

Wanted: One Eel

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The staff of the Fisheries Research Station at Kanudi, Port Moresby, has for more than 10 years, been collecting specimens of Papua New Guinea fish. These fish specimens will eventually form the nucleus of a National Collection for the country.

MUCH of the Kanudi fish collection, comprising thousands of fish, was unidentified 3 years ago and it has been a full-time occupation identifying these fish along with new specimens received. Ian S. R. Munro's book "The Fishes of New Guinea" is the standard text used in identification: of the 1,067 species of fish he lists as being present in Papua New Guinea, the Kanudi collection holds 650. In addition, it contains approximately 220 species not before recorded from Papua New Guinea waters.

The fish held at Kanudi have been collected in the field by research staff, fishermen and schoolchildren. These are initially preserved in 10 per cent formalin, or frozen if no formalin is available. At the laboratory, they are transferred to isopropyl alcohol, identified, registered and entered on a card index. According to their size, they are either stored in glass bottles, 5 gal polythene bins, or large wooden tanks filled with formalin.

Whilst sorting through the fish in one of these tanks, I found a moray eel which turned out to be unusual. The identity of most moray eels can be quickly found by looking at photographs, as their colours are distinctive. In none of the usual texts, however, was there an eel anything like this one.

The reference books and papers on areas further afield were studied. These included works on the fishes of Hawaii, Fiji, the Marshall and Marianas Islands, Australia, south-east Asia, the Philippines, India and South Africa. Eventually, a picture of a similar eel, labelled *Gymnothorax pikei* Bliss, was found in a book entitled "The Fishes of the Seychelles". A brief description of this eel also appeared in a paper on "The Moray Eels of the Western Indian Ocean and the Red Sea." The description included the comment: "... said to come from very deep water of Mauritius, known only from Pike's single 1871 specimen from Mauritius." Our specimen was speared in 1968 at Fisherman's Island near Port Moresby—

more than 5,000 miles from Mauritius, and 97 years later!

It was obvious my first identification of our specimen as *G. pikei* needed to be thoroughly checked. The original description of the Mauritius specimen, along with several other papers on morays, were obtained, and by writing to the Australian Museum and to the Bernice P. Bishop Museum in Hawaii, I was able to locate the original specimen (the holotype) at the Agassiz Museum of Comparative Zoology at Harvard University. Photographs and descriptions were exchanged with the Curator of the Museum, but it is proving extremely difficult to positively decide whether the two specimens are synonymous, simply because there are only two specimens.

It is the usual practice in species identification to examine as large a number of specimens of the one species as possible, so that a complete range of characters within the species can be observed. With only two specimens, this is impossible.

Unlike other fish, eels have no scales or fin rays to count, so the characters used in comparing them are the teeth arrangement and number, the coloration and relative body proportions.

Taking into account that the Mauritius *pikei* specimen has been preserved for nearly 100 years, and is thus warped and shrunken, most body proportions compare favourably with our specimen, except the eye, which is proportionally much larger than in our specimen. The number and arrangement of teeth is almost the same in both specimens, except for those on the vomer, a bone in the roof of the mouth. Ours has only six teeth, but the Mauritius specimen has nine on this bone.

The last major difference is in the colouring. The gill opening of the type specimen is encircled by a black ring, whereas our specimen has the gill opening situated in the middle of the second dark crossband.



Plate I.—Have you seen a moray eel with markings exactly like this one? If you have, Mrs Kailola at the Fisheries Research Station would like to hear about it.

These differences may not be important. The point is, we don't know *how* important they are unless we can obtain more specimens with which to compare the two eels. It is likely that some variation will occur between the widely separated populations at Mauritius and Papua New Guinea. If more specimens from this area were all found to be consistent with the Fisherman's Island specimen, it may indicate a new subspecies of *Gymnothorax pikei*. On the other hand, if specimens varied between the type specimen and ours, the New Guinea specimens would probably be synonymous with *G. pikei*. In either case the results would be extremely interesting scientifically.

This article then is written as a plea for more specimens of moray eels similar to that in the accompanying photograph. The overall colour is pale, probably creamy, over which are about 27 irregular diagonal dark bars, narrower than the interspaces which may break into blotches on the ventral (lower) surface. The head is brown. The total length of the eel is 2 ft 8 in. If you catch an eel like this, please freeze it and contact me at Kanudi Fisheries Station, D.A.S.F., Konedobu. I shall then send you mailing instructions. In view of their possible scientific value, any specimens received will be greatly appreciated.

The Fishes of New Guinea

"*The Fishes of New Guinea*" referred to on p. 78 is available from the Government Printer, Box 3280, Port Moresby, at a cost of \$15.00 posted within Papua New Guinea and \$15.25 posted to an Australian address. The author is Ian S. R. Munro of the CSIRO Division of Oceanography. The book contains the most up-to-date information on local fishes yet published.