NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

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ABSTRACTS FROM PAPERS PRESENTED AT

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PHYSICAL ANTHROPOLOGY IN NEW ZEALAND - Robin J. Watt

Of interest to the archaeologist is that branch of physical anthropology dealing with the skeletal remains of past populations. Unfortunately, though, physical anthropology in New Zealand has been sadly neglected and so has contributed little to our overall knowledge of the Maori. While theory and methodology in archaeology have progressed, physical anthropology here has remained relatively static for over a hundred years.

Earlier research is almost useless and, as Shapiro (1940) noted, was hampered by the lack of adequate samples, variations in methodology and the lack of any comprehensive comparative work, save Scott's gallant paper of 1893. Fashion hindered progress, too. Until the 1920s univariate analyses rested on data from craniometrics and the magic of the cephalic index which was meant to be a marker of racial differences.

Apart from Scott (1893), all research was centred on the problem of Polynesian racial origins giving rise to the numerous multi-wave migration theories of the period. Some accounts were largely impressionistic (e.g., Diffenbach, 1841) while others were a combination of impressions and craniometrics (e.g., Turner, 1884, 1886). But the majority was content to study only a small handful of New Zealand crania (e.g., Duckworth, 1900: Slater, 1901) supplementing their sample with data drawn from museum catalogues such as that of the Royal College of Surgeons (Flower, 1879).

Although there was a change in methodology ushered in by Wagner (1937) who also dealt with Polynesian origins, but this time on the basis of biological affinities using the multivariate technique of Pearson's Coefficient of Racial Likeness, this had no impact on New Zealand anthropology whatsoever. By Wagner's time the only recent significant study was that by Buck (1922, 1923) who dealt with Maori somatology.

Since Shapiro's review in 1940 there have been only three studies that have dealt specifically with the Maori to any great depth. (Taylor, 1962, 1963: Shima and Suzuki, 1967), and it is significant that even since the time of Diffenbach (1841) nearly all of the work published has been done by overseas scholars.

Clearly what is needed, if physical anthropology is to play any part in New Zealand prehistory, is the establishment of a proper course in the discipline at the universities of Auckland and Otago along with the necessary library and research facilities. There is no lack of evidence to study: nearly all material in museums has yet to be researched for the first time.

PREHISTORIC SHELLFISH EXPLOITATION IN NORTHERN NEW ZEALAND - P. L. Swadling

Similar morphological changes to those observed in commercial beds have been found in prehistoric Maori shell middens. Two findings of particular interest have come out of this approach. Firstly, the samples analysed indicate that exploitation does not seem to have been as severe as in some present day commercial beds and, secondly, the extreme form of these changes appear to be associated with a particular form 9 settlement.

RADIOCARBON DATING: ITS USES AND MISUSES IN NEW ZEALAND ARCHAEOLOGY - Michael M. Trotter

In the field of New Zealand archaeology, there is probably no scientific development that has created more excitement and high hopes, and which has subsequently been so misused and misunderstood, than radiocarbon dating. There are several reasons for this. There is a lack of knowledge about the selection of the best material to produce a reliable result; variations between radiocarbon and calendar dates are not well understood and often ignored; the relatively short time span of human occupation in New Zealand tends to maximize the effect of errors in radiocarbon dates; and there is the very human desire to make an exciting discovery - the earliest date for human occupation, or the latest date for moa survival. The only safe way to use radiocarbon dates in New Zealand archaeology is to support interpretations or theories for which there is other strong evidence. Radiocarbon dates alone cannot produce a reliable framework on which to construct prehistory.

BOTANICAL REMAINS FROM ARCHAEOLOGICAL SITES - Beverley McCulloch

Archaeologists are becoming increasingly dependant on a wide range of sciences to assist them with the interpretation and analysis of archaeological evidence. One of the fields in which archaeologists have the greatest difficulty is Botany. Because botanical remains

are often hard to recover from archaeological sites, and because specialised skills and techniques are required for the accurate identification of these remains, the archaeologist does not always make the best possible use of the evidence available, often because he is not aware of its potential value or the correct methods of collecting the material required. As we are becoming increasingly aware of the relationship between man and his environment so, too, should our interest in the environment of the prehistoric Maori be coming greater. Identification of botanical remains from an archaeological site cannot only tell us how the occupants utilised such materials (e.g., for clothes, food, etc.) but also the probable vegetative cover, climatic conditions, and local fauna, knowledge of which may in turn suggest why and when they were there.

ASPECTS OF DEMOGRAPHIC STUDIES IN NEW ZEALAND PREHISTORY - Garry Law

Some recent attempts to define the pattern of New Zealand's population growth are examined. The poor definition of the starting point of the population and a wide variety of possible growth rates give possible populations for the middle of prehistory covering more than an order of magnitude. None of several methods examined, including explaining the number of pa sites in New Zealand by high early population growth, have sufficient precision to narrow the range of choices. For the end of New Zealand's prehistory there have been claims that the population had reached homeostasis; however, these claims have been based on pessimistic views of the environmental capacity and imply late population mortality rates for which there is no other evidence.

THE NATURE AND PROTECTION OF ARCHAEOLOGICAL SITES IN NEW ZEALAND - J. R. McKinlay, N.Z. Historic Places Trust

The field evidence of New Zealand prehistory varies greatly as to form, function and cultural content. Although investigations into the prehistory of New Zealand have been pursued for more than 100 years, we are still in the position of not having satisfactory answers for even some of the most basic questions. This has largely been due to the lateness with which professional archaeology has come to New Zealand, and to the recency of the application of modern investigation techniques, but we are now faced with the situation in which a large part of the body of primary evidence is confronted by a physical threat of considerable magnitude, and we have neither the legislation, the genuine public awareness of the nature or magnitude of the problem, nor the manpower to

ensure the preservation, or the adequate investigation of threatened sites.

The first legislation at the beginning of this century proved to be abortive, and the present legislation is hardly more effective, for by concentrating only on the export of artefacts, it does not attack the main problem which is the protection of sites. There are several other Acts which may be used to give some protection to sites, but only peripherally to their main purposes. New Zealand is one of the few nations not to have wider antiquities legislation, although the protection in many other nations is more apparent than real. The major international Convention in this matter appears unlikely to be ratified by New Zealand.

The last decade has seen several attempts principally by NZAA to have the legislation updated, or its application made more effective, with limited success. While the State itself has given some considerable support to certain salvage archaeology programmes, there has been no formalization of the situation whereby private firms might be obliged to act similarly. The recent movements in the area of sale of artefacts raises fears of a renewed onslaught by fossickers of the remaining sites and the increased dangers of illicit export of artefacts.

Currently, discussions are being held to define areas of weakness in the present legislation and to consider possible revisions. Both NZAA and the Trust in their latest submissions have stressed the wider implications of antiquities legislation for the protection of sites and the control of excavation.

STONE WALLED COMPLEXES OF CENTRAL AUCKLAND - Agnes Sullivan

Stone walled complexes or continuous areas of walls, enclosures and structures, have been recognised as prehistoric remains for some time, but it is only recently that there has been systematic study of them and their place in prehistoric systems in New Zealand and Hawaii.

This paper attempts a preliminary descriptive survey of the occurrence of stone walled complexes, which are assumed to have been associated with gardening, in the Auckland isthmus and vicinity, roughly the area of metropolitan Auckland on NZ MS 1, sheet N42.

The region, from coast to coast, varies from less than one mile to about ten miles wide, and consists of Tertiary mudstones and sandstones at an average 100' (c.30 m.) above sea level, which form heavy soils of low to medium fertility. In the south and east there are Quaternary sediments at lower levels.

Over the last 50,000 years or so, the products of episodic vulcanism have been superimposed on both types of formation. This volcanic activity has several distinctive features, being quite recent, small-scale, multi-centred, and entirely basaltic in character; and it has been classified as ranging from largely explosive, producing low craters, tuff rings and low tuff cones, to largely effusive with scoria cones and lava flows. All types of activity produced quantities of loose basaltic fragments, ranging from occasional lumps of massive lava, through more vesiculated to highly scoriaceous pieces. These lumps and cobbles form the material of the stone walled complexes.

Soils developed on the volcanic areas of the region are friable red brown loams of moderate to good fertility. Stone walled complexes have been found only on these and not on the sedimentary based soils.

The region is now largely occupied by the Auckland urban agglomeration and stone walled complexes of any size are preserved at the present time only on its edges. Surviving or partly surviving complexes include:

1. Wiri - McLaughlins (to south-east), about 700 acres (c. 280 hectares).

2. Styaks - Greenmount - Otara (to east) about 50 acres surviving (c. 20 hectares).

3. Puketutu island (south-west), about 200 acres (c. 80 hectares).

4. Pukeiti - Otuataua - Ihumatao (south-west), about 150 acres (c. 60 hectares).

5. Motukorea or Browns island (north-east) about 10 acres surviving, (c. 4 hectares).

Fragments of wall systems, of less than five acres (c. 2 hectares) in each case, survive around the base and slopes of One Tree Hill (central), Mt Wellington (east central) and Pigeon Mt (north-east).

Complexes which are reasonably intact appear to extend over all available soil on a volcanic patch. Walls radiate out from terraced volcanic cones on a patch, and then form a more irregular network. Walls appear to enclose patches of stone free soil. Structures are often clustered or joining, and clusters of structures tend to form interstices between patches of soil and to be the site of shell midden deposits. Structures include stone piles, terraces, small enclosures

with shapes ranging from rectangular to oval to irregular, either single or complexed, and a variety of small free standing wall structures including semi-lunate and L-shaped.

Stone walled complexes known to have been destroyed in the present century include:

(a) Little Rangitoto (central), probably quite small.

(b) Mt Smart or Rarotonga (south-east central), probably at least 100 acres (c. 40 hect.).

(c) Three Kings or Te Tatua (west central), of at least equal size to Mt Smart.

Complexes demolished in the 19th century include those surrounding the cones of Mt Hobson and Mt St John, both probably small, and Mt Eden, probably large. These are all in the central area.

Indirect evidence suggests use of the stone walled complex as a type on the Auckland isthmus for some length of time from the prehistoric into the protohistoric period.

A CULTURAL ECOLOGICAL EXPLANATION FOR ECONOMIC CHANGE IN N.Z. PREHISTORY - Bruce McFadgen

Cultural ecology takes as its starting point the assumption that man and society are a functioning and integral part of the ecosystem. It follows therefore that where cultural change, particularly economic change has occurred, evidence for it will be found in both the archaeological record and in the record of the past environment.

It is believed that the extinction of the moa in New Zealand, the distribution of the podocarp forest on the Canterbury Plains, and economic change in New Zealand prehistory, especially the development of agriculture, may be explained by reference to a single hypothesis, that of population pressure on food supply brought about by destruction of the South Island podocarp forest between about 1,000 A.D. and 1,200 A.D.