LETTERS TO THE EDITORS

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A New British Fish (*Gobius forsteri*)

FOR the past four or five years, Mr. G. R. Forster, of this Laboratory, has, with aqualung equipment, been making a study of the fauna of sub-littoral reefs and cliffs on the open coast-line near Plymouth. As well as detailed station work at Revelstoke Point, east of Plymouth, and at Queeners Point on Rame Head at the western entrance to Plymouth Sound, he has made dives off St. Helier in the Channel Islands, and off Santander in Spain.

In all these localities, and at points along the Devon and south Cornwall coast from Hope Cove near Bolt Tail to off the mouth of the Helford River, he has seen a goby which is certainly new to the British fauna and also, I believe, to the European fauna, since I have not been able to identify it in published works.

Mr. Forster has caught specimens of this goby up to 12 cm. in length; it is robust and very similar in build to the common rock goby, *G. paganellus*. Its colouring is surprisingly brilliant and arresting: large and conspicuous bright orange or brick-red spots are evenly disposed in a regular pattern on a pale straw-brown ground colour. On the nape, midway between the eyes and the first ray of the first dorsal, is a large orange spot ringed by eight others, four on each side of the midline. Continuing towards the tail, other pairs flank the dorsal fins and there are six large orange spots on the sides of the body—a pattern seen in many *Gobius* species—with smaller intermediate ones. On the dorsal fins there are longitudinal bands and spots of this orange and the hind part of the first dorsal is black, again as in many gobies. Scales are entirely absent from the opercula and from the head and shoulders as far back as the first ray of the first dorsal. There are prominent lines of papillae on the head. In Part 2 of "The Open Sea", there is a coloured illustration of this fish¹.

Gobius forsteri lives in rock fissures in the sides of gullies or under large boulders in a depth of between 4 and 6 fathoms on the open coast or where there are considerable reefs or precipitous cliffs. It does not occur in waters with a marked estuarine influence: Duke Rock, in the eastern channel out of Plymouth Sound, is the closest inshore that Mr. Forster has seen it. Its extreme shyness and quickness make it very difficult to catch, and this has been seen in specimens which Mr. Forster has now kept in one of the laboratory tanks for more than two years: they have not become at all tame, as do many fish kept in an aquarium. They bred, however, in the tank in 1956 and 1957; eggs were laid in a typical single layer on the underside of flat stones and on the tank side in May, June and July. They were guarded by the male, and the young hatched after about a week. During courtship and incubation, the colouring of the male is intensified and the ground-colour darkens almost to a black-purple.

The following fin-ray and lateral-line scale counts are from three preserved and six living specimens; the latter were narcotized with urethane for handling:

<i>D</i> ₁	<i>D</i> ₂	<i>A</i>	Lateral line scales	
			L. H. S.	R. H. S.
5	13	12	35	37
5	13	12	36	37
6	13	12	34	37
6	13	12	37	—
6	13	12	35	36
6	13	12	35	36
6	13	12	38	36
6	13	12	36	37
7	14	12	37	36

In the first dorsal fin of all specimens, there is a markedly larger interval between the last and the penultimate fin-ray, a little more than twice the interval between the other rays at their point of insertion.

I am very much indebted to Mr. G. R. Forster for all the information he has given to me about this species, and it is a pleasure to name it after him.

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¹ Hardy, Sir Allister, "The Open Sea, Part 2—Fish and Fisheries", New Naturalist Series (Collins; in the press).

Coexistence of Three Species of the Wood-boring Isopod *Limnoria* in Southampton Water

THREE species of *Limnoria*, *L. lignorum* (Rathke), *L. quadripunctata* Holthuis and *L. tripunctata* Menzies, have been found living together in piling and test blocks taken from Southampton Water. This is the first European record for *L. tripunctata*, which previously has been reported only from Central and North America¹. This species has since been found with *L. quadripunctata* in piling taken from Cowes, Isle of Wight, and from Swansea, South Wales, where it was the only species present in the samples examined.

No evidence has been found that interbreeding between the species occurs in Southampton Water. All animals in laboratory colonies founded from a number of gravid females of the same species showed the specific characters of the original females. In all cases in which the young post-larval stages were examined from the brood pouch, the species characters of the parent were present. On several occasions males and females of different species were found in the same burrow, but there was no indication of reproduction and in no case was a gravid female taken with a male of a different species. It is probable that migrant *Limnoria* will enter any burrow, for pairs of the same sex and even three animals have been found together.

The specific composition of a series of test block samples taken from Southampton docks during a twelve-month period differed from that of a similar series taken from Calshot, at the mouth of Southampton Water. A further difference occurred between test-block and piling samples from the same locality (Table 1).

Table 1

	Test blocks		Piling	
	Southampton	Calshot	Southampton	Calshot
No. examined	1,444	1,909	751	1,165
<i>L. lignorum</i> (per cent)	43	19	6	3
<i>L. quadripunctata</i> (per cent)	47	46	37	33
<i>L. tripunctata</i> (per cent)	10	35	57	64