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Extension of the Range of the Sea Urchin *Pseudoboletia indiana*
(Mich.) to the Tasman Sea

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Abstract

RECENTLY two skin-divers, Messrs Donald Wilson and John Hughes, collected some unfamiliar, light-coloured sea urchins near the mouth of Sydney Harbour, New South Wales, which have now been identified as belonging to the Toxopneustid species *Pseudoboletia indiana* (Michelin). This identification has kindly been verified by Dr H. B. Fell, of Wellington, New Zealand, to whom a specimen was sent for examination.

THE urchins are reported to cling, sub-tidally to the near-vertical faces of sandstone rocks and almost invariably invest themselves with a covering of shell fragments, including oysters, mussels, limpets or any other mollusc shell available. Even glass fragments from broken bottles may be used.

However, chief interest in the recent discovery of *Pseudoboletia indiana* on the eastern coast of Australia lies in the fact that it extends the range southward in the Pacific and bridges a gap between the eastern population, recorded in the Hawaiian Islands, Ocean Island and the Moluccas and the western population in the Indian Ocean, recorded from Mauritius, Reunion and Madagascar and one lone record from Houtman's Abrolhos Islands, off Geraldton, in Western Australia.¹

A series of sixteen specimens has now been examined from Sydney Harbour, and all agree closely with Mortensen's description of the species in his revision of the Echinoidea.² There are, however, two distinct colour phases among Sydney specimens—the one being a "white" form in which the crowded, light coloured primary spines are tipped with mauve (like typical Hawaiian specimens) and the other having light green spines tipped with violet (as described by de Loriol³ in specimens from Mauritius). The Australian specimens bridge not only the geographical gap but also the morphological differences that existed between eastern and western populations.

Specimens were taken on four occasions between March and May, 1963, and in each sample several individuals spawned prolifically after capture. No correlation could be made, however, between the colour of the urchin and sex since both green and white individuals were seen to produce eggs or sperms.

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Since recognizing these specimens from New South Wales it has been possible to identify two further, somewhat larger, battered specimens which extend the range of this species still further in the Tasman Sea. The one comes from Lord Howe Island, and was taken while skin-diving by Miss Julie Booth on August 22, 1962, and the other was found on the limestone reef near Kingston, Norfolk Island, by Mrs Loisetete March, in 1961. Both these specimens were almost spineless on the aboral surface and somewhat eroded. The sizes of their tests were larger than those collected in Sydney Harbour, measuring as follows:

			h.d.	v.d.
From Lord Howe Island	105mm	51mm
From Norfolk Island	94mm	46mm

The finding of these Tasman Sea specimens clears up the doubt about whether it is the same species found in the Indian Ocean and in Hawaii, as the geographical range is now reasonably continuous. Further search by skin-divers on sub-tidal, vertical rock surfaces will, no doubt, disclose more specimens in other Pacific localities. Moreover the two slightly different morphological forms occur together in Sydney Harbour.

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