

basis of osteological characters. Tandy & Keith (1972) place this species in the *B. latifrons* complex on the basis of morphological features. Although the mating call is basically similar to that of other members of the 'regularis group', its behaviour while calling is certainly very different and may perhaps support its exclusion from the 'regularis group'.

ACKNOWLEDGEMENTS

The author is most grateful for the hospitality and assistance of Mr Gordon Ranger of Kei Road. This work was supported in part by a C.S.I.R. bursary.

REFERENCES

- HEWITT, J. 1935. Some new forms of batrachians and reptiles from South Africa. *Rec. Albany Mus.* 4: 283-357.
- HEWITT, J. 1937. *A guide to the vertebrate fauna of the Eastern Cape Province, South Africa. Part II.* Grahamstown: Albany Museum.
- MARTIN, R. F. 1972. Evidence from osteology. In *Evolution in the genus Bufo*: 37-70, ed. W. Frank Blair. Austin & London: Univ. of Texas Press.
- PASSMORE, N. I. 1972. Intergrading between members of the 'regularis group' of toads in South Africa. *J. Zool., Lond.*, 167: 143-151.
- POYNTON, J. C. 1964. *The Amphibia of Southern Africa.* Cape Town: Purnell & Sons.
- TANDY, M. & KEITH, R. 1972. *Bufo* of Africa. In *Evolution in the genus Bufo*: 119-170, ed. W. Frank Blair. Austin & London: Univ. of Texas Press.
- WAGER, V. A. 1965. *The frogs of South Africa.* Cape Town: Purnell & Sons.

HEWITT, J. 1935. Some new forms of batrachians

PANOPEA GLYCYMERIS (MOLLUSCA, PELECYPODA) IN THE SOUTH AFRICAN FAUNAL PROVINCE

BRIAN KENSLEY
South African Museum, Cape Town

Accepted: June 1976.

Panopea glycymeris (Born) (Family Hiatellidae) is a large bivalve mollusc with an interesting history. In life, the two valves of the shell gape anteriorly and posteriorly to allow the body of the animal and especially the siphons to protrude. The animal lies buried in sand or mud to a depth of one to two metres, with the posterior end uppermost, in a depth of water varying from low water of springs to several metres. The species is known to live from the Mediterranean and Atlantic coast of Portugal to North-west and West Africa as far as Baia dos Tigres in Angola

(Kensley 1974). From its range, this is obviously a warm-temperate species, and is also known as a Pleistocene fossil from Port Elizabeth, Klein Brak River, and Velddrif in the Cape. Tankard (1975) dealing with thermally anomalous Quaternary molluscs from the Cape, regards *P. glycymeris* as an important constituent of the west coast estuarine-lagoonal facies, living in a water depth of more than five metres.

During March 1976, I accompanied an expedition to Meob Bay (approx. 24°30'S/14°30'E), a slight embayment on the coast of South West Africa, within Diamond Area no. 2, and found large numbers of valves of *P. glycymeris* littering the high water region of the beach. The shells were found along a 10 km stretch of beach south of Black Rock, a dolomite and granite outcrop which forms the southern end of Meob Bay. The majority of the shells were broken, which was not surprising considering the strong wave action of the area. Nevertheless, at least 30 complete valves were found on less than one kilometre of beach. These ranged in length

from 122 to 254 mm. On closer examination it was found that several valves possessed remnants of the hinge cartilage in the ligamental pit. Bearing in mind the solidity and weight of the shells it is unlikely that they had travelled any distance up the coast under the influence of the northward-moving inshore current. It was further noted that those shells still carrying some ligamental material were coloured a variable slate-grey, especially externally, while the majority of shells were creamy-white. Shells of the bivalve *Lutraria lutraria* removed alive from the substrate are a similar slate-grey while dead shells bleach white quite rapidly. It is suggested that this grey colouration is due to staining from the black anaerobic sand/mud in which these bivalves live, and that the presence of colour in shells washed ashore indicates that these specimens had but recently died. From these observations it was concluded that there is a relatively large population of *Panopea* living in the immediate vicinity of Meob Bay. In Kensley (1974) I noted a record of a shell from Meob Bay from the State Museum, Windhoek, but as the specimen was not seen, the record was regarded as dubious.

As already noted, the wave action at this particular locality is very strong. Visual searching and digging from the lowtide mark to as far as the waves would allow revealed no sign of *Panopea*, and it is assumed that the population is situated either within the region of the farthest breakers or beyond.

It is of interest to note that old shell middens (presumably of Hottentot people) at Conception Bay some 80 kilometres north of Meob Bay contained occasional *Panopea* shells. Whether these were collected for food-value (unlikely, considering the almost inaccessible habitat) or for utensil value, is a matter for archaeological speculation.

The presence of *Panopea* at Meob Bay, *i.e.* within the South African faunal region as defined by Barnard (1925, 1950) adds to the faunal list its largest (in terms of mass) marine mollusc, and extends the range of the species southward by more than 800 kilometres. It is unlikely that this range is continuous, as I have seen almost all the

coastline from Meob to several kilometres north of the Kunene River mouth, and have never found even isolated *Panopea* shells, let alone concentrated banks. The presence of this isolated relic population can perhaps be explained by reference to the sea temperatures (supplied by Dr D. Cram of the Division of Sea Fisheries). The temperature in the Meob area is known to range from 9,5°C to 19,5°C. This latter relatively high temperature may represent a localized pocket of warm water, but is nevertheless within the range of the living species in the Mediterranean and West Africa (Kensley 1974: 211). D. Cram (*in litt.*) suggests that larvae overdue for metamorphosis might have found a warm-water patch, settled, but might be unable to reproduce due to the generally low temperatures. This could explain why the species appears to be confined to this area and does not occur further north, *e.g.* at Sandwich Harbour where similar or higher temperatures are known.

ACKNOWLEDGEMENTS

I am grateful to the Consolidated Diamond Mines for allowing me entry into the Meob area, and to the State Museum, and the Geological Survey, Windhoek, for inviting me to accompany their expedition.

REFERENCES

- BARNARD, K. H. 1925. A monograph of the marine fishes of South Africa. *Ann. S. Afr. Mus.* 21: 1-1065.
- BARNARD, K. H. 1950. Descriptive catalogue of South African decapod Crustacea (crabs and shrimps). *Ann. S. Afr. Mus.* 38: 1-837.
- KENSLEY, B. F. 1974. The status of the Pliocene *Panopea* in southern Africa (Mollusca, Bivalvia, Hiatellidae). *Ann. S. Afr. Mus.* 65: 199-215.
- TANKARD, A. J. 1975. Thermally anomalous Late Pleistocene molluscs from the south-western Cape Province, South Africa. *Ann. S. Afr. Mus.* 69: 17-45.