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PHYSICAL ANTHROPOLOGY IN NEW ZEALAND

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Of interest to the archaeologist is that branch of physical anthropology dealing with the skeletal remains of past populations. The purpose of this paper is to outline what has been done concerning New Zealand physical anthropology and briefly indicate some of the benefits to archaeology by encouraging the growth of physical anthropology. At this point we could note that the interest of the archaeologist in physical anthropology is certainly not one-sided for both disciplines can contribute to one another. Besides wanting to know about diet, health, genetic and morphological variation among past peoples, the physical anthropologist also asks questions concerning effects the environment could have had on societies by investigating where and how groups lived, together with the state of their technology. Such environmental evidence can be supplied by the archaeologist who, on the other hand, may be concerned with questions dealing with population dynamics, a natural extension of the work done by a physical anthropologist.

Unfortunately, though, physical anthropology has been sadly neglected in New Zealand, and so has contributed little to the overall understanding of the Maori and Chatham Islander. While theory and methodology in New Zealand archaeology have progressed, physical anthropology has remained relatively static for over a hundred years. There has been a noticeable lack of any ongoing systematic research; especially research which would utilise modern and objective techniques similar to the work of Laughlin and Jorgensen (1956) and Brothwell (1959a).

Earlier work was often guided by a somewhat naive belief in oral traditions and, as Shapiro (1940) noted, was hampered by the lack of adequate samples, variations in anthropometric methodology and the lack of any comprehensive comparative work save Scott's study of 1893 which still remains, today, the most significant contribution to the osteology of the Maori and Chatham Islander.

The fashion of the time was to perform an essentially subjective univariate analysis based on the magic of the cephalic index which was supposed to be a marker of racial differences. Various scholars (e.g., Weisbach, 1890 and Mollison, 1908), who used different techniques of measurement, were content to supplement their small samples by drawing

data (also resulting from different methods of measurement) from published works such as the catalogues of Davis (1867) and the Royal College of Surgeons (Flower, 1879). This only compounded the spurious nature of their conclusions since all it did was to accentuate even more the extremes of cephalic indices in the samples they studied. It is not surprising, then, that Volz (1895, cited by Shapiro, 1940) was able to infer from his data that an Australian stock was once widespread in the Pacific, and, later in 1908, Mollison was able to accept the notion of a dark-skinned people in New Zealand, representative of an Australoid-Melanesian strain, before the coming of the lighter brown-skinned Maori. Scott also based part of his work on the preconception that "We know the Maori to be a mixed race, the result of the mingling of a Polynesian and Melanesian strain." (Scott, 1893: 5). This preconception derived from an acceptance of the oral traditions together with the then current belief in the formation of present-day populations by the mixture of pure races.

With the exception of Scott (1893) and Shapiro's 1940 review, all major osteological publications until the time of Taylor (1962, 1963) were concerned with the problems of Polynesian racial origins, with few touching on the environmental influences that may have played a part in peopling the Pacific. Duckworth (1900), beginning from a small series of ten crania, concluded there were two great Polynesian stocks. However, other workers, such as Volz (1895), Poll (1903) and Mollison (1908) on the basis of cephalic indices recognised a Melanesian-Polynesian mixture in the Pacific as did Scott earlier. Poll (1903), finding one of his types of Maori crania not within the index range of the Chatham Islander, concluded this to be indicative of a Melanesian component. By the time of Thompson (1915-1917) the notion of an Australian component in the Pacific, which would have had an influence in the physical makeup of the Maori, seems to have been dropped. Her work, which dismissed any grounds for such an assumption, seems to have been the last published work on the matter.

By the early 1920s the search for Polynesian racial origins had reached a climax with the work of Sullivan (1923) and the Bayard Dominick Expedition (1923) which, in its very broad scope, attempted to settle the problem once and for all. Sullivan (1923), on the basis of head indices from living populations isolated three major types; the Polynesians (which he suggested were intermediate in morphology between the Caucasians and Mongols), the Indonesian and Melanesian types. His basic premise concerning the migrations claimed that Polynesian types were found all over Polynesia but Indonesian types were not; therefore, the latter must have arrived later, or, were the remnants of an earlier population. The Melanesian influence he acknowledges as being "... naturally strongest in the south and west

of Polynesia..." (this would obviously include the Maori and Chatham Islander) but does not bother to say why, although he did suggest the matter needed more research.

The Bayard Dominick Expedition (1923) concluded from their systematic racial and cultural studies that there were at least two basic racial strains to be considered in the peopling of the Polynesian Islands. It is not at all clear, though, how aspects of the "... original characters ..." and the "... original cultural elements..." were represented. Their 'Type A' strain, which represented their Caucasoid stock, and their 'Type B' which represented an Indonesian stock, were neatly correlated with their two cultural types also labelled 'Type A' and 'Type B'. Each body of evidence, of course, supported the other. The ultimate origin was considered to be in the region of the Malay Archipelago.

Not until 1937 with the publication of Wagner's comprehensive study, was there a significant swing away from what had become the traditional approach in anthropometry. Wagner also dealt with population variation in Polynesia, but his approach was multivariate, using Pearson's Coefficient of Racial Likeness (CRL). Although his statistics were not as sophisticated as those suggested by Mahalanobis, Wagner's study far superseded any research done previously (Pietrusewsky, 1969). In contrast to the traditional approach his work not only pointed out differences among island populations but also emphasised the biological affinities between them. He was thus able to illustrate in a more precise and objective manner the relationship of the Maori as forming part of a cluster with the Marquesas and the Society Islands while, at the same time, bringing out localised variations which served to differentiate the island groups from each other.

But although Wagner effectively ushered in this change of methodology to Polynesian studies, his work had no impact on physical anthropology in New Zealand whatsoever. By Wagner's time the only recent significant work was that by Buck (1922, 1923) and that dealt with Maori somatology.

The work of Marshall and Snow (1956) involved the use of both metrical and non-metrical evidence. Analyses of both data were in general agreement that all Polynesians shared a common origin, thus reflecting Wagner's notion of a homogeneous population whose differentiation arose from the branching out from a common stock and not the result of a Melanesian-Polynesian miscegenation.

The latest study of Pacific crania, which also incorporated in it samples of the Maori and Chatham Islander, was that of Pietrusewsky (1969, 1971). The implications of his work for New Zealand physical anthropology lie not so much in the results of his metrical and non-metrical analyses but in his multivariate statistical approach demonstrating island affinities and differentiation. Methods similar to Pietrusewsky's could be applied to New Zealand skeletal evidence.

It should be obvious by now that to talk of physical anthropology in New Zealand is merely to discuss the numerous attempts at solving Polynesian racial origins. In fact, since the time Diffenbach published in 1841, there have only been four studies that have dealt specifically with the osteology of the Maori and Chatham Islander to any great depth. These are the work of Scott (1893), mentioned several times already, Taylor (1962, 1963), and Shima and Suzuki (1967). Of these the latter could have made a contribution greater than the former two writers, but their methodology, immediately reminiscent of the magical cephalic indices associated with comparative data from earlier scholars such as Quatrefages and Hamy, who published in 1882, and Turner, whose contribution to the "Challener Reports" appeared in 1884, only seem to deaden the value of their study.

So far discussion has centred on cranial indices. But there is more to physical anthropology than this. For instance, Brothwell, in his edition of Dental Anthropology, clearly illustrates the value to be gained by a study of dentition. In New Zealand, the work of Taylor, especially his Cause and Effect of Wear of Teeth (1963), has produced some very perceptive conclusions which give insight into the diet and the effects it may have had on the Maori and Chatham Islander.

It remains, now, to speculate as to the future of physical anthropology in this country. Unfortunately, the future looks as bleak as the past. If present trends persist, all that will result in the two major anthropology departments, Otago and Auckland, will be a continuation of a smattering of human evolution and possibly, as Auckland has recently started doing, aspects of population biology. The fact that nearly all that has been published is the work of overseas scholars points clearly to our own inadequacies. The very skeletal material that constantly turns up at archaeological sites or washed out of river banks is every much a part of New Zealand's prehistory as the pa sites, adzes and midden mounds that keep our professional archaeologists merrily employed.

Clearly what is needed, if physical anthropology is to play any part in New Zealand prehistory, is the establishment of proper courses

in the discipline at Otago and Auckland universities, along with the necessary library and research facilities. Such courses would involve not only osteological studies but somatological and population dynamics as well, viewing man as he survives in a given environment.

Some of the more important problems that need to be examined are:

1. Establish a basis of comparative date.

2. Attempt some degree of time control: a problem shared just as much by the archaeologist.

3. Future studies should try to see what limitations the environment may have placed on populations.

From my own direct experience, there is certainly no lack of enthusiasm or imagination at either of the two universities for ongoing research to be done. There is no lack of material to study since nearly all the material in museums has yet to be researched for the first time, while the variety of Polynesian populations within New Zealand and the environs of the South-west Pacific represent a natural laboratory for studies on living human populations. However, until steps are taken to remedy the defects in New Zealand institutions these assets will continue to be exploited by overseas scholars with this country benefiting only marginally.

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FIVE TRIANGULAR ADZES FROM HAIKU, MAUI, HAWAIIAN ISLANDS

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In the collection of the Bernice P. Bishop Museum are five unfinished adzes with triangular cross-sections from Haiku, Maui, Hawaiian Islands. On loan from Maunaolu College, the adze blanks were found together in a cache on the property of Mrs Isa Lindsay. As triangular adzes are an extremely rare, and probably early, form in Hawaii, it seems appropriate to provide a description of these specimens, and to offer a hypothesis for their connection with adze assemblages from other East Polynesian islands.

The adzes are all of the same material, a dense, grey basalt, probably dike stone. The roughing out stage of manufacture had been completed, but the adzes have not been ground or polished. Flaking was the only method used in shaping the artifacts. There is considerable size variation, as indicated in Table 1. The three larger specimens are tanged; the tang was formed by a frontal reduction of the butt. There is a slight "up-curving" at the poll. One of the tanged specimens (L3692) is shown in Figure 1.