



NEW ZEALAND
ARCHAEOLOGICAL
ASSOCIATION

ARCHAEOLOGY IN NEW ZEALAND



This document is made available by The New Zealand
Archaeological Association under the Creative Commons
Attribution-NonCommercial-ShareAlike 4.0 International License.

To view a copy of this license, visit
<http://creativecommons.org/licenses/by-nc-sa/4.0/>.



NZAA: THE CIRCUMSTANCES OF ITS CONCEPTION, BIRTH AND EARLY UPBRINGING

Jack Golson
RSPAS, Australian National University

Early in the northern summer of 1953 the Department of Anthropology of Auckland University College advertised a lectureship in prehistory. Grahame Clark handed me a copy of the advertisement at a garden party to farewell the retiring Disney Professor of Archaeology at the University of Cambridge, Dorothy Garrod, whom he would shortly succeed in the post. “I can’t apply for this, Grahame”, I said, “I’m halfway through a PhD.” “You only do a PhD”, he replied, “when you have no job.” Since the PhD I was doing was a joint historical and archaeological study of medieval settlement in an English county, a lectureship in Auckland seemed additionally inappropriate, but Clark’s pronouncement had clear implications and I applied. The following January I was on the long voyage out to the Antipodes, never to look back.

Anthropology and ethnology in New Zealand

The post that I took up in early 1954 was the first academic position in archaeology in the country and the department that established it the first to offer anthropology as a major for a university degree, though not the first to teach it. It was a new department, only three or four years old, and I had one part-time and three full-time colleagues (Golson 1996: 307). It was headed by Ralph Piddington, an Australian who had studied at Sydney University under Radcliffe-Brown and at the London School of Economics under Malinowski and gone on to an academic career in Britain. Though he belonged to the functionalist school then dominant in British social anthropology, he had a wider view than most of his functionalist colleagues. His aim at Auckland was to build an anthropology department on the American model, with linguistics, archaeology and physical anthropology as well as social anthropology, and his appointments thus far had been across these fields.

A course in anthropology had been taught at the University of Otago since 1919. In that year H.D. Skinner had been appointed ethnologist at the

Otago Museum and lecturer in anthropology at the university (Gathercole 1974: 14), with the teaching, initially formalised as a diploma course in 1920, becoming a one-year unit of a degree course in 1922 (Gathercole 1974: 14, fn 19 and pers. comm. 2004). By the time Skinner formally retired from both institutions in 1952 he was director of the museum and reader at the university. He continued as relieving director until 1957 when a new director took office. It was not until 1958 that a continuing appointment in anthropology was made at the museum and the university in the person of Peter Gathercole, with whom I had been a student at Cambridge.

Born in New Plymouth in 1886, the son of a foundation member of the Polynesian Society, Skinner was brought up with Maori ethnology in his blood. He developed his interest and experience to such an extent as schoolboy and student that when he graduated at the University of Otago in 1912 with qualifications that included classics and zoology, he was put in charge of the Otago Museum while the curator was on overseas leave (Freeman 1959: 9–12). His training in anthropology was from 1916 to 1918 at the University of Cambridge under Haddon and Rivers, with whose ethnological interests in the historical development and inter-relationships of cultures he was in tune. These were the interests that characterised his own anthropology teaching at Otago, unaffected by the later currents in British social anthropology that under Piddington bulked large in the teaching at Auckland (Freeman 1959: 20, Gathercole 1974: 12).

While there was no anthropology teaching elsewhere in New Zealand at the time, there were, besides Skinner at Otago, ethnologists at the three other metropolitan museums, Auckland, Wellington and Christchurch, in charge of important collections of Maori and Oceanic material culture. At the Canterbury Museum the ethnologist was also the director, Roger Duff, who had been one of Skinner's students at Otago. Duff's was the only name known to me in the New Zealand world at whose door I was knocking. This was because of the appearance on the new book shelves of the Haddon Library at Cambridge in late 1950 or early 1951 of the monograph on *The Moa-Hunter Period of Maori Culture*, to which, however, I gave no more than passing attention at the time.

Duff was obviously someone whom I should plan to visit now that I had arrived in the country, as was Skinner, of whose ethnological and archaeological work I was becoming aware. Piddington suggested that I take advantage of the Queen's Birthday weekend to embark on a familiarisation trip of the museums and their staff in Wellington, Christchurch and Dunedin. Before I talk about that trip, I need to set the scene in another respect.

Archaeology and oral tradition

The scene-setting I mean concerns the famous New Zealand institution of which I have made fleeting mention, the Polynesian Society, which, with its journal, began life in 1892. The Society was dedicated to the study of the traditional cultures of the peoples of the Pacific, which was seen as a matter of urgency given the passing of the older generation (Sorrenson 1992: 24–26). Percy Smith, the founding father of the Society and editor or joint editor of its journal for most of its first 30 years, put great effort into the collection and publication of oral traditions from New Zealand and the Polynesian islands and into their collation and exegesis (Sorrenson 1992: 33–39).

This work at times gave rise to interpretations of the prehistoric settlement history of New Zealand that caused problems for the ethnologist. One of these was the claim that the earliest settlement of the country was the work of a Melanesian people, whose descendants lived on as the Moriori of the Chatham Islands after the main New Zealand islands were occupied by Polynesians. Skinner was able to refute this claim by bringing to bear what Duff (1950: 273) called “the archaeological and enthographic [*sic*] method of attacking the problems of the the origin and development of Maori culture.” By this Duff meant Skinner’s demonstration in the one case that Chatham Islands material culture at the time of European contact was Polynesian (1950: 272, cf. Freeman 1959: 15) and in the other that it was similar to the earliest materials surviving on archaeological sites with which he was familiar in Murihiku, the southern districts of the South Island (Duff 1950: 272).

As Duff pointed out, the identification of what were the archaeologically earliest materials was based on their relationship with bones of the extinct moa: objects found in contexts with discarded bones of the butchered moa were older than objects found in contexts without them if they were not intrusive and the bones with which they were found were not of the type that could have been brought in because they were serviceable for implement manufacture. Throughout the 1920s Skinner had an arrangement with an experienced curio-hunter, David Teviotdale, whereby the latter’s activities were ‘managed’ in the interests of Otago Museum (I owe the description to Helen Leach pers. comm. 2004), until in 1929 he was taken on to the staff of the Museum, the first archaeological appointment in New Zealand (Freeman 1959: 22). The excavations carried out by the Skinner–Teviotdale partnership, under the aegis of the Otago Branch of the New Zealand Institute (later Royal Society), were in principle guided by considerations like the location of artefacts in respect of moa bones, but there are differences of opinion about the archaeological precision achieved (contrast Gathercole [1974: 16] and especially Leach [1972: 5–12] with the social anthropologist Freeman [1959: 22]). The Wairau Bar site investigated by Duff

in the 1940s escaped the problem of artefact and moa bone associations, since the crucial evidence was provided by richly furnished graves of high-status individuals accompanied by perforated moa eggs, adzes, ornaments and fishing gear.

It was Duff's opinion that by concentrating on the Melanesian myth Skinner had missed the main plot, which was the relationship of the early moa-hunting culture to the Maori culture of the time of European contact. In Duff's view (1950: 7–9), the earlier culture was clearly distinct from the later, but probably ancestral to it, the transformation from the one to the other resulting from a series of traditionally attested arrivals in the North Island from tropical Polynesia, with agriculture being introduced with the latest of them. In Percy Smith's hands the traditions had produced a dated sequence for the Polynesian settlement of New Zealand based on genealogical reckoning and this had become widely accepted: Kupe AD 950, Toi AD 1150 and the Great Fleet AD 1350; what Simmons calls the great New Zealand myth (1976: 7, 107). Duff used this as the chronological framework for his interpretation of the relationships of Moa Hunter, Maori and Moriori in his monograph (1950: 20–21, Fig. 1), since archaeology could offer no chronology of its own.

Between the publication of Duff's book and my arrival in New Zealand the New Zealand Department of Scientific and Industrial Research had established a laboratory for radiocarbon dating, whose services were available to outside scholars. The method promised to free archaeology from dependence on the traditional record for its chronology and to let it speak in its own terms. The Dominion Physical Laboratory, as the Institute of Nuclear Sciences was then known, was on the agenda for my southern trip in 1954.

The North Island

During the 30 years of activity in the South Island following the end of World War I the North Island was archaeologically quiet. This was no doubt due in part to the fact that, as Anderson (1989: 119) has concluded, there had been much less moa-hunting in the North Island than in the South, meaning fewer and smaller moa-hunting sites to attract artefact collectors with easy pickings from open and eroding middens. Collectors existed, of course, exploiting other sorts of sites, for example island pa in lakes and swamps where organic materials might be preserved, like Arthur Black and his brother in Horowhenua in the early 1930s (Adkin 1948: 35, 84) and about the same time at Oruarangi on the Hauraki plains Sonny Hovell, who invited museum representatives to come and take part in the digging (Furey 1996: 18–21). It is people like this that Les Groube (1993: 8) calls "curio-hunters" and contrasts with "amateur diggers", whom he characterises as often being motivated by a genuine interest in Maori history. I

met people in each category, as well as others who belonged to neither and for whom the attraction lay in the field monuments of the North Island landscape and any Maori traditions that might relate to them.

I made many contacts through Vic Fisher, the ethnologist at the Auckland Museum, who, when I was planning a reconnaissance trip, would give me the names of people who were knowledgeable about sites or had good collections to see. Some, though by no means all, were members of the Polynesian Society. A few lived in or close to Auckland and might attend meetings of the Anthropology and Maori Race Section of the Auckland Institute and Museum. While Groube's classification does not cover the range of activities and motivations involved, he was correct in distinguishing, at one end of it, people for whom the curio meant everything and, at the other end, those who constituted "a potential reservoir of talent and goodwill to be tapped and diverted into productive research" (Groube 1993: 8).

Beyond this I found a latent interest at the public level ready to be engaged. This was apparent from the response when in 1954 a few committed individuals and myself launched a university-based archaeological society with unrestricted membership. Those who signed up comprised students, some staff of the university and the museum and a few people with an established interest in Maori history or artefacts, but a significant number fell outside these classes. We planned regular meetings of general archaeological and allied interest, but hoped also to recruit labour for the programme of archaeological survey and excavation that I was initiating as a staff member of the Department of Anthropology. As far as digging was concerned, the programme aimed to inculcate the principles of stratigraphic excavation, of which, it became increasingly clear, there was no great awareness in the country. Here was a potential area of uneasy relations not only with amateur diggers but with professionals as well.

The formation of a national archaeological organisation

Looking at the sparse and ambiguous documentation of the time, Garry Law (2003: 85) says that the Council of NZAA has taken 1954 as NZAA's year of birth, thus treating the alternative dates of 1955, 1956 and 1957 "as of mild organisational interest." In fact, it took the three years following 1954 to bed the organisation down. Given the sensitivity of some of the issues which its establishment raised, it was a matter of hastening slowly.

At an early stage of my engagement with the world of New Zealand archaeology I had begun to think in terms of a national organisation to pull the various strands together. It could be a vehicle for promoting archaeology as an independent avenue to the study of New Zealand prehistory and of doing so by

building on and going beyond the provincialism that the very shape of the country encouraged. It could smooth the way for growing university participation in what had for so long been a museum field of operation. It could provide a common meeting ground for the professional and the amateur practitioner and the means of responding to the widespread interest in the country in the monuments and relics of its past.

In fact it became the major message I took with me on my mid-1954 trip south to Wellington and the South Island. I must have tried it out beforehand with Vic Fisher at the Auckland Museum since it was a matter that I was intending to put to the professionals at the other main museums. The suggestion was well received by all I spoke to about it, with the result that a group of invited people met to discuss it further at the then Dominion Museum in Wellington in August of the same year. They formed the association under its present name and set up an interim committee of five, as reported in the *Journal of the Polynesian Society* (Golson 1955a), which offered to make its pages available for the reporting of the Association's future activities and the publication of its work.

Some decisions on matters of policy were taken. The principle of joint annual excavation of key sites was accepted (but never seriously taken up) and the delicate matter raised of the responsibilities of the amateur digger as a member of the Association. The outlines of a formal code of ethics for members of the Association in general began to emerge with talk of proper respect on the one hand for landowners and farmers, on the other for the Maori people whose history the Association was setting out to study and whose sites were to be used for the purpose. A constitution to embody such matters was said to be "in process of perusal" (Golson 1955a: 156).

It was a year before the committee next met, again in Wellington (Golson 1955b). A draft constitution for the Association was agreed on, to be put to the membership at its first annual general meeting. It was decided that AGMs should be made the occasion for an archaeological conference to advance the discipline and serve the interests of members throughout the country. The first of these was held at the University of Auckland in May 1956 and I made a short report on it and the Association's first AGM in *JPS* (Golson 1956). The draft constitution could not be ratified because the meeting had not been formally called in terms of it, but members made decisions for the Association to join the recently created National Historic Places Trust and for its Council to act as the New Zealand branch of the Far Eastern (now Indo-Pacific) Prehistory Association. A new Council was elected for the forthcoming year, representative of the four metropolitan museums and Auckland University College, with two non-professionals and a Maori member (Golson 1956: 81).

It was this Council that appointed Ron Scarlett of the Canterbury Museum to edit a cyclostyled newsletter to keep the membership in touch with what was going on at national and regional level. The first issue of this (vol. 1 no. 1) appeared in March 1957 and the fourth in July 1958. The second issue recorded the adoption of the constitution at the 1957 annual general meeting (Scarlett 1957: 5). In the fourth issue, reporting on the third annual general meeting and conference, the editor (Scarlett 1958a) announced that Council would in future require intending members to agree to a formal statement of principles of conduct in respect of landowners, the Maori community and archaeological sites themselves, such as had been under exploratory discussion from the very beginning of the Association's existence.

With the fifth issue, dated December 1958 and numbered vol. 2 no. 1, the Newsletter became a quarterly publication produced by regional editors with Scarlett a regional editor as well as editor-in-chief. The Dunedin issue of the Newsletter for 1960, vol. 3 no. 3, besides reporting on modifications to the Association's membership application form (page 23), spelt out the principles to which intending members had to agree and by which they had to abide on penalty of expulsion (page 27). There was one early case of this.

The early conferences

NZAA set out "to serve a serious pedagogic purpose in a relaxed and convivial fashion" (Golson 1996: 308). The principal means were the conferences that were organised in association with the annual general meetings and I like to think that both aims were achieved. The first five conferences, 1956–60, were annual events, but in 1961, in place of a formal conference, there was an extended AGM. Golson and Gathercole (1962: 276) talk about an average attendance of 50–60, but there is no indication of how many of these were paid-up members. Indeed I do not have any figures on how many paid-up members there were as a whole.

Each conference was organised round a particular theme, chosen with a practical aim and ample time was always allowed for presentation of papers and discussion. The first conference, in August 1956, was on the theme of the potential contribution of the natural, biological and field sciences to archaeological research in the New Zealand context. It was the subject of a report (Golson 1956) and some of the papers were published in issues of *New Zealand Science Review* (Golson 1957b, Kear 1957, Rafter 1957, Bell 1958, McKelvey 1958, Taylor 1958). The 1957 conference, on Moas and Man, held appropriately in Dunedin, was designed to review the state of knowledge in the field and consider ways of advancing it (Golson 1957a, Scarlett 1957: 1–5). In 1958 we met for our third conference in Wanganui to discuss archaeological sites and their field recording

and consider the feasibility of a national site recording scheme (Scarlett 1958b: 2–3). One of the keynote speakers, J.D.H. Buchanan, who had for some years been involved in devising a recording scheme for Maori sites with the historical section of the Hawke’s Bay branch of the Royal Society of New Zealand (Mumford 1959: 7–9), presented a paper that was essentially “a blueprint for a national site recording scheme” (Groube 1993: 14).

In 1959 we turned our attention to excavation and the ethical questions it raised: on the one hand the loss of information and the destruction of context that followed from inappropriate digging and on the other the relationship of excavators with Maori people with their special relationship to sites. Rotorua was chosen as the conference venue because it was at the same time a centre of Maori population and of a district rich in places with both traditional and archaeological associations. Accorded a ceremonial welcome on the Ohinemutu Marae, the conference comprised a day of discussion in Rotorua and a demonstration excavation over two days at a pa site, Pakotore, whose investigation had been negotiated with its traditional as well as its modern owners (Golson 1959, Scarlett 1959, cf. Golson and Stafford 1959). The fifth conference, held in Wellington in 1960 as Section O of the 9th Science Congress of the Royal Society of New Zealand, continued the theme of the Rotorua conference by discussing the recording, interpretation and care of excavated material (Gathercole 1960, Scarlett 1960). At the extended AGM that took the place at a full conference in 1961 in Wellington there were sessions to discuss the descriptive record of artefacts (Phelan *et al.* 1961).

The National Site Recording Scheme

The conferences played an important role in establishing an identity for the Association, both for its members and on the stage of New Zealand public institutions. In no case was this more true than of the Wanganui conference of 1958 with its discussions about the establishment of a national site recording scheme. Groube calls it “one of the great landmarks in the emergence of modern New Zealand archaeology” (1993: 13). It was followed by a meeting of invited representatives in Wellington in July 1958 when the scheme was planned in detail. A pilot survey was carried out by the Auckland University Archaeological Society in October using site record forms from the July meeting (Groube and Green 1959). A report on this survey was discussed by NZAA Council in November and, with some revision, published as a handbook to site recording in New Zealand (Golson and Green 1958).

The background and history of the scheme’s development thus far, together with the details of its operation, were described in a Wellington issue of the *Newsletter* by Win Mumford (1959), who made acknowledgement of

Buchanan's initiating role and the support of the National Historic Places Trust, which provided funds for filing cabinets and a duplicate set of inch to the mile maps. The same and other *Newsletters* of the period attest to the energy and enthusiasm widely harnessed by the recording scheme, with Association members forming new groups for the purpose or promoting an expansion of activity on the part of existing local historical and other societies. In the course of this activity problems surfaced in the organisation and functioning of the scheme and solutions were devised and tested (see, for example, Groube 1960 in respect of the complex fortified sites of the Auckland isthmus). In April 1960 Council instituted a review of the scheme and at an extended Council meeting in July proposals were brought forward for discussion and decision (Mumford *et al.* 1960). The old *Handbook to Field Recording* (Golson and Green 1958) was to be revised to incorporate the new procedures and the new version was expected early in 1961. In fact it was not until 1970 that the revised version appeared, by which time it had been completely revised (Daniels 1970: iv) in the light of growing experience in site recording.

Concluding word

I do not know that I wish to draw any particular conclusions from this review of the origins and early development of the New Zealand Archaeological Association. What I do want to do to bring the story to a close, however, is to acknowledge the people who worked together in the 1950s on a project which they thought worthwhile and which has stood the test of 50 years of time.

Acknowledgements

I am indebted to Helen Leach and Peter Gathercole for guiding me through the careers of Dr H.D. Skinner and David Teviotdale during the early years of anthropology at Otago Museum and University. Stuart Bedford and Win Mumford answered questions about the site recording scheme and handbooks. Wal Ambrose, who was all but a foundation member of NZAA, acted as a check on my memory when the documentary evidence dried up.

References

- Adkin, G.L., 1948. *Horowhenua: its Maori Place-Names and their Topographic and Historical Background*. Department of Internal Affairs, Wellington.
- Anderson, A., 1989. *Prodigious Birds: Moas and Moa-Hunting in Prehistoric New Zealand*. Cambridge University Press, Cambridge.
- Bell, R.E., 1958. Dendrochronology. *New Zealand Science Review*, 16: 13–17.
- Daniels, J.R.S., 1970. *New Zealand Archaeology: A Site Recording Handbook*. New Zealand Archaeological Association, Wellington.

- Duff, R., 1950. *The Moa-Hunter Period of Maori Culture*. Department of Internal Affairs, Wellington.
- Freeman, J.D., 1959. Henry Devenish Skinner: a memoir. In J.D. Freeman and W.R. Geddes (eds.) *Anthropology in the South Seas: Essays Presented to H.D. Skinner*, 9–27. Thomas Avery, New Plymouth.
- Furey, L., 1996. *Oruarangi: The Archaeology and Material Culture of a Hauraki Pa*. Bulletin of the Auckland Museum, 17. Auckland Institute and Museum, Auckland.
- Gathercole, P.W., 1960. The fifth annual conference of the New Zealand Archaeological Association. *Journal of the Polynesian Society*, 69: 160–3.
- Gathercole, P.W., 1974. Introduction. In H.D. Skinner (ed.) *Comparatively Speaking: Studies in Pacific Material Culture*, 11–17. University of Otago Press, Dunedin.
- Golson, J., 1955a. New Zealand Archaeological Association. *Journal of the Polynesian Society*, 64: 349–52.
- Golson, J., 1955b. New Zealand Archaeological Association. *Journal of the Polynesian Society*, 64: 155–6.
- Golson, J., 1956. New Zealand Archaeological Association: first annual conference. *Journal of the Polynesian Society*, 65: 77–81.
- Golson, J., 1957a. New Zealand archaeology, 1957. *Journal of the Polynesian Society*, 66: 271–90.
- Golson J., 1957b. The contribution of the natural sciences to archaeological research. *New Zealand Science Review*, 15: 56–60.
- Golson, J., 1959. The fourth annual conference of the New Zealand Archaeological Association, Rotorua, May 19–21, 1959. *Journal of the Polynesian Society*, 68: 150–2.
- Golson, J., 1996. Roger Green: early and late encounters. In J. Davidson, G. Irwin, F. Leach, A. Pawley and D. Brown (eds.) *Oceanic Culture History: Essays in Honour of Roger Green*, 307–317. New Zealand Journal of Archaeology Special Publication, Dunedin.
- Golson, J., and P.W. Gathercole, 1962. The last decade in New Zealand archaeology. Part II. *Antiquity*, 36: 271–8.
- Golson, J. and R.C. Green, 1958. *A Handbook to Field Recording in New Zealand*. Handbook No. 1. New Zealand Archaeological Association, Auckland.
- Golson, J. and D.M. Stafford, 1959. Rotorua–Bay of Plenty. *New Zealand Archaeological Association Newsletter*, 2(2): 29–30.
- Groube, L.M., 1960. Mt. Wellington site survey. *New Zealand Archaeological Association Newsletter*, 3(2): 24–31.
- Groube, L.M., 1993. ‘Dig up those moa bones, dig’: Golson in New Zealand, 1954–1961. In M. Spriggs, D.E. Yen, W. Ambrose, R. Jones, A Thorne and A. Andrews (eds.) *A Community of Culture: The People and Prehistory of the Pacific*, 6–17. Occasional Papers in Prehistory, 21. Department of Prehistory, Research School of Pacific Studies, Australian National University, Canberra.
- Groube, L.M. and R. Green, 1959. Site survey of South Kaipara Head: preliminary results. *New Zealand Archaeological Association Newsletter*, 2(2): 8–13.

- Kear, D., 1957. Geological techniques in dating New Zealand's prehistory. *New Zealand Science Review*, 15: 76–9.
- Law, G., 2003. The date of the formation of the Association. *Archaeology in New Zealand*, 46: 84–6.
- Leach, H.M., 1972. A hundred years of Otago archaeology: a critical review. *Records of the Otago Museum (Anthropology)* 6.
- McKelvey, P.J., 1958. Forest history and New Zealand prehistory. *New Zealand Science Review*, 16: 28–32.
- Mumford, W., 1959. Field recording scheme. *New Zealand Archaeological Association Newsletter*, 2(4): 7–12.
- Mumford, W., J.R.S. Daniels and C.D. Smart, 1960. Revision of the site recording scheme. *New Zealand Archaeological Association Newsletter*, 3(4): 33–5.
- Phelan, E.L., J. Davidson, C.D. Smart and P. Gathercole, 1961. The extended annual meeting, 1961. *New Zealand Archaeological Association Newsletter*, 4(3): 3–21.
- Rafter, T.A., 1957. Radiocarbon ageing in New Zealand. *New Zealand Science Review*, 15: 93–6.
- Scarlett, R.J. (ed.), 1957. *New Zealand Archaeological Association Newsletter*, 1(2).
- Scarlett, R.J. (ed.), 1958a. *New Zealand Archaeological Association Newsletter*, 1(4): 1.
- Scarlett, R.J., 1958b. Talks at Whanganui Conference. *New Zealand Archaeological Association Newsletter*, 1(4): 2–3.
- Scarlett, R.J., 1959. Report on conference. *New Zealand Archaeological Association Newsletter*, 2(3): 2–8.
- Scarlett, R.J., 1960. Conference report 1960. *New Zealand Archaeological Association Newsletter*, 3(3): 3–11.
- Simmons, D.R., 1976. *The Great New Zealand Myth: A Study of the Discovery and Origin Traditions of the Maori*. Reed, Wellington.
- Sorrenson, M.P.K., 1992. *Manifest Duty: the Polynesian Society over 100 years*. The Polynesian Society, Auckland.
- Taylor, N.H., 1958. Soil science and New Zealand prehistory. *New Zealand Science Review*, 16: 71–9.