold, F. A. M., *Ned. Tsch. Geneesk.*, **103**, 1521 (1959).

<sup>3</sup> Uchida, M., *Showa Med. J.*, **20**, 1742 (1961).

<sup>4</sup> Friesewinkel, H., *Ther. Monat. Boehringer*, **9**, 207 (1956).

<sup>5</sup> Woolley, D. W., in *Hormones, Brain Function and Behaviour*, 127 (Hoagland, Academic Press, Inc., New York, 1957).

### Pogonophora from British Coastal Waters

A SUB-LITTORAL faunistic survey of the Scottish west coast has recently produced specimens of the genus *Siboglinum* from 55–62 fathoms in the North Minch about 8 miles east of Lewis. *Siboglinum* has been found in deep water in the north-east Atlantic and an undescribed species has been recorded from 80–90 fathoms off the west coast of Ireland by Southward<sup>1</sup>, but Pogonophora were not previously known from inside British coastal waters.

The samples were collected with a 1/10 m<sup>2</sup> spring-loaded grab and the grounds surveyed included the Minches from Dubh Artach north to the Butt of Lewis, as well as all navigable mainland sea lochs and most of the Hebrides lochs. Of several hundred samples covering this area, Pogonophora were found in only four, all from the extreme north-west corner of the Minch. Details of these collections are given in Table 1.

Table 1. DISTRIBUTION OF SPECIMENS  
Position Depth (fath.) No. of specimens per 1/10 m<sup>2</sup>

58° 24' N., 05° 55' W.	60	3 specimens plus several tubes
58° 27' N., 05° 55' W.	58	Several empty tubes
58° 31' 48" N., 05° 55' W.	55	1 specimen
58° 33' 30" N., 05° 55' W.	62	21 specimens plus many tubes

The bottom on which they occurred consisted of fine grey sand, and an analysis of the associated fauna is given in Table 2. At stations farther south and east where Pogonophora were not found the bottom was generally softer and more muddy and the fauna consisted either of a typical *Ditrupa* community, or of an association, common in the lochs, dominated by the polychaete *Rhodine*.

Hydrographically the distribution of the Pogonophora seems to be closely associated with a tongue of compara-

Table 2. ANALYSIS OF ASSOCIATED FAUNA (NO. PER 1/10 M<sup>2</sup>)

<i>Astrorhiza limicola</i> Sandahl	18	<i>Spiophanes bombyx</i> (Claparède)	4
<i>Dentalium entalis</i> L.	1	<i>Prionospio malmgreni</i> Claparède	10
<i>Abra prismatica</i> (Montagu)	14	<i>P. cirrifer</i> Wieren	4
<i>Spisula elliptica</i> (Brown)	1	<i>Polydora</i> sp.	72
Opisthobranchia	5	<i>Chaetozone setosa</i> Malmgren	2
<i>Ophiura affinis</i> Lütken	5	Cirratulidae	5
Spatangidae juvs.	30	<i>Pectinaria auricoma</i> (Muller)	12
<i>Echinocyamus pusillus</i> (O. F. Muller)	1	<i>Diplocirrus glaucus</i> Hasse	5
<i>Amphiuva filiformis</i> (O. F. Muller)	1	<i>Ammotrypane aulogaster</i> Rathke	1
<i>Thyone</i> sp.	2	Maldanidae	5
<i>Leptosynapta</i> sp.	5	Ampharetidae	4
<i>Sthenelais limicola</i> Ehlers	2	Terebellidae	14
<i>Pholoe minuta</i> (Fabricius)	1	<i>Ocenebra fusiformis</i> Delle Chiaje	12
<i>Eulalia</i> sp.	1	<i>Myriochele heeri</i> Malmgren	65
<i>Nephtys hombergi</i> Lamarck	5	Nemertini	2
<i>Glycera</i> sp.	2	Amphipoda	13
<i>Goniada maculata</i> Oersted	2		

tively saline water from west of the Hebrides which flows round the Butt of Lewis and influences the north-west Minch. This gives bottom temperatures ranging annually from 7°–8° C in February to 11°–12° C in late September, and salinities of about 35.10 parts per thousand.

These animals thus seem to be restricted to a small part of the Minch with faunistic and hydrographic characteristics which differentiate it clearly from the rest of the area.

I thank Dr. Eve C. Southward for examining the specimens. She considers them to be identical with the species referred to from off Ireland, and is preparing a description.

A. D. MCINTYRE

Marine Laboratory,  
Aberdeen.

<sup>1</sup> Southward, A. J., *Nature*, **182**, 272 (1958).

### Oysters killed by Trematode Parasites

DURING laboratory breeding experiments with the New Zealand mud oyster, *Ostrea lutaria* Hutton, sectioned material showed specimens with gonads containing sporocysts of a digenetic trematode parasite. The sporocysts were tubular and branched as in the family Bucephalidae, and contained rediae, but as cercariae were not found the trematode has not yet been identified.

Twenty-two of the oysters were fixed on arrival from Foveaux Strait, New Zealand, and showed 13.6 per cent parasitized. The remainder were kept in aquaria for 6 months and those that died were fixed and sectioned. Samples of living animals were also fixed and sectioned at intervals during the same period. The parasitization in the two groups was as follows.

	No. parasitized	No. not parasitized	Parasitization (%)
Oysters that died	35	17	67.3
Oysters that remained alive	3	17	15.0

The highly significant difference indicates that the parasites were an important cause of death.

Heavy infection causes almost complete destruction of the gonad, and later, death of the oyster. The importance of this parasite in Nature is unknown, but under laboratory conditions all the animals initially parasitized may die. Until the species is identified and the hosts are known, the probability of accidentally spreading the trematode to oysters in other countries cannot be assessed, but the danger should be recognized by anyone introducing oysters from New Zealand.

R. H. MILLAR

Marine Station,  
Millport,  
Scotland.

### Extension and Retraction of the Tube-Foot of Ophiuroids

THE greater part of the basic anatomy of ophiuroids was worked out in the latter half of the last century and the results summarized in Bronn<sup>1</sup>. In the water-vascular system, the absence of tube-foot ampullae comparable with those of asteroids or echinoids is striking. It has been generally recognized that the feet are less important in locomotion than the arms, and they are frequently attributed only sensory and adhesive functions. In several common genera the tube-feet are small and show only slight changes of shape, although protraction has been recorded<sup>2,3</sup>. Perhaps for these reasons there has been little discussion of possible mechanisms of protraction and it seems often to have been tacitly assumed that none is present, and that retracted feet resume the extended condition only on relaxation of their musculature (which is