



SHORT COMMUNICATION

EXTENSION OF THE GEOGRAPHIC RANGE OF *HOMIPHOCA* INTO NORTHERN CAPE PROVINCE, SOUTH AFRICA, WITH COMMENTS ON THE POSSIBLE FEEDING STRATEGIES USED BY *HOMIPHOCA*

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Studies have placed the Mio-Pliocene terrestrial fauna, avifauna, marine avifauna, and paleoenvironment of southern African in a world context; however, the marine fauna and associated paleoenvironment have been largely unstudied and lacking context (e.g., Hendey, 1974, 1980; Olson, 1983, 1985; Sanders, 2007; Manegold et al., 2013). As a result, the fossil marine mammals from the southern African west coast were reexamined (Govender et al., 2011, 2012, 2016; Govender, 2015a, 2015b). These studies include the Zanclean age (early Pliocene, 5.2 Ma) *Homiphoca capensis*, a fossil phocid seal, from Langebaanweg (Hendey, 1981; Robert et al., 2011; Govender, 2015a). *Homiphoca capensis* is considered a stem lobodontine (Berta et al., 2015) and forms a clade with fossil lobodontines from South America and extant species from Antarctica (Amson and Muizon, 2014; Govender, 2015a). Koretsky and Ray (2008) described aff. *Homiphoca capensis* from the Yorktown Formation, Lee Creek Mine in North Carolina, U.S.A. *Homiphoca capensis* has heretofore been known only from the southwestern Cape coast and possibly North Carolina.

This contribution describes a new specimen of *Homiphoca capensis* from Hondeklip Bay (Fig. 1A), Northern Cape Province (early Pliocene, Zanclean age; Pether, 1986; Pether et al., 2000; Roberts et al., 2006) and extends the range of *H. capensis* some 430 km to the north of Langebaanweg at a time when cold temperate oceanic conditions existed. This study provided the opportunity to examine the dentition and cranial morphology of *Homiphoca* and to determine what feeding strategies it could have employed.

GEOLOGICAL SETTING

Namaqualand (Fig. 1A), within the Northern Cape Province, on South Africa's west coast has its coastal plain on the passive continental margin and stretches from the Olifants River in the south to the Orange River in the north (Hendey, 1983; Pether, 1994; Pickford and Senut, 1997). It is 50–60 km wide and 300 km long, running parallel to the modern coast (Hendey, 1983; Pether, 1994; Pickford and Senut, 1997). Onshore aridity is juxtaposed against the high marine productivity (Pether, 1994).

Coastal Neogene nearshore deposits exposed in the course of diamond mining produced discontinuous exposures ca. 1.5–5 km inland from the current coast (Pether, 1986, 1994). The deposits are located on the farms Hondeklip and Avontuur-A (Pether, 1994) and were deposited into the Orange River basin between

the mouths of the Olifants and Orange rivers (Hendey, 1983). These deposits are temporally discrete marine transgressive-regressive sequences (Roberts et al., 2006).

In Namaqualand, three members—the Kleinsee (90 m Package [mP]), the Avontuur (50 mP), and the Hondeklip Bay (30 mP) members—are placed within the Alexander Bay Formation (Pether, 1986, 1994; Pether et al., 2000; Roberts et al., 2006). The mollusk fauna includes warm-water taxa with an affinity with taxa from West Africa and South Africa's east coast (Pether et al., 2000; Roberts et al., 2006).

The Avontuur Member (5 Ma) (Fig. 1B) was deposited in the course of a prograding shoreline as the coast regressed from its maximum of 50 m above sea level (a.s.l.) (Pether, 1994; Roberts et al., 2006). The exposure comprises three facies (from the base): lower shore face, foreshore, and terrestrial environments (Pether, 1986). The high-energy environment was open to the ocean; however, once the high points offshore formed islands, a low-energy sequence of prograding, regressive, and nearshore conditions formed (Pether, 1986).

The fossils from Hondeklip Bay also show signs of taphonomic damage that include abrasion (Fig. 1C) and varying degrees of polishing (from slightly to well polished; Fig. 1D), whereas others are fragmentary (Fig. 1E) (Boessenecker et al., 2014).

Institutional Abbreviations—**NMH-(BM)-ZD**, Zoology collection in The Natural History Museum, London, U.K.; **SAM-MBK-ZM**, Marine Biology Collection (Zoology Mammals), Iziko South African Museum, Cape Town, South Africa; **SAM-PQHB**, Quaternary Palaeontology (Hondeklip Bay), Iziko South African Museum, Cape Town, South Africa; **SAM-PQL**, Quaternary Palaeontology (Langebaanweg), Iziko South African Museum, Cape Town, South Africa.

MATERIALS AND METHODS

A complete right half of a fossil seal mandible with only the m1 preserved (SAM-PQHB-1038) is described from Hondeklip Bay. The Hondeklip Bay material was compared with the Langebaanweg (LBW) seal mandibles, which show variable preservation and reconstruction (Table 1). There are no associated mandibles for SAM-PQL-15695 (*Homiphoca capensis* holotype) and SAM-PQL-30080. Anatomical comparison with other fossil monachines and Lobodontini was made using published literature. Anatomical comparisons with extant Antarctic phocid seals were made with specimens from Iziko South African Museum and images of *Monachus* spp. used in Govender et al. (2012) (Table 1).

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