

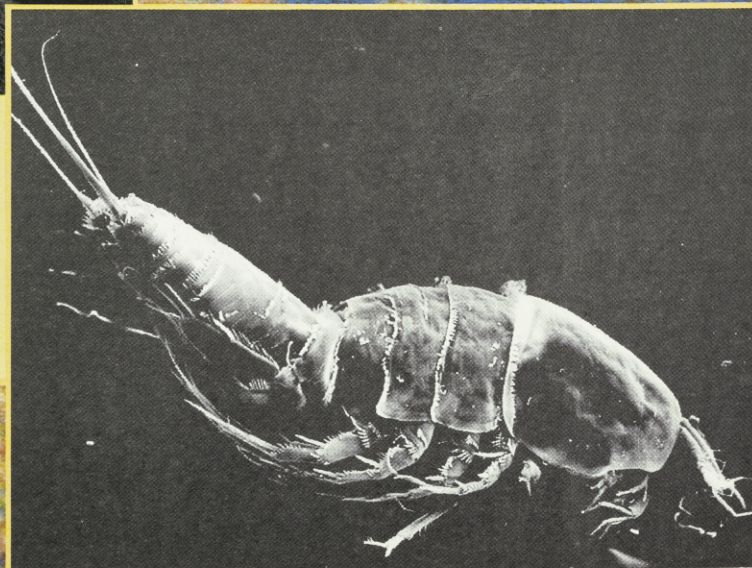
Estuaries

EXTRAORDINARY ECOSYSTEMS

Wading and migratory birds, the most visible and spectacular dwellers of estuaries, command most of our attention when we visit these biologically-rich habitats. Next time you visit your local estuary, however, spare a thought for what it is that attracts the birds there, for they are simply a link in a complex food chain. Dr Geoffrey Hicks, Curator of Crustacea at the National Museum, has for the last five years studied part of Pauatahanui Inlet, just north of Wellington and the site of a Society reserve (see August 1985 *Forest and Bird*). In that time he has come up with figures which show that this inlet contains huge numbers of a creature found near the beginning of the food chain, the meiofaunal copepod crustacean *Parastenhelia megarostrum*, which impacts directly on birds at the top end of the food chain.



Estuaries are as productive as tropical rainforests, and four times more so than a good ryegrass pasture. The factor which earns estuaries their reputation as being among the most productive ecosystems on earth is the immense annual quantities of highly microbially enriched organic material referred to as detritus, which is derived from the fringing vegetation of the estuary. Photo: Terry Fitzgibbon



Too minute to be seen except with a microscope, meiofauna are found midway in the food chain between microbes such as bacteria, protozoans and microalgae, and the large macrofauna such as crabs and shellfish. Studies of one of these meiofaunal animals, the bottom-dwelling copepod *Parastenhelia megarostrum*, have revealed it to be in enormous numbers at Pauatahanui, ranking the inlet of high scientific value internationally. The copepod is not able to eat detritus whole, but feeds on the rich coating of bacterial or microalgal cells. The productivity of this copepod is amongst the highest recorded anywhere in the world. (See Table)