

## Decapods

*J. C. Yaldwyn.*

When I was asked to speak it was suggested that I might summarise the results of the work being done by the Zoology Department here, in Cook Strait, from the point of view of the Decapods.

This is what I propose to do, using the decapod shrimps only, as the systematics of the crab fauna is not well enough known to make generalisations at the moment. The shrimps, however, are well known systematically, though much of this work is, as yet, unpublished.

Not very much ecological information is known yet, but three years of work in the area culminating in a well-organised programme this year, is beginning to produce some results. An outline of the origin of this material is as follows:

1. Zoology Department stations worked in the Palliser Bay area have produced collections from 50-300 fathoms. Deep water stations have been worked in mid-water down to 300 fathoms. (Shelf, slope and bathypelagic material)
2. Material from fishing trawlers, especially from Mr. F. Abernethy (Shelf material).
3. Stomach (whale and fish) material, only source of the large *Sergestes* sp. and *Notostomus* (probably bathypelagic).
4. Shallow-water harbour work (sublittoral material).
5. Two years' work at the Island Bay fore-shore (inter-tidal material).

### SHRIMP FAUNA OF COOK STRAIT

55% of the known New Zealand fauna of about 42 species have been recorded from Cook Strait, 20% of these having been found only here. During the last three years of more intensive work in the Strait, 12 species, i.e. 28%, have been added to the New Zealand fauna.

The relationships of the species are as follows: 65% of the Strait fauna are endemic

to New Zealand, these being mainly intertidal and shallow water species. Most of the remainder are Indo-Pacific and none of the bathypelagic species is restricted to New Zealand waters.

A close generic relationship is to be seen between the bathypelagic fauna of the Strait and that of the Bermuda area in the North Atlantic which is the most intensively studied similar area in the world from this point of view. All the main Bermuda genera are present together, i.e. *Sergestes*, *Pasiphaea*, *Acanthephyra*, *Notostomus*, *Systellaspis* and *Oplophorus*.

### ECOLOGICAL DISTRIBUTION.

The Strait fauna can be divided clearly into the following groupings:

Characteristic Genera:

1. Littoral and Intertidal—*Palaemon*, *Hippolyte*, *Betaeus*, *Alope*.
2. Sublittoral—*Periclimenes*, *Pontophilus*.
3. Shelf—*Alpheus*, *Angasia*, *Chlorotocus*.
4. Slope—*Pandalus*, *Campylonotus*.
5. Bathypelagic:
  - About 100 Fms.—*Sergestes*, *Pasiphaea*.
  - About 300 Fms.—*Acanthephyra*,  
*Oplophorus*.

Evidence of a concentration of the two bathypelagic forms, *Pasiphaea* sp., and *Sergestes* sp., at approximately the 50-150 fathom zone, is accumulating.

(The paper was illustrated with the Cook Strait chart, and two kodochromes of New Zealand representative species of Bermudan bathypelagic genera were shown. These species were *Oplophorus novae-zealandiae* de Man and *Acanthephyra quadrispinosa* Kemp. A display of the majority of the Cook Strait shrimps was arranged according to their ecological distribution.)