



NEW ZEALAND  
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## ARCHAEOLOGY IN NEW ZEALAND



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## WHERE IS THE MAP, ROGER ?

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During his visit to New Zealand in 1965 Thor Heyerdahl gave a public lecture for the Auckland University Archaeological Society. The advertised topic was his theories of Polynesian origins; he discussed the Rapa Nui (Easter Island) archaeological investigations, testing these theories and the general proposition that oceans had served as potential pathways, rather than barriers, for the indigenous sailing craft of the Pacific. At that time, the great New Zealand navigator and sailor, David Lewis, who was then beginning his own process of testing views on Pacific voyaging put forward by both Thor and Andrew Sharp, was also in Auckland to refit his catamaran *Rehu Moana* at Westhaven. David accepted my invitation to attend Thor's lecture but declined a ride, confidently asserting that he knew his way and preferred to walk. But he became lost among transformed streets downtown, and his very late arrival for Thor's lecture "did nothing to enhance my reputation as a navigator" (Lewis 2000: 76). Thor put David at ease, but the unspoken irony of the navigator's need for a map, if only of stars, was not lost on the audience.

Thor reinforced the fundamental value of maps when, several days later, I drove him to the top of Maungakiekie (One Tree Hill) to see that splendid Maori fortification—near to if not the biggest in Oceania. Not long before this Thor had written that on Rapa his archaeologists investigated one of the biggest fortifications in Polynesia. On this day I observed that Maungakiekie was perhaps a great deal larger. His immediate response: "Where is the map, Roger?" I had to admit that there were none, only a description by Elsdon Best (1927: 228–230). He suggested that a full map would be worthwhile; he reiterated this after we visited Maungawhau (Mt Eden), and he viewed Maungarei (Mt Wellington) and more distant volcanic cones from both vantage points. Such maps now exist, thanks to four decades of efforts by myself, my graduate students and various colleagues (Davidson 1993: 41, Figure 2; Fox 1977; Bulmer 1986: 87, Map 9, 1998: Figure 6; Leahy 1991). Thus Thor's successors may no longer accost me: "Where are the maps, Roger?"

Yes, maps matter. Maps are historically located representations of territories; they record and communicate significant information in an abbreviated, contextualised and readily accessible visual format. The background and history of some contributions made during the early years of mapping and recording Maori sites in New Zealand is the subject of this personal account. My involvement stemmed from my earlier training in field geology, which I subsequently transferred into the practice of field archaeology. During the early 1950s all BSc students taking geology at the University of New Mexico had to complete a special course in civil engineering. It was purposively designed by Professor May for the non-engineers in need of particular mapping skills. This course included the use of telescopic levels to determine elevations to tenths of a foot. More usefully, it taught the employment of theodolites to precisely map out set points on the ground (like archaeological grids) and determine the positions and heights of new points on maps (such as archaeological features) in relation to already fixed positions on larger-scale maps. And, perhaps most important of all for an archaeologist, it provided instruction in plane table mapping, from the use of open site alidades (including those composed of a plastic base attached to a Brunton compass), to exercises with Beaman arc telescopic alidades and stadia rods. The latter permitted one to quickly compile contour maps of vacant fields for developers—or map archaeological sites.

The all-day course each weekend for one semester of the field geology programme embedded these skills. Mapping the physical and stratigraphic geology of a 6 square mile rectangle was one assignment. This drew on civil engineering surveying skills as well as the practical fieldwork use of aerial photographs followed by the laboratory transfer of data marked on these images to existing cartographic maps. Unfortunately, my maps did not always show data sought by Professor Kelly: “Roger, TAKE THOSE alluvial terraces and sediments, especially those Indian ruins with pottery-based site dates, OFF your maps.” What was actually wanted were clear delimiters for the underlying geological structures, however inferential. He made it clear—that was where the (oil and uranium) money was. Nevertheless, the course proved to be great training for a budding archaeologist, though my student maps seldom garnished A grades, being of diminished economic value!

This programme was the source of the well-practised mapping skills base that I brought to the Pacific. I had first applied it to the archaeology of the Largo-Gallina region in the northwestern New Mexico portion of the American Southwest. There my archaeological surveys and site recordings had employed pin prick locations on aerial photographs linked to the individual site maps complete with contours based on plane table techniques. And during the 1954–1955 graduate archaeology field schools of the University of New Mexico that

I conducted (under the ostensible supervision of Professor Hibben), these skills were taught to some now well-known North American archaeological colleagues.

I will say no more here about my early incorporation of aerial photographs in New Zealand investigations, or my instruction of New Zealand archaeologists in the use of these invaluable images. Kevin Jones (1996, 1997) has now ventured much further in this field than his original publication, and recently produced a first rate history of the topic and its developing practice in New Zealand archaeology (Jones 1996, 1997). The complete article could usefully be reprinted locally to ensure its availability for members.

My very first substantive contribution to Pacific archaeology was located on the Napali Coast of Kaua‘i, Hawaii, and involved the cliff-face rock shelter of Nu‘ulolokai. I was there under the tutelage of Kenneth Emory during my formal introduction to Pacific and Polynesian archaeology. To the perceptible relief of Yosi Sinoto, my skills allowed them to assign me to use their newly purchased equipment and map the site on August 14th 1958. “Where is the map, Roger?” I am no longer sure, for it seems to remain unpublished. I have on file one battered photocopy of this field map, thanks to the late Bill Kikuchi who forwarded it a few years ago. A photo of this mapmaking in progress appears as Figure 76 in Kirch (1985), and Pat might well have been pleased to have a plan map to accompany that image had he known of its existence.

After Hawaii my Fulbright sponsored time in New Zealand (August 1958–June 1959) involved site survey field work on South Kaipara Head, Sarah’s Gully, Pig Bay, and Pakotore. “And, where are the maps from that period, Roger?” Certainly many of them are not in the published literature, although several should be if one wishes to understand the various accounts of these sites by Golson (1959a) or the more detailed subsequent summaries of Jack’s investigations at Sarah’s Gully by myself (1963a, 1963b). Perhaps, to clarify these historic texts for readers, an account of the field survey accompanied by two formal plan maps is in order—45 years after the events.

Limited information about the initial site survey of South Kaipara Head undertaken by the Auckland University Archaeological Society has appeared in the literature. The pilot survey constituted the field test portion of what became the first *Handbook for Field Recording in New Zealand* (Golson and Green 1958). Assisted by Wal Ambrose, Les Groube and Jack Golson, I conducted a series of weekend training sessions covering various techniques useful for site recording. These included map reading, plotting site locations in the field and operating a prismatic compass, the use of aerial photography, and making rough site plan maps from the identifiable larger features (particularly where there were fortifications). Few among “Golson’s Gang” (as he wished it not be known) had ever previously learned about site surveying in any structured way. And, to

provide such instruction, I faced learning an entirely new set of mapping protocols and New Zealand's grid reference system as well as practices rather different from those I had implemented in North America. So it was necessary to improvise by incorporating techniques currently used elsewhere to achieve a blend that might work in New Zealand. Anyone who reads the original document can infer its dual origin. Jack Golson wrote the long section (Golson and Green 1958: 50–84) that included the range of types and descriptions applied to Maori sites and other information one needed before placing them on record. Given that I had been New Zealand only a few months my knowledge of what to expect in the field was minimal. Jack, it may be said, was also a skilled editor.

Besides the *Handbook*, in which no site maps appear, other outcomes included a first attempt at settlement pattern analysis of the data (Groube and Green 1959). Later additions to a South Kaipara survey database, by Les Groube and colleagues such as Mike Rowell (1960), steadily increased its size. Subsequently it was used by Les in a landmark thesis on Maori settlement patterns in New Zealand (Groube 1964), and decades later the accumulated information formed a basis for the PhD thesis of Wynn Spring-Rice (1996). In short, those initial efforts at site recording and mapping have been gainfully employed, along with more recent efforts, to useful ends in one form of settlement pattern archaeology.

And a quite different outcome of the 1958 Kaipara Site Survey was the beginning of a warm and enduring friendship with Jim McKinlay. His graduate programme led to Monograph 5 in the NZAA series (1973), concerned with legislation for protecting archaeological sites. Jim then became the first archaeologist appointed to the New Zealand Historic Places Trust.

Another outcome of the Kaipara Survey was the official New Zealand map for the Inch to the Mile series in the *Handbook* on which I imposed boundaries for the local file keeping regions following Jack Golson's fairly general instructions, embracing agreed NZAA policies. His logic seemed to be either that I would be perceived as a neutral party, or (presciently) as a wholly naive player in the increasingly partisan boundary disputes. The Association had made a fraught decision that regional filing districts would be based on the existing inch-to-the-mile map series rectangles, rather than natural features or provincial divisions. One proposed boundary, a set of map rectangle lines across the South Island in the vicinity of the Waitaki River, was rejected out-of-hand by Jack. He asserted, wisely, "follow the Waitaki River as closely as you can Roger, even if it means a whole series of steps, otherwise it will be war." At that point it was unstated as to who and who would be at war. Such naivete on my part did not last but, with Jack's counsel, the proposed filing regions endured. And, as I told Jack, by following Parkinson's Principles, a few outrageous feature symbols in the *Handbook* draft did indeed draw Council members' debate. Since

these were easily amended they served well to divert attention from truly contentious issues underlying the stark descriptive prose of the *Handbook*. I now count production of that monograph among my first steps towards becoming a New Zealander, a 46 year journey so far.

During preparation for the summer dig at Sarah's Gully on Kuaotunu Peninsula I learned two rather unsettling bits of information. The Anthropology Department had no surveying equipment other than ranging poles (a few of which had heads fitted with right angle sighting line slits), and some long cloth measuring tapes. Yet Jack requested that I map the site (including those excavation units of the previous and approaching years) and generally "tidy up" things such as grid alignments. Well, yes, I could do that, as he well knew, since I had done it for Yosi Sinoto in Hawaii four months earlier. However, unlike Hawaii, all equipment had to be borrowed from the Geography Department (the source of prismatic compasses used in the South Kaipara survey). What would be available? Wal Ambrose and I soon learned: a few stiff, wooden-leg tripods lacking Johnson heads (so, all leveling of flat table tops would have to be accomplished by painstaking leg adjustments); several kinds of box-wood and metal, open-sight alidades; some Indian clinometers and one well worn stadia rod. I gave silent thanks for Professor May's thoroughness in commencing with the very basics of plane table mapping, employing just the simplest of instruments. Similarly, Indian clinometers necessitated copying off tables of sines and co-sines, making it possible to calculate distance from stadia pole interval intercepts (electronic calculators were still unknown). Under my direction at Sarah's Gully that summer crews mapped, at 2 ft contour intervals, the entire main settlement area investigated (Figure 28, site N40/9, T10/167). To provide the fine contour intervals Jack sought, mapping sufficient points necessitated numerous shots, each of which required careful hand calculations to determine true distance and relevant ground elevations. Comments directed to Jack, suggesting there were easier ways, prompted an unsympathetic response: "Roger, remember the whole of India was mapped that way."

Periodically Jack asked if I wanted another ground crew to instruct! He recently sent a list of the participants' names as they appear on the original map sheets that he holds:

- (b) The main lower ground and terraced bank excavations, including areas A, B, C, and D: Helen Birks, Kaye Green (Figure 29).
- (c) The higher ground areas upslope from these, excavated in 1959 (Figure 30): Lawrie Birks, Barbara Miles, Peter Knuckey.
- (a) The separate pā site on the ridge point, forming the north end of the embayment (Figure 29): Lawrie Birks, Margaret Barrie, Barbara Miles.

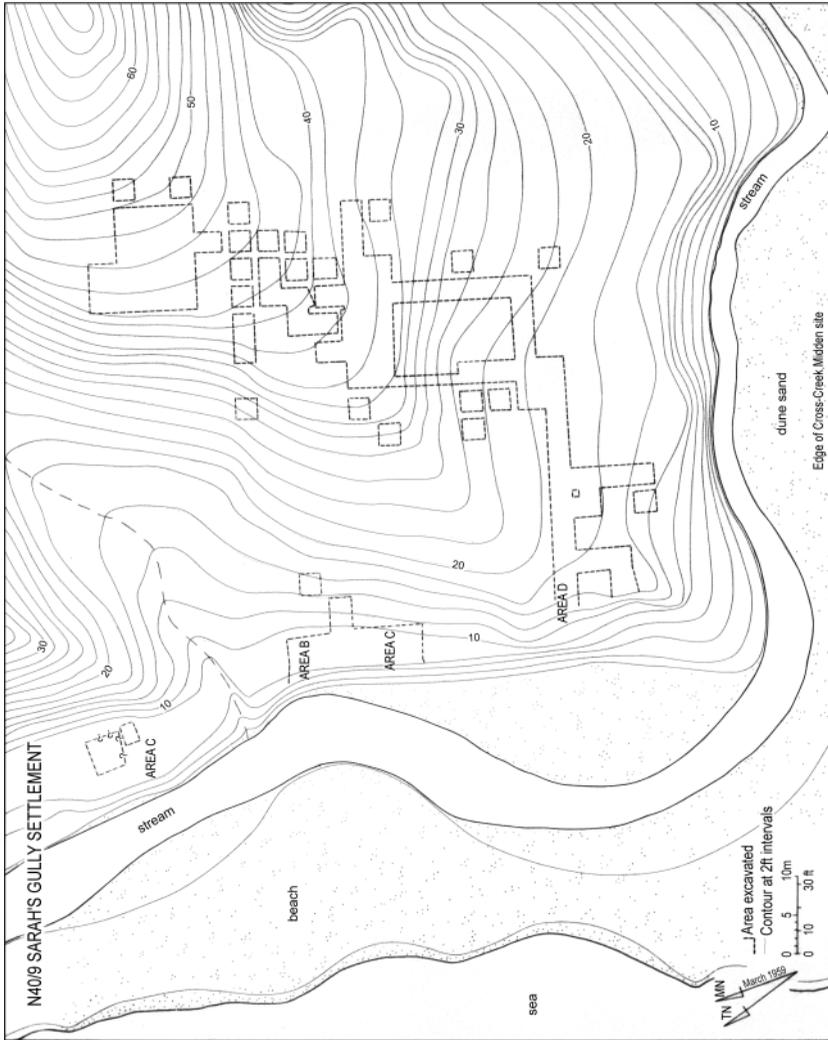


Figure 28. Map of the Sarah's Gully excavations, 1959.

For many years to make summaries of the Golson-led investigations at Sarah's Gully it was necessary to draw on memory, his brief texts, and numerous photographs archived in the Auckland Department of Anthropology. Still, I was able to construct a useful plan of the Sarah's Gully settlement based on the excavated strips and grid squares. Those primitive maps are now archived in the



*Figure 29. Sarah's Gully, pa, archaeologist's camp below and beach and terrace, 1959. Photo Roger Green.*



*Figure 30. Sarah's Gully, open settlement excavation, 1959. Photo Roger Green.*

Auckland Institute and Museum. Fortuitously, nearly two decades ago, the original intellectual efforts in large-scale contoured map-making at the start of modern British-style archaeological excavation in New Zealand briefly passed across my desk. The original, visibly deteriorating sheets had been extensively nibbled by silverfish and seemed in need of safeguard measures. While they were soon returned to Jack, this was not before co-opting Caroline Phillips in piecing together various sheets to produce the overall plan map that is Figure 28. It reveals an astounding circa 1100 m<sup>2</sup> of the settlement was investigated through high quality hand excavation. There is also a similarly constructed map for Sarah's Gully Pa (site N40/10, T10/168), fully contoured but with indications of only the first 10 squares of the ca 500 m<sup>2</sup> finally opened and investigated by Helen and Lawrie Birks (1960). To these two maps one can add the very detailed plan presenting the exposed upper occupation of Cross Creek Midden (site N40/260, T10/399, just south of Sarah's Gully Settlement site) compiled by Brenda Sewell for her MA thesis (1984). She excavated down through 9 layers, over 170 m<sup>2</sup>, to demonstrate that each of the other four occupations replicated the activity pattern of the exposed one (1988: 7).

Now it should be possible to produce a fairly complete composite settlement map, which includes most archaeological components in this small embayment, through more than 700 years. Hopefully, one day, that will happen. Meanwhile, these notes answer a frequently posed question: "Roger, where are the maps for Sarah's Gully?" My answer is possible only because I was involved in making them.

My next mapping assignment with Jack was Pig Bay, Motutapu Island. It was also instigated to instruct Jack, Wal Ambrose and others further in the art of plane table mapping. This was not a notable success, producing only the one map made under my supervision. The main reason is simple. On this occasion, borrowed equipment consisted of "wartime gear" which had been assembled from bits and pieces by the geology professor, Arnold Lilley. The significant item was a telescopic view tube with lenses marked by hairlines that Lilley had 'adapted' and mounted in a hand crafted alidade. This brass item had a most pleasing workman-like quality and performed well. It was just that the upper and lower hairlines of the front lens were not set to Base 100 when reading distance off the stadia rod, and thus required what I called "Lilleyfoot" conversions each time to provide more acceptable imperial land measures and heights. Nonetheless Geoff Irwin, who inquired "Where is the map, Roger?", has assured me that even now the publication of Pig Bay map would assist his current research programme of intensive site survey and excavation on Motutapu. So a March 1959 version of Site N38/21 appears in Figure 31 (see also Golson 1959a: Plates IIA and B for visual images). Evidence of pre-ashfall occupation

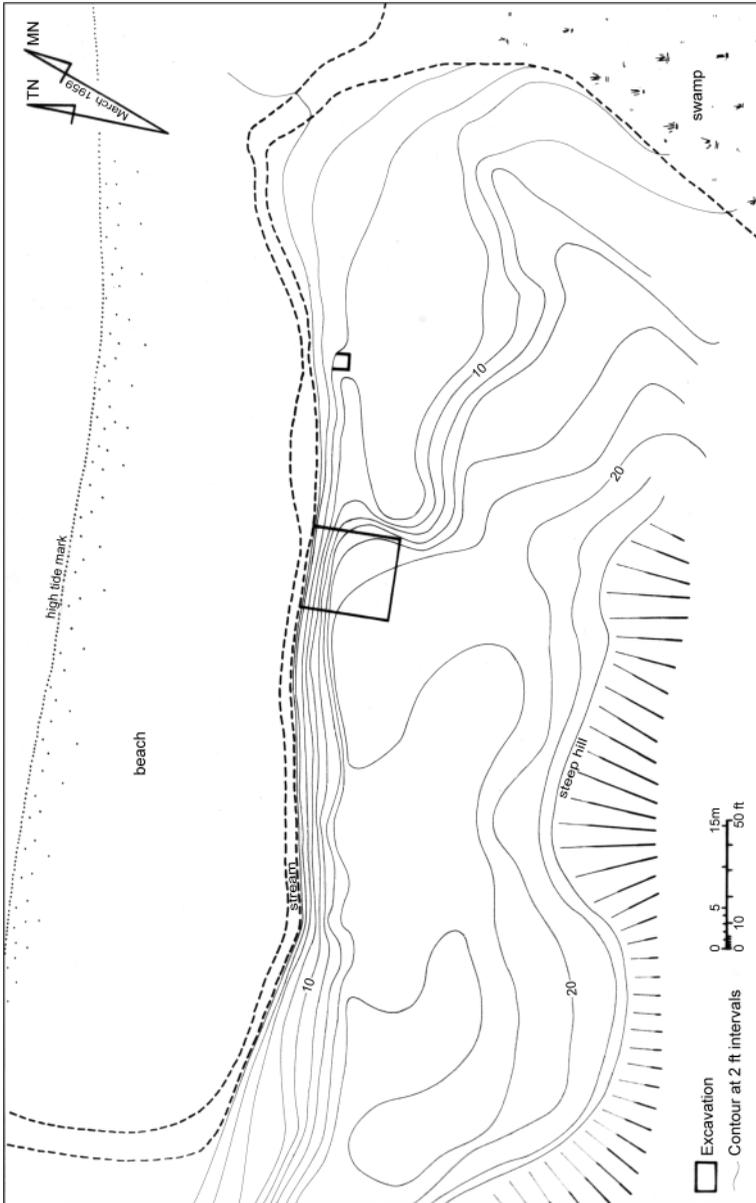


Figure 31. Map of Pig Bay, Motutapu, excavations, 1959.

before that cal AD 1400 event was not encountered during Golson's excavations at this site, though this turned up some years later at an appropriately mapped Sunde site not far away (Scott 1970, Nichol 1981).

That leaves Pakotore, the Association's Easter Weekend Conference and demonstration excavation in May of 1959 (Golson 1959b: 150–152, this volume). Yes, I do remember making a map of that traditional Arawa pā site also. In addition I positioned on it four sectors with their grid squares marked for excavation. In this case it was part of an exercise in modern excavation methods for Association members. But I am unable to answer the related question: "Where is the map, Roger?" Answers might be acknowledged in *AINZ*, perhaps with the publication of yet another 'historical' map.

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