The archive version of the text can be obtained from the project archive on the Archaeology Data Service (ADS) website, after agreeing to their terms and conditions: ads.ahds.ac.uk/catalogue/resources.html?sfs_ba_2007 > Downloads > Documents > Final Reports. From here you can download the file 'Isbister,_SFS__Pigment_Resources.pdf'.

3.8.1 The finds and their context

One purplish-grey nodule of haematite and one of mudstone with an earthy-orange limonite cortex were identified from the excavations (Appendix 12). Both came from outside the main midden area: the haematite from Context 7/8, the slopewash over the palaeochannel; and the limonite from Context 17, the sandy soil with heat-cracked stone. Although these contexts are outside the main midden area, there is no reason to suggest the finds are not Mesolithic.

3.8.2 Possible origins

Iron bearing rocks and minerals including haematite and magnetite are found in the surrounding geology at Sand; in both the Sleat Group and the Applecross Formation of the overlying Torridon Group. Haematite is also found in the sediments around Diabaig (Stewart 1991:73&79).

3.8.3 Modification

Illus 473: Haematite nodule from Sand showing modification

Both nodules have worn surfaces and these suggest that they were primarily exploited and reduced for their pigment (see Illustrations 473, left & 474, right). Various techniques of reduction are apparent on each of the nodules; rubbing down or levigating against a hard surface and gouging or scoring using a sharp point.

Illus 474: Limonite cortex from Sand showing modification

Although the haematite nodule is dull in outward appearance, its streak is orangey-red. The modified surfaces provide evidence that fine, red spectrum pigment was created, which must have been as striking in the past as it is today (Isbister 2000:192–3). Wet abrasion against a pebble was used to work the pigment from the haematite nodule's largest face, as indicated by the type of surface abrasion and the convex profile of the modified area.

Experiments show that rubbing down a crystalline haematite nodule like this in water, against a rounded sandstone pebble, produces a smooth curved nodule face and in the process creates fine, brightly coloured pigment with a tacky paint-like consistency. Rubbing down the nodule in viscous clear liquid, such as gum or resin, cushions the grinding process while simultaneously binding the pigment to enable smaller pigment particles to scatter creating even finer, brighter pigment and a smoother nodule face (see Illustration 475, right). Either of these techniques may have been used.

Illus 475: Experimental haematite colour in gum

Fine orangey-red pigment was produced from the burnished narrow edge-ground facet on the haematite nodule. It is unclear whether coloured pigment was worked wet or dry from the facet and rubbed areas on the limonite nodule.

Illus 476: Experimental pieces compared with the archaeological haematite

Both nodules also have evidence of scraping and various tools, such as bone or flint, would have been suitable to scrape the haematite and limonite from them (see Illustrations 476, left & 477, right). A sharper point was used to score the limonite cortex which produced earthy-orange, dry pigment powder. Pigment from the haematite when dry and crystalline adheres to the fingers like powdered graphite and appears bright orange and translucent when rubbed on the skin. Limonite pigments are hydrated and often appear dull. Experimental work shows that when limonite or ochre is heated, red iron oxide pigments are realised, but those are not equal in brilliance to crystalline haematite pigments. Experiments have also shown that dry pigment powder mixed with water does not create pigment material as fine as that produced by the more efficient wet abrasion techniques described above.

Illus 477: Experimental piece of bone scored haematite

3.8.4 Possible applications

The abrasion and scoring techniques described above required concentration and precision, suggesting that the application of the material was equally focused.

Paints, chalks and cosmetics for personal adornment and artefact decoration are possible interpretations and the colour and healing properties of these pigments may have been also known and used. Ethnography tells us that the brilliance of colour was often used as a sensory stimulus to evoke spiritual or ritual power (Morphy 1989:30). In traditional cultures colour and cosmetics are infused with symbolism and meaning; the word 'cosmetics' comes from the Greek, 'cosmos' meaning order (Power 1999).

It is also possible that the excavated haematite nodules and pigment may have been associated both symbolically and practically with blood, the feminine and medicine. The antiseptic qualities of haematite and its ability to staunch bleeding are attested by both ancient and modern traditions; limonite is also used but high iron bearing red haematite is preferred (Budge 1970:314; Velo 1984:674). The Gugadja people in north-western Australia used haematite pigment as a medicine; after having moistened it with water or saliva it was applied to sores and burns and also used to treat internal pains (Peile 1979:217). There is evidence that the Mesolithic inhabitants of Scotland displayed an intimate knowledge of their surroundings and it is likely that this included information on the medicinal properties of minerals.

Chinese traditional medicine still uses haematite and limonite in the treatment of

diseases and has done so for more than 5,000 years. It employs the healing properties of herbs, minerals and other natural materials and considers that every disease can arise from and/or influence our emotional state. Haematite is finely ground in water or vinegar for oral administration and is commonly used with limonite, oyster shell and white peony root. In light of the large amounts of burnt marine shell excavated from Sand, it may be worth noting that calcined oyster shell and haematite are often used as a major combination in medicinal preparations. Haematite and oyster shell are also used as sedatives to calm the mind and spirit (Reid 1987:120–4). Various other treatments using haematite include those for prolonged menstruation, nasal bleeding, infantile malnutrition, vomiting and belching, bronchial asthma and lacerations (Bensky & Gamble 1990:578).

3.8.5 Conclusion

The small sample size makes specific interpretations problematic, but it is clear that both haematite and limonite formed part of the material culture of the inhabitants of Sand. Whether for colour, healing properties, or perhaps both, they were an important addition to the use of local resources that has been recorded from the site.

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