

Seal carcass at Tvora ($0^{\circ}5'W$, $72^{\circ}12'S$), western Dronning Maud Land, Antarctica

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A seal carcass, tentatively identified as that of a crabeater seal (Lobodon carcinophagus), was discovered on Tvora ($0^{\circ}5'W$, $72^{\circ}12'S$) just to the east of the Jutulstraumen in western Dronning Maud Land, Antarctica. Either the carcass was discarded by a previous expedition, or the seal wandered from the coast to its death, a journey of some 240 km from the present day ice shelf, and 1200 m above sea level. There are difficulties with both these explanations, the first as the location of the carcass is highly inaccessible, the second because of the distances and the nature of the terrain.

'n Robkarkas, voorlopig geïdentifiseer as 'n krabyreterrob (Lobodon carcinophagus), is by Tvora ($0^{\circ}5'W$, $72^{\circ}12'S$), net oos van die Jutulstraumen in westelike Dronning Maudland, Antarktika, ontdek. Die karkas is óf deur 'n vorige ekspedisie agtergelaat, óf die rob het van die kus af oorland na sy dood getrek, 'n reis van ongeveer 240 km vanaf die huidige ysplaat, en 1 200 m bokant seevlak. Daar bestaan probleme met albei verduidelikings, die eerste omdat die vindplek moeilik bereikbaar is, en die tweede as gevolg van die afstand en die terrein.

Introduction

A seal carcass was discovered by the authors on 15 January 1988 during a geological investigation of the Straumsvola area, on a scree slope on the south-east side of the nunatak Tvora (Fig. 1).

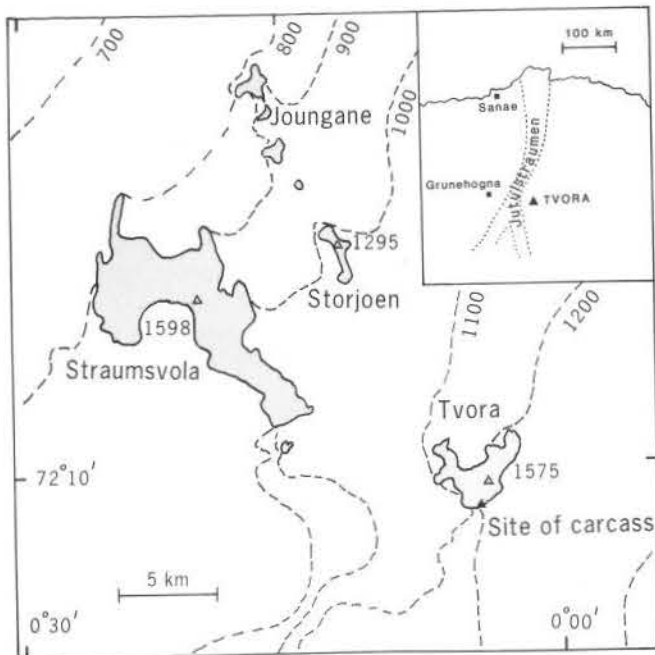


Fig. 1. Sketch map of the Straumsvola region showing the location of Tvora and the seal carcass. The ice shelf is presently over 200 km to the north. The lower ground in the north-west corner of the map forms the edge of the Jutulstraumen. All contour and spot heights are given in metres. The map is based on that produced by the Norsk Polarinstittut, Oslo, 1961.

The carcass was measured and photographed. Since neither of the authors is a zoologist the examination of the seal was brief. The carcass was not collected because there were no facilities to preserve such a sample on board the *S.A. Agulhas*.

Location

Figure 1 shows the location of the carcass on Tvora in the Sverdrupfjella Mountains. The carcass was found partly concealed under a large boulder on a scree slope leading down from the summit cliffs of the south-east face of Tvora. Figure 2 shows the carcass resting on the boulder under which it was found. The south-east face of Tvora has a deep windscoop at its base. This windscoop has steep sides up to about 30 m in height which



Fig. 2. Carcass at the site at which it was found. The figure (RTW) is 1.73 m tall. The seal is resting on the boulder under which it was found. Note that the terrain is not suitable for a campsite. The area is not normally subject to snow accumulation; the photograph was taken after a period of unusually heavy snowfall.

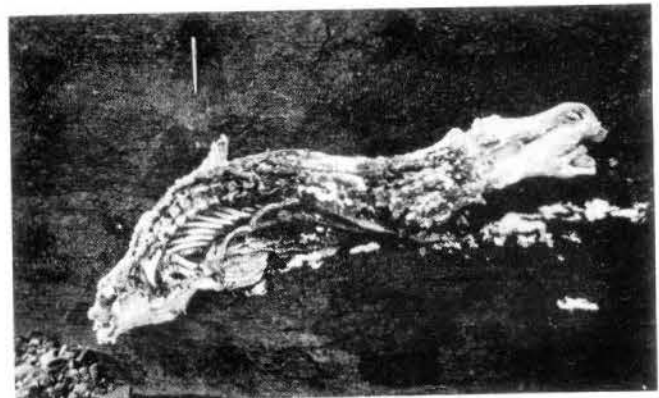


Fig. 3. Close up of the dorsal surface showing the exposed skeleton.

prevent access to the site of the carcass from the ice to the south-east. The easiest route to the carcass is from the north-west, via the col between the two peaks of Tvora, and can only be negotiated on foot. The present height above sea level of the carcass is about 1 200 m, estimated using a pocket barometer.

Description of the carcass

Figures 2 and 3 show the carcass which is 1.3 m in straight-line length. The skin and flesh of the upper, dorsal surface have been worn away and the skeleton exposed. The underside of the animal appeared largely intact. The anterior part of the animal appeared to have been squashed, and all or part of the head appeared to be missing. The seal was tentatively identified from photographs as being a crabeater (*Lobodon carcinophagus*) by P.R. Condy. This species of seal comprises more than 80 per cent of all seals in the King Haakon VII Sea (Hall-Martin 1974, Condy 1977). Adult male crabeaters attain a length of 2.32 m and adult females a length of 2.74 m (Smithers 1983). Even with the head present the length of the Tvora carcass would be less than 2.32 m suggesting that the animal was a subadult.

Discussion

There are two possible explanations for the presence of the seal carcass on Tvora - the seal could have moved inland by itself, or it could have been taken at the coast for food (e.g. dog rations) and dumped at Tvora by a previous expedition.

In the dry valleys around McMurdo Sound, seal carcasses are found up glaciers as far as 47 km inland at 920 m altitude (Stirling & Kooyman 1971). Stirling & Rudolph (1968) also reported the finding of a live crabeater 113 km inland at an altitude of 1 100 m. Crabeaters are by far the most abundant of the seal types found inland in the McMurdo region (Stirling & Kooyman 1971). This is not only because they are by far the most abundant seal species in the Southern Ocean, but also because they are the best equipped of the Antarctic seal species for locomotion on land. Stirling & Kooyman (1971) also report that the majority of crabeaters seen in the Dry Valley region are subadults, and ascribed this to dispersal behaviour. Such an explanation in the Tvora case seems less plausible, because not only is the distance from the ice shelf presently over 200 km, but includes the highly crevassed hinge zone. Seal carcasses from the Dry Valley region have been dated by the ^{14}C method and given ages ranging up to $2\,490 \pm 140$ years B.P. (Stuiver & Braziunas 1985). If the seal at Tvora is of the order of a few thousand years old, it may be that the Jutulstraumen Glacier was at that time a fjord as its floor lies below sea level (Barnard 1975). This would mean that the seal may have travelled as little as 10 km, although it would have had to climb 1 200 m.

The fact that all or part of the head appears to be missing is

more consistent with the second explanation. Several previous expeditions have visited this area, notably the British/Norwegian/Swedish expedition in 1951, the Soviets in the early 1960s, and the Norwegians in the early 1970s (see Wolmarans & Kent 1982 for a review of activities in Dronning Maud Land). It seems probable that frozen seal meat was carried by at least the earliest expeditions to feed dog teams. However, seal meat carried on sledging expeditions would normally be cut up, with bones and innards of the animal removed. It is clear from Figures 1 and 2 that this has not taken place. That the carcass was discarded by a previous sledging expedition is made even less plausible by its highly inaccessible location. The precipitous ice walls of the windscoop can only be descended using ropes and the easiest route to the site of the carcass can only be negotiated on foot. The vicinity of the carcass is therefore neither a sensible location for a campsite or a practicable route for a dog team, nor was campsite debris observed at the site.

On the advice of P.R. Condy, the seal carcass was left at the site of its discovery so that further studies by experts can be made. It is hoped that seal specialists in SANARP will make use of this opportunity in the near future, at least to confirm the identification, age and sex of the animal and possibly also the period of time elapsed since its death.

Acknowledgements

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