

TRANSACTIONS
OF THE
ROYAL SOCIETY OF NEW ZEALAND

BIOLOGICAL SCIENCES

VOL. 11

No. 5

JULY 15, 1969

Benthic Ecology of Glory Cove, Stewart Island

By E. J. BATHAM,

Portobello Marine Biological Station, Portobello, New Zealand.

[Received by the Editor, August 9, 1968.]

Abstract

GLORY Cove, near the south end of New Zealand, is a small sheltered bay with a bottom of sandy mud. Five dredge hauls and three trawl hauls indicate that its benthic ecology is relatively uniform. The red alga *Lenormandia chauvinii* is dominant over most of the bottom. Echinoderms are especially in evidence, 17 species being recorded, with *Echinocardium cordatum* and the holothurians *Amphicyclus thomsoni* and *Chiridota nigra* each present in at least three-quarters of the samples. Of infaunal lamellibranchs, *Paphirus largillierti* and *Tawera spissa* are present in moderate numbers. Abundant epifaunal molluscs include *Terenoichiton inquinatus*, *Micrelenchus micans*, *Chlamys radiata* and *Maoricolpus roseus*, though the shells of the latter frequently house hermit crabs. *Eunice australis* and the amphipod *Maera inaequines* abound.

INTRODUCTION

Two days of intensive bottom sampling of Glory Cove, during the *Munida*-Port Pegasus 1967 Expedition, gave a relatively uniform picture of its benthic ecology. At the present stage, when little has to date been published on New Zealand benthic ecology (Powell, 1937; Skerman, 1964; Ralph and Yaldwyn, 1956; Hurley, 1959; Fleming, 1952), but when much work is in active progress, it is felt that an account of Glory Cove can usefully be presented.

METHODS

Field work was carried out from the University of Otago's 46ft research vessel *Munida*. The trawl used was a 4ft-wide Agassiz beam trawl, with $\frac{3}{4}$ in mesh, and with a removable bottom-sampling box in each runner, after the pattern of one used by the New Zealand Oceanographic Institute. The dredge was an 18in-wide Salpa dredge with curved, angled jaws and with a sacking bag that quickly filled with substrate. This was washed gently out on to the deck with a hose, and the animals removed as they appeared. Because the bottom biota was very rich, the Agassiz trawl was hauled each time for less than the usual 10 minutes the writer normally standardises on. In one haul (Mu 67-38), after approximately one minute on the bottom, the trawl bag was so full that difficulty was encountered in getting it on board and only half of the large catch was methodically sorted. Familiar species were identified and recorded on deck; others were brought back and subsequently

Published by the Royal Society of New Zealand, c/o Victoria University of Wellington, P.O. Box 196, Wellington.

Trans. R. Soc. N.Z., Biol. Sci., Vol. 11, No. 5, pp. 73-81, 3 figs.