

A SMALL COLLECTION OF FISH FROM MACQUARIE ISLAND.

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I. INTRODUCTION.

Macquarie Island (Lat. $54^{\circ} 13' S.$, Long. $158^{\circ} 59' E.$) is a small island situated approximately 850 miles south-south-east of Hobart, Tasmania, in the Southern Ocean. Since 1948 the Australian National Antarctic Research Expedition (ANARE) has maintained a scientific station at the northern end of the island.

In December 1959 Miss J. Hope Macpherson, Curator of Molluscs at the National Museum of Victoria, and Miss Isobel Bennett, Scientific Assistant to the Professor of Zoology at the University of Sydney accompanied the ANARE relief expedition to Macquarie Island aboard the M.V. "Thala Dan" for the purpose of carrying out ecological studies. During the five-day period spent on the island 26 fish specimens were either collected by these two workers or presented to them by Mr. D. Smith, a member of the ANARE scientific staff. All the specimens were collected from a limited area adjacent to the ANARE station.

Although all species in this collection have been previously recorded from Macquarie Island, this paper presents a further record, certain comments, and a guide to the relevant literature which it is hoped will be a starting point for future ichthyological work in this area.

All specimens are housed in the National Museum of Victoria and the registered numbers are given.

II. FISHES COLLECTED.

Family MYCTOPHIDAE (lantern fishes).

Genus *MYCTOPHUM* Rafinesque, 1810.

MYCTOPHUM SUBASPERUM (Günther).

Scopelus subasper Gunther 1864, p. 411.

Myctophum subasperum Waite 1916, p. 59, pl. 4, fig. 2, fig. 13; Norman 1930, p. 323, fig. 29.

Nat. Mus. Vic. Reg. No. A.153, 1 specimen 90 mm. in total length. Collected by D. Smith from a rock pool in Garden Cove after a storm during June, 1959.

This specimen was identified by Dr. R. L. Bolin of the John Hopkins Marine Laboratory, California.

MYCTOPHUM SP. JUV.

Nat. Mus. Vic. Reg. No. A.154, 16 specimens, 11-19 mm. in total length. Collected by Macpherson and Bennett in an overnight surface plankton tow made from the M.V. "Thala Dan" while anchored in Buckle's Bay.

The generic identification was made from Taning (1918). These specimens were also examined by Dr. Bolin.

Family HARPAGIFERIDAE.

Genus *HARPAGIFER* Richardson, 1844.

HARPAGIFER BISPINIS (Schneider).

Callionymus bispinis Bloch and Schneider 1801, p. 45 (*ex* Forster MS).

Harpagifer bispinis Richardson 1844, p. 11, pl. 5, figs. 1-3;—1845, p. 19, pl. 12, figs. 8, 9; Waite 1916, p. 70; Norman 1937, p. 59;—1938, p. 52, fig. 32.

Nat. Mus. Vic. Reg. No. A.153. 3 specimens, 57-72 mm. in total length collected by D. Smith during April, 1959. This species was reported to be abundant in rock pools during the whole year.

A dissected specimen proved to be a ripe female containing large yellow eggs. Its gut contained a number of macerated crustaceans which appeared to be Amphipods. This circumpolar species is recorded from rock pools and shallow waters in the whole Subantarctic region and from Graham Land on the Antarctic continent.

Family NOTOTHENIIDAE.

Genus *NOTOTHENIA* Richardson, 1844.

NOTOTHENIA MACROCEPHALA Günther.

Notothenia macrocephala Günther 1860, p. 263; Regan 1913, p. 227; Waite 1916, p. 66, pl. 3, fig. 2, fig. 16; Norman 1938, p. 27.

Nat. Mus. Vic. Reg. No. A.155. Four specimens 68-187 mm. in total length. Collected by D. Smith in April, 1959. Colours in life bright red with green eyes. Common in rock pools during whole year.

Nat. Mus. Vic. Reg. No. A.157. One specimen 181 mm. in total length. Found washed up on beach in Garden Cove by Macpherson and Bennett in December, 1959.

This species has been also recorded from the Patagonian Region, the Kerguelen Region and the Antipodes.

The largest and smallest specimens were dissected, both being immature and of an indeterminate sex. In view of the comparatively large size attained by this species (Waite loc. cit.) it is not surprising that our specimens were immature. The ovaries of Waite's 435 mm. fish were approaching maturity, but it is not known if this was for the first time.

The gut of the smallest fish contained unidentified crustacean remains and traces of red algae. There was a large isopod in the gut of the largest fish.

Family CONGIOPODIDAE.

Genus *ZANCLORHYNCHUS*, Günther, 1880.*ZANCLORHYNCHUS SPINIFER* Günther.

Zanclorhynchus spinifer Günther 1880, p. 15, pl. 8, fig. A; Waite 1916, p. 72; Norman 1937, p. 59, fig. 4.

Nat. Mus. Vic. Reg. No. A.156. One specimen 233 mm. in total length. Collected by Macpherson and Bennett in a dredge from 30 meters in Buckle's Bay, December 1959.

This species has been recorded previously only from the Kerguelen-Macquarie Island area.

Our large specimen differed from the description of Waite (1916) and Norman (1937) in the larger size of spines on the head and the form of the anal fin. Also no mention was made of three flat, opercular spines radiating from just below the large supraopercular spine to a point a little beyond the opercular edge.

III. DISCUSSION.

Regan (1913, 1914, 1916), Waite (1916), Norman (1937, 1940) and Whitley (1941) recorded fish from this area. Regan (1916) stated that Macquarie Island fish fauna is more closely related to that of the Kerguelen area some 3,000 miles distant, than to the Subantarctic islands of New Zealand which are only 400 miles away. He also pointed out that Macquarie Island and the Kerguelen area are almost on the same isotherm.

Waite (1916) and Norman (1937) listed the distribution of species from Macquarie Island, indicating that *Zanclorhynchus spinifer* was the only species common to the Macquarie-Kerguelen area. Of the remainder *Notothenia macrocephala* was found adjacent to the Antarctic continent. *Harpagifer bispinis* was found to be circum-polar in both the Antarctic and Subantarctic regions. *N. colbecki* was recorded from the Antipodes, but did not occur in the collection described in this paper. The biogeographic relationships are, therefore, very incompletely known and can only be elucidated by further intensive collecting from Macquarie Island and elsewhere in the Subantarctic region.

IV. ACKNOWLEDGEMENTS.

The author is indebted to Mr. P. G. Law, Director of the Antarctic Division of the Department of External Affairs, for permission to study the above collection, and to Miss J. Hope Macpherson for help and encouragement during the preparation of this paper. The manuscript was read by Mr. J. K. Ling.

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Slack-Smith, R J . 1962. "A small collection of fish from Macquarie Island."
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<https://doi.org/10.24199/j.mmv.1962.25.02>.

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DOI: <https://doi.org/10.24199/j.mmv.1962.25.02>

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