

siderably greater importance than the accepted methods of spread, on implements, seed potatoes, etc.

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¹ Ministry of Agriculture and Fisheries, Advisory Leaflet No. 284 (1952).

² Peters, B. G., *Roy. Lancs. Agric. Soc. Ann. J.* (1949).

³ Strachan, J., and Taylor, T. H., Univ. of Leeds and the York Coun. for Agric. Educ. Bulletin No. 159 (1929).

⁴ Chitwood, B. G., U.S. Dept. Agric. Circular No. 875 (1951).

Siliceous Spicules in the Calcareous Sponge, *Leucandra johnstonii* (Carter)

SPECIMENS of this sponge collected at Calf Sound, Isle of Man, were investigated for spicules, and for their arrangement in the body of the sponge. Six types of spicules were found, ranging from very large tetraradiates and triradiates to long slender and minute rod-like oxea¹. When the acid test was applied to a slide with dried spicules, all except the long slender oxea dissolved. These oxea are present in large numbers, and are set vertically in a palisade round the osculum.

When mixed spicules are examined with a geological microscope, crossing of the nicols causes five of the spicule types to show up as iridescent bodies (calcite); but the long slender oxea disappear—they are isotropic, and probably composed of colloidal (opaline) silica. A sensitive chemical analysis gave a strongly positive test for silica.

So far as is known, in no other calcareous sponge have siliceous spicules been observed. I should be grateful for more specimens of the sponge in order that a full account can be prepared.

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¹ Bowerbank, J. S., "British Spongiadae", 2, 36 (1866) (as *L. nivea*).
Haeckel, E., "Die Kalkschwämme", 2, 221 and Pl. 34. 1h. (1872).

The American Slipper Limpet (*Crepidula fornicata*) in Milford Haven

DURING a short survey of Milford Haven (July 27–30, 1953) for the purpose of assessing the possibility of reviving the oyster fishery, six American slipper limpets (*Crepidula fornicata*) were found in or near Pennar Gut, the estuary of the Pembroke River. *Crepidula*, a serious pest of oysters, had previously been recorded only from the east and south coasts of Britain¹. The limpets, varying in length from about 12 to 50 mm., were found during approximately half an hour's examination of the shores uncovered at low water of a good spring tide. Much of the time was devoted to other tasks and undoubtedly more limpets would have been found in an intensive search. The limpets taken comprised four singles and one colony of two. Two of the isolated limpets were covering spawn. It has been suggested² that isolated females may be capable of self-fertilization, but this has not been proved experimentally. Since young males are actively motile,

the possibility that these apparently isolated females had been fertilized by itinerant males cannot be excluded. The minimum size at which males may become sexually mature is not known, but it is certainly very small, probably less than 10 mm., and such tiny males are easily overlooked on the shore.

Pennar Gut was used in the years following the Second World War for laying up both merchant and naval ships, and is adjacent to Pembroke Dock. There is a ship-breaking yard on the opposite shore near Milford Haven. Evidence has been adduced¹ to show that a major factor in the spread of *Crepidula* has been the movement of laid-up naval and merchant ships, which may remain for several years in infested areas on the east and south coasts of Britain and later be transferred for refitting or breaking-up to other areas. Very frequently, such vessels carry mussels and slipper limpets on their bottoms, and as a result *Mytilicola intestinalis*, the copepod parasite of mussels, and *Crepidula* have reached new areas^{1,3}. It is to be anticipated that, when a careful search is made, *Crepidula* will be found in the Firths of Forth and Clyde, at Londonderry, Barrow-in-Furness, and at other ports in South Wales, to all of which laid-up ships have been traced after periods in east and south coast ports.

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Aug. 11.

¹ Cole, H. A., *Fish. Invest.*, Ser. 2, 17, 1 (1952).

² Orton, J. H., *Nature*, 169, 279 (1952).

³ Bolster, G. C., *Fish. Invest.*, Ser. 2 (in the press).

A Plasmodium in Common Indian Partridges

ON routine examination of birds commonly found in the vicinity of Delhi during the winter months, a species of avian malaria parasite was observed in some wild partridges (*Francolinus pondicerianus interpositus* Hartert), a species widely distributed in many parts of India and locally known as 'titar' (Hindi).

Gametocytes and all stages of asexual forms were detectable in the erythrocytes. The parasite appears to resemble *P. polare* first found by Manwell (1935) in a cliff sparrow (*Petrochelidon lunifrons lunifrons* Say).

Infection was invariably found to be low; but it had always been possible to passage the infection to fowls and chicks by blood inoculation from partridges showing infection. This infection was later transmitted from partridge to fowl and from fowl to fowl through *Aedes aegypti*.

It is believed to be the first report on any plasmodial infection in Indian partridges.

The strain is now being maintained in fowls and further studies are in progress.

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