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LATE HOLOCENE USE OF PENGUIN SKINS: EVIDENCE FROM A COASTAL SHELL MIDDEN AT STEENBRAS BAY, LÜDERITZ PENINSULA, SOUTH WEST AFRICA–NAMIBIA

By

GRAHAM AVERY

South African Museum, Cape Town

(With 6 figures)

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ABSTRACT

Cut-marks on jackass penguin *Spheniscus demersus* humeri and tibiotarsi from a shell midden dated to 2000 BP are examined. Evidence from experimentation and the ethnographic record shows that the marks were produced while skinning the penguins. High frequencies of small convex scrapers and backed bladelets and segments are correlated with skinning and the preparation of penguin pelts. This is amongst the earliest evidence for the manufacture of skin garments in southern Africa.

CONTENTS

INTRODUCTION

This paper reports on unusual bones from samples excavated in 1972 and 1982 by W. E. Wendt from a shallow shell midden (maximum 0,3 m in depth, 50 m² in area, 12 m³ in volume) at Steenbras Bay, Lüderitz Peninsula (26°40′S 15°07′E) (Fig. 1).* The 1972 excavation at the site of a trench 3,5 m² in area was reported on briefly by Wendt (1974). Material from the recent bulk sample is being processed. Radiocarbon dates are available: Pta 1049 (S3) 2070 ± 50 BP (charcoal) 10–20 cm; Pta 1045 (S2) 2540 ± 50 BP (limpet shell, *Patella* sp.) 20 cm; Pta 1042 (S1) 2440 ± 50 BP (limpet shell, *Patella* sp.) 3–5 cm (= surface). Vogel & Visser (1981) in reporting these dates state that the determinations run on the shells appear to be *c.* 420 years too old and that dating of the occurrence is, therefore, consistently at about 2000 BP.

* Wendt's collection will be deposited in the State Museum, Windhoek.

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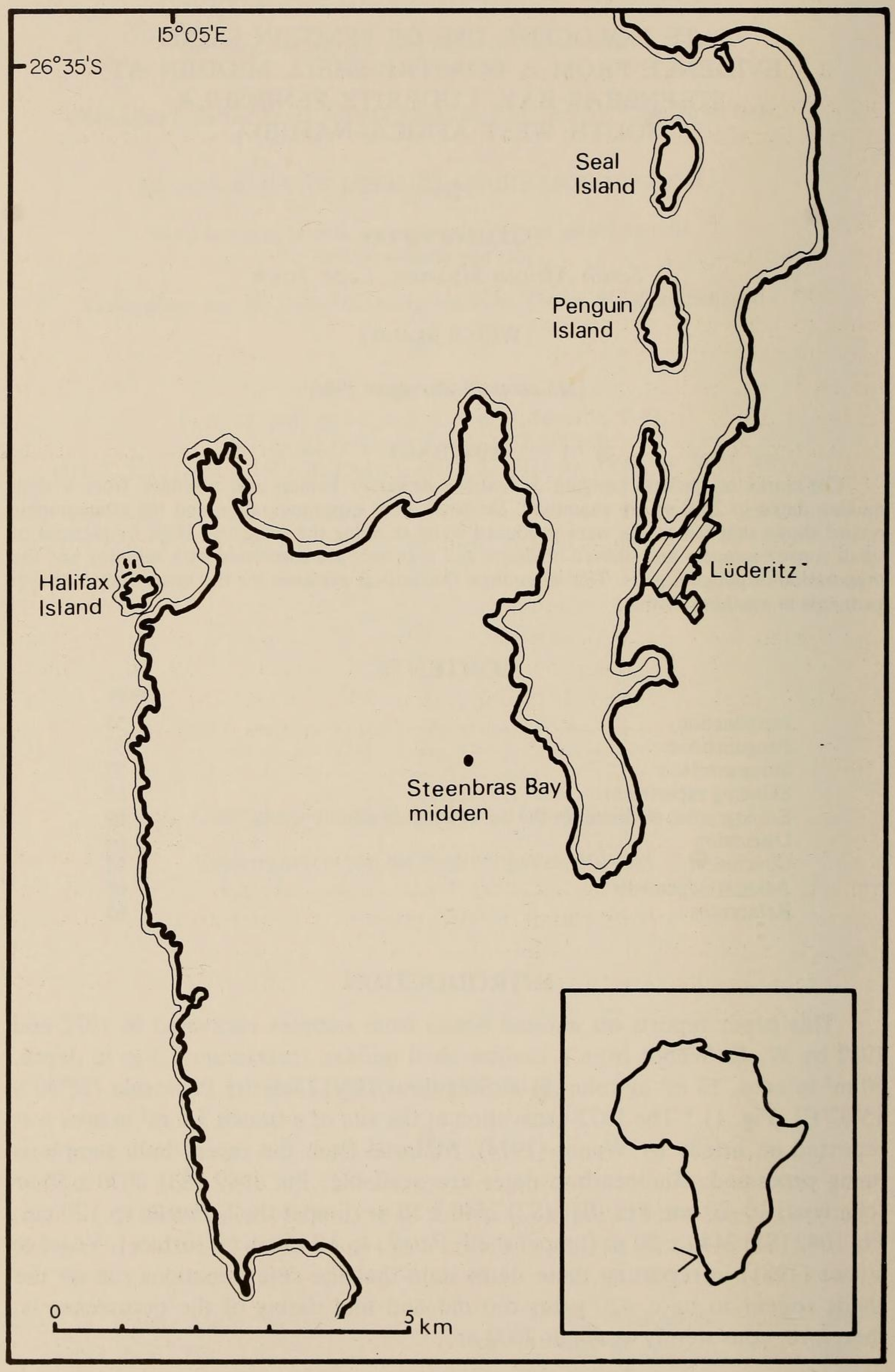

Fig. 1. Locality of Steenbras Bay midden and nearby islands.

PENGUIN BONES

Among the bones there is a series of jackass penguin (*Spheniscus demersus*) humeri and tibiotarsi bearing a series of obvious cut-marks (Fig. 2). Although other body parts were present in small numbers, no other evidence of cutting was found.

Humeri

The collection consists of two virtually complete left humeri (Fig. 2A, B), a proximal end of a left humerus (Fig. 2C), a shaft and distal fragment of a left humerus (Fig. 2D), and a shaft of a right humerus (Fig. 2E), representing a minimum of three individuals. All the bones are incompletely ossified and therefore of immature birds. Figure 2 shows that the cut-marks occur consistently on the proximal halves of the humeri.

Cut-marks are located in the capital groove and extend on to the head and bicipital surface. Others are on the median crest of the pneumatic fossa, deltoid crest, and the region of the nutrient foramen and attachment of the latissimus dorsi posterioris. The marks clearly resulted from cutting in the region where the flipper was attached to the body. The nature of the cut-marks and their extension towards the shaft suggest both that some form of sawing action was exercised and that the intention was to cut around the skin in order to remove it at the point where the paddle-like flipper joins the body. The logical goal, therefore, seems to have been to skin the bird. It would otherwise have been simple to rip off the skin, locate the joint and sever the attachments with little or no damage to the bone.

Tibiotarsi

A complete right tibiotarsus and a right distal end of a tibiotarsus of immature birds showed cut-marks on the distal shaft (Fig. 2F–G). Cutting was not as distinct as on the humeri. The position of the cut-marks, however, corresponds to the point at which feathered skin on the leg becomes the bare skin of the foot. This too is consistent with the suggestion that the marks resulted from skinning the birds.

STONE ARTEFACTS

It is postulated that the relatively high frequencies of small convex scrapers and backed bladelets (Fig. 3) that occur in the Steenbras Bay stone assemblage may be correlated with skinning activities and the preparation of pelts, perhaps not only of penguins but also of other animals such as the Cape fur seal *Arctocephalus pusillus*. Recent examinations of the function of small convex scrapers (Deacon & Deacon 1980; Binneman 1984) support the suggestion that they were used hafted as skin scrapers. Only a limited number of backed bladelets and segments have been examined as yet but Binneman (1984) has suggested that

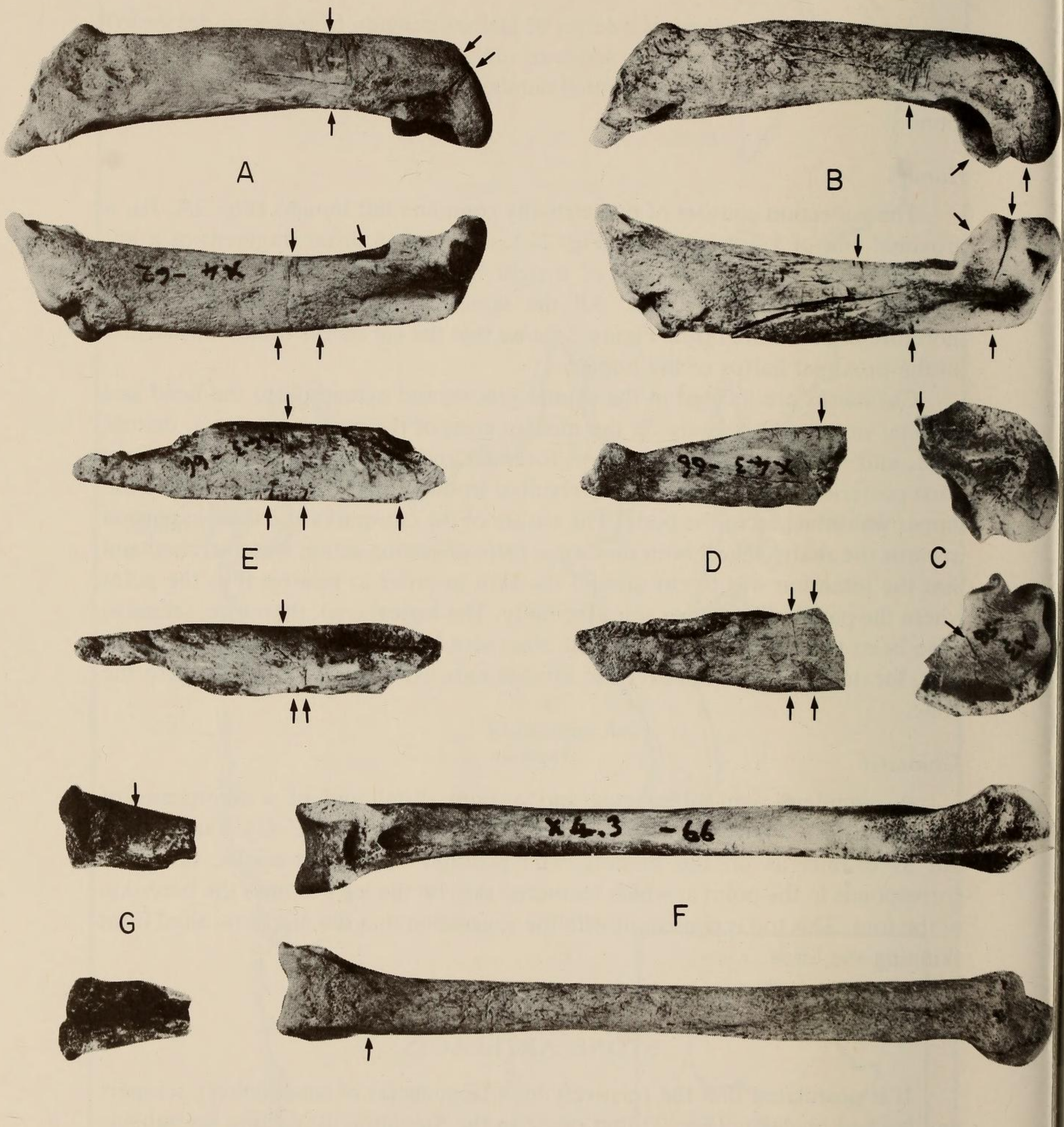

Fig. 2. Jackass penguin bones from Steenbras Bay midden (collected by W. E. Wendt). A–E. Humeri. F–G. Tibiotarsi. Arrows indicate location of cut-marks. Note sinuous lines caused by rootlets.

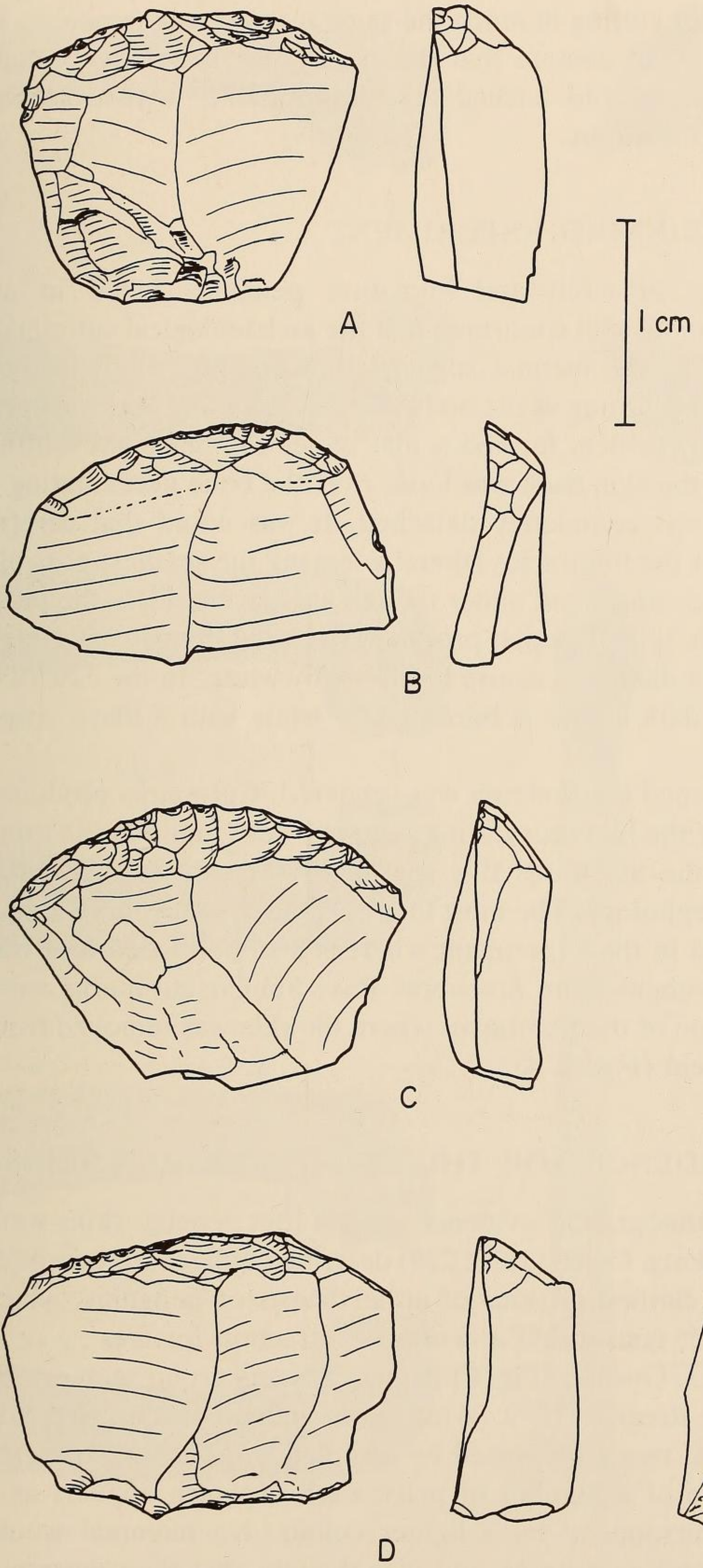

Fig. 3. Examples of some stone artefact types from the Steenbras Bay midden (collected by W. E. Wendt). A–D. Small convex scrapers (raw material: cryptocrystalline silica); broken line near worked edge of B indicates edge of mastic trace. E–H. Backed blades (raw material: quartz).

they were hafted in series for cutting in much the same manner as a penknife. It seems reasonable, therefore, to assume that the occurrence in relatively high frequencies of convex scrapers and backed bladelets together with evidence pointing to skinning is not fortuitous.

SKINNING EXPERIMENT

Experimental skinning of adult and immature penguins killed in an underwater explosion and an oil spill confirmed that the archaeological cut-marks could have been produced in the manner suggested above (Fig. 4). It proved difficult to remove the skin by cutting at the body–flipper link using decisive cuts. This was because displaced feathers formed a mat under the blade preventing penetration. Furthermore, the skin itself was loose over the bone necessitating a number of cuts before it was completely detached. It was noted that careful skinning at this point and at the tibiotarsus (thereby leaving the smallest possible holes in the pelt requiring closing), and under the tail at the vent made the most economical use of the whole skin. The pelt produced from the juvenile specimen (Fig. 5) was in the form of a dark oval centre bordered by white. In the case of a bird in adult plumage the dark centre is bordered by white with a black stripe (Brown *et al*. 1982).

After the bird was skinned the skeleton was prepared. Cut-marks produced around the proximal end of the humerus during skinning were found in the same position as the marks on the Steenbras Bay specimens (Figs 2, 4). They did, however, differ in their morphology. The most likely explanation for this is that a steel-bladed knife was used in the experiment whereas a stone-bladed tool was probably used on the specimens from Steenbras Bay. Similar cut-marks were produced on the distal region of the tibiotarsus where the skin was removed from the hind limbs of the penguin (Figs 2, 4).

ETHNOGRAPHIC EVIDENCE FOR THE USE OF PENGUIN SKINS

At least two lines of ethnographic evidence suggest that penguin skins were used in the making of garments. Owen (1833: 229) described indigenous people at Walvis Bay as being '. . . clothed in skins of either beasts or penguins, which being in an undressed state, constituted a centre of attraction for flies . . .'. A vignette drawn by Col. R. J. Gordon (Fig. 6) depicts a Nama group seen on the coast north of the Orange River in 1779. While some individuals are depicted wearing plain skin karosses, two are covered by completely different garments. These are apparently made of a number of pelts, each of which appears as a roughly oval dark form surrounded by a lighter colour. No mammal would produce pelts of this size and description and it is thought that they represent penguin pelts. This is supported both by the size, shape and number of the pelts, and details of texture depicted on both the external and internal surfaces (feather texture, and stippled internal texture created by feather roots). The detail

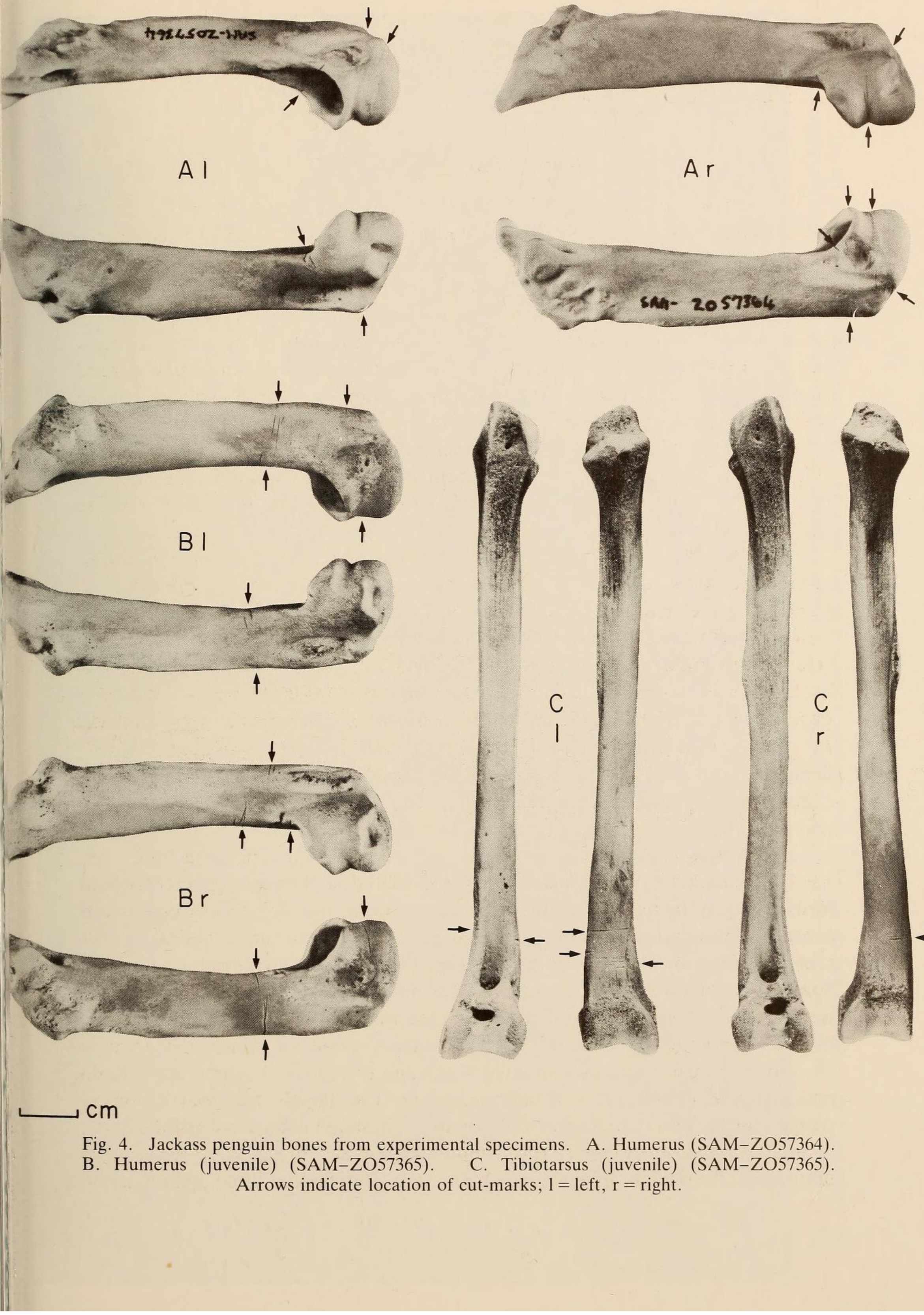

Fig. 4. Jackass penguin bones from experimental specimens. A. Humerus (SAM–ZO57364). B. Humerus (juvenile) (SAM–ZO57365). C. Tibiotarsus (juvenile) (SAM–ZO57365). Arrows indicate location of cut-marks; l = left, r = right.

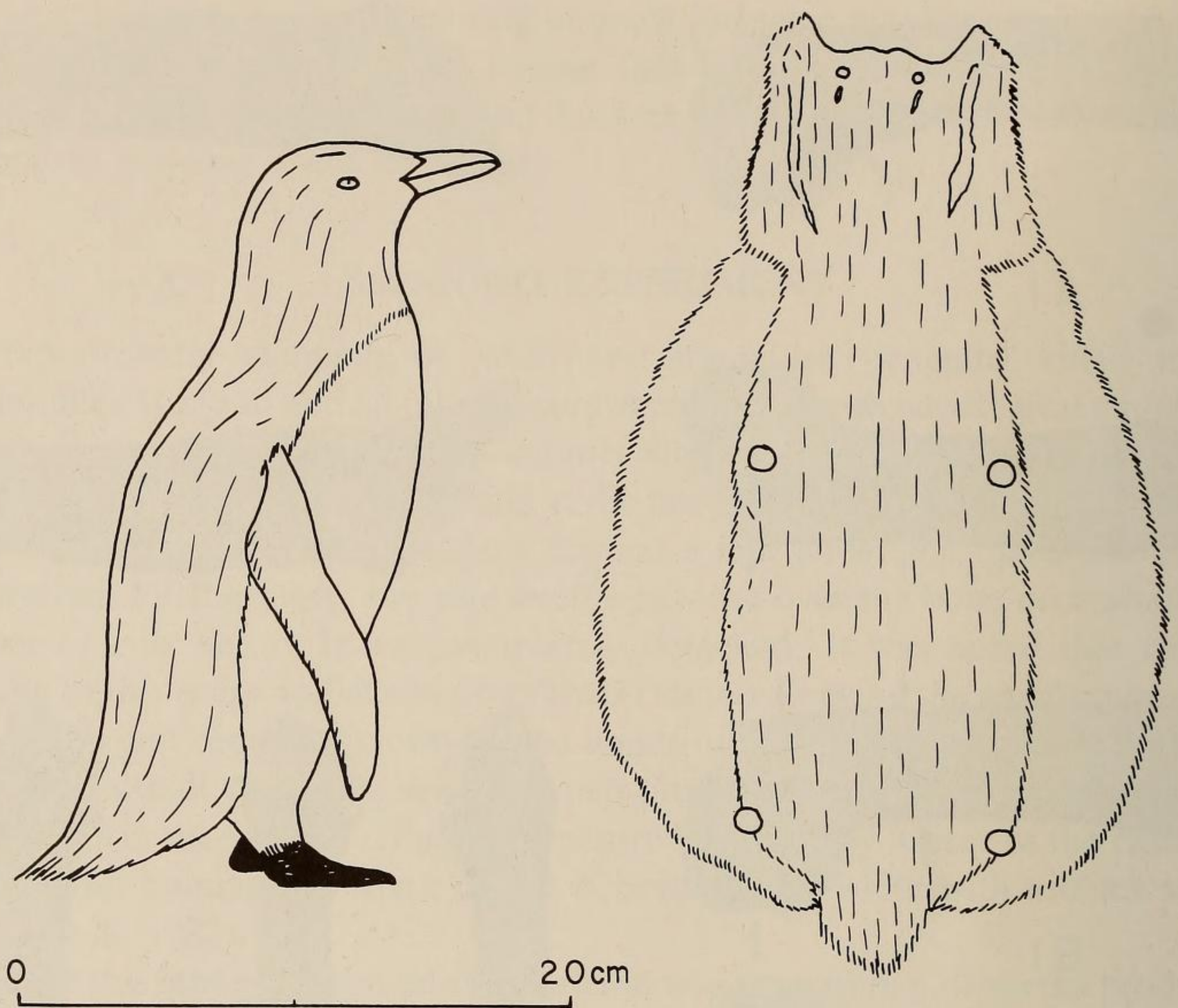

Fig. 5. A. Juvenile jackass penguin showing distribution of black and white feathering. B. Pelt from juvenile specimen, SAM–ZO57365. Note distribution of black and white areas and points (indicated by circles) at which humeri and tibiotarsi were removed. The holes are only visible from the ventral surface of the skin.

depicted, both as regards the karosses and as regards other aspects of activity, clothing, equipment, etc., suggests that Gordon was a keen observer of detail and that the depictions are accurate, in spite of a slight discrepancy where the black is not shown to extend down to the tail.

The karosses are obviously supple and the skins must have received some form of preparation prior to being trimmed and sewn together. This is in apparent contradiction to Owen's (1833) comment, but nevertheless essential to prevent rapid disintegration of the skin and loss of feathers through rotting (R. Rau, South African Museum, pers. comm.). It is more likely, therefore, that the skins were prepared. Flies would be attracted to the wearers' bodies, which would have been well-greased (Rudner 1982: 116 ff.), as well as to raw skins.

From the drawing it is estimated that some fifty pelts would be required to make up a full kaross. It is of interest to note that Nama Hottentot informants report that forty similar-sized hyrax (*Procavia capensis*) pelts are used to make a blanket (often described as a kaross) approximately 1,20 m × 1,60 m in area. One informant also described how hyrax skins were softened by hand and their raw

Fig. 6. Nama people on the coast near the mouth of the Orange River in 1779 (Gordon Collection No. 93, photograph courtesy of the Cape Archives). Note the colour and shape of the pelts and the texture of inner and outer surfaces of the karosses worn by the figures third and fourth from the left. They differ markedly from the skin garments worn by the other people.

sides were cleaned by means of little stones (L. Webley, University of Stellenbosch, pers. comm.).

Other illustrations by Gordon (Gordon Collection Nos. 84, 91, Cape Archives) appear to depict similar karosses, the first of these illustrations including what appear to be aprons made of a single penguin skin. These are not as convincing as those illustrated in Figure 6, and were from inland observations. However, the latter point, while relevant, need not present a problem, as it is well known that Khoisan people moved over great distances.

DISCUSSION

The fact that relatively few penguin bones occur can be explained by the size of the excavated sample. It is relevant that although relatively few bones ever show evidence of cutting, all penguin humerus fragments recovered and most of the tibiotarsus fragments show cut-marks. Furthermore, according to Thackeray's (1979) report on the earlier sample, penguins are the most common bird in the sample, in a proportion of 3 to 1.

The occurrence of penguin remains in midden accumulations has hitherto been assumed to indicate that these birds were eaten by the occupants of a site (Avery 1977; Thackeray 1979). However, penguin skins would make excellent pelts provided that they were preserved and softened; the skin is relatively thick and durable and the short feathers would provide good insulation. In order to preserve and soften them, the minimum of preparation required would involve scraping away the subcutaneous fat and other tissue adhering to the skins and working them to make them supple enough to be worn. Suitable scraping artefacts such as the small convex scrapers that occur in large numbers on the site would be essential to achieve this. In addition, experience from skinning a number of avian species and Cape fur seals taken from beaches indicates that even modern cutting instruments are rapidly blunted both by the presence of sand and by the resistance offered by feathers and thick fur. It may be predicted, therefore, that prehistoric skinning and scraping would have required regular sharpening and discarding of stone artefacts. Examination of the artefacts for wear traces would be a worthwhile test of this postulation.

Although there are instances of small numbers of penguins breeding on the mainland in localities where they are protected from predators (Finkeldey 1984), penguins are not normally accessible on the coast, as from choice they breed, and usually come ashore, on offshore islands. The Lüderitz Peninsula (Fig. 1), however, is close to a number of islands on which penguins breed or may have bred in the past (Rand 1963; Shaughnessy 1984). There are also other penguin colonies to the north and south of the area shown. Penguins do sometimes rest on the shore, moreover, and proximity to large breeding colonies would result in larger numbers doing this and thus being accessible. Mienertzhagen (1950) comments that large numbers of non-breeding individuals occurred on the shore and in the water opposite Halifax Island. The lack of an adult stripe on the

karosses depicted by Gordon suggests that the people were catching inexperienced immature birds, which often occur alive on beaches (pers. obs.) and are, therefore, more easily taken. Schultze (1907: 185) mentions Nama people catching immature penguins on beaches.

CONCLUSION

Although evidence is limited it is considered that skinning presents the best alternative to explain the location and nature of the cut-marks on the specimens. It is further postulated that the occurrence of relatively high frequencies of small convex scrapers and backed bladelets, and some segments, is correlated with the skinning and preparation of penguin pelts.

ACKNOWLEDGEMENTS

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