



NEW ZEALAND
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NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION NEWSLETTER



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ROCKS AND THE ARCHAEOLOGIST

G.M. Mason

A large number of the artifacts recovered by archaeologists are made of rock material: one has only to think of the thousands of adzes, chisels, and personal ornaments, which are domiciled in museums and private collections throughout the country to realize the truth of this. Unfortunately very little is known about the provenance of the majority of this material with a few important exceptions such as obsidian, nephrite, some "baked argillites" and two cemented siliceous sandstones (improperly termed quartzite.) The number of quarries known are few indeed and the number of descriptions (either of the hand specimen, or of microscopically examined thin sections) are, lamentably, even fewer. The reason that so few quarries are known seems to be fourfold:-

- (a) Collections from well documented excavations have generally not been subjected to petrographic analysis and thus possible source areas cannot be recognized.
- (b) Little or no systematic search for quarries seems to have been done except for obsidian.
- (c) Quarries found "by accident" have not been placed on record.
- (d) The search for quarries is complicated by the wide distribution of many rock types commonly used by the Polynesian peoples in this country. For example - chalcedony, cemented siliceous sandstones, greywacke, fine-grained basic volcanic rocks, quartz crystals etc., all occur widely in outcrop and are distributed even further by rivers and the sea.

One method of attacking the matter of provenance would be to prepare thin sections of rocks (determination in the hand specimen is generally unsatisfactory) from several well-documented excavations in one region and also from natural occurrences in beaches, rivers and in situ outcrops of all those rocks which could have supplied material found in local sites. Then it would be a simple matter to decide which of the rocks were probably imported and from these latter could be removed rocks from known and fully described quarries (if any). By repeating this process for a number of sites, it might become possible to postulate the existence of local and undiscovered quarries. However, it has been pointed out, and will bear reiteration, that once a quarry for some particular rock has been found it should not be assumed that all similar rocks come from this same source. The Author has recently embarked upon a project of this type for the Canterbury region with favourable preliminary results.

As more is known about rock types occurring at various well documented sites, it may happen that a simple chronology based on the incoming and obsolescence of various materials will be erected; also migration and trading patterns and their permutations with culture change could be reasonably expected to emerge, to name but a few of the likely results.

A cursory glance through New Zealand archaeological literature reveals that on the whole, archaeologists are not very familiar with petrological terms, but have selected a few 'omnibus' terms to use (or more often, misuse) particularly the words 'basalt', 'quartzite', 'argillite' and 'jasperoid'. It is very necessary to have a quick and ready field terminology, but at the same time it is strongly desirable to have a terminology which is unambiguous as far as possible, bearing in mind that even where the knowledge is present, hand specimen determinations are at best, a tentative 'guess' and the last word rests with thin section determination. To meet the need for field description, the term 'basaltic appearance' might be used for rocks which are certainly igneous, (i.e. those which have passed through a molten stage to solidify at a lower temperature), have a relatively high density and are fine grained. The word 'quartzite' is properly applied only to siliceous sediments etc., which have been completely recrystallized, not to well cemented siliceous sandstones, various cherts and so on. To distinguish a true quartzite in the field is in most cases well nigh impossible if the specimen is not from an outcrop, so the term silite is proposed for all those tough, fine to medium grained siliceous rocks which break to give a sharp cutting edge and with a subconchoidal fracture and which have been known variously in the past as quartzites (ortho- or meta-). In most cases where the worker has little knowledge of petrology, it would be preferable for him to give a very general description of a rock within the limits of his knowledge rather than to give a name which could be very misleading.

To sum up, it is suggested that quarries be recorded and the rocks from them be adequately described in hand specimen and thin section; that material from well documented excavations be sectioned and described and that rock names be used with more precision.

DATING SHELL MIDDENS - A SOUTH AFRICAN CHEMICAL AID FOR RELATIVE
DATING

J.B. Palmer

Stretching from East London to beyond the Mozambique border is a belt of sand dunes known as the Natal Old Red Dune. Rising in places to 500 feet above sea-level, the belt is four miles or so at its widest point. In parts the dune slopes directly onto a rocky beach but is often separated from the sea or covered by lighter coloured sands.

Along this dune belt are sites of Later Stone and Iron Age peoples who left middens at many points close to fresh water. Many of the problems that South African archaeologists have to contend with in such terrain are those that face New Zealand archaeologists where there is a paucity of cultural material in similar dune belts. Common to both countries is the problem of determining the relative ages of local concentrations or clusters of middens spatially separated and often unstratified, yet similar in their characteristics. Quantitative analyses of mollusca may not always give a guide and