



**NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION MONOGRAPH 10:  
J.R.S. Daniels, *New Zealand Archaeology: A Site Recording  
Handbook, Second Edition***

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# NEW ZEALAND ARCHAEOLOGY

A SITE RECORDING HANDBOOK  
SECOND EDITION  
by J.R.S. Daniels



Monograph No. 10 of the New Zealand Archaeological Association.

**NEW ZEALAND ARCHAEOLOGY**  
**A SITE RECORDING HANDBOOK**

**By J.R.S. Daniels**

**(with A.J. Challis, B.G. McFadgen, and N.J. Prickett)**

*SECOND EDITION, REVISED AND ENLARGED*

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SECOND EDITION REVISED AND ENLARGED

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New Zealand Archaeological Association  
C/- Department of Anthropology, University of Auckland

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## PREFACE TO THE FIRST EDITION (1970)

This handbook replaces the New Zealand Archaeological Association's Handbook No. 1, *A Handbook to Field Recording in New Zealand*, by J. Golson and R.C. Green, which has been out of print for some years. The authors of that handbook stated that it was designed to help everyone participating in the Site Recording Scheme, and so is this one. The approach used in the first handbook has, however, been completely revised in the light of later experience in site recording. This handbook also contains much new material, including a chapter on surveying by B.G. McFadgen. It will, I hope, be particularly helpful to recorders who feel the need for some guidance and assistance in their work, and to beginners who have done no recording before.

I make no apology for the fact that some parts of this handbook are detailed and require careful reading. I believe this to be justified. One of the original aims of the Site Recording Scheme was to make it easy for casual observers such as farmers and others working on the land to report sites. This aim has never been fully realised, and even in those cases in which it has, the records produced have required further checking to be of real use. The people who have made the Site Recording Scheme their own are the enthusiastic, experienced individual workers and small local groups who specialise in recording. I know that I need make no apology to them for a handbook which demands care and high standards in recording.

The standards set out here are those of the New Zealand Archaeological Association. They are not unreasonably high, but there is room for improvement on much of the recording done already. The Association's aim in producing this handbook is both to set standards and in so doing to raise existing standards. The systematic recording of sites is vital to many aspects of prehistoric research and investigation, and recorders have the satisfaction of knowing that their work forms a vital tool of future research.

Many people have given me advice and assistance in producing this handbook, and I wish to thank them most gratefully. In particular I thank Dr A.G. Buist, the Association's editor, for his guidance and assistance, and the staff of Messrs A.H. and A.W. Reed for their advice on the production of this handbook. I also willingly acknowledge my debt to the authors of the 1958 handbook. I wish to thank Mr B.G. McFadgen for contributing the section on surveying.

I am also grateful to all those who helped with illustrations. The line figures were ably drawn by Mr K.M. Peters of the Department of Anthropology of the University of Auckland, and Mr C. Schollum of that Department printed the photographs contributed from its files. Special thanks are due to Mr P. Van Asch of New Zealand Aerial Mapping Ltd for waiving the Company's copyright on the photographs from the Buchanan collection, and for the trouble so willingly taken to print portions of the photographs to the required size.

I would like to record my thanks to Mr F.W. Shawcross for his cover design.

JOHN DANIELS.

## PREFACE TO THE SECOND EDITION

The second edition of this handbook, which appears nine years after the publication of the first, reflects the significant changes which have taken place in New Zealand archaeology in those years.

A new dimension has been added to archaeology, and particularly to site recording, by the Historic Places Amendment Act 1975. The site recording scheme has formed the basis of the New Zealand Register of Archaeological Sites, which is in turn the cornerstone of the improved statutory protection of sites provided by the Act. The changes to machinery and procedures brought about by the Act are described in the following pages.

The increased involvement of the New Zealand Historic Places Trust in archaeology has had a great effect on site recording, and the input of public funds has brought about an upsurge of systematic recording. However, the site recording scheme still depends mainly on the work of those amateurs who record sites and, as local filekeepers, process the records.

This edition, more than the last, is the work of many hands. The new sections by Aidan Challis and Nigel Prickett represent respectively a growing interest in the research potential of recording programmes, and the newly recognised dimension provided by archaeology to historical studies. I record my thanks to these authors, and once again to Bruce McFadgen, who has revised his chapter in the first edition. I also express my most grateful thanks to my colleagues in the New Zealand Historic Places Trust, particularly Aidan Challis, Jim McKinlay and Tony Walton, for their help in the extensive revisions which the previous text has undergone. This revision owes more to their work than anyone else's.

I am grateful to the Cartographic Branch of the Department of Lands and Survey, Wellington, for the redrawing of figures for this edition, and to N.Z. Aerial Mapping Ltd for permission to re-use photographs.

I also thank the officers and Council of the New Zealand Archaeological Association for enabling this new edition to be published. Finally, as the changes in the site recording scheme mean that my office of Central Filekeeper has been superceded, I take this last opportunity to salute and thank those most vital people in the scheme, the local filekeepers.

JOHN DANIELS  
Wellington,  
January 1979

### COVER DESIGN by Wilfred Shawcross

The scene is an imaginary one with a double bank and ditch pa in the right foreground and a group of terraces on the left. Bank and ditch fortifications are common in North Auckland, the Bay of Plenty, and Taranaki.

Terraces are found throughout the country as far south as Otago, either by themselves or combined with banks and ditches. The middle and background is based on a view of the Otago Peninsula and the site of Little Papanui, but where the main site would have been on the lower left, another site, Galatea Bay on Ponui Island in the Hauraki Gulf, has been substituted. This latter is an example of a widely represented form of site consisting of a coastal shell midden located by a source of fresh water. The style of drawing, based on the lino-cut technique, has been made deliberately formal, in order to emphasise the fact that field archaeology relies on maps and cartographic techniques.

## PART I – INTRODUCTION

### 1. The Object of Site Recording

Archaeology is a means of studying man. It involves the discovery, recovery, and interpretation of the surviving evidence of past human activity in its context in the ground. Recording the location and surface evidence of archaeological sites is the subject of this handbook. Site recording is an essential step in the study of man's past.

The basic recording unit of archaeological study is the site. At the commencement of the Site Recording Scheme the New Zealand Archaeological Association adopted the following definition of the term "site":

"Any specific locality for which there is physical (as opposed to traditional) evidence for its occupation by the pre-European peoples of New Zealand, even though the occupation has been transient."

Site recording is based on the fact that sites may survive as visible traces upon the present-day landscape. The recognition of discrete areas of archaeological features is the major concern of the site recorder. Archaeological sites in New Zealand vary considerably in size and in the complexity of their surface features. They may be a single feature or a complex arrangement of many and different features. These may represent the activities of a small group of people over a short period of time or a larger group over an extended period. Sites may accordingly be grouped for study in a number of ways. A distinction may be drawn between sites where a range of day-to-day activities took place and others where specialised activities were undertaken. Especially valuable sites for archaeological study are those where detailed evidence of human activity is recoverable by excavation. The recorder however is not always in a position to determine the possible significance of a site.

Another method of grouping sites is by the description, with minimal interpretation, of the surface features of sites. This is how sites are dealt with for the purposes of the Site Recording Scheme. Some classification is essential to order the observations of a large number of sites by different site recorders. Therefore the Association has adopted a system which tries to avoid assigning deliberately constructed features to site categories on the basis of function. This is because functional interpretations made on the basis of surface features are unreliable. A number of quite different activities may leave apparently similar surface features. Until more excavation has been done on relevant sites it may not be possible to consider a functional interpretation.

The exact function of many very common features such as pits is unclear and still a subject of continuing research and debate. For example, Trotter (1977: 373) has argued that the size and situation of pit sites in the Marlborough Sounds and elsewhere in the South Island would seem to rule out their use for root-crop storage. In contrast, workers elsewhere see such sites as having been put to this storage use (Fox 1974).

The term pa is so firmly established that this is retained as a category. Sufficient descriptions of pa have been recorded by earliest explorers to enable the interpretation of the field evidence in this light. Identification of sites as pa, however, obscures the probability that they may include a wide range of settlement types. The onus is, therefore, on the recorder to provide a detailed description of the site. Enough has been said by now to make it clear that the scheme is based on recording surface evidence with minimal recourse to interpretation in terms of function.

With this classification as a basis, the objective of the scheme is to record accurately by written description and appropriate illustrative material as many as possible of the individual archaeological sites throughout the country.

Information gathered by site recorders is put to a range of practical purposes. While the discovery and recording of sites is an absorbing interest, most recorders operate in the expectation that their work is serving a wider purpose or will do so in the future. The rest of this chapter describes some of the purposes which site recording serves.

## RESEARCH

Recording is an integral part of the process of archaeological research. It is the means whereby a vital research tool is formed, for without knowledge of the existence, surface features, and distribution of sites over a given area, no archaeological investigation may begin. The Site Recording Scheme cannot hope — indeed, it would be wasteful to try — to record sites with such accuracy and detail that further surface investigation becomes unnecessary, although some recording has reached a standard almost high enough to make this so. The real aim is to provide the researcher with:

- (a) The place in the classification within which a site falls; and
- (b) Sufficient information to enable him to judge whether it contains, or could throw light on, particular features which may be relevant to his interest.

Depending on the case in point, the research may either be satisfied with the information on the record form or may wish to visit the site himself. In either case, the record has fulfilled its function.

## EXCAVATION

Recording is a preparation for and an essential adjunct to the work of excavation. The excavator is not able to adequately select sites to investigate unless he has access to information on the whole range of sites in the area concerned. As one of the founders of the Site Recording Scheme has remarked:

“Each site discovered is obviously a potential site for excavation, and the choice of the ideal site for an excavation designed to answer specific problems can be the work of field archaeology on the highest level” (Golson 1957: 64).

Only excavation can determine the exact form and function of some features (e.g. pits) and the chronology of occupation. However, once a certain feature has been investigated and checked by excavation, some of the resultant information may be assumed for similar features found elsewhere. Thus, once some types of field monuments have been excavated it is possible to draw conclusions about similar features in other areas without further excavation.

## SITE DISTRIBUTION STUDIES

Site recording also provides a wide and important field of research in itself. The character and distribution of surface field remains can often tell the prehistorian a great deal about the occupation of an area. However, it is unlikely that any conclusions reached will be fully reliable without resorting to excavation of some of the sites. Thus, work on settlement patterns depends on the inter-relationships of the information on site distribution provided by field recording, and the more intensive work of excavation. Field recording provides the distributional information of the site types whose form and function are defined by excavation. The role of site recording in research is dealt with more fully in Chapter 3.

At their best, site records comprise an archaeological archive for an area. They provide not only an index for future research but a documentation of the visible prehistory of the area, so that the knowledge of this is never lost, no matter what happens to the sites themselves. Therefore standards of accuracy and description must be set, and kept, high. The individual recorder should have no difficulty in meeting them if recording is done with the research worker of the future in mind.

It should always be remembered that knowledge, to be used effectively must be accessible, and entered into the scheme:

“A discovery dates only from the time of the record of it, and not from the time of its being found in the soil” (Pitt-Rivers in Wheeler 1956: 209).

## SITE PROTECTION

Archaeologists and others have in recent years become increasingly concerned about the destruction of archaeological sites, which are part of the national cultural heritage. Unless action is taken, the archaeological resources will become so depleted that effective study of them may no longer be possible. This concern has resulted in the passing of the Historic Places Amendment Act 1975, and action by central and local government agencies to conserve archaeological sites.

Before 1975 some measure of protection was given to sites through local authority planning schemes, and through co-operation by some public and private organisations. The Historic Places Amendment Act 1975 now provides that no site may be modified, damaged or destroyed except with the consent of the Historic Places Trust.

As a result, both the Trust and the Association's filekeepers often receive requests for information on the location and nature of sites. These requests may originate from comprehensive land use or public works planning by official agencies, or from particular land use proposals by organisations or individuals.

The legislation, and the improvement in official attitudes, can be fully effective only if there are adequate records of the existence, location and nature of sites available before developments affecting sites proceed. Recorders therefore have as an added incentive the knowledge that their work, in building the record of archaeological resources, makes for the more effective protection of those resources.

Records are employed in several ways where sites are threatened with destruction:

1. They show what sites are recorded in any area.
2. They enable an initial impression of the possible relative value of recorded sites.
3. They indicate the extent to which further site recording is required.

A thorough recording programme will, when completed, demonstrate what sites are visible on the surface and will indicate those which should be preserved. If preservation is not possible, an estimate will be given of the extent of excavation required prior to destruction.

Even with increased public awareness of archaeology, vigilance is necessary to anticipate likely threats to sites. There are a number of ways in which prior knowledge of threats can be obtained:

1. From publication of local authority planning schemes in which changes of zoning (e.g. rural to residential) could endanger sites.

2. From announcements of new public works, e.g. roads, and reservoirs.
3. From advertisements of subdivisions.

In all these cases the developer and planner should also approach the Trust to ascertain whether or not archaeological sites will be affected and to ensure that all obligations under the Historic Places Amendment Act 1975 are met.

Examination of the site records will reveal if sites are known in the area. The Trust and the Association must then consider whether or not further site recording is required and what action should be taken to protect sites. The advice and local knowledge of site recorders and filekeepers are always valuable in such cases.

If no recording has been done in the threatened area, then an immediate survey is called for. Few areas in New Zealand are completely recorded. In filling the gaps, intelligent anticipation of likely threats to sites, using the indicators suggested above, should play an important part in moulding the future recording programme. Areas where the threats seem greatest should obviously be recorded first.

### **PUBLICITY AND PUBLIC EDUCATION**

The results of site recording form the most easily available body of material for this purpose. Excavation, on the other hand, takes time, and there is inevitably delay in the processing and interpretation of the results to the stage where they are readily comprehensible by non-archaeologists.

The results of site recording can be presented in effective ways. People are usually very interested to learn of archaeological sites in an area they know. Distribution maps and aerial photographs, as well as photographs and slides of individual sites, can be used in talking to interested groups, or with official agencies. The aim of this is to complete the first stage of public education in archaeology, that is, what the range of archaeological field evidence is in New Zealand, what the sites are like, and where they occur. Many groups, such as local service clubs, historical societies, scout groups, university and training college groups, and tramping clubs welcome illustrated talks.

Even though there is now effective legal protection for sites, it is still very necessary to encourage sympathetic attitudes in land owners. Some owners may even be interested in making important sites available as historic reserves under the Reserves Act 1977. If an owner is interested in this, contact should be made with the Trust or the Department of Lands and Survey, who will negotiate with the owner.

### **References**

- FOX, A., 1974: 'Prehistoric Maori storage pits and problems in interpretation', *JPS* 83, 141-154.  
GOLSON, J., 1957: 'Field archaeology in New Zealand', *JPS* 66 (1), 64-109.  
TROTTER, M.M., 1977: 'Moa-hunter research since 1956', in R. Duff, *The Moa-hunter Period of Maori Culture*, Wellington, Government Printer.  
WHEELER, Sir Mortimer, 1956: *Archaeology from the Earth*, Harmondsworth, Penguin.

## 2. The Site Recording Scheme

### HISTORICAL

The Site Recording Scheme was inaugurated by the Association in 1958. Before that time various exercises in recording, usually field surveys intended for publication (e.g. Best 1927) had been carried out. However, the development of systematic recording began comparatively recently, and owes much to the late Mr J.D.H. Buchanan. In 1951, the Historical Section of the Hawkes Bay Branch of the Royal Society was given a financial grant by the Society to investigate the setting up of a suitable scheme for recording Maori sites. Mr Buchanan, as convener of a committee set up for this investigation, devised a detailed scheme along the lines of that developed for recording geological fossil collections. In many essential respects, the Association's Scheme in operation today implements Mr Buchanan's recommendations.

It soon became clear that the forms adopted for the scheme when it commenced operation were inadequate to cope with the varied information being recorded. There was a general demand for more flexible recording forms. (See Mumford, Daniels and Smart 1960. Not all of the changes suggested in that article were subsequently acted on). The forms adopted in 1960 continued in use with only minor changes until 1978, when a new edition was issued to take account of changing requirements (see chapter 10).

The history of the scheme has been described by Davidson (1974). Points worthy of note here are the broadening of the scope of the scheme to include all sites, both historic and prehistoric, capable of being dealt with by archaeological techniques, and the gradual shift in emphasis from the use of the scheme as a research tool to its unforeseen but vital role in site protection. Davidson noted the fate of some large-scale site recording surveys and concluded that failure to process the field data often meant that records were never filed in the scheme.

A total of 17,000 sites has been recorded in the scheme in its 20 years of operation. New filing districts have been created in Nelson, the West Coast, and Southland in recent years. Very good progress has been made towards a comprehensive site survey of some areas, but little work has been done in several parts of New Zealand rich in field evidence.

A new chapter in New Zealand archaeology opened with the passing of the Historic Places Amendment Act 1975. The Act provides statutory protection for all archaeological sites through the New Zealand Historic Places Trust, which must consider and decide on all proposals involving the destruction, modification, damage, or excavation of sites. The Act is a major challenge to the Trust's organisation, finance, and field-work capacity. The Trust has the full backing of the Archaeological Association in its new responsibilities.

An essential cornerstone of the Act is the requirement that the Trust maintain a New Zealand Register of Archaeological Sites. Thus for the first time legal recognition has been given to site recording as an essential tool in the protection and conservation of sites. The Association has made available the central file as the basis of the new register. The 1978 edition of the site record form includes changes which will enable the records to be integrated into the register. The Trust Archaeology Section now carries out some of the administrative and clerical functions of the Site Recording Scheme at national level. Administrative arrangements for site recording are described in the following section.

So that it can fulfil its responsibilities to expand the body of recorded sites, the Trust has since 1974 funded an annual programme of site recording, employing experienced recorders on a contract basis, and assisting others to further their recording programmes. Preference for expenditure on recording has been given to areas where land development proposals might cause the destruction of archaeological sites.

The Association has appointed a Site Recording Scheme Co-ordinator to develop and oversee the scheme at national level. He is the main contact in the Association for local filekeepers, who continue to work as a vital part of the system. The Historic Places Trust's Survey Archaeologist also has close contact with local filekeepers in the central processing of records. Both officers work together to ensure that the Association and Trust sectors of the recording scheme mesh smoothly together.

The new legislation cannot function without an effective site recording scheme. Increased recording by both professional and amateur recorders is vital. Improved training and support of local filekeepers and site recorders will be a major concern of both the Association and the Historic Places Trust.

### References

- BEST, E., 1927: *The Pa Maori*, Dominion Museum Bulletin 6, Wellington, Government Printer.  
DAVIDSON, J.M., 1974: 'Whither the Site Recording Scheme', *NZAA Newsletter*, 17 (1), 2-26.  
MUMFORD W., J.R.S. DANIELS and C.D. SMART, 1960: 'Revision of the Site Recording Scheme', *NZAA Newsletter*, 3 (4), 32-5.

## ORGANISATION

The object of the scheme is to create simple but systematic files of site records. A file of sites is kept for each district and duplicates of all records are deposited in a central file. The records produced and incorporated in the scheme are the property of the Association. All aspects of the scheme are under the ultimate direction of the Association's Council. The Council member with special responsibility for the scheme is the Site Recording Scheme Co-ordinator, appointed by the Council.

### THE CO-ORDINATOR

The Site Recording Scheme Co-ordinator is responsible to the Association's Council for the operation and development of the scheme and its co-ordination with the Historic Places Trust's register of archaeological sites. This involves close liaison with local filekeepers, and representing the interests of the Association in respect of the Trust's register.

### FILING DISTRICTS

Mutually exclusive filing districts, the boundaries of which are based on NZMS 1 (1 inch to 1 mile series) maps, cover the whole of New Zealand. The areas of each of the 17 districts, the location of each file, and the filekeeper as at the date of publication, are given in section 11 (pp. 81-85).

### LOCAL FILES

Each district has a local file containing the site records from that district. These are currently filed according to the NZMS 1 maps on which the sites are situated, sites on each map being numbered in order of receipt. A set of index maps is kept on which is marked the location and number of each site recorded. Wherever possible local files are housed in public institutions, but in smaller towns and in rural areas there is sometimes no alternative to keeping them in private houses.

## **LOCAL FILEKEEPERS**

Each file is in the custody of a local filekeeper who is a financial member of the Association and is appointed by Council. The local filekeeper is a key figure in the scheme. He is the immediate contact for the recorder, and is responsible for processing the records and deciding on the rejection of unsatisfactory material. Filekeepers keep the files as laid down in this handbook and as revised or instructed in greater detail by the co-ordinator.

## **THE CENTRAL FILE**

A duplicate of each record is kept at the office of the New Zealand Historic Places Trust in Wellington. As with local files, records are currently filed under NZMS 1 map numbers. This central file is maintained by the Trust's Survey Archaeologist on behalf of the Association and in consultation with the co-ordinator. The Survey Archaeologist is responsible for the New Zealand Register of Archaeological Sites. He supervises the process of filing duplicate records in the central file and the integration of that file with the register.

## **ACCESS TO FILES**

Access to local files is controlled by the filekeepers who may grant access to financial members of the Association, and also at their own discretion to students of archaeology or related subjects, officers of government departments, local and statutory bodies, and any other person or body having a legitimate interest. Filekeepers may decline to assist with any requests which they consider place an excessive burden on themselves, and may refer these requests to the Historic Places Trust. Access to the central file is controlled by the Survey Archaeologist of the Trust in consultation with the co-ordinator on the same discretionary basis.

## **RIGHT OF APPEAL**

Under the above rules, access to central and local files may be denied to financial members of the Association. In any case where access is refused, the applicant must be informed that he may appeal to the Association Council and the filekeeper must report the refusal to the co-ordinator. The Association Council may reverse the filekeeper's decision to refuse access.

## **SECRET FILES**

Filekeepers may create secret files if requested to do so by a site recorder provided there is valid reason. Secret files must be stored in such a way that they are not seen by persons making routine use of the file. They may be consulted by the recorder, the current filekeeper, the co-ordinator, and others at the discretion of the filekeeper or co-ordinator who may consult the recorder if appropriate.

## **PROCEDURES**

Records are submitted in duplicate direct to the local filekeeper. His procedure is then as follows:

1. He examines the site record for internal consistency, credibility, and acceptability, and then checks the grid reference on the appropriate map and compares the location with that described in section 1 of the site record form. Minor corrections obviously necessary may be made by the local filekeeper (any changes made should be initialled), but other major problems are referred back to the site recorder.

2. Acceptable records with apparently correct grid references may be included in the NZAA file. Grid reference and site type are checked against the index list and index map of sites recorded. In cases of apparent duplication, new records are checked against the existing ones. If both apply to the same already numbered site, that site number is placed on the new forms, the top copy of which may be placed in the local file with the old ones.
3. If the site has not already been recorded, and the new site record is acceptable, it is assigned the next consecutive site number for the relevant map sheet. The index list and index map are updated accordingly. Note that if a sequence of site numbers becomes interrupted for any reason, such as a record being cancelled, such unused or pre-used numbers are to be re-assigned as soon as possible. The issuing of blocks of site numbers by filekeepers to site recorders can lead to site record duplication, gaps in site number sequences, and the presence of inappropriate records in the files. This practice is discouraged.
4. Each copy of a new record is marked with the assigned site number, signed, and dated by the local filekeeper.
5. The top copy of the record is placed in the local file. The second copy is then sent to the central file. The third copy, if provided, is returned to the site recorder.
6. Acknowledgement of receipt of acceptable records is sent to the site recorder, together with a list of site numbers assigned if a third copy of the records was not submitted.

#### **METRICATION OF THE SITE RECORDING SCHEME**

The NZMS 1 series topographic maps will gradually be replaced by NZMS 260 at a scale of 1:50,000. NZMS 270 maps will appear at a scale of 1:25,000 with the same grid as NZMS 260. As metrication of the map coverage proceeds, NZMS 1 sheets will be phased out.

It will therefore become necessary to change the site recording scheme from its basis on NZMS 1 and the National Yard Grid to NZMS 260 and the metric New Zealand Map Grid.

It is proposed to proceed in piecemeal fashion with the changeover to metric sheet files for the scheme, as the NZMS 260 maps become available. That is, filekeepers and recorders should continue to use NZMS 1 maps and references until the new maps are available.

Filing district boundaries follow the index to topographic map sheets. Thus, filing district boundaries will change marginally to accommodate the metric map series (see map in section 11). No maps other than the NZMS 1 or NZMS 260 - 270 series should be used in site numbers and grid references.

As before, NZAA site numbers will consist of map number, slash (/), and site accession number. Metric site numbers will be identifiable by a prefix M, to avoid confusion between some NZMS 1 sheets and other NZMS 260 sheets for different areas which happen to have the same numbers. Thus, MN5/24 and MK37/1 are metric NZAA site numbers, based on the NZMS 260 map series.

NZMS 1 site numbers are assigned according to published map sheets. Thus, sites in N1 and N2 of NZMS 1, published together as N1 & 2, have been allocated a single

accession number series. Metric site numbers, on the other hand, will be assigned according to the index of map sheets. Thus, although sheets MM02 and MN02 of NZMS 260 are likely to be published together, separate site number series will apply to each of MM02 and MN02.

Sites already recorded will be allocated a metric map number and a metric grid reference by computer program at the Historic Places Trust. No manual grid reference correlation or site re-numbering by local filekeepers is envisaged.

When a metric map becomes available, NZMS 1 site number allocations in that area will cease. Sites already recorded will have metric site numbers and grid references assigned to them. These records will then be withdrawn from the NZMS 1 file, and placed in order as a new metric map site records sequence.

Prior to the availability of a NZMS 260 map for an area, new sites recorded will continue to be allocated NZMS 1 site numbers by local filekeepers and filed as before. After a metric map becomes available, new records in the area will be allocated the next metric site number by the local filekeeper, and no NZMS 1 site number will be applied. At this stage reference to the NZMS 1 map for that area should cease.

Filekeepers who receive site records with NZMS 1 details from site recorders after NZMS 260 maps are available may either make the necessary changes and additions to the records themselves, or, if this becomes too burdensome, return the records to the site recorders for alteration.

At the time of local conversion to metric maps and site numbers, all secret site records which cannot be reclassified as ordinary records will be taken into a separate NZAA filing scheme and separately numbered.

### 3. Research Design in Site Recording

#### Aidan J. Challis

Archaeological surface fieldwork involves the recording of sites, their location and nature, by non-excavational means, and the analysis of the evidence collected in this way. Site recording activity is accorded high priority in New Zealand archaeology, but the study of related analysis and theory has been relatively neglected. The increasing application of geographical models to such analysis is opening up stimulating new possibilities for the interpretation of fieldwork results (Haggett 1965, Cole and King 1968, Clarke 1968, Hodder and Orton 1976). However, major advances in interpretation are dependent upon the availability and quality of the evidence to interpret. It is essential that the degree of reliability of the fieldwork is known. Therefore it is appropriate to review the procedures and redefine the objectives of fieldwork research.

Practical guidance for fieldworkers can be found in general publications on archaeological methods, in site survey reports, and in handbooks especially written for the purpose. (For example, Alexander 1970, Heizer and Graham 1967, Schiffer *et. al.* 1978, Davidson 1975a, Ordnance Survey 1963, and the present volume). From such sources it can be learned that the objectives of fieldwork are the location of as many sites of past human activity as possible, the assessment of their nature by surface examination, and the production of full records for use by archaeologists and those concerned with land management. A "catch-all" approach is commonly adopted. The usual procedure is described as initial familiarisation with the topography, ecology, relevant records, and oral knowledge of the area as a guide to possible site location, followed by as complete a physical examination of the surface as practicable. Reports frequently include a descriptive account of sites located, site plans often of high apparent accuracy, and distribution maps.

However, archaeological site distributions produced by fieldwork result not only from the real distribution which existed in the past. Apparent distributions are affected by subsequent land use and geomorphological history, which lead to patterns of destruction and survival in the evidence (Stevenson 1975). The intensity of the site recording and the procedures adopted may bias the pattern of site discovery. There are also variations in the likelihood of finding different types of site. Some may be missed completely because their features have never previously been recognised. Major programmes of rescue excavation overseas have demonstrated the unreliability of distributions derived solely from surface fieldwork. Indeed, the goal of complete site survey is unattainable.

Thus, archaeological research demands more of the fieldworker than a descriptive treatment and a vain attempt at comprehensiveness. Site recording may be interesting and enjoyable and may be of great assistance in extending local knowledge and achieving the preservation of the sites found. Even so, such localised data collection, if it does not also contribute to the wider aims of archaeology, is an inefficient activity. The advance of the academic discipline requires that accurate observation and recording should stem from a conscious quest for patterns and relationships and for new explanations of them. All such work can achieve research results. To this end it is suggested that site recorders should consider using a structured procedure concerned with the isolation of problems and the testing of answers to them against data gathered in the field. The procedure is summarised in figure 1.

The selection of the problem area (step 1, fig. 1) applies in both a physical and an academic sense. The physical area of study within which fieldwork methods are to be

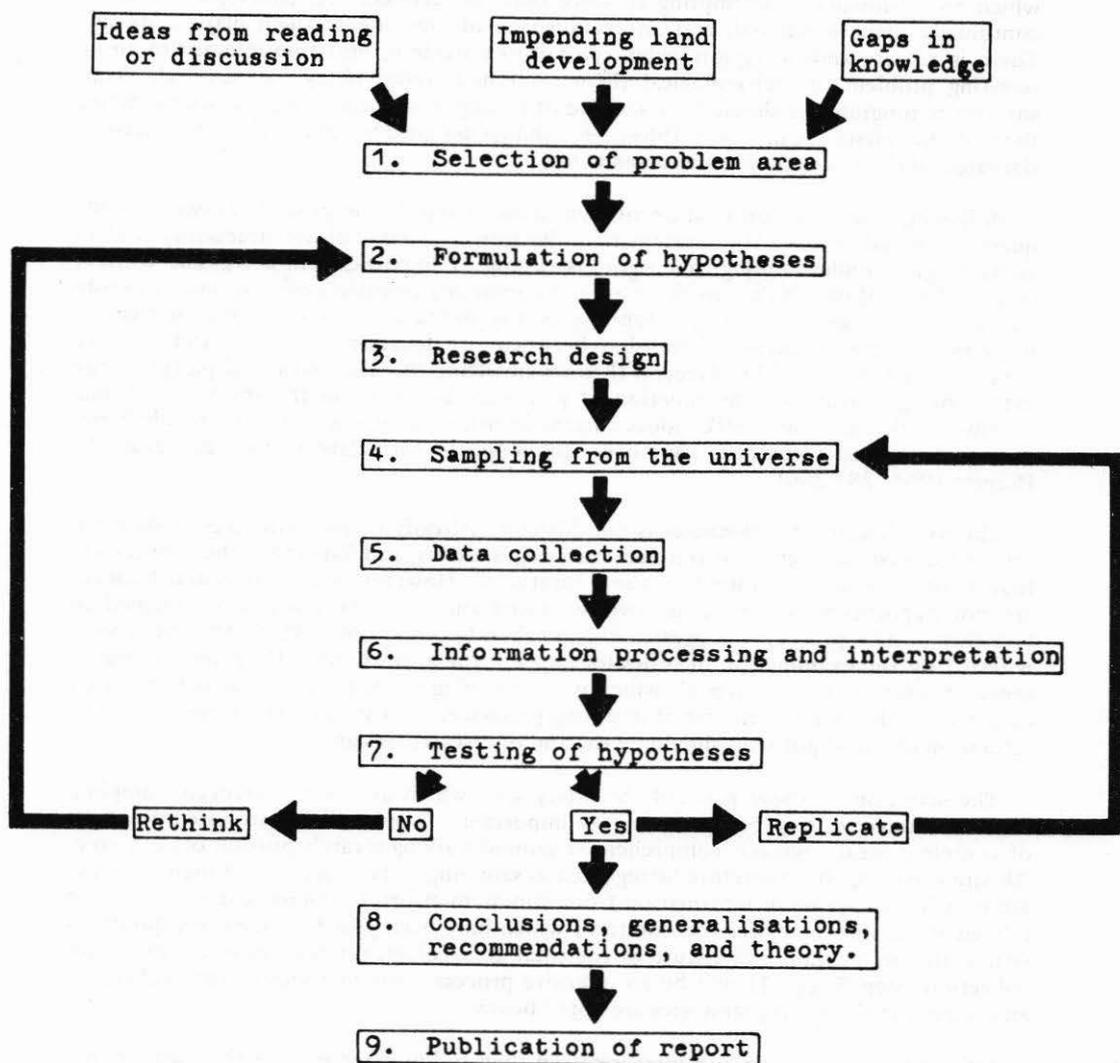


Fig. 1 A procedure for surface archaeological fieldwork

applied to archaeological questions is often dictated by impending land development or may be suggested by regional gaps in knowledge. Beyond this, the academic problems which the fieldwork is attempting to solve must be defined. Archaeological sites are continually being destroyed, and an examination of any one of them may be its last. There is no site and no region which can fail to provide information relevant to an interesting problem of archaeological theory, method, terminology, or material. Thus site survey programmes should take account of a range of archaeological questions, define them at the outset (as in Green 1969: 5-6), and be designed to answer them. The potential range of these questions is discussed below.

Following this, the formulation of hypotheses (step 2), or possible answers to the questions posed, is essential. Systematic collection of facts will not necessarily lead to archaeological understanding, but rigorous testing of hypotheses in a regional context usually does. Most scholars work on several competing possible explanations of a problem at once (Green 1974: 209). Hypotheses may derive from experience of settlement patterns and the apparent relationship between site location, site type, and resource zones (as in Cassels 1972). General theories involving the distribution of pa types, the extent of agriculture, or the function of pits, may be tested in the study area (using Groube 1970, and Law 1969). Ideas current in other social sciences may provide hypotheses. Statistical techniques have been developed to formulate them. (For example, Haggatt 1965: 281-286).

The formulation of hypotheses is not difficult. Already most fieldworkers apparently act on the basis of them: to traverse main ridges, dunes, and flats infers the expectation that most sites will be found in these locations. However, such procedural hunches are not hypotheses until they are overtly stated and until the research is designed to test them. The procedure suggested (fig. 1) then becomes productive: the hypothesis is tested by the examination of other localities in the area as well. Here lies the importance of research design (step 3), which is the planning of the project to achieve research objectives. This is not a matter of imposing preconceptions since, even more than proof, refutation of the hypotheses should be the aim of research design.

The selection of those parts of the study area which are to be surveyed (sampling from the universe, step 5, fig. 1) is very important. Despite the often-stated objective of complete areal coverage, comprehensive ground-walking is rarely possible or economic. All site surveying may therefore be regarded as sampling. The objectives of such sampling are to achieve maximum information from minimum effort, to obtain representative and reliable data, and to answer the questions which have been posed. When these questions deal with the location and nature of the total archaeological resources of an area, data collection (step 5, fig. 1) will be an intensive process. The methods of data collection and some useful sampling strategies are noted below.

Information processing and interpretation then follow (step 6). Of the stated hypotheses, some may be proved acceptable and others refuted (step 7). Those accepted may receive further confirmation as a result of additional fieldwork in the study area or elsewhere. The refuted hypotheses may be abandoned, and replaced by new hypotheses to be tested using the fieldwork data.

Thus the archaeologist is led on to generalisations, conclusions and recommendations about future work (step 8), related to distribution studies and the hypotheses tested. Recommendations about site conservation priority are also best defined according to research objectives. Publication (step 9) may be difficult, because many explanations cannot be further substantiated or refuted without excavation or related studies elsewhere. Nevertheless, international study is impossible without publication; ephemeral

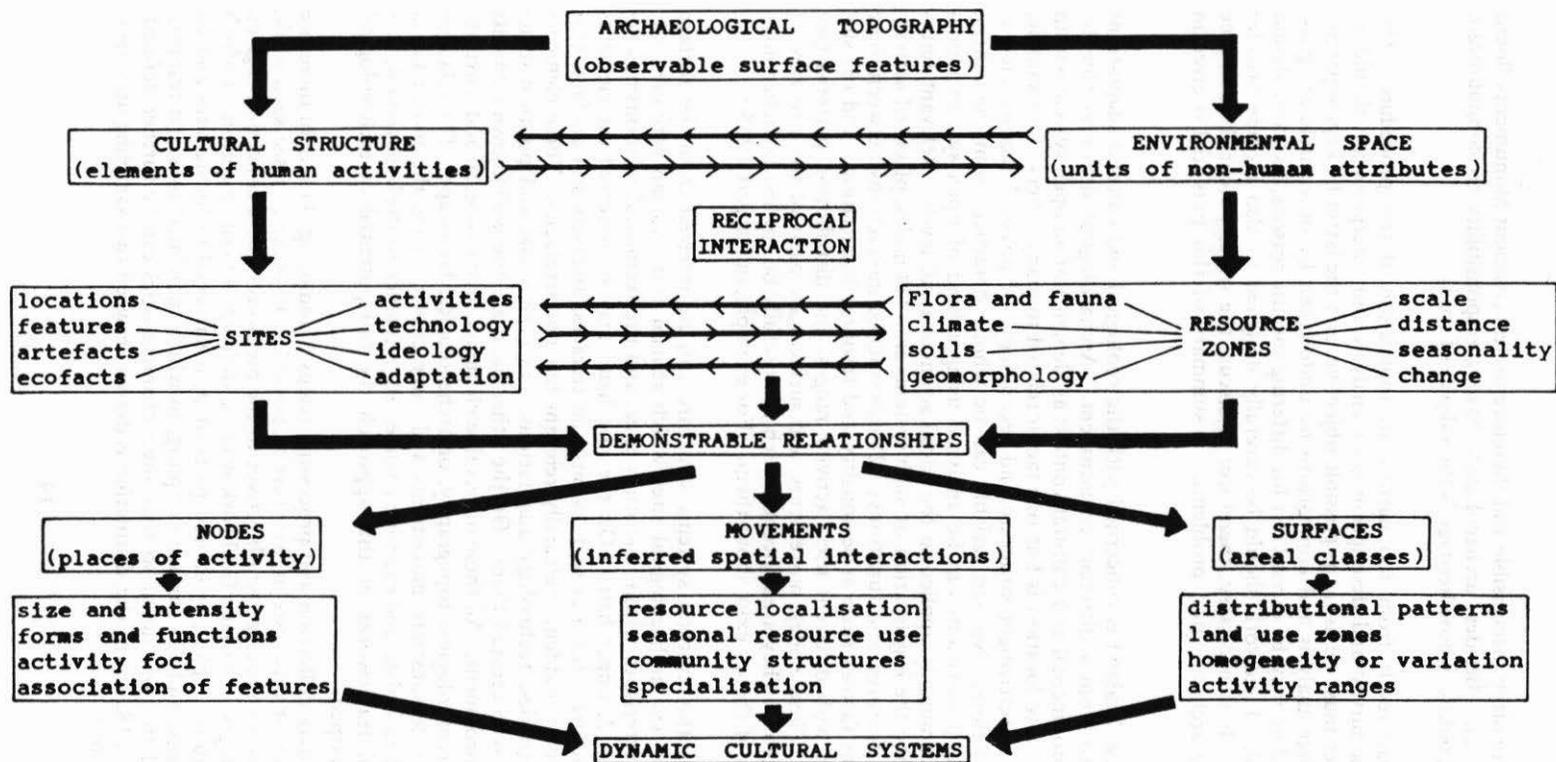


Fig. 2 The interpretative potential of surface archaeological fieldwork

reports and theses are often inaccessible and therefore useless (Ancient Monuments Board for England 1975: 2). Besides, archaeologists have a responsibility to communicate their findings to the public, whose heritage is the subject of study.

Some pitfalls may result from too narrow an application of this procedure. The mixing of fieldwork survey and description with analysis and interpretation should be avoided. The former must be as far as possible objective, and the latter be kept separate. Only then can further analysis and comparison be undertaken by other archaeologists. Although site recording may be carried out for differing specific reasons, its scope should not become limited. Fieldwork should be carefully designed to also include broader research objectives. It is necessary, therefore, to discuss the wider potential of surface fieldwork in solving archaeological problems. A summary of this potential is given in figure 2.

Prehistory in New Zealand is concerned with the ecological and cultural adaptations of people transferred from a different environment. Archaeological sites may thus be viewed in their environmental and cultural context as elements of an open system within which people lived. Site location is but one factor related to many others; for example, social factors such as settlement structure and technology, or physical factors such as surface geology and flora. No one variable can be wholly detached from the others. Such dynamic cultural situations can be analysed using a kind of open system model (as in fig. 2) now commonly applied in the social sciences at all levels. Relevant terms often used to describe the organisation of such systems are: (1) nodes, places of activity with differing sizes, features, and functions; (2) movements, interactions between these nodes resulting from factors such as seasonality and resource localisation; and (3) surfaces, or land areas with different uses, activity ranges, and distribution patterns (see fig. 2, lower half). These nodes, movements, and surfaces are parts of the structure of human cultural systems. They are concepts which can usefully be applied to archaeology because large bodies of theory exist about them. (For example, in Haggett 1965.)

The existence of this cultural systems structure can be inferred from the surface fieldwork evidence: the archaeological sites which remain from human activities, the environmental characteristics within the study area, and the reciprocal relationships between them (see fig. 2, upper half). On the one hand may be observed the elements of the cultural structure: features such as pits and terraces, artefacts and ecofacts (for example, shells from a midden: culturally relevant but not artefacts). These elements demonstrate the activities, technology adaptations, and even social and political structures of the people who created them. On the other hand are the well-known elements of the changing environment. All these observable elements, archaeological and environmental, comprise archaeological topography, or archaeological landscape. The relationships between them demonstrate movements and interactions. Thus the model (as in fig. 2) may be used to isolate and examine change. By reference to the behavioural, ecological and regional frameworks of this approach the full potential of archaeological fieldwork may be grasped.

An objective of data collection and processing (steps 5 and 6, fig. 1) should therefore be to define as much of this systems structure as possible. In order to assist such work, a general enquiry model relating the objectives to the methods of data collection is given in figure 3. Two stages in surface fieldwork may be defined: (1) site location, in which the whole of the study region, or chosen parts of it, is surveyed to locate sites and establish resource zones, and (2) surface sampling, in which individual sites and resource zones are examined in more detail so that their characteristics can be further defined. (See Binford 1972: 148, where the distinction is drawn between two sampling universes: the region and the site.)

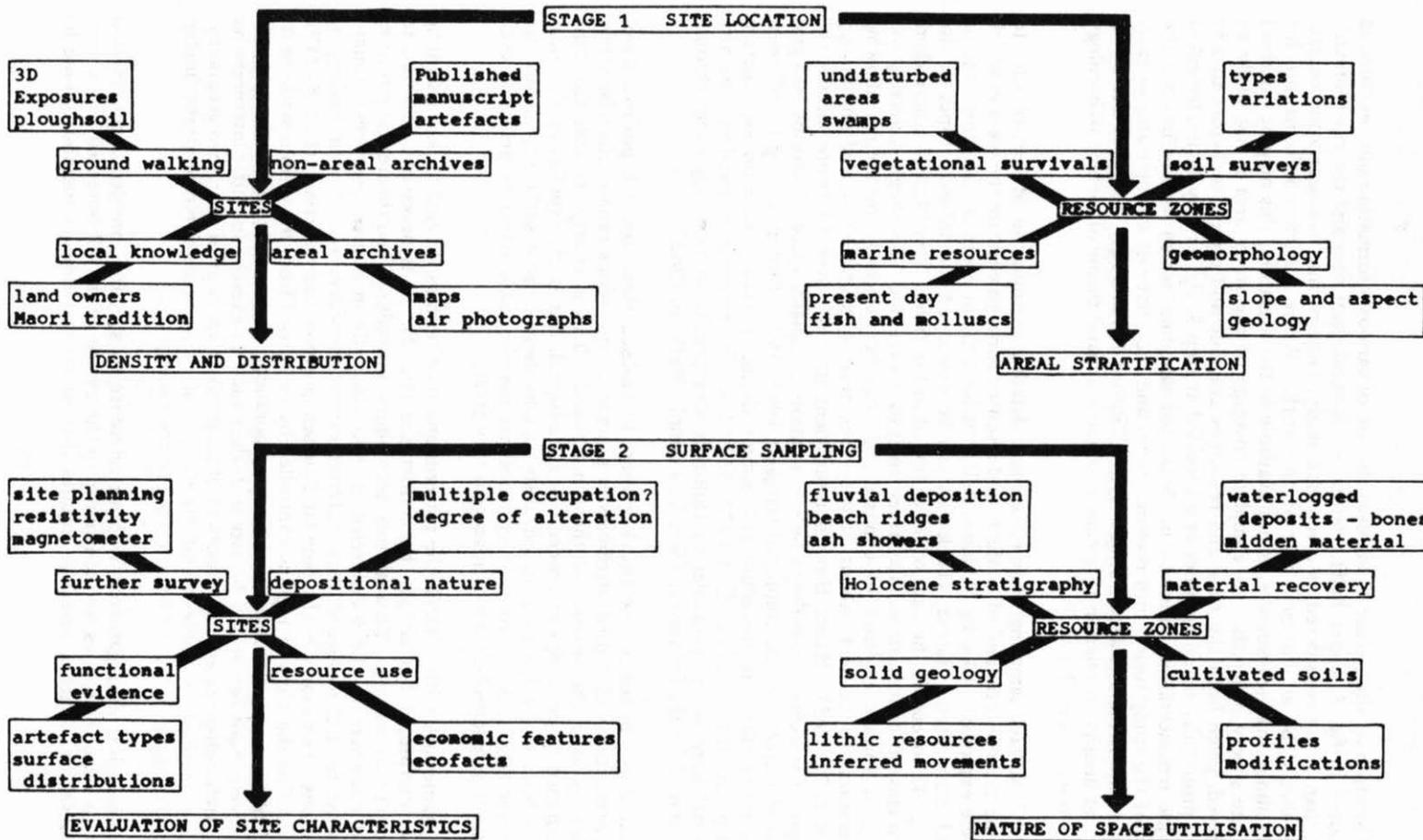


Fig.3. Data collection stages and sources in surface archaeological fieldwork.

The location of sites, stage 1, involves the use of various information sources (such as those noted in fig. 3, upper half) relating to archaeological sites and the environment. Rather than being considered as a separate study, enquiry into resource zone characteristics should be an integral part of the work. Where sufficient information, for example about marine resources, is not available in the literature, this may be obtained as the site survey proceeds. As complete coverage of the study area is not likely to be achieved, given both the time and resources available and the other factors already noted, a probability sampling procedure (decided at step 3, fig. 1) may be implemented to provide representative information. Stratified sampling, which usually involves the division of the study region into resource zones and the survey of a sample area of each, may be recommended (Haggett 1965: 195; Binford 1972: 151). Study of site distribution and density in relation to resource zones is a major theme of surface archaeology (demonstrated in figs 2 and 3).

Stage 2, surface sampling, requires a more detailed examination of located sites to determine their nature, and of ecofacts and resource zones to evaluate the ways in which they were exploited. (See fig. 3, lower half.) It is often not necessary for samples to be removed from sites. Rather, check lists can be developed for different types of site (as in fig. 4) to enable the data to be compiled in the field. Nevertheless, where there are problems of identification, laboratory analysis is desirable. Thorough collecting and mapping of surface evidence of exposed sites can be extremely rewarding, allowing interpretations to be made about activity loci, feature relationships, and chronology (Binford 1972: 163). Where there is insufficient time to cover the entire surface, the technique of systematic sampling (the examination of equally spaced locations on a grid covering the area) may be employed (Haggett 1965: 196). Binford's "dog leash" technique can expedite this procedure as it simply defines a circular zone for examination at each point on the grid (Binford 1972: 152-153). On the environmental side, worthy of especial note is the potential of Holocene stratigraphy in providing some chronological control for the fieldwork. (See, for example, Wellman 1962.)

At all stages in surface fieldwork it must be realised that, although positive proof of the presence of identified attributes is provided, conclusions cannot often be safely extended to infer the absence of those not found. This is clearly the case for areas not examined when sampling procedures are adopted, but it also applies to the areas searched because, as has been noted, distributions derived from surface fieldwork are never complete. Absence of field evidence has not the same status as presence, even when the apparent probability of absence is very great.

The framework within which the patterns and relationships defined by site recording may be interpreted has already been discussed (fig. 2). It is necessary, however, to understand that many of the analytical techniques, procedures, and theoretical positions adopted elsewhere in the social sciences, and especially in human geography, cannot be applied to archaeological data without careful consideration of their underlying assumptions. For example, the popular Thiessen polygon analysis (Haggett 1965: 247), used to define the areas or regions controlled by or utilised from the various settlements in a distribution pattern, assumes the contemporaneity of the settlements. If settlement coexistence cannot reasonably be assumed, then such an exercise has little interpretative value. Archaeology rarely achieves the tight chronological control of human geography. Therefore, methods of analysis and the validity of the resulting interpretations (undertaken at step 6, fig. 1) should be subjected to critical examination.

Archaeological data gathered without reference to specified problems and research designs to solve them does not contribute to the extent of its full potential to archaeological research. Rather, research requires that objective fieldwork methods should be

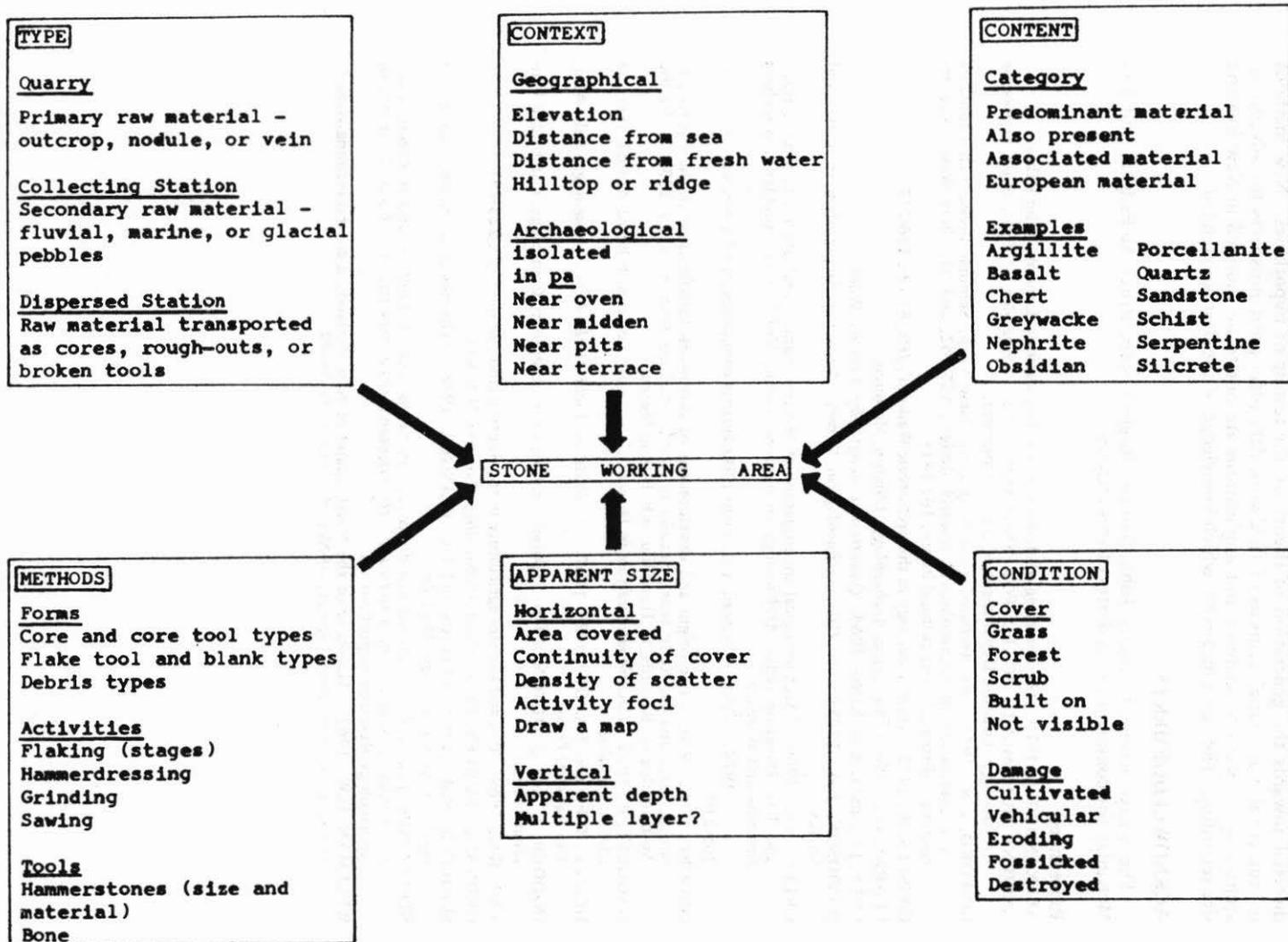


Fig. 4 An example of a surface fieldwork check-list

directed towards the generation of theory by the testing of hypotheses. New methods of numerical and spatial analysis of fieldwork data offer great prospects for advance in archaeology. Such procedures and applications are not to be shunned in New Zealand site recording. They are a means by which knowledge of the past is extended.

#### ACKNOWLEDGEMENTS

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#### References

- ALEXANDER, J., 1970: *The Directing of Archaeological Excavations*, London, John Baker.
- ANCIENT MONUMENTS BOARD FOR ENGLAND, 1975: *Principles of Publication in Rescue Archaeology*, London, Department of the Environment.
- BINFORD, L.R., 1972: *An Archaeological Perspective*, New York, Seminar Press. (This contains 'A consideration of archaeological research design', 135-162, and 'Hatchery West: site definition - distribution of cultural items', 163-181).
- CASSELS, R., 1972: 'Human ecology in the prehistoric Waikato', *JPS*, 81 (2), 196-247.
- CLARKE, D.L., 1968: *Analytical Archaeology*, London, Methuen.
- COLE, J.P., and C.A.M. KING, 1968: *Quantitative Geography*, London, Wiley.
- DAVIDSON, J.M., 1975a: *Te Paki Archaeological Survey*, Auckland, Department of Lands and Survey.
- GREEN, R.C., 1969: 'Archaeological investigation of Western Samoa prehistory', in Green, R.C., and J.M. Davidson (eds), *Archaeology in Western Samoa*, Vol I, 3-11, Auckland, Auckland Institute and Museum.
- 1974: 'Tahiti - Hawaii A.D. 1100-1300: further comments', *NZAA Newsletter*, 17 (4), 206-210.
- GROUBE, L.M., 1970: 'The origin and development of earthwork fortifications in the Pacific', in Green, R.C., and M. Kelly (eds), *Studies in Oceanic Culture History*, Vol I, 133-164, Pacific Anthropological Records, 11, Honolulu, B.P. Bishop Museum.
- HAGGETT, P., 1965: *Locational Analysis in Human Geography*, London, Edward Arnold. (Second edition available).
- HEIZER, R.F., and J.A. GRAHAM, 1967: *A Guide to Field Methods in Archaeology*, Palo Alto, The National Press.
- HODDER, I., and C. ORTON, 1976: *Spatial Analysis in Archaeology*, Cambridge, Cambridge University Press.
- LAW, R.G., 1969: 'Pits and kumara agriculture in the South Island', *JPS*, 78 (2), 223-251.
- ORDNANCE SURVEY, 1963: *Field Archaeology*, London, H.M.S.O.
- SCHIFFER, M.B., A.P. SULLIVAN and T.C. KLINGER, 1978: 'The design of archaeological surveys', *World Archaeology*, 10, 1-28.
- STEVENSON, J.B., 1975: 'Survival and discovery', in Evans, J.G., S. Limbrey and H. Cleere (eds), *The Effect of Man on the Landscape: the Highland Zone*, 104-107, The Council for British Archaeology Research Report No. 11.
- WELLMAN, H.W., 1962: 'Holocene of the North Island of New Zealand: a coastal reconnaissance', *Transactions of the Royal Society of New Zealand*, 1 (5), 29-99.

## PART II – DESCRIPTION OF SITES

### 4. General

#### WHAT IS A SITE?

There are a number of practical difficulties in recording, particularly in describing and typing sites. All these reduce to the question: what is a site? How does the simple definition "any specific locality for which there is physical (as opposed to traditional) evidence for its occupation", quoted in chapter 1, apply to the more complex reality encountered in the field?

It has been noted that the scheme is based on recording surface evidence with minimal recourse to interpretation in terms of function. In practice the classification is a very pragmatic one, but the recorder must be as objective as possible about the site he is faced with; in other words, he should record what is there, not what he thinks might have been there or what the site may have been used for. It is much more important to make an accurate record of the surface features of a site than to make inferences as to its former use.

#### IMPRECISE TERMS:

It is not helpful to use vague terms that cover a variety of evidence. For instance the following terms have been used by recorders:

##### Occupation

All sites represent occupation of some sort. Nevertheless this term has been used quite widely to describe the miscellaneous debris of everyday living. Sites described in this way usually contain such things as blackened earth or sand, diffuse scatters of midden, oven stones, flakes, artefacts, or all or any of these in combination. The use of a general term confuses rather than assists those consulting the files.

The temptation to use this term is considerable when faced with a situation where, for instance, because of the amount of disturbance, the site recorder does not know quite what to make of a site. A general term then becomes a substitute for the difficult job of describing the site. Yet it is precisely these instances where it is important to know exactly what is there. If the site recorder cannot describe it he cannot expect those consulting the form to guess what the site consists of. The danger of general terms such as occupation is that gradually they become accepted as substitutes for description and sites are given the same typing although they may actually be very different. The sites should be typed according to the classification detailed in chapter 5 and it will be found that practically all will fall within these categories. Artefacts/midden, artefact/oven, or artefact/midden/oven, or similar combinations describe many of them. The presence of blackened earth or sand is a detail contributing to the overall picture of the site and does not merit a separate mention as a site type category. It will, of course, be mentioned in the description of the site.

##### Settlement

This has been used to describe apparently undefended living areas of varying sizes, particularly combinations of pits, terraces, and middens. Earlier recorders in the same situation might have used the equally unacceptable term *kainga*. These terms would cover many different combinations of features, such as pits, terraces, and middens, that have little in common except the absence of defences. Such terms also imply that all

the components of a site may be contemporary. While the evidence is treated as one site for the purposes of site recording, it must be recognised that different features may date from different periods of occupation. Terms like settlement are therefore insufficiently precise for the recorder, who should clearly define the visible features of the site. Is it a midden? Does it have pits and terraced areas?

The term pa has also been used in an imprecise way by site recorders. A pa is a site showing defensive works such as ditches, banks, and scarps. Thus a site located on a headland or a ridge but showing no surface evidence of fortification is not a pa according to this classification of field evidence. Sites which may have been easily defended because of their topographic situation are not pa, in the absence of clear surface evidence of fortification. This confusion is based on a failure to recognise that the categories are *field* categories, and are not intended as statements on prehistoric settlement patterns or social organisation.

### COMBINATION OF SITE TYPES

Many sites will be of a single type, but combinations often occur (for example, pits/terraces). It is sometimes hard to decide whether a group of features should be recorded as one site. Being restricted to recording surface features, the site recorder must, in deciding whether to record them as one site or more, rely on the proximity of features to one another, and in relation to the landscape. Usually the 'lie of the land' and the way the features are arranged will enable a judgement to be made. If they are definitely separated physically they should be recorded separately, but if there is no clear spatial differentiation, and all the features appear to be roughly of equal importance, they should be recorded as one site with a multiple typing such as that described above.

Another common case is that of the small site near a much larger one, apparently related to it in some way, but clearly less important. Examples are:

- Pa with minimal occupation evidence outside the defences.
- Large groups of pits with small midden areas.

In such cases the features may be recorded together, although it may be decided that the lesser features do not merit a separate listing under the site type heading. They will, of course, be described in the appropriate section of the site record form.

### EXTENSIVE AREAS OF OCCUPATION

At present these are the greatest problems for recorders, who sometimes may have been deterred from recording them. Typical of the problem are extensive areas of stone walling or of made soils and borrow pits. Equally difficult are large areas of middens and burnt stones, sometimes partly covered by sand or vegetation, so that the presence of occupation debris in every eroded place suggests that the whole area may be one undivided site.

The problem is not confined to prehistoric evidence. For example, early historic mining sites may cause even greater difficulty.

Experience has shown that initially it is reasonable to record these as one site rather than to try to distinguish discrete areas. Splitting them into different sites without detailed study often seems an artificial exercise. Such an initial record notes the presence of the area in the Site Recording Scheme, and serves as a basis from which further work can proceed.

Subsequently, more detailed examination of the surface will usually be productive. Careful mapping of the evidence, if necessary using an artificial grid or, particularly in bush or dunes, aerial photographs, will reveal variations in spatial pattern and archaeological content. The evidence, which had initially appeared continuous, may thus emerge as a series of nuclei or groups of apparently related features, sometimes different in content, and often discrete but sometimes contiguous. At this stage it is desirable to subdivide the site records.

Subdivision into separate sites after study of the field evidence is important. In the case of middens, variation in location, density, content and stratigraphy may possibly mark different stages of occupation. This is very significant. In the case of large areas of stone rows or borrow pits it is acceptable to record site type variations within the same area, such as pit groups and middens, as separate sites, especially if the field evidence suggests discrete settlement units or different periods of occupation. Individual miners' claims within historic mining areas can often be defined by documentary research and careful fieldwork.

If subdivision is required, separate site numbers must be given. Site numbers must on no account be subdivided (e.g. into A, B, C, etc.). An initial site number assigned to a whole area may be reassigned to one site within the area, and other numbers should be given to the rest.

When recording large numbers of small adjacent sites in this way, the scale at which the sites are mapped will cause problems. Six figure grid references on NZMS 1 maps, giving location to the nearest 100 yards, are not sufficient to distinguish them. Maps at a scale of 1:25,000 (NZMS 270, becoming increasingly available) and aerial photographs, especially those at a scale of 1:15,840 or larger, will usually resolve these problems, because, in addition to having a larger scale, they contain a wealth of topographic detail. Sketch location maps should be included with all such groups of site records. They may be filed with the first site record form of the series, and then be referred to in subsequent records.

## SITES DESCRIBED ELSEWHERE

Where sites are described in published records, the publication reference must be given in the site record but repetition of the publication is unnecessary. If field observation shows additional features to those already published, description of this is required.

## PARTLY DESTROYED SITES

With these it is best to be objective, recording the visible evidence only and giving the site type accordingly. For instance, if there is midden on what may have been the site of a pa, but where there is no evidence that defences were ever present, it should be recorded as a midden site. Mention may be made in the site description that it is possibly the site of a pa. But if there is some trace of the defences remaining, the site type pa would be justified. It is possible, however, that if the midden is all that remains this could be quite unconnected with the pa which may have existed.

For this reason traditional and historical evidence should be used sparingly for identifying sites. The Site Recording Scheme is concerned principally with that which is observable, the *field* evidence.

## DESTROYED SITES

The word 'destroyed' should be used with considerable caution. The first reaction to a very badly disturbed site is to write it off as destroyed. The levelling of a site for subdivision or other development however does not always entail the complete destruction of retrievable archaeological information. Sections of the site may well survive and be able to supply answers to research questions.

The purpose of the Site Recording Scheme is to assist research, as well as to enable site protection, so records of "destroyed" sites do have a place in the files. Such sites are usually learnt about from aerial photographs, published information, verbal information, or unpublished manuscripts. Records of destroyed sites, if accurate, can be of use in studies of site distribution and in reconstruction of the prehistoric landscape. While the emphasis is placed on visible remains, sites that no longer exist, but which nevertheless at some point were satisfactorily described and can be accurately located, do have a place. Suspected sites, only approximately located, and of which only meagre hearsay descriptions exist, should not be placed in the files.

## STRATIGRAPHY

One of the most important points to watch for in all recording is stratigraphy (i.e. layering of occupation). This is usually evident only if the site has been exposed in section by erosion or other disturbance. Where various layers are visible, describe each one in detail.

Erosion and other forces may have exposed structural features, such as pits or post-holes, not visible on the ground. These may be recorded as for the relevant site type, with full details of the dimensions and contents of the site exposed. This is a rare opportunity to see a site in depth, so it is worth taking some time in recording.

## SURFACE COLLECTIONS

Bone or stone material should be listed, and if it cannot be identified a small surface collection can be made for later identification. Collection of samples which involves disturbance of the surface can be done only if a permit has been obtained from the New Zealand Historic Places Trust under the Historic Places Amendment Act 1975. Note also that under the Antiquities Act 1975 artefacts, as defined in the Act, found after 1 April 1976 are the property of the Crown and therefore ownership does not rest with the finder. Any finding or recovery of an artefact must be notified to the Secretary for Internal Affairs or the nearest museum within 28 days of the find. Notification forms are available from the Department of Internal Affairs and larger public museums.

The collection of culturally significant material, either artefacts or ecofacts, from the surface of archaeological sites is an unresolved issue among archaeologists. Binford (1972: 163-181) discusses the more academic implication of surface collecting, while Lipe (1977: 28) comments on the more practical issues faced by the site recorder. As surface collecting will bias the evidence available to future researchers, the purist approach would require the site recorders to leave all culturally important material in place. More practical considerations, however, may impel the fieldworker to remove materials which would be at risk from fossickers, casual site visitors or from natural events such as floods. However, if any surface material is removed from a site, a record of the removal, including the distribution of the material on the site, must be made, and should be included

in the site record when filed. If the material is removed from a previously recorded site, this information can be submitted to the filekeeper on a continuation sheet. Of course, as noted above, the provisions of the Antiquities Act must be observed. The removal of surface material must not be confused with sub-surface testing and collection, for which a permit from the Historic Places Trust must be obtained.

## References

- LIPE, W.D., 1977: 'A conservation model for American archaeology', in Schiffer, M.B. and G.J. Gumerman (eds), *Conservation Archaeology*, New York, Academic Press.
- BINFORD, L.R., 1972: *An Archaeological Perspective*, New York, Seminar Press.

## SETTING

Some basic types of information on environmental setting are important in recording sites of all kinds. These include:

1. Topography — the particular position it occupies, whether on hill or ridgetop, on gentle or steep slopes, or on flat ground. The surrounding topography is also important. Linked with these are questions of:
  - a) altitude — this can often be estimated from map contours once the position of the site is fixed.
  - b) outlook — how much country is visible from the site and in what directions.
  - c) aspect — the direction in which the site faces — position towards or away from the sun is often of importance.
2. General geological and soil information.
3. Possible food or other resources in the area, including the presence of karaka trees or fresh water on or near the site.

The relative importance of these will depend on the type of site involved.

Studies of site types and archaeological landscapes in different parts of New Zealand include:

- CHALLIS, A.J., 1978: *Motueka: an Archaeological Survey*, NZAA Monograph 7, Auckland, Longman Paul.
- DAVIDSON, J.M., 1970: 'Survey of archaeological sites on Motutapu Island, New Zealand', *Rec. Auck. Inst. Mus.*, 7, 1-12.
- 1972: 'Archaeological investigations on Motutapu Island, New Zealand. Introduction to recent fieldwork and further results', *Rec. Auck. Inst. Mus.*, 9, 1-14.
- PRICKETT, N.J., and K.E. PRICKETT, 1975: 'D'Urville Island archaeological survey 1973' *NZAA Newsletter*, 18 (3), 108-131.

## 5. Types of Site

### PA

A pa is a site showing defensive works such as ditches, banks, and scarps. Pa sites are the most striking form of field evidence in New Zealand. Their often massive earthworks, in many cases very well preserved, have attracted much attention. More has been written about pa than any other type of site.

#### CLASSIFICATION

The diversity in size and complexity of pa raises the question of whether or not recorders should adopt any of the various classifications of pa types which have been proposed. Classification is a convenient way of ordering information, and of giving a 'shorthand' reference to the features which a particular site possesses, based on recurring observable similarities between sites. Whether a classification reflects any important functional or cultural similarities is another matter altogether. This is a question which ultimately only intensive study of individual sites, mainly through excavation, will determine.

Until recently classifications of pa were based on the topographical position of the site. Best (1927) proposed a simple topographical classification of six types. Golson (1957) put forward an enlarged and more detailed version of Best's classification, and this in turn appeared in a slightly altered form in a predecessor to this handbook (Golson and Green 1958).

Since then classifications have been devised which concentrate on the character of the defences or the internal layout of the pa. Groube (1964) suggested that pa should be grouped according to the disposition of supplementary and complementary defences around their perimeter, assuming that all pa can be seen as rectangular sites. More recently Groube (1970) has developed another classification and this has been modified and enlarged by Fox (1976). This classification (Fox 1976) consists of four types:

Class I: Terraced pa.

Class II: Sites defended by transverse ditches and banks.

Class III: Sites defended by transverse and lateral ditches and banks, including ring-ditch pa.

Class IV: Sites defended by palisades only, e.g. swamp pa.

This classification has the advantage of covering every type of pa site and leaving little doubt as to the placing of examples which remained uncertain in previous classifications.

Another scheme is that devised by Buist (1964). This is based on a differentiation of pa according to the number of internal 'units' possessed by sites.

There is no objection to any of these classifications being used in recording; as long as it is made quite clear whose classification is being used in cases where there could be doubt. (This can be done quite simply by stating the name of the author before or after the site class.) No particular classification is preferred by the Association and recorders should not feel obliged to use any of them. It is important to describe a site in unambiguous terms, and this can be done quite satisfactorily without assigning it to any class.

The recording of a site simply as, for example, a headland pa, does not constitute a full and useful description. Classification of a site should not, therefore, be used as an alternative to a full description.

#### RECORDING THE DEFENCES

Artificial defences provided to supplement natural defences include ditches, banks, and scarps. The terms ditch and bank should be used instead of the Victorian terms fosse and rampart. A scarp is an artificially steepened slope. Ditches, banks, and scarps may be combined in different position in a defence system. (See fig. 5)

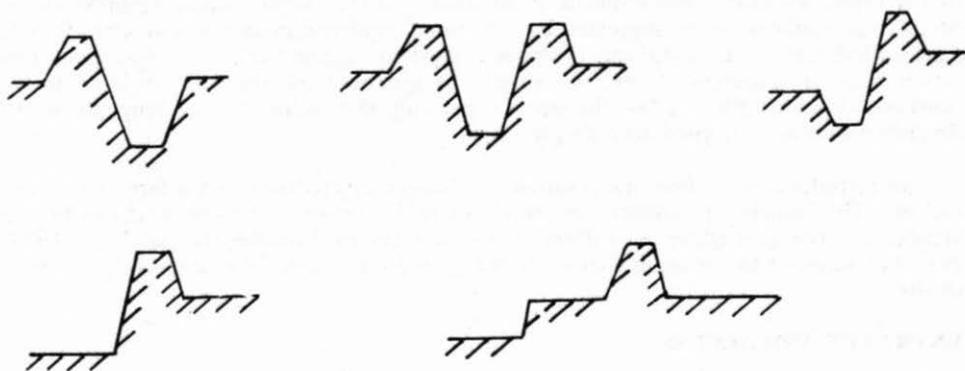


Figure 5  
DEFENSIVE EARTHWORKS

Some combinations of ditches, banks and scarps

The disposition of artificial defences in relation to the topography of the site and to each other must be recorded. In some cases the site will be entirely surrounded by defences; in others there may be a lesser portion of the circumference which it was necessary to fortify. Thus features such as scarps and terraces may be found either continuously aligned or irregularly arranged. On some sites, particularly those on headlands, spurs or ridges, it is useful to distinguish between transverse and lateral defences, transverse defences being those running at right angles to, or across, the topographical feature on which the pa is situated, and lateral defences those parallel with the length of the feature.

Defensive features may be arranged either singly, or in dual, treble, or even quadruple series. If they are in series, state whether they are contiguous or spaced and note the

interval between them. Often the inner defence lines of a spaced or staggered series are more massive than the outer ones.

The junction of transverse and lateral defences should be noted. These may take various forms.

1. Transverse ditches and banks may be extended in a straight line in such a way that the lateral features abut at right angles against them.
2. Transverse ditches and scarps may meet the lateral features at right angles.
3. Transverse ditches may turn through a right angle to become lateral ditches for a short distance.
4. Combinations of these elements may be present on the same site. Other practices may be discovered.

Pa on natural or artificial islands (Bellwood 1971, Shawcross 1968) have had defences of the types described. Recognition of the sites as pa may depend upon the preservation of palisade timbers, or be suggested by traditional evidence in association with *definite* signs of habitation. If traditional evidence is used to suggest the status of a site as a pa rather than an undefended site, this should be specified. If there is the least doubt, however, about whether or not the site is a pa, only the visible field evidence should be described and the site typed accordingly.

The introduction of firearms resulted in changes in methods of warfare and fortification. The trench, for instance, became a place to shelter, and from which to fire on attackers. The gunfighter pa differs in many ways from earlier pa and Best (1925) describes some of the changes that occurred, giving some specific examples of this type of site.

### ENTRANCE AND ACCESS

The following features have been noted in the field, but may not exhaust the possibilities:

1. Undug causeways across ditches.
2. Gaps in banks, sometimes opposite undug causeways.
3. Gaps in ditches, particularly at angles, covered by a flanking bank.
4. Sunken pathways through scarps.
5. Graded causeways over low scarps.
6. Slanting pathways up high scarps.

Defensive elements may also have been used for access purposes:

1. Sloping terraces.
2. Ditches, especially transverse ditches turning through a right angle at one or both ends and giving access to the lateral terraces.

### AREAS OF HABITATION

Signs of habitation on pa should be carefully described. The place of the pa in the prehistoric settlement pattern appears to be complex and indications of long term occupation of any sort is relevant to this question. Pa may be envisaged, for instance, either as settlements which were defended, or as fortifications which were lived on.

Although the question can be answered only by excavation of particular sites, careful field recording of habitation evidence can be of great value.

Habitation took place within the pa proper and sometimes outside. Where the perimeter is uncertain, it is impossible to decide whether certain areas are outside the defences or not.

On the majority of upland pa useable ground is provided by artificially levelling hill-tops and slopes. The levelling of hills or ridges created platforms or terraces. Platforms (see also page 31) are generally so disposed that they contribute to the defence system; they are not only areas of habitation, they may also be units of defence, bounded by scarps, or by ditches, with or without banks, and forming part of a spaced system of transverse ditches.

Terraces on pa vary considerably in size and form (see also page 29). They may be:

1. Long and continuous, sometimes with irregularities of level and width.
2. Shorter and discontinuous, making a broken, irregular arrangement on the hillside.
3. Short and discrete, not noticeably part of any arrangement, regular or irregular.

Signs of habitation consists of features, such as pits, hearths, ovens, and shell middens. Pits are more fully discussed below. Hearths are occasionally visible as rectangular stone slab settings. Their positions in relation to other features should be noted.

#### References

- BEST, E., 1927: *The Pa Maori*, Dominion Museum Bulletin 6, Wellington, Government Printer.
- BELLWOOD, P., 1971: 'Fortification and economy in prehistoric New Zealand', *Proceedings of the Prehistoric Society*, 37, 56-95.
- BUIST, A.G., 1965: 'A suggested typology of pa', *NZAA Newsletter*, 8 (2), 75-78.
- FOX, A., 1976: *Prehistoric Maori Fortifications in the North Island of New Zealand*, NZAA Monograph 6, Auckland, Longman Paul.
- GOLSON, J., 1957: 'Field archaeology in New Zealand', *JPS*, 66 (1), 64-109.
- GOLSON, J., and R.C. GREEN, 1958: *A Handbook to Field Recording in New Zealand*, NZAA Monograph 1, Wellington.
- GROUBE, L.M., 1964: *Settlement Patterns in Prehistoric New Zealand*, Unpublished M.A. Thesis, University of Auckland.
- 1970: 'Origin and development of earthwork fortifications in the Pacific', in Green, R.C. and M. Kelly (eds), *Studies in Oceanic Culture History* Vol 1, 133-164, Pacific Anthropological Records 11, Honolulu, B.P. Bishop Museum.
- SHAWCROSS, F.W., 1968: 'The Ngaroto Site', *NZAA Newsletter*, 11 (1), 2-19.

#### PITS

Pits are of two kinds:

1. rectangular to square open or surface pits; and
2. subterranean pits which may be either the bell type with an entrance at the top, or the cave type with an entrance at the side.

#### OPEN OR SURFACE PITS (Fig. 6)

There is a distinction between pits with a raised rim, presumably from earth dug out of the pit, and those without. Where a raised rim pit is dug on a slope, the uphill side may lack the rim. Pits vary considerably in size.

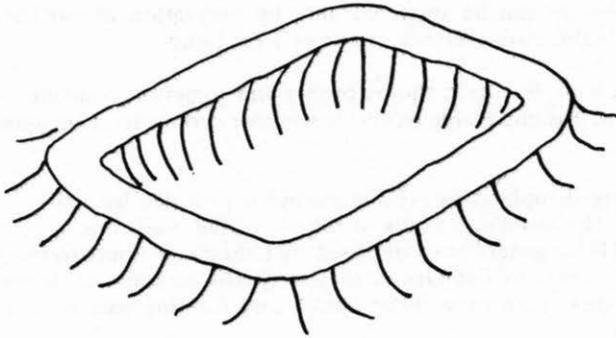


Figure 6  
OPEN PIT WITH RAISED RIM



Figure 7  
SUBTERRANEAN PITS - BELL TYPE

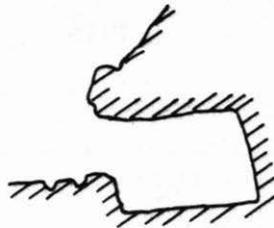


Figure 8  
SUBTERRANEAN PIT - CAVE TYPE

Pits occur in many situations: in pa, on flat ground, on ridge tops, on natural platforms on spurs, on artificial terraces, and on hills or ridges with extensive views. Pits occur singly, in clusters, end to end in line, and side by side with undug baulks in between.

### **SUBTERRANEAN PITS**

These are possibly more common than the recorded instances of their occurrence would suggest. Since they are a danger to stock, they have often been filled in by farmers. The nature of their construction renders them liable to collapse.

There are two varieties:

#### **Bell type (fig. 7)**

The domed chamber of the pit has a narrow circular or square entrance at the top. The type is usually found on the level areas of pa, sometimes in rows with connections from one to the other underground.

#### **Cave type (fig. 8)**

The domed chamber has an entrance to the side, and is thus adapted for the base of scarps of ditches, where it is commonly found with underground communications. The entrance is sometimes elaborated into a doorway, with recesses for the fitting of a wooden door.

Subterranean pits which have collapsed leave saucer-shaped depressions.

Fallen trees and the activities of stock also leave pit-like depressions. Therefore some features recorded may not be archaeological features. Positive indications in the form of regularity and adjacent features should be sought before recording depressions as archaeological sites.

### **RECORDING**

Describe and give details such as the entrance, the rims, and the length, breadth and depth. Measurements are best taken where the least damage by stock and other agencies is likely to have occurred.

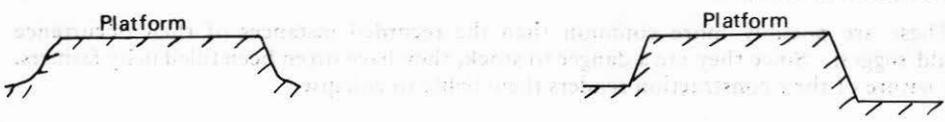
Describe the position the pits occupy in relation to the surrounding topography, and what the drainage appears to be. This information will contribute to studies of the function of pits.

### **References**

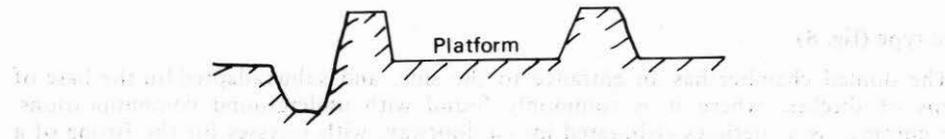
- DAVIDSON, J. 1975: 'The excavation of Skipper's Ridge (N40/7), Opito, Coromandel Peninsula, in 1959 and 1960', *Rec. Auck. Inst. Mus.*, 12, 1-42.  
FOX, A., 1974: 'Prehistoric Maori storage pits: problems in interpretation', *JPS*, 83, 141-154.  
LAW, R.G., 1969: 'Pits and kumara agriculture in the South Island', *JPS*, 78, 223-251.  
TROTTER, M., 1972: 'Pits at Seddons Ridge, Kaikoura' *NZAA Newsletter*, 15 (3), 94-99.

### **TERRACES**

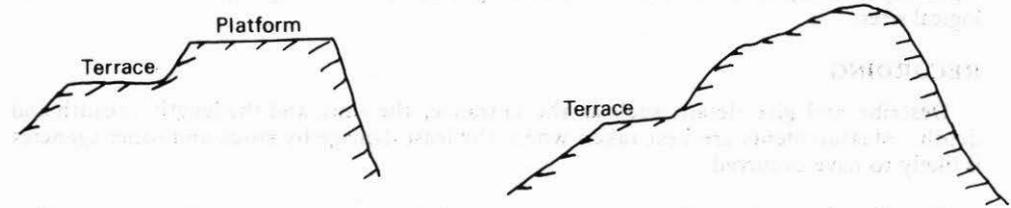
A terrace is an artificially levelled area rising by way of a scarp to another feature, natural or artificial. It may or may not have ditches and banks on one or more sides. The abutment by a scarp distinguishes a terrace from a platform (see fig. 9). Terraces may appear singly, in small sets, or in large flights.



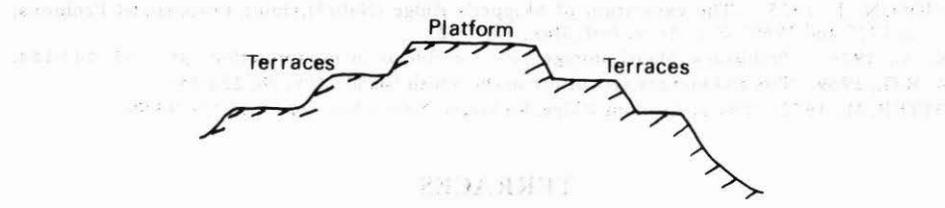
The diagram shows the profile of the platform. The left side shows a steep slope leading up to a flat top. The right side shows a gentler slope leading down from the flat top. The flat top is labeled 'Platform'.



The diagram shows the profile of the platform. The central part is a flat top labeled 'Platform'. It is flanked by steep slopes.



The diagram shows the profile of the terrace. The left side shows a steep slope leading up to a flat top. The right side shows a gentler slope leading down from the flat top. The flat top is labeled 'Terrace'.



The diagram shows the profile of the terrace. The central part is a flat top labeled 'Platform'. It is flanked by steep slopes labeled 'Terraces'.

**Figure 9**  
**PLATFORMS AND TERRACES**

This category covers a variety of different functions which in many cases can only be determined by excavation. Terraces have been noted covered with a sand or gravel spread, with occupational features such as pits or middens, or with no obvious features at all.

These details should be noted, together with the number of terraces, their disposition, size, and approximate area. General information on topographical position, direction of outlook, and distance from water should also be given.

#### Reference

- DANIELS, J.R.S., 1961: 'Whitireia Peninsula, Porirua', *NZAA Newsletter*, 4 (4), 25-29.

### PLATFORMS

A platform is an area, usually flat, standing above and surrounded in whole or in part by scarps, ditches or banks (see fig. 9). Platforms may occur either on hilly situations or as areas of generally flat or uneven ground which appear to have been artificially levelled, possibly for house floors.

Details should be given of the size of the platform(s); their relation to one another if more than one; whether they are on sloping or flat ground; and the presence of any occupational debris, such as midden or artefacts. If this material is obtrusive enough the site should be given a composite typing, such as platform/midden, or platform/working floor.

### HOUSE FLOORS

These features should not be confused with some forms of pits, terraces or platforms. On some sites, house floors may be recognised as shallow rectangular depressions surrounded by a low bank. This interpretation should only be used if there is a firm basis in the evidence. A rectangular hearth of stone slabs may also be present.

### STONE STRUCTURES

Most of these structures occur in horticultural areas, and are probably connected with clearing ground for gardening. They may be divided into the following classes:

#### STONE WALLS

These are solidly built, free-standing, and have more or less perpendicular parallel sides. In recording them, state:

1. Height, width, and construction.
2. Alignment (Are they straight or crooked, and do they run in regular or haphazard directions?)
3. Arrangement. (Do they make enclosures?)
4. Area covered by the features.
5. If enclosures are formed, their number and size.
6. The presence and relationship of other stone structures.

7. The nature of the ground over which the walls are built. (Is it normally stony, and is it steep or flat?)
8. The possible source of stones.

### **STONE ROWS**

These are elongated heaps of stones. The arrangement of the stones is haphazard and the rows are not laid in regular courses for a true wall, although they often follow a straight line. The same information should be recorded for stone rows as for walls.

### **STONE HEAPS**

These are piles of stones of various sizes. Examples with a facing on some or all sides of carefully placed larger stones, no doubt to keep the heap contained, have been noted. In recording stone heaps give:

1. The number of heaps.
2. The size and shape of heaps.
3. Their arrangement (Aligned or haphazard, closely clustered or scattered?)
4. The presence and relationship of other stone structures.
5. The area covered, and any pattern of distribution of the heaps over the area which may be apparent.
6. The nature of the ground.

### **STONE RETAINING WALLS**

These are solidly built stone walls acting as retaining walls for terraces or natural slopes. In some cases they may have been built at least in part as free-standing structures, and the earth of the terrace has been filled in behind them at a later date.

### **STONE-FACED SCARPS**

In these, stones have apparently been pushed into the face of the scarp.

### **STONE ALIGNMENTS**

These are lines of single stones. Few examples have been recorded.

Stone structures, particularly retaining walls and stone-faced scarps, may occur on other sites, particularly pa.

### **OTHER STONE STRUCTURES**

Other stone structures which have been recorded include stone fish weirs, stone-lined pits, and stone-surfaced and stone-bordered paths and stone platforms.

## References

- BEST, E., 1925: *Maori Agriculture*, Dominion Museum Bulletin 9, Wellington, Government Printer.
- 1927: *The Pa Maori*, Dominion Museum Bulletin 6, Wellington, Government Printer.
- LEACH, H., 1974a: 'Man's use of nature: Pre-European (1) the first 500 years', *New Zealand Nature Heritage*, 1, 117-122.
- 1974b: 'Man's use of nature: Pre-European (2) the last 500 years', *New Zealand Nature Heritage*, 2, 164-169.
- 1976: *Horticulture in Prehistoric New Zealand*, unpublished PhD. Thesis, University of Otago.
- LEAHY, A., and E.M. NICHOLLS, 1964: 'The Poor Knights Islands', *NZAA Newsletter*, 7 (2), 99-109.
- SULLIVAN, A., 1972: 'Stone walled complexes of central Auckland' *NZAA Newsletter*, 15 (4), 148-160.
- 1974: 'Scoria mounds at Wiri', *NZAA Newsletter*, 17 (3) 128-143.

## DITCHES AND 'CANALS'

Ditches or channels of fairly small size have been recorded. They often extend downslope and across flats, particularly behind bays and beaches. Some may define garden systems (Peters 1975). They are also referred to as slope lines.

Large ditches, which have been described as 'drains' or 'canals', may have been 'eel tanks', or for trapping ducks (see Adams 1903, Adkin 1948, and Skinner 1912). Ditches in swamps may be associated with cultivation, but little is known about them.

Ditches associated with banks in open country are likely to be the remains of fences, probably mostly of the historic period (Smart 1966, Trotter 1976). In these cases the site type is ditch/bank.

Ditch features are therefore variable and their functions are uncertain. Measurements of depth, width, and length should be made. The course of the individual ditches and the layout of ditch systems should be described in relation to the topography and soil of the area.

## References

- ADAMS, C.W., 1903: 'Maori canals in Marlborough', in *Report of the Department of Lands and Survey for the year 1902* (Appendices to the Journals of the House of Representatives 1903, C-1, Appendix VIII, p. 161).
- ADKIN, G.L., 1948: *Horowhenua*, Polynesia Society Memoir 26, Wellington.
- NICHOLLS, M., 1965: 'Some probable pre-European agricultural evidence in Northland', *NZAA Newsletter*, 8 (4), 147-9.
- PETERS, K.M., 1974: 'Agricultural gardens on Moturua Island in the Bay of Islands', *NZAA Newsletter*, 18 (4), 171-180.
- SKINNER, H.D., 1912: 'Ancient Maori canals, Marlborough, N.Z.', *JPS*, 21, 105-108.
- SMART, C.D., 1966: 'The ditch-and-bank fence', *NZAA Newsletter*, 9 (1), 19-28.
- TROTTER, M., 1976: 'Investigations at Otokitoki, Banks Peninsula', *NZAA Newsletter*, 19 (3), 119-123.

## MOUNDS

Man-made mounds are found occasionally, sometimes within pa. A type with a surrounding ditch and low bank has been recorded (Golson & Green 1958: 75; Daniels 1961). Here the site type would be ditch/bank/mound, or, if there is no recognisable inner mound, ditch/bank. Squared mounds on hilltops are believed to have been burial sites.

Record mounds as for stone heaps.

## References

- DANIELS, J.R.S., 1961: 'Whitireia Peninsula, Porirua', *NZAA Newsletter*, 4 (4), 25-29.
- GOLSON, J., and R.C. GREEN, 1958: *A Handbook to Field Recording in New Zealand*, NZAA Monograph 1.

## MIDDENS

Middens are refuse from occupation. Contents may include shell, bone, stone and charcoal. They are often exposed by erosion or other disturbance of the ground on known sites, and at locations where no other surface indications are present.

The following is a guide to the important things to describe.

1. The potential of the immediate environment in respect of fish, shellfish, fresh water, swamps, and rock outcrops or boulder banks for stoneworking, should be fully described.
2. Describe the composition of the midden, for example: abundant cockle, some mussel and paua; little fish bone; rare bird bone; abundant burnt stones. Call in expert help for identification. No identification is better than a false one. Full description of contents requires excavation, for which a permit from the Historic Places Trust is required.
3. Record the structure of the midden, i.e. whether it is a heap or a scatter, if its contents are broken or unbroken, and the area and depth of midden visible.
4. If stratification is apparent, record in full the depth, composition, and state of each layer.
5. If a midden is found in sand dunes, note whether it is associated with the foredunes or the inner dunes. If on an inner dune, note the number of the dune in the beach ridge series, and its distance from mean high water. Describe the relationship of the midden to the dune sand: whether it is on the top, on the lee slope, or at the foot of the lee slope.

## References

- ANDERSON, A., 1973: 'A critical evaluation of the methodology of midden sampling', *NZAA Newsletter*, 16 (3), 119-127.
- DAVIDSON, J.M., 1967: 'Midden analysis and the economic approach in New Zealand archaeology', *Rec. Auck. Inst. Mus.*, 6 (3), 203-228. (See also list of references therein).

## OVENS

The remains of cooking activity often appear as an area or depression showing signs of blackening or burning, usually accompanied by fire broken stones if these were used in the cooking process. Ovens are often seen in section, exposed by erosion or road cutting. They should be recorded as for middens. Ovens may be stratified, but only controlled excavation will elucidate this.

It has been established that at least some ovens (*umu-ti*) which were used for cooking the root of the *ti* (*Cordyline* spp) occur in the field as simple circular pits. They are to be recorded as ovens only if it is clear that they were *umu-ti*. Otherwise they should be recorded simply as pits.

## Reference

KNIGHT, H., 1966: 'Umu-ti', *JPS*, 75 (3), 332-347.

## SOURCE SITES

This type covers places where material such as rock, sand or gravel was obtained from the ground. It includes those places where extraction operations involved substantial disturbance of the ground surface, borrow pits and quarries, and those where material could be collected without quarrying.

### BORROW PITS

Sand and gravel were obtained by excavating a pit into the ground. These pits are referred to as borrow pits. They are often irregular, vary considerably in size, and are sometimes found in large numbers over a considerable area. It is often assumed that they relate to the processes of kumara cultivation. For borrow pits, record:

1. The number of pits.
2. The area covered by them.
3. The presence or absence of contiguous areas of made soil.
4. The soil type of the area where they are dug.
5. Estimates, if possible, of the quantity of overburden removed and the quantity and nature of the sediments quarried.

### QUARRIES

Stone material for tools was obtained from suitable outcrops. Such rock sources are known as quarries. For quarries, record:

1. The type of rock being quarried.
2. The by-products of quarrying (i.e. cores and flakes), the area they cover, and the depth they attain (if visible).
3. Evidence for quarrying methods, and tools like hammer-stones.
4. Evidence for stone tool manufacture on the site, i.e. rough-outs and broken artefacts.

### References

- DUFF, R.S., 1946: 'Native quarries of baked argillite', *Rec. Cant. Mus.*, 5(2), 115-124.
- KEYES, I.W., 1975: 'The D'Urville Island-Nelson metasomatised rocks and their significance in New Zealand prehistory', *Historical Review* (Whakatane Historical Society), 23 (1), 1-17.
- MOORE, P., 1976: 'The Tahanga basalt: an important resource in North Island prehistory', *Rec. Auck. Inst. Mus.*, 13, 77-93.
- 1977: 'The definition, distribution and sourcing of chert in New Zealand', *NZAA Newsletter*, 20 (1), 51-85.
- WALLS J.Y., 1974: 'Argillite quarries of the Nelson mineral belt', *NZAA Newsletter*, 17 (1), 37-43.
- WARD, G.K., 1973: 'A paradigm for sourcing New Zealand archaeological obsidians', *Journal of the Royal Society of New Zealand*, 4 (1), 47-62.

### OTHER SOURCE SITES

Gravel deposits associated with rivers and beaches, where material was collected for working on the site or elsewhere, recognised by deposits of stone flakes and cores and waste chips. They should be recorded as for quarries.

## Reference

TROTTER, M.M., 1961: 'A 'quartzite' source site at Nenthorn, Central Otago', *NZAA Newsletter*, 4 (3), 29-32.

## MADE SOILS

These are formed for cultivation purposes, presumably for kumara or potatoes. Deliberately added gravel, sand, or shell is often present in the soil. Made soils may be discovered as a result of ploughing or erosion, or by the exposure of a section through ditch-digging. They may be associated with borrow pits, from which the sand or gravel has been excavated, or this material may have been taken from a beach.

Artificial terraces, covered by a thin spread of gravel, have been noted.

In recording made soils, describe:

1. The topography of the areas of made soils, e.g. flat, gently sloping, or steep.
2. The direction the areas face.
3. The nature of the sands and gravels exploited, e.g. river gravels at a certain depth, extensive or limited in area, or beach gravels found at a certain distance from the sites.
4. The nature of the soil which has been modified, and the nature of the modifications.
5. The area of the soils, if this is possible to obtain from field evidence.

## References

- CHALLIS, A.J., 1976c: 'Physical and chemical examination of a Maori gravel soil near Motueka, New Zealand', *N.Z. Journal of Science*, 19, 249-254.
- 1978: *Motueka: an Archaeological Survey*, NZAA Monograph 7, Auckland, Longman Paul.
- FLEMING, C.A., 1953: *The Geology of the Wanganui Subdivision*, N.Z. Geological Survey Bulletin 52, Wellington, Government Printer.
- RIGG, T., and J.A. BRUCE, 1923: 'The Maori gravel soil of Waimea West, Nelson', *JPS*, 32, 85-93.

## WORKING AREAS

These are areas where materials, usually stone, have been worked to produce either implements or the roughouts for them.

They are extremely important to an understanding of the economy and culture of an area.

The surface evidence should be recorded in detail, but further description will depend on excavation. A surface collection *only* should be described as follows:

1. The proportion of stone working to working in, for example, bone.
2. The nature of waste flakes and the nature of worked flakes, if any.
3. The number and character of unfinished and broken tools, if any.
4. The variety and proportions of stone present, such as obsidian, chert or metasomatised argillite. Call in an expert for identification.

5. The character of bonework and the type of bone worked.
6. The area covered by the working area.

#### References

- CHALLIS, A.J., 1976a: 'An archaic site, Jacketts Island, Tasman Bay, New Zealand', *NZAA Newsletter*, 19 (3), 124-138.
- 1976b: 'Metasomatised argillite artefacts from Pah Point, Riwaka, New Zealand', *JPS*, 85 (4), 463-486.
- LEACH, B.F., 1969: *The Concept of Similarity in Prehistoric Studies*, Studies in Prehistoric Anthropology Vol I, Anthropology Dept., University of Otago.

## CAVES AND ROCK SHELTERS

These may have visible evidence of any or all of the following, which should be described fully. Recording must be of surface evidence only.

#### HABITATION

The evidence of habitation should be specified (e.g., midden, ovens, hearths, burnt patches, and working floors).

#### Reference

- LEAHY, A., 1976: 'Whakamoenga cave, Taupo N94/7: A report on ecology, economy and stratigraphy', *Rec. Auck. Inst. Mus.*, 13, 29-75.

#### BURIAL

The circumstances of burial should be noted without interference with the remains (e.g. remains articulated or disarticulated; presence of mainly long bones, skulls, etc.; placement of remains). See section on burials (below).

#### Reference

- TROTTER, M.M., 1972a: 'Investigation of a Maori cave burial on Mary Island, Lake Hauroko', *Rec. Cant. Mus.*, 9 (2), 113-128.

#### ARTISTIC ACTIVITY: DRAWINGS AND CARVINGS

Attention should also be given to the nature of the parent rock, and the origin of the cave (e.g. sea-worn, river-worn, water-eroded). Record details of the topographical position; the direction in which the entrance faces; the availability of light in respect of different parts of the cave or shelter, and different times of the day; whether the cave is sheltered or unsheltered; and the availability of water supply.

#### Reference

- TROTTER, M.M. and B. McCULLOCH, 1971: *Prehistoric Rock Art of New Zealand*, Wellington, A.H. & A.W. Reed.

## BURIAL SITES

On no account should these sites be disturbed unless a proper excavation has been planned with due permission and authority. It is illegal to disturb them. Burial sites may relate to the present Maori community, and interference of any kind may prejudice further archaeological work in the area. The Association values the goodwill of the Maori people and does not sanction any disturbance of burial sites without the consent of the local Maori community.

## ROCK DRAWINGS OR PAINTINGS

These are abstract designs or naturalistic motifs, normally executed in red or black pigment, and are found on the walls of dry caves or shelters. Sometimes the drawings are associated with other occupation.

Detailed copying of these features is not the aim of the Site Recording Scheme. It is sufficient to record the location, surroundings, and general character of the artistic features, with sketches of the drawings on a blank form if desired. Photography can be particularly valuable.

## ROCK CARVINGS

These are incised designs or outline engravings in the surfaces of rocks or the walls of rock shelters. They are less common than drawings or paintings and should be recorded as above.

### References: Rock drawings, paintings and carvings

- AMBROSE, W., 1970: 'Archaeology and rock drawings from the Waitaki Gorge, Central South Island', *Rec. Cant. Mus.*, 8 (5), 383-437.  
TROTTER, M.M., and B. McCULLOCH, 1971: *Prehistoric Rock Art of New Zealand*, Wellington, A.H. & A.W. Reed.

## TREE CARVINGS

The tree carvings in the Chatham Islands form a unique group. Genuine prehistoric tree carvings are rare on the mainland. These can be recorded as for other art sites.

### References

- BATLEY, R.A.L., 1957: 'A dendroglyph from Inland Patea (Upper Rangitikei)', *JPS*, 66 (2), 210.  
JEFFERSON, C., 1955: 'The dendroglyphs of the Chatham Islands', *JPS*, 64 (4), 367-441.  
SIMMONS, D., 1965: 'Preliminary report on an associated group of dendroglyphs in the Chatham Islands', *NZAA Newsletter*, 8 (2), 39-42.

## TRACKS AND TRAILS

These are an important part of the settlement pattern in any area, and deserve more attention from recorders than they have received. The difficulty has been to locate the features, as traces of them disappear quickly after use. On rare occasions, however, it may be possible to pick up definite traces in the field, but before tracks are recorded as being of Maori origin there should be direct evidence, or very strong circumstantial evidence, that this is so.

The location of old tracks or trails is most likely to be learnt from old survey plans, as the tracks were a vital part of the economy of early European settlement in some areas. Many roads formed in the early days followed Maori tracks, and this information can be found in contemporary sources, local histories, memoirs, and the like.

In giving a grid reference for such a feature it is best to give two references, one for each terminal point, in addition to a single central reference in the space provided. This will give only the beginning and the end, and there should always be a locality plan of the route, preferably traced from a topographical map so that it can be related to the present landscape. However, in the case of a track which followed an existing road it is sufficient to identify the road.

## FIND SPOTS

These are places where artefacts have been found, there being no other traces of occupation. In other words, if artefacts are found with other traces, the site is recorded according to the occupation (e.g. terraces, middens), although naturally the presence of artefacts will be an important point in the site record. If desired, artefacts can become a part of the site type, e.g. terraces/artefacts, middens/artefacts.

In some areas the existence of find spots is very significant because no other signs of occupation may have been found. The particular type of artefact found may throw light on the nature of the occupation in the area.

The finds themselves if made after 1 April 1976 must be notified to the Department of Internal Affairs and should be recorded with sketches and measurements to provide detail.

### Reference

McKINLAY, J.R., 1974: 'An archaic adze from Inland North Island', *NZAA Newsletter*, 17 (4), 171-174.

## BOTANICAL EVIDENCE

This is worth recording as supplementary information in the description of the nearest neighbouring archaeological site. Physical evidence of plant exploitation should be located before recording it as a site by itself.

### FLAX

The occurrence of flax should be recorded if there is a reasonable probability that it was planted and cultivated. Often there are fairly obvious plantations near other signs of occupation. Record the general situation, the area covered, the relation to other sites, and the height of plants.

### TARO

In some areas, particularly North Auckland, taro may be found growing on or near old Maori sites. This is worth recording.

### KARAKA

Karaka trees may be an indication of a possible adjacent site.

### Reference

DIAMOND, J.T., 1970: 'The association of karaka and pre-European sites in the Waitakere ranges, Auckland', *NZAA Newsletter*, 13 (3), 143-146.

### CLEARED BUSH

Areas of cleared bush may be sometimes recognised as islands of secondary vegetation.

### Reference

McKELVEY, P.J., 1958: 'Forest history and New Zealand prehistory', *N.Z. Science Review*, 16 (3), 29-32.

## MUTILATED TREES

Examples have been reported of trees partially stripped of bark in antiquity to make containers. The stripped portion dies and decay affects the heart of the tree, but the unstripped portion continues to grow and a characteristic scar is left. Totara and karaka were commonly stripped in this way.

Record details of the dimensions and area of the stripping and the amount of growth since stripping.

## OTHER TYPES

It is certain that field remains other than those described here will be found. If a site does not fit into any known category assign a site type which seems appropriate and send a note to the Site Recording Scheme Co-ordinator and to the Newsletter about the site. Unusual sites are of interest, and a published note may bring other information to light and so help to define their character.

## 6. Historical Archaeology — N.J. Prickett

### INTRODUCTION

A very wide range of archaeological sites in New Zealand date from the historical period. Many are of great potential interest, offering insight into material culture, economy, events and historical processes which are not documented in the written record.

Historical archaeology can complement written historical material in the study of our recent past, offer insight into like processes in the prehistoric period for which archaeology is the only source of information and, like prehistoric archaeology, can contribute to the general study of anthropology.

Overseas there has been strong development in historical archaeology in recent years. Experience gained in Australia and the United States is very relevant to New Zealand in types of sites encountered, excavation techniques employed and artefacts recovered. In Britain 'industrial archaeology' is concerned mainly with industrial technology of the past two hundred years and seldom employs actual excavation. British 'landscape-history', however, draws on the widest possible range of archaeological evidence to emphasise continuity in man's interaction with the land.

'Landscape-history' has useful lessons for New Zealand. In North America archaeology has traditionally been divided into the historic and prehistoric periods; 'landscape-history' makes no such distinction. While American archaeological experience may have closer relevance to the New Zealand historical period, 'landscape-history's' emphasis on continuity may help us avoid an over-emphasised historic/prehistoric division of archaeologists and archaeological discussion. Archaeology is uniquely equipped to emphasise continuity in man's occupation of New Zealand.

Some introductory texts include —

- Buchanan, R.A., 1972: *Industrial Archaeology in Britain*, Harmondsworth, Penguin.  
Hoskins, W.G., 1955: *The Making of the English Landscape*, London, Hodder and Stoughton.  
Hume, I. Noel, 1969: *Historical Archaeology*, New York, Alfred A. Knopf.  
Raistrick, A., 1972: *Industrial Archaeology — An Historical Survey*, London, Eyre, Methuen.

Many overseas archaeological journals occasionally run articles on historical archaeology. There are also some specialist publications:

- Historical Archaeology*. Journal of the Society for Historical Archaeology. (Vol. I, 1967). An American publication very relevant to New Zealand.  
*Industrial Archaeology*. The journal of the history of industry and technology. (Vol. I, 1964). A British publication; contains much of interest to New Zealand in a specialised field.

### TYPES OF HISTORIC ARCHAEOLOGICAL SITES

Historic archaeological sites older than one hundred years are protected under the Historic Places Amendment Act 1975. However, many sites in New Zealand now excluded from the provisions of the Act are equally deserving of study, and will in the course of time also become protected sites.

The variety of historic archaeological sites is as great as the variety of activities which characterise the early years of settlement in New Zealand. Most sites come within a few broad classes: agricultural, industrial and commercial, transport and communication, and military. There are also others such as mission stations which do not fit easily into any of these categories. Many Maori sites also belong to the historic period but they are not covered here, being similar in most instances to like classes of prehistoric sites.

An important group of sites dates to the earliest period of European settlement, for which 1840 remains a useful cut-off point. Included are early mission sites, whaling stations, sealers' camps and trading establishments. Also included is a range of industrial (for example, ship-building yards) and agricultural sites which are precursors of a much wider range of similar sites dating from the post-1840 period.

A class of sites unique to this early period documents the brief stopovers of early European explorers on our coasts. In Dusky Sound the stumps of trees cut down to form a clearing for Cook's observatory of 1773 have been re-discovered. De Surville's anchors, while not strictly from an archaeological site, have been recovered from Doubtless Bay.

After 1840, European settlement greatly increased and is reflected in the wide array of all classes of historical sites.

## AGRICULTURAL SITES

Agricultural sites document the felling of the bush, the breaking in, fencing, draining and cultivation of the land, as well as particular past agricultural and pastoral landscape. Sites include saw pits, fencelines (wire, post and rail, stone or earth walls), drainage systems, farm tracks, sheep yards and dips, boiling down plants (for the tallow trade prior to refrigeration) and farm dwellings, cowsheds, shearing sheds and other buildings.

On the Otago Peninsula an early rural landscape is modelled on Scottish small-holdings of the period. The remains can be seen of stone houses, barns (frequently built for over-wintering cattle), stone walls, mortised broadleaf fence posts and round stone towers erected like 'consumption dykes' in clearing the paddocks of stones (Plate 1).

A recent study of a set of early farm buildings at Matanaka in Otago combines library and field research in a manner which is the very essence of historical archaeology.

### Reference

KNIGHT, H., and P. COUTTS, 1975: *Matanaka: Otago's First Farm*, Dunedin, John McIndoe.

## INDUSTRIAL SITES

Industrial sites include mines, quarries, kauri gum workings, timber mills and a range of manufacturing plants: smelters, potteries, brickworks, lime kilns, flour mills, breweries, creameries and dairy factories and many others.

In early years poor transport encouraged the establishment of local manufacturing industries in many districts; with the arrival of mass production and mass marketing many of these have closed. Yet they remain as a physical presence in the landscape. In Taranaki recent amalgamations in the dairy industry have resulted in derelict factories in many districts. An earlier re-organisation saw creameries replaced by whole-milk factories. The older wooden creameries have not survived as surface structures and are open to study by traditional archaeological techniques.

In parts of New Zealand the optimism of early settlers resulted in much exploration for minerals. In the Nelson area mining for copper, chromite and other ores began early in the 1840s. The Dun Mountain railway line reaching from Nelson to mines in the ranges behind the town is evidence of one of the most ambitious of these ventures and, incidentally, is the oldest railway in New Zealand. A later venture in the Aniseed Valley behind Nelson included two mines connected by tramway to a smelter in the valley bottom (Plate 2).

Gold mining areas such as Coromandel, the West Coast, Central Otago and Golden Bay are very rich archaeological resources with major engineering works (water races, mine tailings, etc.) and large settlements often completely abandoned since the mining era. All are capable of examination by means of archaeology.

An important class of site unique to the north of the North Island is the kauri timber dam. These were designed to impound a stream at a collecting point for kauri logs, then, when 'tripped', to release the water in a flood which would carry the logs downstream to the mill.

A recently published study of kauri dams provides the best example to date of an exhaustive study of a single class of historical site.

#### Reference

DIAMOND, J.T., and B.W. HAYWARD, n.d.: *Kauri Timber Dams*, Auckland, The Lodestar Press.

Some short articles of an archaeological nature have been published on mining areas in New Zealand.

BLOOMFIELD, G.T., 1974: 'The Kawau Copper Mine, New Zealand', *Industrial Archaeology*, 11 (1), 1-10.

KNIGHT, H., 1964: 'Gold at Harbour Cone, Peninsula Country, Otago', *NZAA Newsletter*, 7 (4), 164-165.

MCFADGEN, B.G., 1963: 'Gold in Wellington', *NZAA Newsletter*, 6 (3), 152-155.

#### TRANSPORT AND COMMUNICATION SITES

Archaeological sites relating to early systems of transport and communication include jetties and wharves, tracks, roads, railway lines and tramways. Associated with them is a fascinating array of bridges. Many of these sites may, of course, be related directly to farming or industrial activity.

An example of a site type relating to a now superceded transport system is given in Plate 3. Throughout the Marlborough Sounds all farm produce was once shipped by sea. The jetties which were a vital part of this transport system are now becoming derelict following roading in the area.

#### MILITARY SITES

Military sites include redoubts, blockhouses, stockades, camps and battle sites of the New Zealand Wars, as well as coastal defence systems and other sites of later periods.

Sites of the New Zealand Wars are to be found in the Wellington, Wanganui, Taranaki, Taupo, Bay of Plenty, Waikato, Auckland and North Auckland areas, as well as isolated instances in other areas. Redoubt sites in particular are an attractive and important class of site (Plate 4).

An excellent study of military sites of the Wellington district was published by Elsdon Best as long ago as 1921. Two recent publications by the Historic Places Trust, on the Te Porere gunfighter pa and Paremata Barracks, include archaeological material as well as historical accounts. A recent N.Z.A.A. Newsletter article on the Esk Redoubt introduces an important site of the Waikato War.

### References

- BELLWOOD, P.S., 1968: 'The Esk Redoubt, Miranda', *NZAA Newsletter*, 11 (2), 88-92.  
BEST, E., 1921: 'Old redoubts, blockhouses, and stockades of the Wellington District', *Transactions of the N.Z. Institute*, 53, 14-28.  
BURNETT, R.I.M., 1963: *The Paremata Barracks*, Wellington, Government Printer.  
WILSON, O., 1961: *War in the Tussock*, Wellington, Government Printer.

The Russian scare of the 1870s and 1880s and the Japanese scare of the 1940s have left sites at harbour mouths and in coastal areas in many parts of New Zealand. Harbour mouth gun positions were first built in the 1870s and once they are 100 years old will come under the provisions of the Historic Places Amendment Act 1975.

### SOME RECENT SITES

There is a very wide range of sites in New Zealand dating from recent years. Of course many of these sites are of little immediate interest, the activities they represent and the artefacts they contain being familiar enough to present day New Zealanders. Sites relating to defence activity in World War Two, as mentioned above, are an example of a class of site now of interest since they represent activities no longer current.

Another class of such sites are the camps for the unemployed of the 1930s. By government policy located well away from population centres, these sites doubtless contain much information on the economy of the unemployed of the period. Nearby are often signs of work to which the men were put, such as the road leading nowhere in the Rerekapa Valley, inland Taranaki (Plate 5).

## RECORDING HISTORIC ARCHAEOLOGICAL SITES

The search for historic archaeological sites may begin with fieldwork, or it may begin with historical knowledge or research. In either case the site must be properly located on the ground.

With a specific historical research project in view the site recorder will generally have a good knowledge of the location and nature of sites before going into the field. This is especially true of historically important sites such as military redoubts or early mission stations. The field recording of the site becomes a matter of following up historical clues or, frequently, specific locational information.

An alternative is for the recorder to go into the field and record sites as they are found, once a likely area has been selected and suitable maps and aerial photographs obtained. This follows the method now employed in recording most prehistoric sites in New Zealand.

Since evidence of recent changes in the New Zealand landscape is very abundant (at least in most areas of interest to historical archaeology) it is often impractical to record all of it. Evidence for changes in farming practice alone would, if completely recorded, be beyond the range of interest of all but the most specialised study.

Much recording will be of specific classes of sites within a geographically defined area. This approach has already been demonstrated in the work of kauri dams referred to above. Since the approach is historical as well as archaeological it makes good sense to confine attention to a particular historical activity or period. In many cases this will lead to recording of more than one site type: for example, in the north, kauri gum diggings may be recorded along with complementary evidence for the dwellings and camps of the gum diggers.

In prehistoric archaeology the site is fitted into an essentially archaeological framework. In historic archaeology the framework is both archaeological and historical.

It was many years before a wide-ranging and inclusive approach was developed in recording prehistoric sites. For a long time highly visible sites or sites offering important excavation results were over-represented in the files. It would be a pity if this situation were repeated in historical archaeology because of an historical interest in a limited range of sites.

Districts which enjoyed a flurry of early European settlement (for example those connected with gold mining or gum digging) and very little subsequent activity to blur or destroy the early evidence, offer opportunities for developing an inclusive approach. Here the evidence may be approached in the same manner as in prehistoric archaeology. The selective basis of much historic archaeological site recording may be replaced by a wide-ranging field search for all evidence of early economic activity and settlement pattern.

Recording historical sites is essentially the same as recording prehistoric sites. There will generally be modification to the natural topography, or sub-surface deposits visible in natural sections or surface scatters, which call for techniques of observation and measurements no different to those now used in recording prehistoric sites.

Historical sites, especially those with standing structural remains or engineering works, lend themselves very well to recording by camera. Black and white film is less expensive than colour and its use should encourage photography of historic archaeological remains from every angle. Be sure to write down the content of each photograph, as the deterioration of historic sites is such that in a few years good photographic records may be invaluable.

Sketches or plan drawings employ essentially the same techniques as in prehistoric archaeology. An accurate plan (surveyed or taped) is best, but any sketch showing the relation of elements of a site is better than none.

In addition to skills developed in recording prehistoric sites, a range of new skills is needed with historic sites. Many sites will include standing structures which demand some knowledge of building materials and techniques. Other skills are needed in researching historical material for particular references to the site or general descriptions of the class of sites to which it belongs. Also required is a wide interest in the natural environment and cultural landscape, so that the natural surroundings contemporary with the site may be learned and surviving contemporary buildings or cultural modifications to the local landscape be identified and noted.

The collection of artefacts from historic sites as from prehistoric sites should be avoided if possible. If artefacts are found on the surface then they should be accurately located on the site plan and properly labelled. The destruction of many important historic archaeological sites in recent years by collectors of bottles and other artefacts

has been an archaeological disaster. Many of the most important goldmining sites of Central Otago and the West Coast have already been destroyed and the archaeologically important interrelationship of all aspects of the sites irrecoverably lost. Many sites under attack by bottle hunters are, of course, now protected under the Historic Places Amendment Act 1975.

## RECORDING HISTORIC BUILDINGS

Although standing structures, strictly speaking, are not archaeological sites, if a structure is part of or linked to an archaeological site it should be recorded along with the site. Quite apart from their intrinsic interest and importance, such buildings may greatly assist in interpretation of other similar sites in both recording and excavation. Here, however, historical archaeology and architectural history overlap, and the services of an architectural historian in the context of a combined investigation may prove productive.

It is to be hoped that in New Zealand the problem of deciding just when a historical structure becomes an archaeological site is resolved in a practical manner. The historical archaeologist needs to maintain an open-ended interest in the classes of archaeological sites into which he is putting his recording effort. If for example, work is being done on early mission stations in a particular district, then sites with no standing remains along with sites which include extant buildings all need to be recorded. The record of sites needs to be complete from an archaeological and historical point of view. The same can be said of individual sites which include both standing buildings and archaeological deposits.

For the present, however, the site recording scheme is not designed to cope with standing buildings. Buildings may and should be recorded only when they make up part of a particular archaeological site, or are surviving examples of a class of historical site which has a strong basis in evidence of an archaeological nature.

An example of a building related to a particular class of archaeological site is given in Plate 6. The earthworks are those of a military redoubt. The building is a blockhouse of the same period, altered since to become a farm cottage. Clearly the blockhouse needs recording both for its own interest and to assist in archaeological interpretation of military sites in the area.

## HISTORICAL RESEARCH

Historical research is essential for the identification and interpretation of historic archaeological sites. There are two areas of historical research relating to sites. The first is concerned with the specific history of the site: when occupied, by whom, in what circumstances, and all the particular detail which relates to the one site. The second is concerned with the general identification and classification of artefacts ranging from buttons and glassware to building techniques and mining practices.

There are many sources of historical information available. Public and research libraries hold a wide variety of printed books, documents, newspapers and manuscript material.

Among the most important research libraries are the Alexander Turnbull Library, General Assembly Library and National Archives, all in Wellington, the Hocken Library

in Dunedin, and the libraries of the Canterbury Museum and the Auckland Institute and Museum. Important local collections are held by the Hawkes Bay Museum, the Taranaki Museum, the New Plymouth Public Library, the Nelson Provincial Museum and elsewhere. Public libraries and museums in smaller centres frequently hold collections of local printed and manuscript material. By arrangement with the librarian, university libraries are available for research purposes.

Records held by the Lands and Survey Department, the Registry of Lands and Deeds, and other government departments can be searched with profit. District offices of the Lands and Survey Department hold printed and manuscript maps as well as surveyors' field books which can give detailed locational information often quite unobtainable elsewhere. Lands and Deeds offices hold records of past ownership and property boundaries.

In addition to written and printed material many libraries hold collections of photographs, paintings and sketches of immense value in identifying archaeological remains. The record of early mining activity in the Golden Bay district which is included in the Tyree Collection of photographs held in the Nelson Provincial Museum is just one example of the invaluable information yet to be utilised by historical archaeologists. Other important photographic and pictorial collections are held in the Alexander Turnbull Library, the Hocken Library, the Auckland Institute and Museum and elsewhere.

It is not possible here to mention more than a fraction of the sources and nature of primary and secondary historical documentation available to those interested in researching historical sites. In many cases accurate identification will be as far as the recorder will wish to go; in others the site surveyor will be drawn into a continuing quest for historical information far beyond the resources of the local library or museum.

Those interested in historical research connected with archaeological sites would be advised to seek out —

Wood, G.A., 1973: *A Guide for Students of New Zealand History*, Dunedin, University of Otago Press.

## PART III — METHODS AND PROCEDURE

### 7. Planning and Organisation of Recording

#### INTRODUCTION

This chapter is not a set of binding instructions for recorders. It is a general discussion of the subject, containing ideas which may be applicable in some local conditions. It is intended to help beginners to develop techniques which are satisfying to themselves and which will return maximum results for the Site Recording Scheme. These two aims are quite compatible. It is important that recorders should neither attempt too much, nor, faced with an apparently overwhelming number of sites to record, think the task beyond them. The experienced individual or team probably has little to learn from this section. However, it will deal with preparations for and the organisation of recording, subjects which anyone must consider in order to ensure the best results.

#### TYPES OF SURVEY

Green (1967) gives examples in the New Zealand and Pacific context of four types of site survey, using a classification originally proposed by Ruppé (1966).

- (1) Reconnaissance survey which is extensive rather than intensive, e.g. Best's survey of pa sites (Best 1927).
- (2) Survey done in conjunction with a specific programme of excavation. Davidson's work on Motutapu Island provides an example (Davidson 1970, 1972).
- (3) Limited survey, problem orientated and in a specific area, e.g. Buist's study of pa in North Taranaki (Buist 1964).
- (4) Intensive survey of an area, e.g. D'Urville Island (Prickett and Prickett 1975).

All types of survey can contribute valuable information to the Site Recording Scheme.

#### References

- BEST, E., 1927: *The Pa Maori*, Dominion Museum Bulletin 6, Wellington, Government Printer.
- BUIST, A., 1964: *Archaeology in North Taranaki, New Zealand*, NZAA Monograph 3, Wellington.
- DAVIDSON, J., 1970: 'Survey of archaeological sites on Motutapu Island, New Zealand', *Rec. Auck. Inst. Mus.*, 7, 1-12.
- 1972: 'Archaeological investigations on Motutapu Island, New Zealand. Introduction to recent fieldwork and further results', *Rec. Auck. Inst. Mus.*, 9, 1-14.
- GREEN, R.C., 1967: 'Settlement patterns: four case studies from Polynesia', in Solheim, W. (ed), *Archaeology at the eleventh Pacific Science Congress*, Asian and Pacific Archaeology Series 1, Honolulu, University of Hawaii.
- PRICKETT, N.J., and K.E., 1975: 'D'Urville Island archaeological survey 1973', *NZAA Newsletter*, 18 (3), 108-131.
- RUPPÉ, R.J., 1966: 'The archeological survey: a defense', *American Antiquity*, 31, 313-333.

#### CHOOSING THE AREA OF OPERATIONS

Nearly everybody interested in archaeology follows his or her first awareness of the fascination of the subject by trying to see as many sites as possible. In some ways this early stage of exploration and growing recognition of the range of field remains is the most exciting and satisfying for the archaeologist, but it is not the best way to record sites.

Sporadic, unplanned forays into the field are extremely inefficient. Lack of preparation usually means that the wrong equipment is taken. Time is often wasted by starting at the wrong place. By not reconnoitring properly, sites may be missed, and retracing of steps may be required.

Anyone seriously interested in recording the sites in a region must therefore first decide how to tackle the project. The first step is to choose the area to work in, and then to concentrate efforts in that area until it is completed. Some recorders prefer to move around between areas, but it is still necessary to have an order in which sites in each area will be tackled.

## PRELIMINARY SURVEYING

This is the first reconnaissance of an area. Resist the temptation to make detailed records at this stage. The aim is to gain a general impression of the environment of the area, the type of sites to be found and their location and size, and problems likely to be encountered in site recording. Brief field notes and a sketch site location map should be made.

## EQUIPMENT

### FIELD BOOKS

In the early days of the Site Recording Scheme it was planned that information recorded in the field would be plotted directly on to rough copies of the various forms. It quickly became apparent, however, that field books of various kinds were much more convenient to use. A field book may be just an ordinary notebook. Better is a surveying field book which usually has a waterproof cover, an elastic band to hold the book closed or open at a particular position, and a pouch for a pencil. The commonest type has pages which are either ruled or gridded, the former, of course, being useful for site descriptions and the latter for small plans of sites or features. A field book with alternate ruled and gridded pages is ideal.

Separate sheets of graph paper taped to a drawing board or hardboard are useful for drawing plans.

### MAPS

Recording as at 1978 is based on the NZMS 1 series maps, although as explained earlier (page 8) these will be progressively superseded by NZMS 260-270. Grid references are to be given from these maps according to the instructions on them, so they should always be taken into the field. The most up-to-date edition available must be used, and it is important to state the edition and its publication date in the site record.

Other maps, particularly the NZMS 2 and NZMS 270 series, are more useful than NZMS 1 and NZMS 260 maps in the field because of their larger scale. They should be used if available. All grid references in records must be to NZMS 1 or to NZMS 260-270 maps. See chapter 8 for further details on maps and aerial photographs.

### TAPES

A steel or linen reinforced tape is desirable for taking measurements of features.

## DIAGRAMS

These need not be highly accurate, but should illustrate particular points. They should not be confused with surveys (see chapter 9) but both have a place. They can be used to good effect:

- (a) to indicate the layout of a site for which no plans have or can be prepared;
- (b) to illustrate certain features of a site, e.g. a stratigraphic sequence, the relationship of a ditch and a terrace, as a supplement not only to verbal descriptions, but also to drawn plans.

The following points should be noted:

- (a) symbols used should be clearly explained;
- (b) dimensions should be indicated by measurements written on the diagram;
- (c) there should be adequate *references* to the diagram in either the verbal description or a drawn plan.

## PHOTOGRAPHS

Photographs can be used to illustrate:

- (a) the layout of a site;
- (b) selected features;
- (c) the general setting.

The following points should be noted:

- (1) Photographs unintelligently taken tell nothing. Use must be made of light and shadow to bring out the required features.
- (2) A scale of some sort must always be included — a trowel; a person, a farm animal, depending on the subjects of the photograph.
- (3) As soon as a shot is taken, a description of the subject should be written against the appropriate frame number in a notebook. The reels should be numbered as they are completed and the appropriate number written in the notebook.
- (4) Description of the subject should always include a note concerning the direction from which the shot was taken.
- (5) There should be references to photographs in the written description, and in plans and diagrams.
- (6) The month and year the photograph was taken should be written on its back and on the Photograph Form.

## RECORDING INFORMATION FOR THE SITE RECORD FORM

Besides recording an adequate description of the site, notes must be made of the details required for the Site Record Form. Section 10 explains in detail what is required. It is essential that recorders be thoroughly familiar with this section and with the forms

before going into the field, otherwise some aspect of the information required may be missed. If this happens another trip to the site will have to be made.

## ORGANISED GROUPS

Although much recording is still done by individual enthusiasts, very good results can be achieved by organised groups under the auspices of archaeological societies. The advantage of group recording is that regional coverage can be achieved more quickly. The best size for a recording group is probably around half a dozen. Above this number, individual contact with the work cannot be kept up and interest tends to weaken. Site recording is not a mass activity. If numbers grow, it is advisable to divide the group into two or more, detaching some experienced recorders to lead each party.

It may also be possible for a group to diversify its activities. Some people may wish to concentrate on a particular area, or particular types of sites. If several groups can be organised, this is the best way of keeping a programme flexible and allowing more scope for individual tastes.

## LONG-TERM REVISION

Not all site records filed so far meet the standards suggested in this handbook. In some cases only sparsely-completed Site Record Forms have been filed for important sites. There is therefore considerable scope for upgrading and improvement of existing records, and it is hoped that all engaged in recording will look on this as an integral part of their recording programme, and aim to provide adequate descriptions, plans and photographs for all sites. Groups which have grown large enough to diversify their activities should deploy a group on this aspect of recording straightaway.

## INDEXING SITE RECORDS

All sites recorded are plotted by the filekeeper on the maps held by him. However, as numbers increase other indexes become desirable. The simplest is to list all grid references, providing a quick check against duplication. A more detailed index is described by Hitchings (1963). The categories in this type of index lend themselves well to punched card indexing, which has the advantage of requiring only one card per site. Detailed index maps, for instance in the NZMS 2 and NZMS 270 series, are a great aid to studies of site distribution.

These and other types of indexes may be useful to recorders as well as filekeepers.

## KEEPING UP WITH RECORDING

Preparing records for the filekeeper is just as important as work in the field. This takes longer than is sometimes realised. It involves checking, and drawing plans, and if postponed can pile up most distressingly. If necessary, stop fieldwork and spend a day at the typewriter and drawing board. Recording which remains in the field book is of value only to the recorder.

## References

- BEST, E., 1927: *The Pa Maori*, Dominion Museum Bulletin 6, Wellington, Government Printer.
- BUIST, A.G., 1964: *Archaeology in North Taranaki, New Zealand*, NZAA Monograph 3, Wellington.
- DAVIDSON, J.M., 1970: 'Survey of archaeological sites on Motutapu Island, New Zealand', *Rec. Auck. Inst. Mus.*, 7, 1-12.
- 1972: 'Archaeological investigations on Motutapu Island, New Zealand. Introduction to recent fieldwork and further results', *Rec. Auck. Inst. Mus.*, 9, 1-14.
- GREEN, R.C., 1967: 'Settlement patterns: four case studies from Polynesia', in Solheim, W. (ed), *Archaeology at the Eleventh Pacific Science Congress*, Asian and Pacific Archaeology Series 1, Honolulu, University of Hawaii.
- HITCHINGS, M.G., 1963: 'Indexing site recording files', *NZAA Newsletter*, 6 (3), 141-5.
- PRICKETT, N.J. and K.E., 1975: 'D'Urville Island archaeological survey 1973', *NZAA Newsletter*, 18 (3), 108-131.
- RUPPÉ, R.J., 1966: 'The archeological survey: a defense', *American Antiquity*, 31: 313-333.

## 8. Sources of Information

### MAPS

Thorough examination of maps and aerial photos will help to give the 'lie of the land' generally, and with practice may suggest likely site locations. Some published maps have the more prominent sites marked on them.

Instructions on how to give a grid reference are given on all NZMS maps. On NZMS 1 a six-figure grid reference defines the location of a site as within a 100-yard-square area. An accurate grid reference is essential. The grid reference is found by taking the numbers on the west and south sides of the square in which the site is located. A grid reference ALWAYS relates to the south west corner of such a square; it is NEVER rounded up to the nearest figure. Thus a grid reference is not necessarily that of the nearest intersection of grid lines but to the south west corner of the square in which the site is located. Where a line lies just right of, or up from, a main square line (on NZMS 1 these lines represent 1,000 yards) the last number of the eastings or northings is 0. A romer is designed to show where lines would fall if they were drawn on the map. Made using durable paper and marked with the appropriate set of lines drawn from the scale line on the map, it provides an accurate third and sixth figure and is to be preferred to estimating tenths by eye.

The principle is exactly the same with NZMS 260-270 maps. A six-figure grid reference gives the location to within a 100 m square; an eight-figure grid reference (only possible with NZMS 270 maps) to within a 10 m square.

### AERIAL PHOTOGRAPHS

New Zealand has been completely covered by vertical aerial photography with major surveys at intervals of between 10 and 20 years in most regions. Aerial photos may be examined and purchased through the Head Office (Wellington) or any District Office of the Department of Lands and Survey. Head Office holds coverage for all parts of New Zealand. District offices hold only those for the Land District concerned. Delivery of orders for prints or enlargements takes four to five weeks.

Aerial photographs are an important tool of archaeology:

1. Because of the amount of information they contain about the nature of the terrain they allow the plotting of the site location with an accuracy much greater than on topographical maps. The important role of aerial photographs when dealing with large numbers of small sites in a restricted area has already been noted.
2. Stereo-pairs may be viewed in 3 dimensional relief.
3. They assist the planning of fieldwork.

The major limitation to this potentially extremely valuable tool is the scale of most aerial photographs taken for routine survey purposes in New Zealand. Most are taken at a scale of 1:15,840 and 1:44,000. This is too small to identify anything other than major earthwork sites. Identification of many features at this scale is difficult and ground checking is essential.

These photos are unlikely to disclose sites invisible on the ground to the naked eye (unless the site has been ploughed flat since the photo was taken). Thus aerial

photographs cannot be considered to have a major role in site discovery under present circumstances. However, use of obliques (aerial photos taken at an angle to the ground to highlight contrasts in shadow, vegetation etc.) to show sites not apparent to observers on the ground has become a major archaeological tool overseas.

## BASIC INFORMATION

Vertical aerial photos are taken in 'runs' and generally in an east-west or west-east direction so that each photo overlaps some 60% on the previous photo. Successive runs are generally parallel and overlap with the previous run, thus building up a comprehensive coverage of the land surface.

The basic information essential for the interpretation of the photo is shown in a panel on the margin of the photo. The top of the photograph is not always the apparent top indicated by this panel. Usually successive runs differ, depending on whether they were flown west-east or east-west.

For present purposes the important details are:

1. **Number of survey or run number and photo number.** These are numbers assigned by the Department of Lands and Survey for reference purposes. For each photo there is a survey number, a run number or, more recently, letter (if a number of runs is involved), and a photo number. The Department of Lands and Survey maintains a set of index maps at a scale of 1:63,360 which shows the coverage available for an area.
2. **Scale.** Altitude is indicated on the photo, as is the focal length of the camera. These are used to determine the scale of the photo.

$$\text{Scale} = \frac{\text{Focal length of camera (in inches)}}{12 \times \text{altitude in feet}}$$

3. **Date of photography.** The older aerial photos have a number of advantages for archaeological purposes. They are generally at the larger scale 1:15,840 and in many cases provide the only record of sites that have been subsequently levelled. A disadvantage is that landscape changes may have occurred which make it difficult to recognise a specific location. Comparison of photos at one or more dates in the past with the present state will allow informed comment on the state of the site.

## VIEWING AERIAL PHOTOGRAPHS

If aerial photos are viewed singly the information they contain is not being used very effectively. The ground surface common to two successive aerial photos is photographed from different viewpoints by the camera in its two positions. Use is made of this difference in perspective to produce a 3D image with a stereoscope. It is possible to view small areas of stereo-pairs in 3D relief without the aid of a stereoscope, but this is tiring and less effective, since the stereoscope provides magnification which allows recognition of features missed by the naked eye.

Two kinds of stereoscope are in common use: a simple lens stereoscope and the more expensive mirror stereoscope. With the lens stereoscope, to position the image-pairs directly beneath each eye the photos will partially lie one over the other so that the whole area of image overlap cannot be seen at once. By rolling the top print between the eye pieces of the stereoscope it is possible to extend the area that can be seen without

rearranging the stereo-pair. With the mirror stereoscope the photos are more widely separated and the whole area of overlap in a pair of photos can be seen.

It should be noted that relief under a stereoscope is greatly exaggerated.

In mid-latitudes most photos are taken around midday when the sun is highest. When viewing a photo the relief looks correct when the observer is facing the light source, i.e., the photo should be viewed with north to the top.

The aerial photo should not be used as if it is an accurate and reliable map. This is because the aircraft flies at a given altitude so that in rough country higher ground is nearer the camera than lower-lying terrain. The scale therefore varies and higher ground is displaced in relation to lower lying areas. Such considerations are often not important for most archaeological purposes but recorders should be aware of some of the limitations.

### **PRACTICAL POINTS**

Chinagraph pencils enable photos to be marked in the field and have the advantage that markings can later be erased without damage to the photo.

The pin hole method involves pricking the location of sites and recording the provisional site number on the back. This damages the photo, although not seriously.

### **Reference**

WELLMAN, H.W., 1967: *Notes on Mapping and Structure*, Department of Geology, Victoria University of Wellington.

### **NZMS 3 MOSAIC MAPS**

Mosaic maps are vertical aerial photos fitted together in the best manner possible to make a map at a scale of 1:15,840. They are available for many parts of country.

## **LANDOWNERS AND LOCAL CONTACTS**

Members of the Archaeological Association pledge to obtain the landowner's permission when any archaeological work is intended. This is essential. Archaeologists cannot expect co-operation from a landowner if they enter land without permission.

Contact with landowners has a positive aspect too. It is a good opportunity to tell those with no particular interest in archaeology what is being done and why, perhaps thereby enlisting interest and support. Many landowners can provide valuable information about sites or the Maori history of the area, and many have collections of artefacts discovered on their properties.

Locating owners is usually easy, but in areas which are unfamiliar it sometimes saves time to search land titles. This is not as formidable as it sounds. The documents are kept in District Land Registry Offices, which are usually in main or provincial centres. The procedure is:

- (1) Locate the section number of the relevant piece of land on the cadastral map of the area. This type of map shows land block names and numbers and section numbers, and is a standard series published by the Department of Lands and Survey. Land is subdivided for ownership purposes in several different ways. The main types are:

- (a) (i) Survey districts divided into blocks and sections – expressed as ‘Section 4, Block X, Belmont Survey District’.
  - (ii) Land Registration Districts divided into sections – expressed as ‘Section 2, Porirua District’.
  - (iii) ‘Maori Blocks’, which are in fact several blocks having a common name, e.g. ‘Haukaretu, Block 2’. These blocks are land originally in Maori ownership, but which may have been sold subsequently to Europeans.
- (b) Land subdivided after the land registration system in (a) was in force. In these cases it is not necessary to cite the reference to the above category (a) divisions. The number is based on the number given to the plan of the subdivision, and the number of each ‘lot’ in the subdivision. Plan numbers are divided in several series, the main ones being ‘A’, ‘B’ and ‘D.P.’ (Deposited Plan).

The sections under each are expressed as follows:

A 237, Lot 1  
 B 136, Lot 2  
 D.P. 1522, Lot 37

In areas where land is closely settled, all the original divisions in (a) may have been further subdivided, and the cadastral map will bear references only to subdivisions in category (b). More usually there is a mixture of (a) and (b). The aim of finding the number of the section is to find the title number to that section. Sometimes this is also noted on the plan, in which case all that is needed to find the name of the owner is to examine the title.

- (2) Locate the title number in one of the various indexes in the Land Registry Office. There is one for each of the types of land division referred to above. In each index the title reference is noted next to the section, block, or lot number.

Obtain the title and examine it. Title references are usually in two parts (e.g. 427/154). Older titles are bound in volumes, the first part of the number denoting the volume number. Later titles are filed singly in vertical files. The bound volumes are usually available without assistance from the Land Registry Office staff, but those in files must be requested. The current owner of the land in question is stated.

This is necessarily no more than a brief outline of the procedure, but it should enable the ownership of most land to be traced. If difficulty is experienced, the Land Registry Office staff will assist.

Landowners may be good contacts, but there may also be many others such as farmers, local historians and old identities who are able to provide valuable information on sites in an area.

## DOCUMENTARY RESEARCH

There are many written sources which can assist the site recorder, even if he is dealing with sites occupied before the days of written records in New Zealand. Two words of caution are, however, necessary.

- (1) Most of the written material, apart from records of traditions, relates to sites post-dating European contact. It is important to record these, but they may be only

a part of the evidence to be seen in the field. Older sites do not as a rule figure in early European documentary evidence.

- (2) Some less critical local histories are not reliable guides to the pre-European period. Some contain either garbled versions of already published tradition (often unacknowledged) or unreliable and fanciful accounts of Maori history. Such works need, therefore, to be treated with reserve, particularly if the sources of the information in them are not made clear.

## **BOOKS AND ARTICLES**

These fall into four main classes.

- (1) Accounts of the traditions of an area.
- (2) Early European accounts. These are an excellent source of information on the location and character of sites visited by the authors. Some of these works are little known and hard to come by, and for anybody going deeply into the Maori occupation of an area a check through the holdings of one of the larger libraries specialising in New Zealand history, particularly the Hocken or Alexander Turnbull Libraries, would be well worthwhile.
- (3) Local histories. These are often valuable, and smaller works, such as school jubilee booklets and guidebooks, may turn out to be unexpectedly rewarding.
- (4) Published archaeological surveys. These are still rare in New Zealand, but there are some excellent examples (e.g. Adkin 1948, Buist 1964, Challis 1978).

## **UNPUBLISHED MATERIAL**

The recorder may find occasionally that he is able to consult valuable unpublished manuscript material such as, for example, the reminiscences of a pioneer settler, or the journals of early missionaries, travellers, and explorers. The best collection of such material in New Zealand is in the Alexander Turnbull Library.

Maori Land Court minute books deserve special mention. These records of the Court's proceedings are a goldmine of information on Maori history and traditions, and individual sites. However, they must be treated with some reserve. Often there were two parties whose claims were in conflict, each trying to establish a case. The evidence of one has to be balanced against that of the other, and contradictory statements of fact must be treated with suspicion. The judgements of the Court are usually helpful in arriving at the facts.

Site location information is usually reliable, as witnesses would have been unlikely to make false statements on matters on which opposing parties would also be well informed.

A microfilm copy of all minute books is held in the Alexander Turnbull Library.

## **EARLY MAPS**

Survey maps and plans dating from the earliest period of European Government are held in district offices of the Department of Lands and Survey, and in the National Archives in Wellington.

Some of these show Maori place-names (not always spelled correctly), occupied sites, cultivation grounds, and tracks. Searching the ground for traces of the sites can

be profitable. Lands and Survey district offices hold index maps on which all maps relating to particular areas are listed. Old Roll Plans (whose numbers are prefixed by the letters "R.P.") are particularly valuable. In addition, the contemporary field books, the numbers of which are often noted on the plans, may well repay perusal.

#### References

- ADKIN, G.L., 1948: *Horowhenua*, Polynesian Society Memoir 26, Wellington.
- BUIST, A.G., 1964: *Archaeology in North Taranaki, New Zealand*, NZAA Monograph 3, Wellington.
- CHALLIS, A.J., 1978: *Motueka: An Archaeological Survey*, NZAA Monograph 7, Auckland, Longman Paul.

## 9. Surveying for Site Recording

B.G. McFadgen

### INTRODUCTION

In this chapter methods are described for drawing a plan of archaeological field remains. The methods are not intended for surveying large sites, which are often better handled by different methods. Instead, they are intended for small sites likely to be encountered on a field trip. The important details to show on a plan are size, shape, and relative position of remains, and to do this the means should be available to measure distance, direction and slope.

### INSTRUMENTS

To measure distance a tape measure is suitable, and careful pacing is sufficiently accurate on fairly flat sites. Measure pace-length by pacing out a known distance. State in field notes whether metres, links, or feet are used.

To find the direction or bearing of a line, a prismatic compass which can be read to the nearest degree is accurate enough for most recording. If only a north point is required, then use any compass. To use a prismatic compass, look through the prism and line up the object sighted and the line scribe on the glass cover. The numbers seen through the prism (fig. 10b) give the magnetic bearing of the line.

To find the angle of slope to an object, use an Abney level, a hollow tube attached to a semi-circle graduated in degrees and fractions of degree (fig. 11a). Attached to the semi-circle is a bubble level and a pointer which are free to rotate, the pointer moving around the graduated semi-circle. To use an Abney level, look through the eyepiece at the end of the tube and sight towards the object. Inside the tube is a mirror with a scribed line, which reflects an image of the bubble. The object sighted must be cut by the hair-line in the tube, and the bubble level rotated until the scribed line on the mirror bisects the bubble (fig. 11b). The angle of slope (elevation or depression) is then read off the graduated semi-circle.

### METHODS OF RECORDING DETAIL

Detail is recorded either by offsets at right-angles from a baseline (fig. 12a), or by bearing and distance from a single point (fig. 12b). If a site is mapped from a single baseline, then the bearing of the line is not necessary, and north can be shown approximately.

### COMPASS TRAVERSE

A compass traverse is a series of baselines forming a closed framework for mapping a site. Measure the length of each baseline and along each line take two bearings (fig. 13): a forward bearing (from point A, fig. 13) in the direction of the traverse, and a back bearing (from point B, fig. 13) in the reverse direction. Add 180 degrees to the back bearing. If the back bearing plus 180 degrees is more than 360 degrees, subtract 360 degrees. The forwarding bearing and adjusted back bearing should agree within

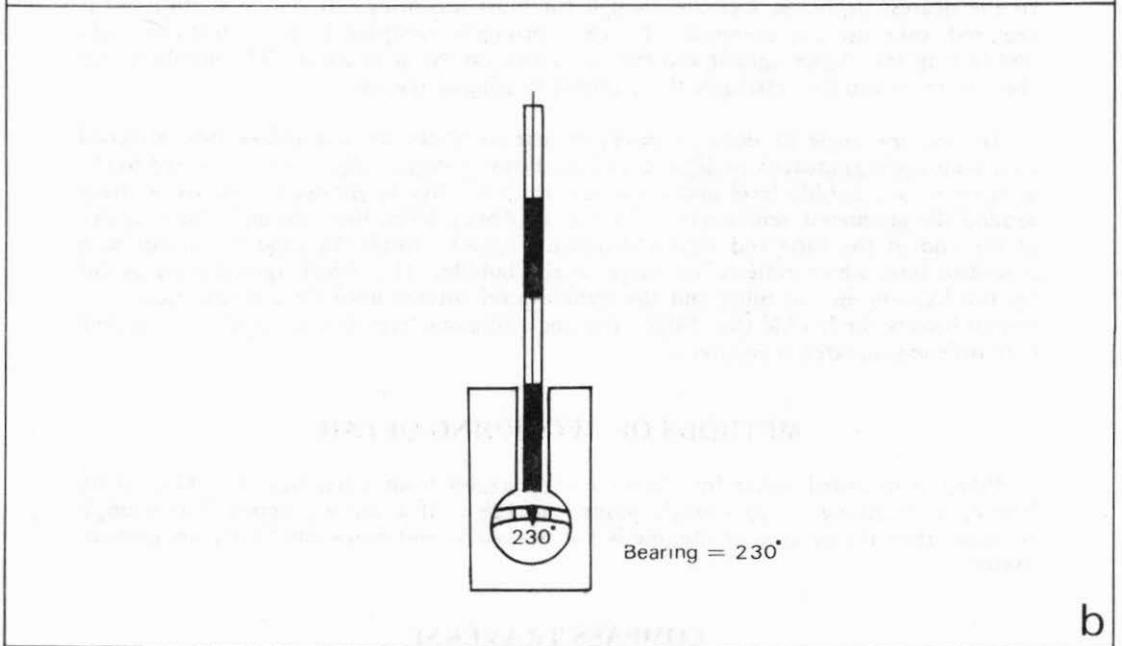
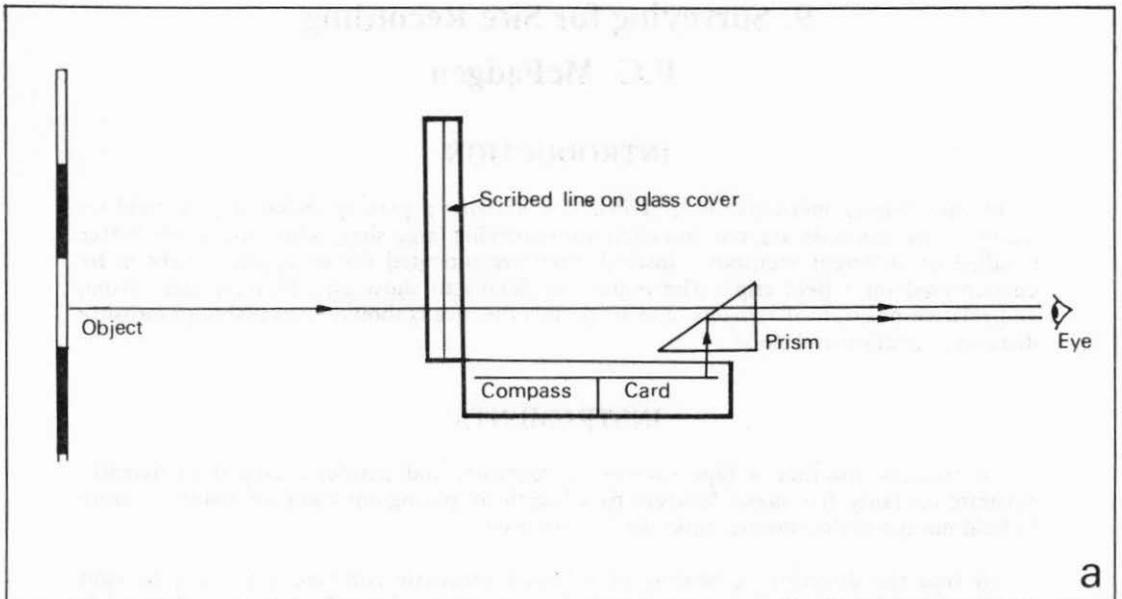


Figure 10

USE OF PRISMATIC COMPASS

Fig a: Line of sight through prism

Fig b: View through prism

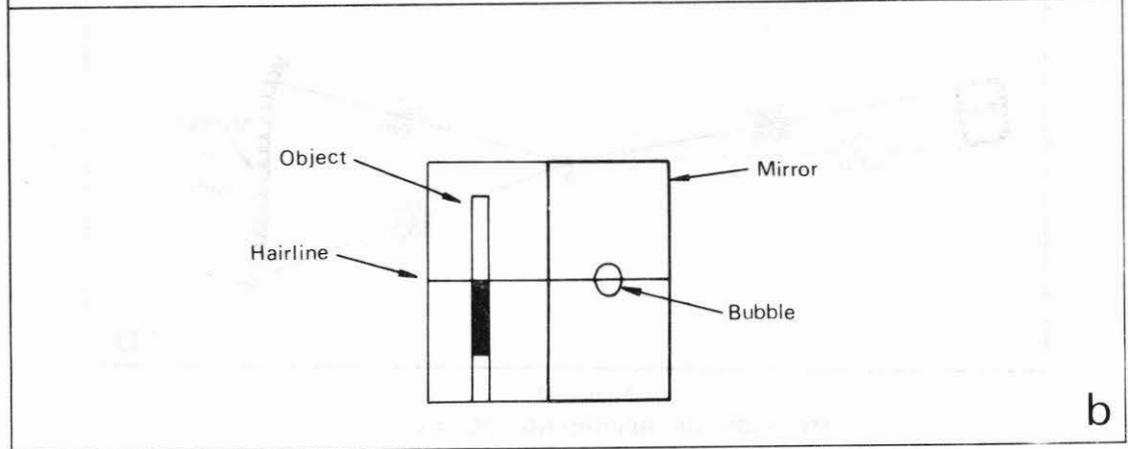
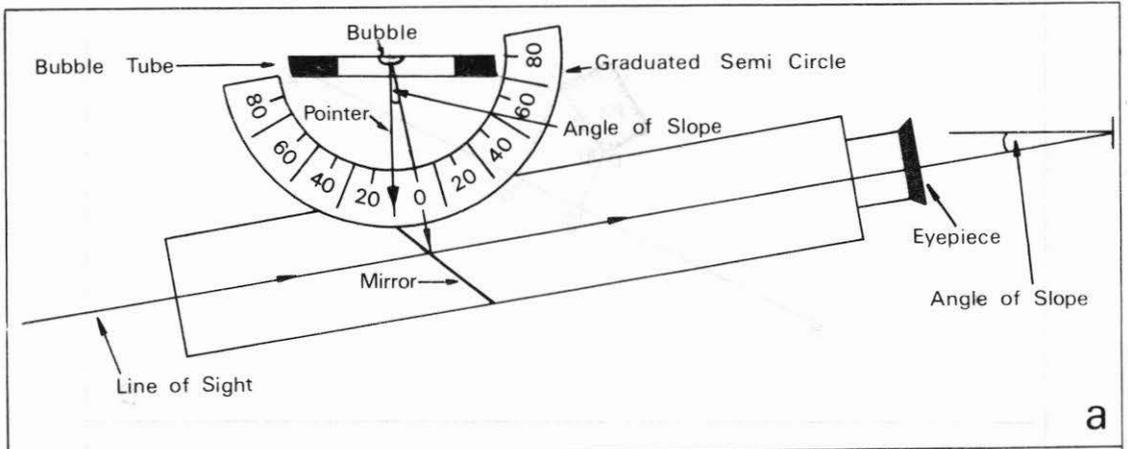


Figure 11  
USE OF ABNEY LEVEL

Fig. a: Line of sight through tube.  
Fig. b: View through eyepiece.

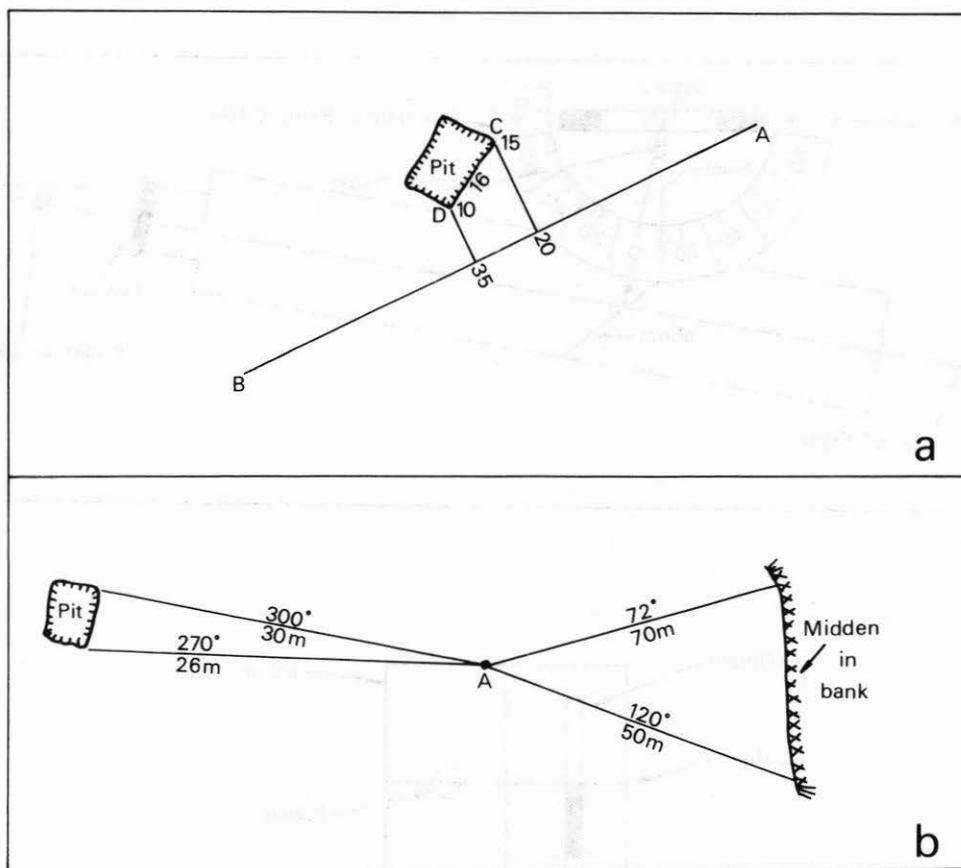


Figure 12  
METHODS OF RECORDING DETAIL

Fig. a: Offsets from a baseline. A-B = baseline. Corner C of pit is 20m from point A and 15m at right-angles from the baseline; corner D is 35m from A and 10m at right-angles from the baseline. The side D-C of the pit, measured as a check, is 16m.

Fig. b: Bearing and distance from a single point (=A).

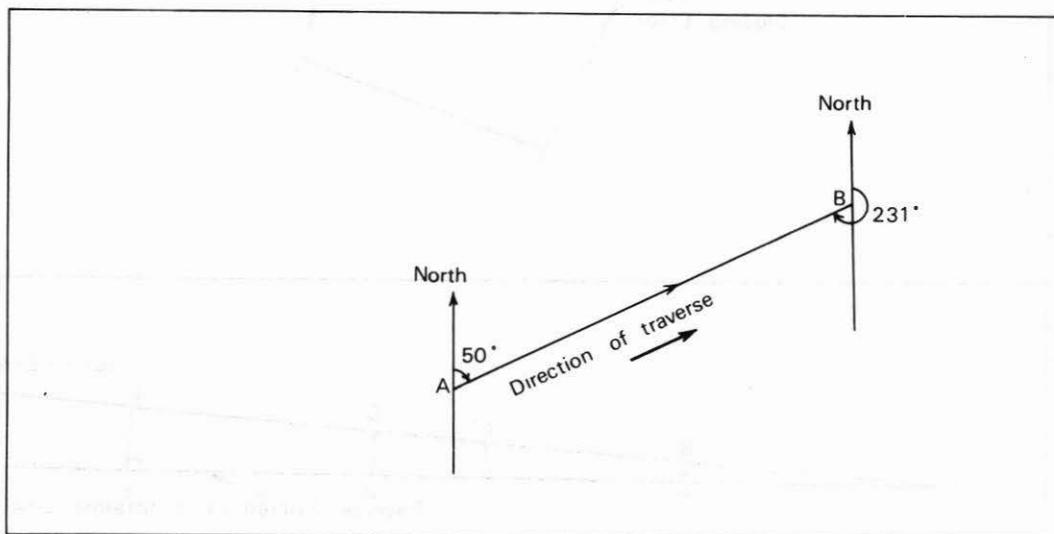


Figure 13

### MEASUREMENT OF THE BEARING OF A LINE A-B

Forward bearing (from A) =  $50^\circ$

Back bearing (from B) =  $231^\circ$

The following calculation shows how to find the bearing of the line from A to B (for explanation, see text):

Back bearing =  $231^\circ$

+  $180^\circ$

411

-  $360^\circ$

51

Forward bearing =  $50^\circ$

Bearing of line A-B = mean of

forward and back bearings =  $50\frac{1}{2}^\circ$

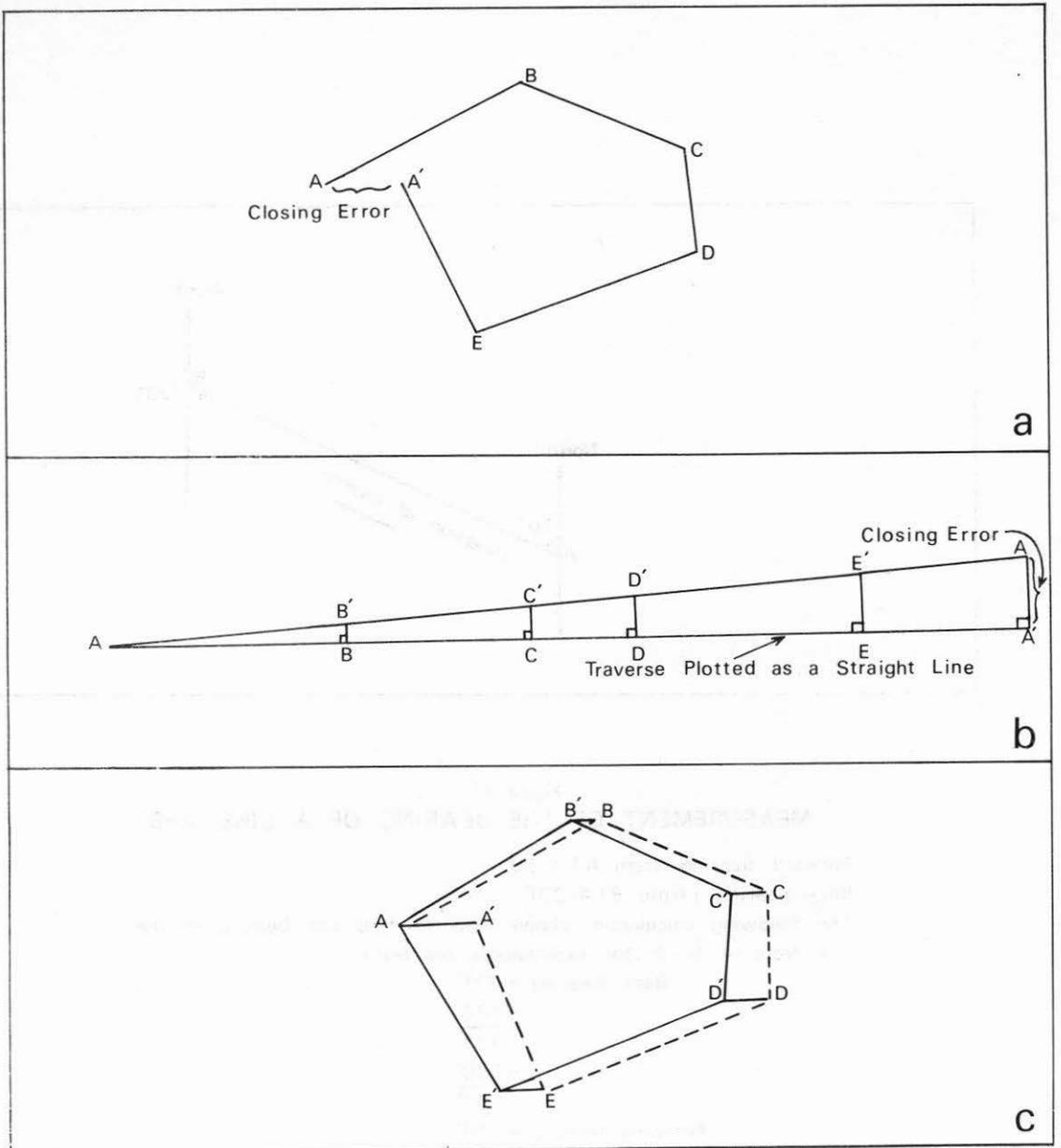


Figure 14

### ADJUSTMENT OF A COMPASS TRAVERSE

Fig a: Traverse plotted to scale. Traverse points = A,B,C, etc, Closing error = A - A'

Fig b: Traverse plotted to scale as a straight line. Corrections to traverse points = A-A', B-B', etc

Fig c: Adjusted traverse. Corrected traverse points = A,B',C', etc

2°. If they do not agree the observations should be repeated. The bearing of each baseline is the mean of the forward bearing and adjusted back bearing.

The traverse is plotted to scale using a protractor, rule, and pencil. A plotted traverse will normally end at a different point from which it began. If the difference (closing error) is greater than 2% of the traverse length, check calculations and plotted traverse for errors. If no errors are found repeat the traverse. If the closing error is less than 2% adjust the traverse as shown by fig.14:

1. Plot the traverse to scale as a straight line and mark each traverse point.
2. Draw the closing error at right angles to the end of the line, and draw in the third side of the triangle.
3. At each traverse point draw a perpendicular to meet the third side of the triangle. The length of the perpendicular at each point is the correction to be made at that traverse point.
4. Apply the correction to each point of the plotted traverse parallel to the original closing error. The adjusted traverse is between the new points: A B' C' D' E' A.

## ACCURACY

Edges of archaeological remains are often indistinct and measurements to the nearest metre are usually sufficiently accurate. Keep *offset* distances short (about 30 m maximum) to reduce errors due to the estimated right angle not being truly perpendicular to the baseline. Keep *bearing and distance* distances less than 100 m: half a degree error in 100 m will result in a lateral error of about 1 m.

Measured distances are assumed to be horizontal, although the horizontal distance between two points is less than the slope distance which is that usually measured. Except for very steep slopes, slope error can be ignored. Slope errors are significant when the difference between horizontal distance and slope distance is more than a metre, in a 60 m line when the slope is greater than 10 degrees, in a 30 m line when the slope is greater than 15 degrees, or in a 15 m line when the slope is greater than 20 degrees. To correct for slope, measure slope with an Abney level and find the horizontal distance as shown in fig. 15. For traverse lines, measure the slope from each end, and use the mean of the readings to find the horizontal distance.

## FIELD NOTES

A small school notebook is suitable for making field notes. A pencil, rubber, and straight edge are necessary and a semi-circle protractor is useful.

Make a sketch of the area to be mapped. Show the compass traverse or baseline, and either show on the sketch all measurements made or, if points are clearly labelled, tabulate the measurements. Describe remains in note form and record the site grid reference and the map used.

Fig. 16 is an example of a small site survey.

Forward Slope =  $13\frac{1}{2}^{\circ}$   
 Backward Slope =  $12\frac{1}{2}^{\circ}$   
 Mean Angle of Slope =  $13^{\circ}$

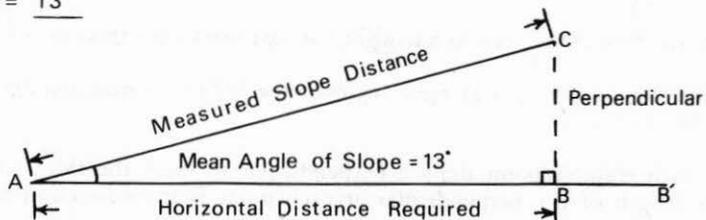
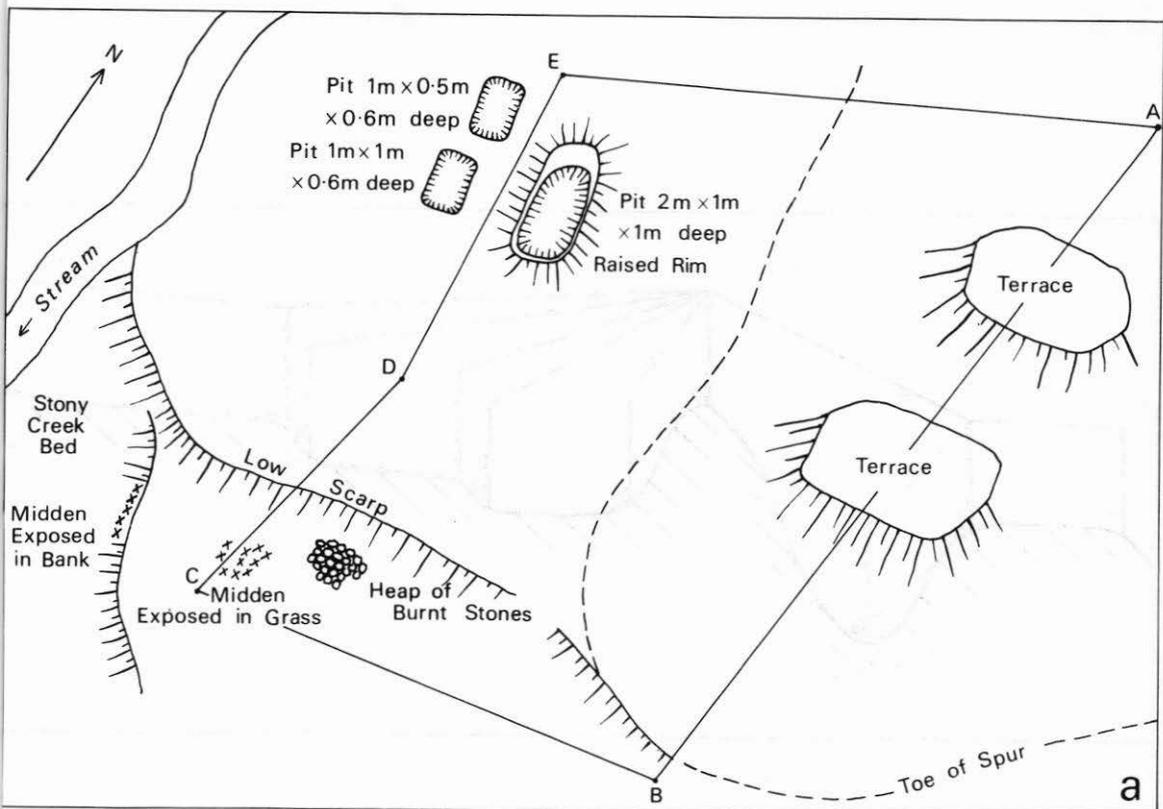


Figure 15

**METHOD TO FIND HORIZONTAL DISTANCE FROM SLOPE DISTANCE AND SLOPE ANGLE**

1. Draw a line A-B'.
2. Draw to scale a line A-C at an angle to A-B' equal to mean angle of slope, and with a length equal to the measured slope distance.
3. Draw line C-B at right-angles to A-B'.
4. Horizontal distance = A-B



Pg.1.

Point	Bearing		Abney		Dist. (m)
	Fore	Back	Fore	Back	
A-B	195°	15°	-15°	+15°	135
C	270°	90 ½°			77
D	20°	19 ½°			47
E	3 ½°	3°			53
A	72°	73°	+20°	-20°	100

Grid Reference : 283976  
 Map: N170 Cook Strait  
 Notes on Site: Faces S.W.  
 Exposed to Sth. wind  
 About 1km from Coast up stony stream bed. Site in grass  
 Subject to stock erosion.

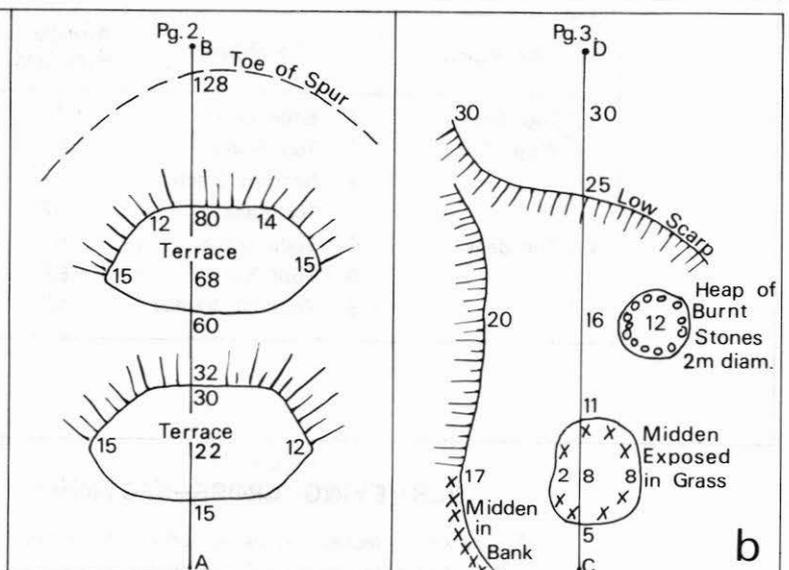
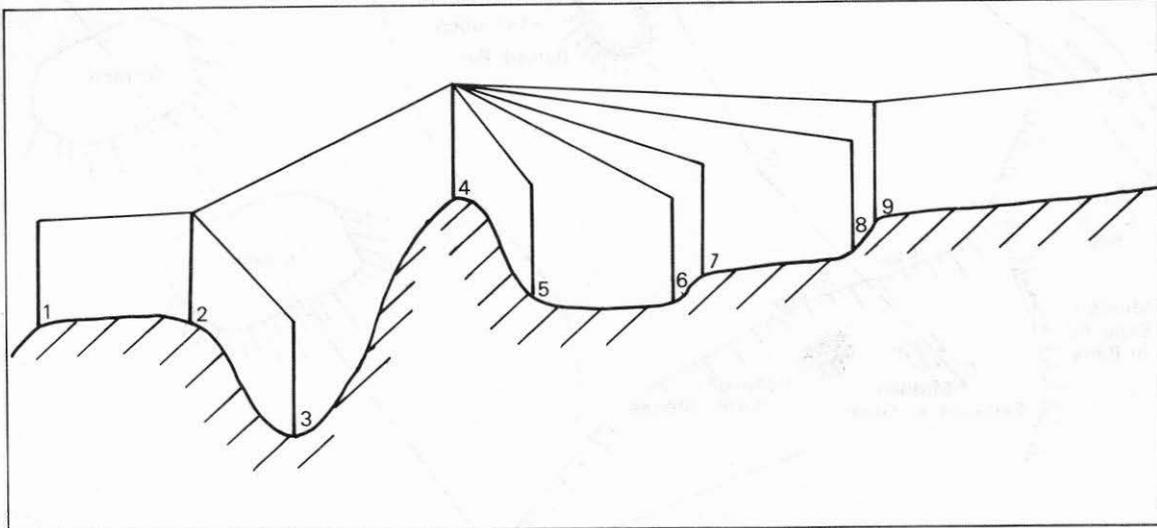


Figure 16

EXAMPLE OF A SMALL SITE SURVEY

Fig. a: Sketch map of site showing archaeological and topographical features to be recorded, and compass traverse.

Fig. b: Sample field notes.



At Point		To Point		Abney Reading	Distance (metres)	Bearing
1	Top Scarp	2	Edge Ditch	+2°	30	210°
2	Edge Ditch	1	Top Scarp	-2°		30°
		3	Bottom Ditch	-50°	8	250°
		4	Top Bank	+10°	16	"
4	Top Bank	2	Edge Ditch	-10°		"
		5	Foot Bank	-52°	6	"
		6	Foot 1st Terrace	-12°	15	"

Figure 17  
SURVEYING CROSS-SECTIONS

Fig. a: Cross-section showing observed lines  
Traverse points = 1, 2, 4, 9, 10.

Fig. b: Example of field notes.

## PLOTTING

On a site record form draw in pencil the baseline or compass traverse at a suitable scale, and plot the surveyed remains. Draw the remains in ink and erase the traverse or baseline. Show a north point, a scale, site grid reference and site name.

## CROSS-SECTIONS

A cross-section is normally surveyed from traverse points along one or more straight lines which should be marked on the plan and should show each significant change in ground slope. Use two poles marked at eye-height, an Abney level, and a tape. Hold the Abney level against one pole and sight to the same height on the other pole. Read the angle of slope and measure the slope distance. Several change in ground slope can be measured from each traverse point (fig. 17a), but keep slope distances less than 30 m. Where slope distances are greater than 30 m, where there is a change in direction, or where points are not intervisible, establish a new traverse point. Between traverse points, read the Abney level forwards and backwards. Where the traverse changes direction, measure bearings of traverse lines with a compass. Level back to the starting point. When a cross-section is plotted, the level at the start and finish should be the same. If it is not, adjust the plot in the same way described for the compass traverse (fig. 18).

## PLOTTING CROSS-SECTIONS

When plotting a cross-section ignore the heights of the poles because all measurements will have been taken to and from a constant height. Lay off each slope and slope distance with a protractor and scale and join up the resulting points. Show a horizontal and vertical scale.

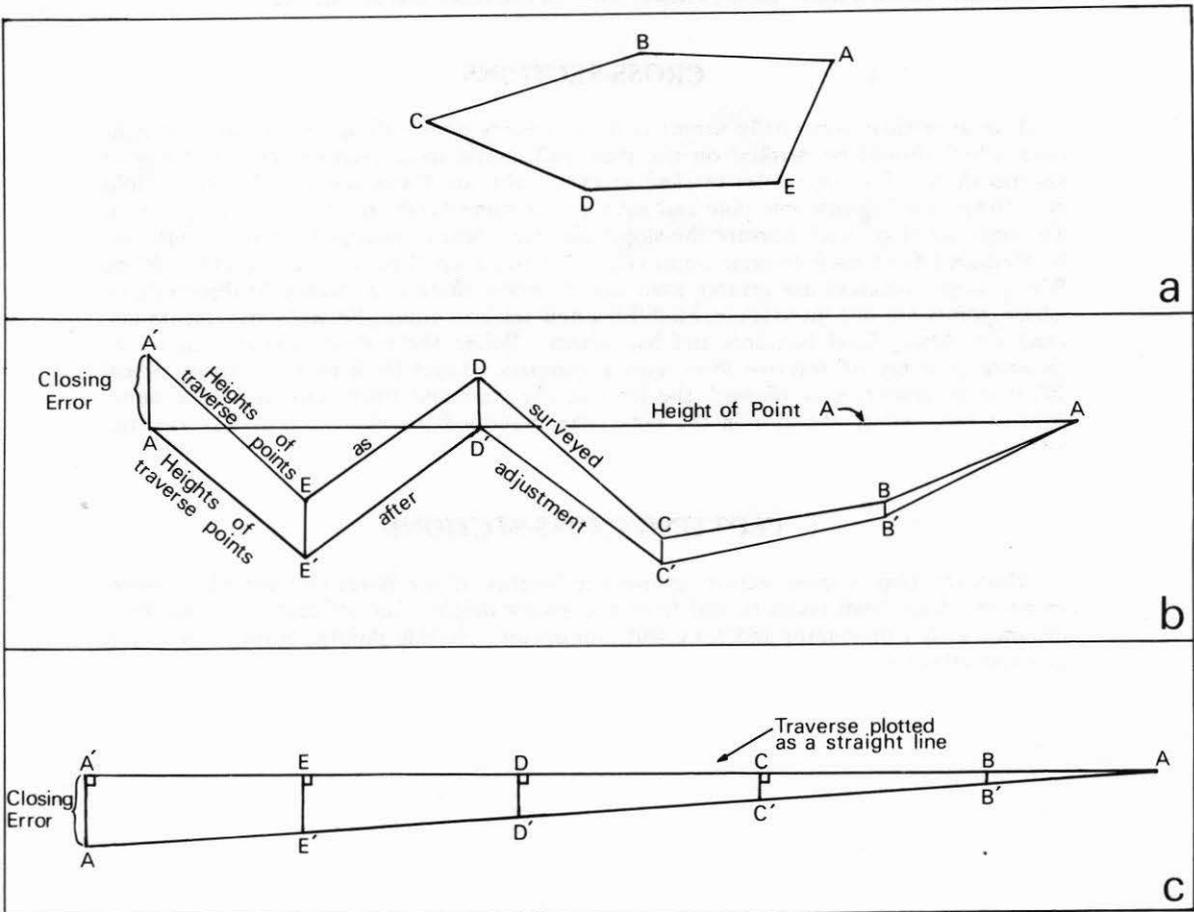


Figure 18

ADJUSTMENT OF CROSS-SECTION TRAVERSES

Fig. a: Plan View of traverse points (shown A, B, C, etc).

Fig. b: Vertical view of traverse point heights, plotted to scale: A, B, C etc = surveyed positions; A', B', C' etc = adjusted positions.

Fig. c: Height corrections to traverse points (= A'-A, E-E', D-D' etc).

## 10. Completing the Forms

### SITE RECORD FORM

#### GENERAL

- (a) One site record should be produced for each site recorded. A site comprises archaeological remains separated by unoccupied space from other such remains. Thus, several archaeological features may be recorded together as one site if they abut or are apparently otherwise related.
- (b) There are two sides to the site record form: NZMS1 (National Yard Grid) and NZMS 260 (metric map grid). The side appropriate to the latest available map covering the location of the site should be chosen. Attach extra site description sheets as necessary.
- (c) If possible, type the records. Any handwriting must be firm and clear.
- (d) In all cases include a site location map on a site description form.
- (e) All sections of the site record form are important and should be filled in. (Type dashes if no information is available).
- (f) All records must be sent in duplicate to the appropriate NZAA local filekeeper. (See list and map attached).
- (g) In the notes that follow, refer to the specimen forms.

#### SPECIFIC

- (a) Map details: number, name and edition. Use the latest available NZMS 1 or NZMS 260 map.
- (b) NZAA site number: leave this clear — it will be filled in by the local filekeeper. All sites receive a serial number based on the number of the map, e.g. N160/1, 2, 3, etc. The sites are numbered consecutively, in the order in which they are given to the filekeeper. Therefore the numbers need not necessarily bear any relationship to geography or any factor other than the relative order of receipt by the filekeeper.

In the course of recording it may be useful to allocate field numbers as sites are recorded. These numbers will be provisional, since the permanent numbers will be allotted by the local filekeeper.

- (c) Date visited: the date on which the fieldwork took place.
- (d) Site type: one of the types described in this Handbook, or a combination of such types: e.g. 'midden', or 'midden/pits', not 'occupation', or 'exposed section'.

The site may merit a combination of site types. An obvious example is the ditch and bank, which would be recorded as 'ditch/bank', but there are many other possibilities, such as 'midden/pits', 'midden/terraces', etc. If possible, try to keep the types in alphabetical order, but this need not be done in the case of established combinations like 'ditch and bank', or when one feature of the site is more pro-

minent than the other (e.g. if there is a large group of pits with a small scatter of midden, 'pits/midden' is permissible).

*Don't* describe a site as, for example, 'Pits, associated with midden' in the Site Type panel. It is your job to decide whether, or not, in this case, the midden is part of the same site as the pits (see page 20). If it is, record it as 'midden/pits'; if not, a separate site record is needed, with cross references if you like.

*Don't* put miscellaneous information, such as 'Ovens, 7 small', or types of pa, in this panel. This type of information belongs in the site description.

- (e) Site name: Maori – a genuine Maori name if known.
- (f) Site name: other – name of the site, locality, paddock, or street, or a name assigned for archaeological purposes.
- (g) Grid reference: an accurate 6-figure grid reference for the map quoted in (a) above, placed in the boxes provided. All topographic maps carry instructions for giving grid references. (An 8-figure reference may be given if the use of a larger scale map such as NZMS 270 permits this degree of accuracy, using the appropriate spaces to the right of the boxes.)

In the case of a very extensive site it is a good idea to give the grid references at each end, e.g. '376721 to 380724' in the description of site section. However only a single central grid reference should be placed in the space provided at the top of the form.

*An accurate grid reference is essential.*

- (h) Aids to relocation of site: clear precise description with reference to relatively permanent features of the adjacent landscape. A sketch location map incorporating distances and bearings should be attached. (Such a map may apply to several adjacent sites and may be filed with one site record and referred to in the others.)

This entry should enable someone unfamiliar with the area to find the site without too much trouble. It *must* be completed, because a grid reference is usually not sufficient to locate a site, particularly small ones or those in confusing surroundings.

If many sites are being recorded in a small area it is a good idea to draw a locality plan and plot the site numbers on it. This saves much written description, as you can simply refer to the plan, and this will avoid confusion among later investigators. The plan should be traced from a map (preferably a larger scale one than the 1 inch to 1 mile series) but may be drawn freehand if none is published for the area. The plan should be filed with the first site recorded on it, and subsequent site records should have, under 'Aids to relocation' – 'See locality plan filed with (site number)'.

- (i) State of site and possible future damage: the state of site at the time of the field-work, and the likelihood of future damage by any agency.

Record whether the site is in grass, bush, etc., the general state of preservation, and whether it appears to have been disturbed by fossicking, ploughing, or cultivation, etc.

'State of site and possible future damage' covers possible effects of:

erosion by sea, stream, wind, slips;  
trampling by stock;  
ploughing or discing;  
major engineering works, e.g. roading, drainage (name of authority responsible);  
subdivision for housing or industry;  
reversion to scrub or other vegetation;  
fossicking.

It is usually worthwhile to make some discrete inquiries to see whether or not the property owner intends to subdivide the land or carry out any works on it himself.

- (j) Description of site: give full details as instructed on the site record form.
- (k) Owner, Tenant/Manager: include postal address, street address, and if possible land title reference.

Permission *must* be obtained before going on to private land, and this is a good opportunity to find out name, address, etc., as well as seeing if the owner has found any artefacts or knows anything of the site or its history.

Give a sufficiently clear address to enable the owner to be relocated. In the countryside the name of the road and the district is usually sufficient. If you know the title reference to the property, or the name of the land block, put these in too. A grid reference to the owner's house is useful.

If the land is not occupied by the owner, find out discretely whether the occupier is a tenant (e.g. lessee) or a manager, and cross out whichever does not apply.

- (l) Nature of information: the nature of the fieldwork, photographs taken, and aerial photograph coverage. (Note that clarity refers to archaeological features and not to topographic location).
- (m) Reported by: fill in name and address; leave the filekeeper section blank.
- (n) Keywords: up to a dozen words which in the opinion of the recorder summarise the archaeological significance of the site. (These words should be factual, not interpretative or imaginary, and should relate to features and contents of the site identified in the field.)
- (o) New Zealand Register of Archaeological Sites: leave blank.

## SITE DESCRIPTION FORMS

Blank forms are available.

These may be used for any purpose desired, and headed up appropriately. Examples are:

Site description  
Traditional information  
Historical  
Publication references.

Other uses of blank forms may be for small plans, or for amplification of any other categories of the Site Record Form.

### **PHOTOGRAPH FORMS**

This is largely self-explanatory. Give the month and year the photograph was taken, both on the back of the photograph and on the form. Say exactly what the photograph is of, and in what direction it is taken. Photographs are kept in the file with the other material, and please remember to forward two prints of each, as one set must go to the Central File.

### **SECRET FILES**

There may be sites in existence which the recorder, for various reasons such as local Maori feeling, does not wish to make widely known. This is a very useful safeguard, but sites will only be placed in this category if there are valid reasons for doing so (see page 7).

### **SAMPLE SITE RECORDS**

The following pages show typical record forms for two sites, which should be completed in duplicate for posting to the local filekeeper.

Forms are obtainable from local filekeepers or from the New Zealand Historic Places Trust head office.

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

## SITE RECORD FORM (NZMS1)

NZMS 1 map number N170  
 NZMS 1 map name WAIOTAHU  
 NZMS 1 map edition 2nd, 1971

NZAA NZMS 1 SITE NUMBER

DATE VISITED 1.4.1976

SITE TYPE Pa

SITE NAME: MAORI Te Wai o Tama  
 OTHER

Grid Reference

Easting

1 3 2

Northing

4 6 5

1. Aids to relocation of site (*attach a sketch map*)

On headland between Sandy Bay and Cockle Bay. (See locality plan attached).

2. State of site and possible future damage

Ditch and bank defences well preserved. Terraces only fair condition. Continuing stock damage.

3. Description of site (*Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here*)

A headland pa with two lines of ditch and bank defences, cutting across promontory. Internal features include a platform, terraces, pits and midden.

4. Owner W. Smith,  
 Address Sandy Bay Road,  
 WAIOTAHU

Tenant/Manager —  
 Address

5. Nature of information (*hearsay, brief or extended visit, etc.*)Photographs (*reference numbers, and where they are held*)Aerial photographs (*reference numbers, and clarity of site*)

Two people examined and measured the site.

-

987/6 Clearly

6. Reported by T. Jones,  
 Address 1 Main Street,  
 WELLINGTON

Filekeeper  
 Date

7. Key words Pa, ditch, bank, platform, terraces, midden, Chione stutchbury, Paphies australe.

8. New Zealand Register of Archaeological Sites (*for office use*)  
 NZHPT Site Field Code


Type of site

Local environment today

Land classification


Present condition and future danger of destruction

Security code

Local body

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION  
SITE DESCRIPTION FORM

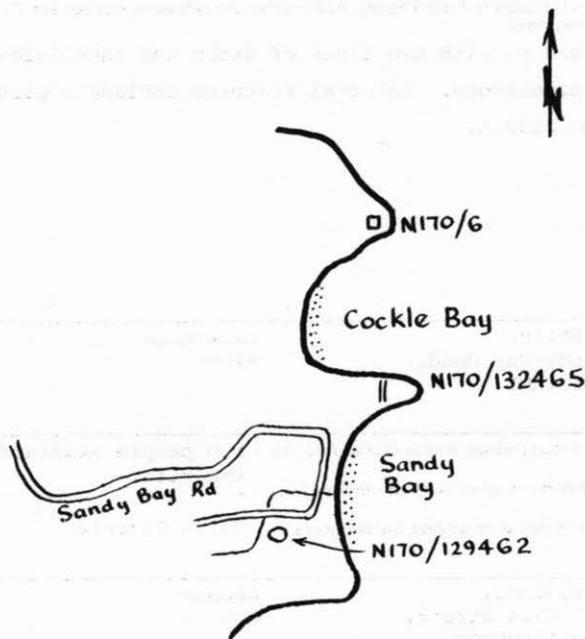
Map Number N170  
Map Name WAIOTAHĪ  
Map Edition 2nd, 1971  
Grid Reference 132465

SITE NUMBER

SITE NAME: MAORI  
OTHER

SITE TYPE

(This form may be used for recording any descriptive information or other supplementary information on the site, or for maps and drawings.)



Drawn from air photo 987/G

0 150m (approx.)

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION  
SITE DESCRIPTION FORM

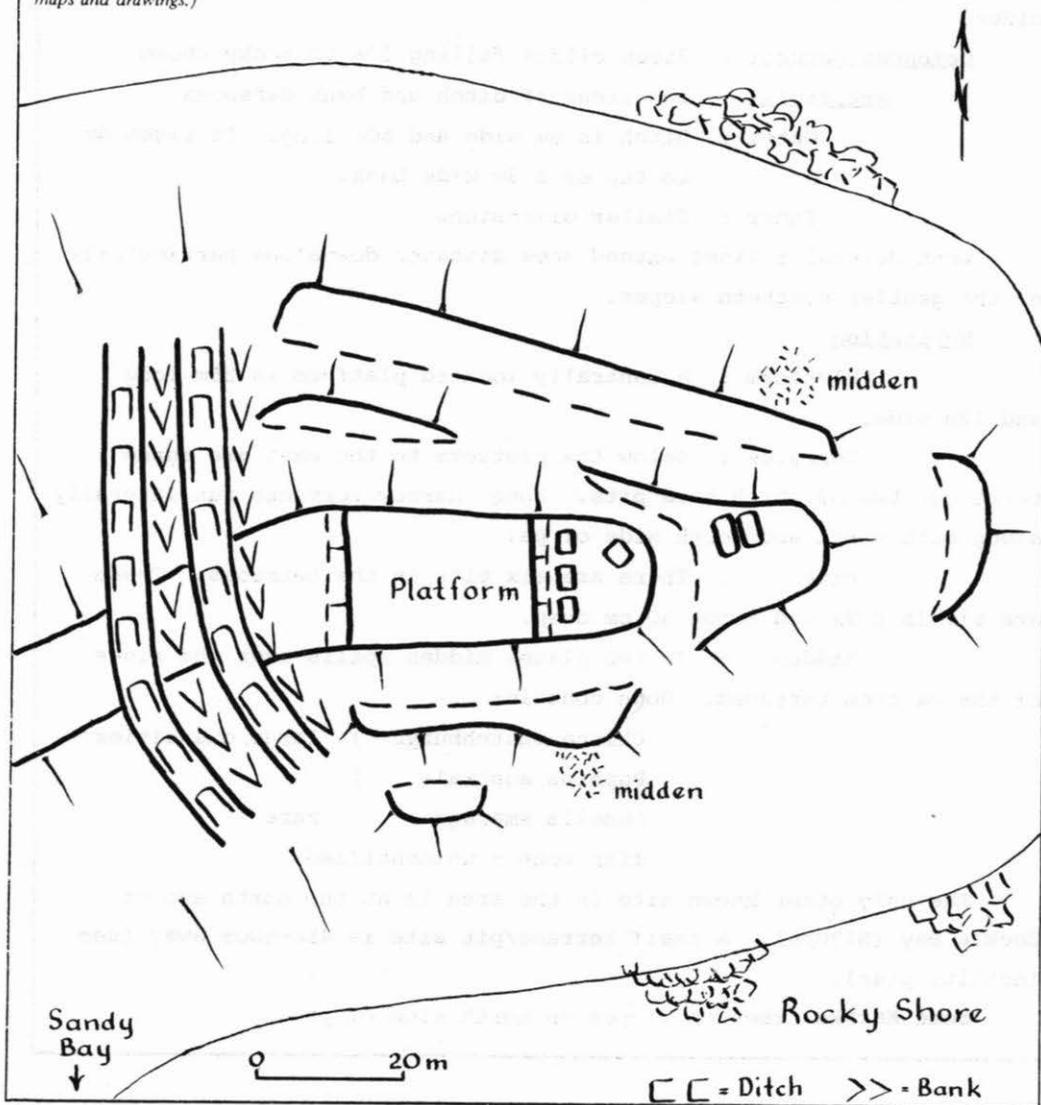
Map Number N170  
Map Name WAIOTAHU  
Map Edition 2nd, 1971  
Grid Reference 132465

SITE NUMBER

SITE NAME: MAORI Te Wai o Tama  
OTHER

SITE TYPE PA

(This form may be used for recording any descriptive information or other supplementary information on the site, or for maps and drawings.)



NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION SITE DESCRIPTION FORM		SITE NUMBER
Map Number	N170	SITE NAME: MAORI Te Wai o Tama <del>OTHER</del>
Map Name	WAIOTAHU	
Map Edition	2nd, 1971	SITE TYPE PA
Grid Reference	132465	

(This form may be used for recording any descriptive information or other supplementary information on the site, or for maps and drawings.)

The site is a headland pa with strong natural defences on three sides.

Defences Natural : Steep cliffs falling 20m to rocky shore.

Artificial : two lines of ditch and bank defences.

Outer : Ditch is 8m wide and 60m long. It rises 4m to top of a 3m wide bank.

Inner : Similar dimensions

Both defensive lines extend some distance downslope particularly on the gentler northern slopes.

Habitation

Platform : A centrally located platform is 25m long and 12m wide.

Terraces : Below the platform to the east are three terraces, two of which have pits. Long, narrow terraces run laterally along both north and south side of pa.

Pits : There are six pits on the terraces. These are all 3m x 2m and about 30 cm deep.

Midden : In two places midden spills over the sides of the pa from terraces. Both contain:

Chione stutchburyi ) large quantities  
Paphies australe )  
Lunella smaragda rare  
fish bone - unidentified.

The only other known site in the area is at the north end of Cockle Bay (N170/6). A small terrace/pit site is 450-500m away (see locality plan).

Some Karaka trees on slopes on north side of pa.

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

## SITE RECORD FORM (NZMS1)

NZMS 1 map number N170  
 NZMS 1 map name WAIOTAHU  
 NZMS 1 map edition 2nd, 1971.

NZAA NZMS 1 SITE NUMBER

DATE VISITED 1.4.1976

SITE TYPE PITS/TERRACES

SITE NAME: MAORI  
 OTHER

Grid Reference

Easting

1 2 9

Northing

4 6 2

1. Aids to relocation of site (*attach a sketch map*) At end of spur above bridge on Sandy Bay Road. Stream at foot of spur. See Locality Plan attached to N170/

2. State of site and possible future damage

Poor condition in grass. Further stock damage likely.

3. Description of site (*Supply full details, history, local environment, references, sketches, etc. If extra sheets are attached, include a summary here*)

See attached sketch plan.

Three terraces on gentle slopes at end of spur. One terrace contains two pits (1). 2m x 5m x.15m  
 (2). 2m x 5m x.2m

4. Owner B. Brown,  
 Address Sandy Bay Road,  
 WAIOTAHU

Tenant/Manager  
 Address

5. Nature of information (*hearsay, brief or extended visit, etc.*) Two people briefly examined site.

Photographs (*reference numbers, and where they are held*) -

Aerial photographs (*reference numbers, and clarity of site*) 986/6 Not at all

6. Reported by T. Jones,  
 Address 1 Main Street,  
 WELLINGTON.

Filekeeper  
 Date

7. Key words

Terraces, pits.

8. New Zealand Register of Archaeological Sites (*for office use*)  
 NZHPT Site Field Code


Type of site

Local environment today

Land classification


Present condition and future danger of destruction

Security code

Local body

## 11. Filing Areas, Filekeepers and Location of Files

<b>NORTHLAND:</b>	<b>NZMS 1 Maps N1-29</b>	
Filekeeper —	Mr S.M. Bartlett, 50 Cairnfield Road, WHANGAREI.	File — at same address
<b>AUCKLAND URBAN:</b>	<b>N41, 42, 46, 47</b>	
Filekeeper —	Mrs S. Bulmer, Department of Anthropology, University of Auckland, Private Bag, AUCKLAND.	File — at same address
<b>AUCKLAND REGION:</b>	<b>N30-40, 43-45, 48-49, 53-54</b>	
Filekeeper —	Ms A. Leahy, Auckland Institute and Museum, Private Bag, AUCKLAND.	File — at same address
<b>WAIKATO:</b>	<b>N51-52, 55-57, 64-66, 73-75, 82-84</b>	
Filekeeper —	Mr S.C. Edson Waikato Art Museum, Box 937, HAMILTON.	File — at same address
<b>BAY OF PLENTY:</b>	<b>N58-61, 67-70, 76-79, 85-87, 93-95, 103-104</b>	
Filekeeper —	Mr K.W. Moore, 13 McKenzie Street, KAWERAU.	File — at same address
<b>EAST COAST:</b>	<b>N62-63, 71-72, 80-81, 88-90, 96-98, 105-107, 116-117, 126-127</b>	
Filekeeper —	Mr J.L.R. Allum, 122 Fox Street, GISBORNE.	File — at same address
<b>TARANAKI:</b>	<b>N91-92, 99-100, 108-110, 118-120, 128-130, 136-137</b>	
Filekeeper —	Dr A.G. Buist, Box 447, HAWERA.	File — at 30 High St., Hawera.
<b>WANGANUI:</b>	<b>N101, 111, 121, 131, 138, 143-144, 148-149, 152-153</b>	
Filekeeper —	Mr D. Butts, Manawatu Museum, P.O. Box 1867, PALMERSTON NORTH.	File — at same address

## NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

## SITE DESCRIPTION FORM

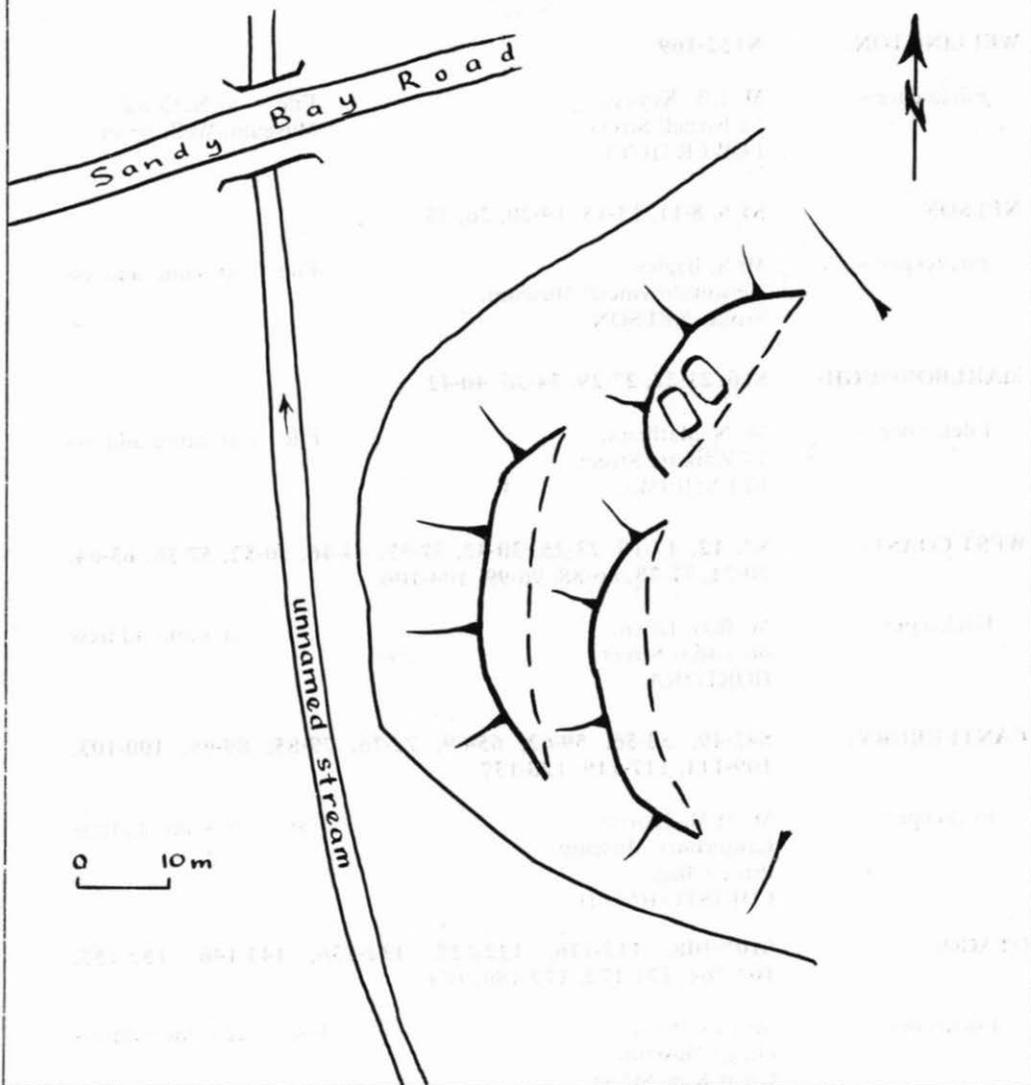
Map Number N170  
Map Name WAIOTAHU  
Map Edition 2nd, 1971.  
Grid Reference 129462

SITE NUMBER

SITE NAME: MAORI  
OTHER

SITE TYPE PITS/TERRACES

(This form may be used for recording any descriptive information or other supplementary information on the site, or for maps and drawings.)



**INLAND PATEA: N101, 112-113, 122-123, 132-133, 139**

Filekeeper — Mr R.A.L. Batley, File — at same address  
The Homestead,  
Moawhango, via TAIHAPE.

**HAWKES BAY: N114-115, 124-125, 134-135, 140-142, 145-146, 150-151**

Filekeeper — Mrs M. Jeal File — at same address  
11 Havelock Road,  
NAPIER.

**WELLINGTON: N152-169**

Filekeeper — Mr I.W. Keyes File — at National  
12 Parnell Street, Museum, Wellington  
LOWER HUTT.

**NELSON: S1-6, 8-11, 13-15, 19-20, 26, 33**

Filekeeper — Mr S. Bagley File — at same address  
Nelson Provincial Museum,  
Stoke, NELSON.

**MARLBOROUGH: S16, 21-22, 27-29, 34-36, 40-42**

Filekeeper — Mr N. Mathews, File — at same address  
14 Waikura Street,  
BLLENHEIM.

**WEST COAST: S7, 12, 17-18, 23-25, 30-32, 37-39, 44-46, 50-52, 57-58, 63-64, 70-71, 77-78, 86-88, 96-99, 104-106**

Filekeeper — Mr R.G. Lawn, File — at same address  
66 Tudor Street,  
HOKITIKA.

**CANTERBURY: S47-49, 53-56, 59-62, 65-69, 72-76, 79-85, 89-95, 100-103, 109-111, 117-119, 128-137**

Filekeeper — Mr M.M. Trotter, File — at same address  
Canterbury Museum,  
Private Bag,  
CHRISTCHURCH.

**OTAGO: S107-108, 113-116, 122-127, 132-136, 143-146, 152-155, 161-164, 171-172, 179-180, 184**

Filekeeper — Mr G.S. Park, File — at same address  
Otago Museum,  
Great King Street,  
DUNEDIN.

**SOUTHLAND:** S112, 120-121, 129-131, 138-142, 147-151, 156-160, 165-170,  
173-178, 181-183, 185-191

Filekeeper — Ms J.B.J. Cave File — at same address  
Southland Museum and  
Art Gallery,  
Victoria Avenue,  
INVERCARGILL.

**OFFSHORE ISLANDS:** C240

Filekeeper — Dr B.F. Leach, File — at same address  
Department of Anthropology,  
University of Otago,  
Box 56,  
DUNEDIN.

**SITE RECORDING SCHEME CO-ORDINATOR**

Mr R.G. Law,  
112 Gowing Drive,  
Meadowbank,  
AUCKLAND.

**SURVEY ARCHAEOLOGIST**

New Zealand Historic Places Trust,  
Box 12255,  
WELLINGTON.

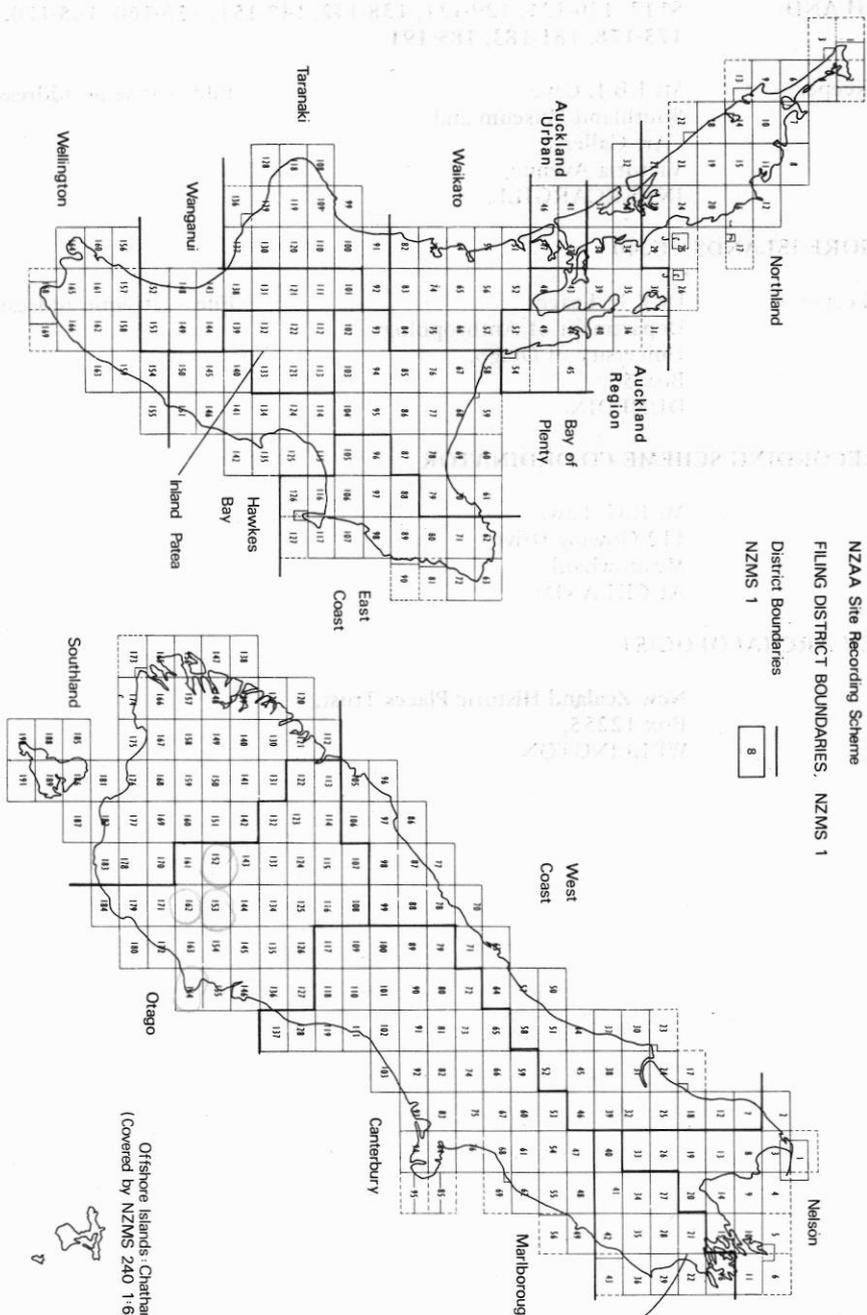


Figure 19  
 NZAA Site Recording Scheme  
 FILING DISTRICT BOUNDARIES, NZMS 1  
 District Boundaries  
 NZMS 1

8

Offshore Islands: Chatham Islands  
 (Covered by NZMS 240 1:63 380)



7



## REFERENCES

The following abbreviations are used:

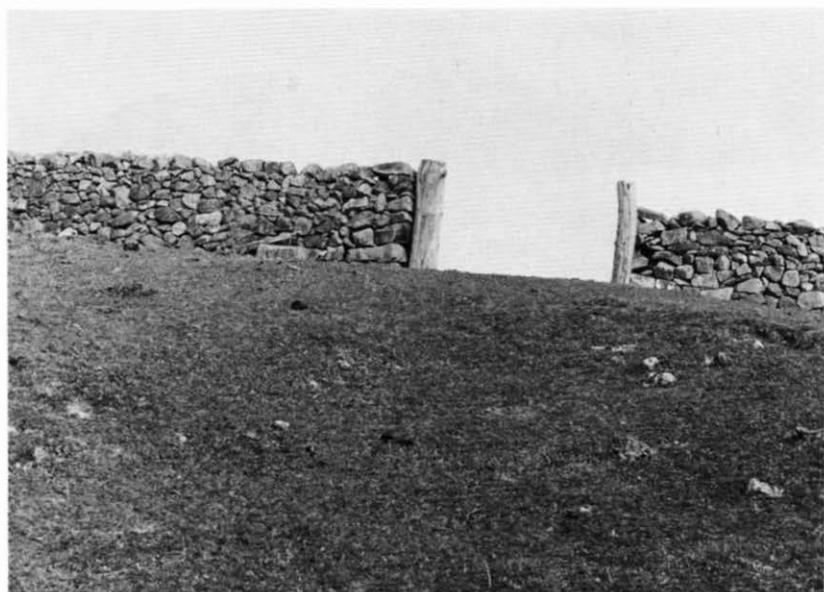
<i>JPS</i>	Journal of the Polynesian Society
<i>NZAA Newsletter</i>	New Zealand Archaeological Association Newsletter
<i>Rec. Auck. Inst. Mus.</i>	Records of the Auckland Institute and Museum
<i>Rec. Cant. Mus.</i>	Records of the Canterbury Museum.

- ADAMS, C.W., 1903: 'Maori canals in Marlborough', in *Report of Department of Lands and Survey for the year 1902*, Appendices to Journals of the House of Representatives 1903, C-1, Appendix VIII, 161.
- ADKIN, G.L., 1948: *Horowhenua*, Polynesian Society Memoir 26, Wellington.
- ALEXANDER, J., 1970: *The Directing of Archaeological Excavations*, London, John Baker.
- ANCIENT MONUMENTS BOARD FOR ENGLAND, 1975: *Principles of Publication in Rescue Archaeology*, London, Department of the Environment.
- AMBROSE, W., 1970: 'Archaeology and rock drawings from the Waitaki Gorge, Central South Island', *Rec. Cant. Mus.*, 8 (5), 383-437.
- ANDERSON, A., 1973: 'A critical evaluation of the methodology of midden sampling', *NZAA Newsletter*, 16 (3), 119-127.
- BATLEY, R.A.L., 1957: 'A dendroglyph from Inland Patea (upper Rangitikei)', *JPS*, 66 (2), 210.
- BELLWOOD, P.S., 1968: 'The Esk Redoubt, Miranda', *NZAA Newsletter*, 11 (2), 88-92.
- 1971: 'Fortification and economy in prehistoric New Zealand', *Proceedings of the Prehistoric Society*, 37, 56-95.
- BEST, E., 1921: 'Old redoubts, blockhouses, and stockades of the Wellington District', *Transactions of the New Zealand Institute*, 53, 14-28.
- 1925: *Maori Agriculture*, Dominion Museum Bulletin 9, Wellington. Government Printer.
- 1927: *The Pa Maori*, Dominion Museum Bulletin 6, Wellington, Government Printer.
- BINFORD, L.R., 1972: *An Archaeological Perspective*, New York, Seminar Press.
- BLOOMFIELD, G.T., 1974: 'The Kawau Copper Mine, New Zealand', *Industrial Archaeology*, 11 (1), 1-10.
- BUCHANAN, R.A., 1978: *Industrial Archaeology in Britain*, Harmondsworth, Penguin.
- BUIST, A.G., 1964: *Archaeology in North Taranaki, New Zealand*, NZAA Monograph 3, Wellington.
- 1965: 'A suggested typology of pa', *NZAA Newsletter*, 8 (2), 75-78.
- BURNETT, R.I.M., 1963: *The Paremata Barracks*, Wellington, Government Printer.
- CASSELLS, R., 1972: 'Human ecology in the prehistoric Waikato', *JPS*, 81 (2), 196-247.
- CHALLIS, A.J., 1976a: 'An archaic site, Jacketts Island, Tasman Bay, New Zealand', *NZAA Newsletter*, 19 (3), 124-138.
- 1976b: 'Metasomatised argillite artefacts from Pah Point, Riwaka, New Zealand', *JPS*, 85 (4), 463-486.
- 1976c: 'Physical and chemical examination of a Maori gravel soil near Motueka, New Zealand', *New Zealand Journal of Science*, 19, 249-254.
- 1978: *Motueka: an Archaeological Survey*, NZAA Monograph 7, Auckland, Longman Paul.
- CLARKE, D.L., 1968: *Analytical Archaeology*, London, Methuen.
- COLE, J.P., and C.A.M. KING, 1968: *Quantitative Geography*, London, Wiley.
- DANIELS, J.R.S., 1961: 'Whitireia Peninsula, Porirua', *NZAA Newsletter*, 4 (4), 25-29.

- DAVIDSON, J.M., 1967: 'Midden analysis and the economic approach in New Zealand archaeology', *Rec. Auck. Inst. Mus.*, 6 (3), 203-228.
- 1970: 'Survey of archaeological sites on Motutapu Island, New Zealand', *Rec. Auck. Inst. Mus.*, 7, 1-12.
- 1972: 'Archaeological investigations on Motutapu Island, New Zealand. Introduction to recent fieldwork and further results', *Rec. Auck. Inst. Mus.*, 9, 1-14.
- 1974: 'Whither the site recording scheme?', *NZAA Newsletter*, 17 (1), 2-26.
- 1975a: *Te Paki Archaeological Survey*, Auckland, Department of Lands and Survey.
- 1975b, 'The excavation of Skipper's Ridge (N40/7), Opito, Coromandel Peninsula, in 1959 and 1960', *Rec. Auck. Inst. Mus.*, 12, 1-42.
- DIAMOND, J.T., 1970: 'The association of karaka and pre-European sites in the Waitakere ranges, Auckland', *NZAA Newsletter*, 13 (3), 143-146.
- DIAMOND, J.T., and B.W. HAYWARD, n.d. *Kauri Timber Dams*, Auckland, The Lodestar Press.
- DUFF, R.S., 1946: 'Native quarries of baked argillite', *Rec. Cant. Mus.*, 5 (2), 115-124.
- FLEMING, C.A., 1953: *The Geology of the Wanganui Subdivision*, New Zealand Geological Survey Bulletin 52, Wellington, Government Printer.
- FOX, A., 1974: 'Prehistoric Maori storage pits: problems in interpretation', *JPS*, 83, 141-154.
- 1976: *Prehistoric Maori Fortifications in the North Island of New Zealand*, NZAA Monograph 6, Auckland, Longman Paul.
- GOLSON, J., 1957: 'Field archaeology in New Zealand', *JPS*, 66 (1), 64-109.
- GOLSON, J., and R.C. GREEN, 1958: *A Handbook to Field Recording in New Zealand*, NZAA Monograph 1, Wellington.
- GREEN, R.C., 1967: 'Settlement patterns: four case studies from Polynesia', in Solheim W. (ed), *Archaeology at the Eleventh Pacific Science Congress*, Asian and Pacific Archaeology Series 1, Honolulu, University of Hawaii.
- 1969: 'Archaeological investigation of Western Samoan prehistory', in Green, R.C., and J.M. Davison, (eds.), *Archaeology in Western Samoa Vol I*, 3-11, Auckland, Auckland Institute and Museum.
- 1974: 'Tahiti — Hawaii A.D. 1100-1300: further comments', *NZAA Newsletter*, 17 (4), 206-210.
- GROUBE, L.M., 1964: *Settlement Patterns in Prehistoric New Zealand*, Unpublished M.A. Thesis, University of Auckland.
- 1970: 'The origin and development of earthwork fortifications in the Pacific', in Green, R.C., and M. Kelly (eds), *Studies in Oceanic Culture History Vol I*, 133-164. Pacific Anthropological Records 11, Honolulu, B.P. Bishop Museum.
- HAGGETT, P., 1965: *Locational Analysis in Human Geography*, London, Edward Arnold.
- HEIZER, R.F., and J.A. GRAHAM, 1967: *A Guide to Field Methods in Archaeology*, Palo Alto, The National Press.
- HITCHINGS, M.G., 1963: 'Indexing site recording files', *NZAA Newsletter*, 6 (3), 141-5.
- HODDER, I., and C. ORTON, 1976: *Spatial Analysis in Archaeology*, Cambridge, Cambridge University Press.
- HOSKINS, W.G., 1955: *The Making of the English Landscape*, London, Hodder and Stoughton.
- HUME, I. NOEL, 1969: *Historical Archaeology*, New York, Alfred A. Knopf.
- JEFFERSON, C., 1955: 'The dendroglyphs of the Chatham Islands', *JPS*, 64 (4), 367-441.
- KEYES, I.W., 1975: 'The D'Urville Island-Nelson metasomatised rocks and their significance in New Zealand prehistory', *Historical Review* (Whakatane and District Historical Society), 23 (1), 1-17.

- KNIGHT, H., 1964: 'Gold at Harbour Cone, Peninsula County, Otago', *NZAA Newsletter*, 7 (4), 164-165.
- 1966: 'Umu-ti', *JPS*, 75 (3), 332-347.
- KNIGHT, H., and P. COUTTS, 1975: *Matanaka: Otago's First Farm*, Dunedin, John McIndoe.
- LAW, R.G., 1969: 'Pits and kumara agriculture in the South Island', *JPS*, 78 (2), 223-251.
- LEACH, B.F., 1969: *The Concept of Similarity in Prehistoric Studies*, Studies in Prehistoric Anthropology Vol I, Anthropology Dept., University of Otago.
- LEACH, H., 1974a: 'Man's use of nature: Pre-European (1) The first 500 years', *New Zealand Nature Heritage*, 1, 117-122.
- 1974b: 'Man's use of nature: Pre-European (2) The last 500 years', *New Zealand Nature Heritage*, 2, 164-169.
- 1976: *Horticulture in Prehistoric New Zealand*, Unpublished Ph.D. Thesis, University of Otago.
- LEAHY, A., 1976: 'Whakamoenga cave, Taupo N94/7: A report on ecology, economy and stratigraphy', *Rec. Auck. Inst. Mus.*, 13, 29-75.
- LEAHY, A., and E.M. NICHOLLS, 1964: 'The Poor Knights Islands', *NZAA Newsletter*, 7 (2), 99-109.
- LIPE, W.D., 1977: 'A conservation model for American Archaeology', in Schiffer, M.B. and G.J. Gumerman (eds), *Conservation Archaeology*, New York, Seminar Press.
- McFADGEN, B.G., 1963: 'Gold in Wellington', *NZAA Newsletter*, 6 (3), 152-155.
- McKELVEY, P.J., 1958: 'Forest history and New Zealand prehistory', *New Zealand Science Review*, 16 (3), 29-32.
- McKINLAY, J.R., 1974: 'An archaic adze from Inland North Island', *NZAA Newsletter*, 17 (4), 171-174.
- MOORE, P., 1976: 'The Tahanga basalt: an important resource in North Island prehistory', *Rec. Auck. Inst. Mus.*, 13, 77-93.
- 1977: 'The definition, distribution and sourcing of chert in New Zealand', *NZAA Newsletter*, 20 (1), 51-85.
- MUMFORD, W., J.R.S., DANIELS, and C.D. SMART, 1960: 'Revision of the site recording scheme', *NZAA Newsletter*, 3 (4), 32-5.
- NICHOLLS, M., 1965: 'Some probable pre-European agricultural evidence in Northland', *NZAA Newsletter*, 8 (4), 147-9.
- ORDNANCE SURVEY, 1963: *Field Archaeology*, London, H.M.S.O.
- PETERS, K.M., 1974: 'Agricultural gardens on Moturua Island in the Bay of Islands', *NZAA Newsletter*, 18 (4), 171-180.
- PRICKETT, N.J., and K.E., 1975: 'D'Urville Island archaeological survey 1973', *NZAA Newsletter*, 18 (3), 108-131.
- RAISTRICK, A., 1972: *Industrial Archaeology — An Historical Survey*, London, Eyre, Methuen.
- RIGG, T., and J.A. BRUCE, 1923: 'The Maori gravel soil of Waimea West, Nelson', *JPS*, 32, 85-93.
- RUPPE, R.J., 1966: 'The archeological survey: a 'defense'', *American Antiquity*, 31, 313-333.
- SCHIFFER, M.B., A.P. SULLIVAN and T.C. KLINGER, 1978: 'The design of archaeological surveys', *World Archaeology*, 10, 1-28.
- SHAWCROSS, F.W., 1968: 'The Ngaroto site', *NZAA Newsletter*, 11 (1), 2-19.
- SIMMONS, D., 1965: 'Preliminary report on an associated group of dendroglyphs in the Chatham Islands', *NZAA Newsletter*, 8 (2), 39-42.
- SKINNER, H.D., 1912: 'Ancient Maori canals, Marlborough, N.Z.', *JPS*, 21, 105-108.
- SMART, C.D., 1966: 'The ditch-and-bank fence', *NZAA Newsletter*, 9 (1), 19-28.
- STEVENSON, J.B., 1975: 'Survival and discovery', in Evans, J.G., S. Limbrey, and H. Cleere, (eds). *The effect of Man on the Landscape: the Highland Zone*, 104-107. The Council for British Archaeology Research Report No. 11.

- SULLIVAN, A., 1972: 'Stone walled complexes of central Auckland', *NZAA Newsletter*, 15 (4), 148-160.
- 1974: 'Scoria mounds at Wiri', *NZAA Newsletter*, 17 (3), 128-143.
- TROTTER, M., 1961: 'A 'quartzite' source site at Nenthorn, Central Otago', *NZAA Newsletter*, 4 (3), 29-32.
- 1972a: 'Investigation of a Maori cave burial on Mary Island, Lake Hauroko', *Rec. Cant. Mus.*, 9 (2), 113-128.
- 1972b: 'Pits At Seddons Ridge, Kaikoura', *NZAA Newsletter*, 15 (3), 94-99.
- 1976: 'Investigations at Otokitoki, Banks Peninsula', *NZAA Newsletter*, 19 (3), 119-123.
- 1977: 'Moa-hunter research since 1956', in Duff, R., *The Moa-hunter Period of Maori Culture*, Wellington, Government Printer.
- TROTTER, M., and B. McCULLOCH, 1971: *Prehistoric Rock Art of New Zealand*, Wellington, A.H. & A.W. Reed.
- WALLS, J.Y., 1974: 'Argillite quarries of the Nelson mineral belt', *NZAA Newsletter*, 17 (1), 37-43.
- WARD, G.K., 1973: 'A paradigm for sourcing New Zealand archaeological obsidians', *Journal of the Royal Society of New Zealand*, 4 (1), 47-62.
- WELLMAN, H.W., 1962: 'Holocene of the North Island of New Zealand: a coastal reconnaissance', *Transactions of the Royal Society of New Zealand*, 1 (5), 29-99.
- 1967: *Notes on Mapping and Structure*, Department of Geology, Victoria University of Wellington.
- WHEELER, Sir Mortimer, 1956: *Archaeology from the Earth*, Harmondsworth, Penguin.
- WILSON, O., 1961: *War in the Tussock*, Wellington, Government Printer.
- WOOD, G.A., 1973: *A Guide for Students of New Zealand History*, Dunedin, University of Otago Press.



1. Agricultural site; stone wall on the Otago Peninsula  
(N.J. Prickett).



2. An industrial site; copper smelter in the Aniseed Valley near Nelson  
(N.J. Prickett).



3. A transport and communication site; disused jetty on D'Urville Island, Marlborough Sounds (N.J. Prickett).



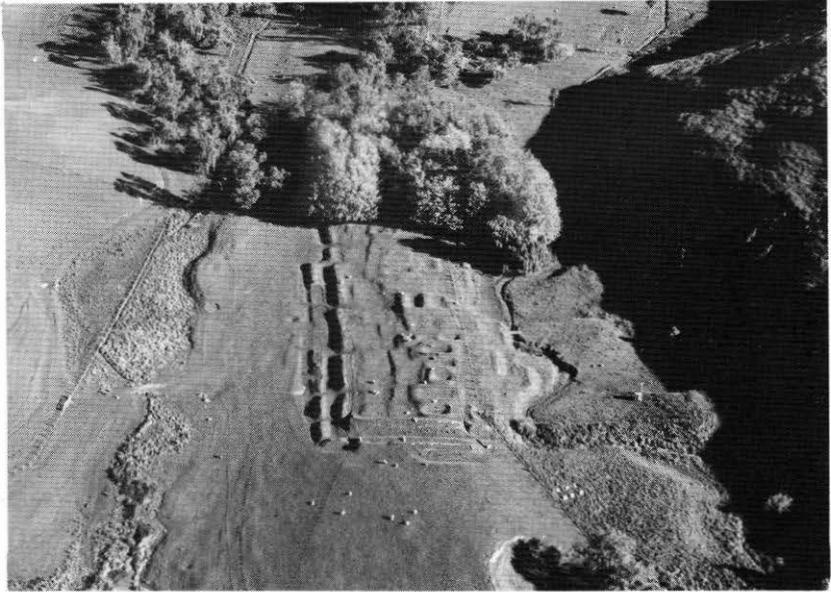
4. A military site; Waireka Redoubt, Taranaki (N.J. Prickett).



5. A recent archaeological site; a road in inland Taranaki built by unemployed labour in the 1930s (N.J. Prickett).



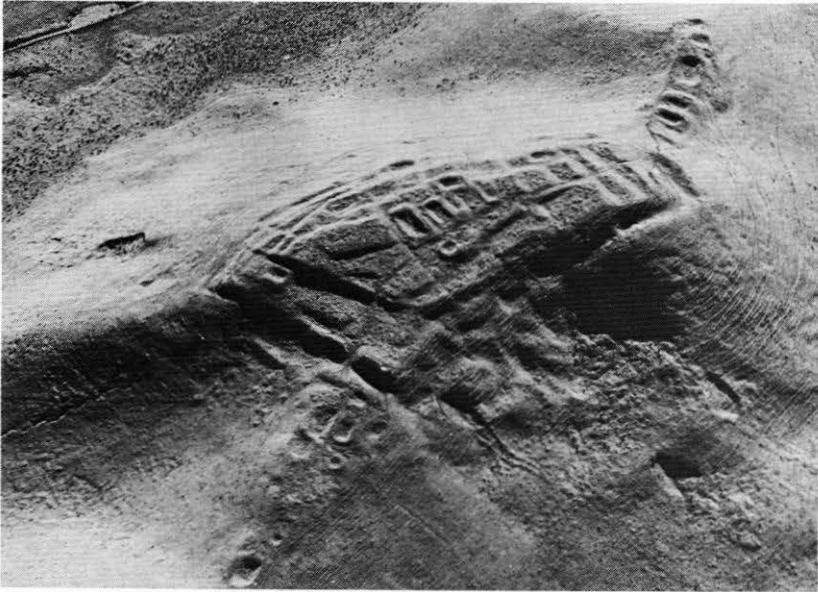
6. Blockhouse at Pahitere, Taranaki; the earthworks of the Pahitere Redoubt can be seen on the hill immediately behind (N.J. Prickett).



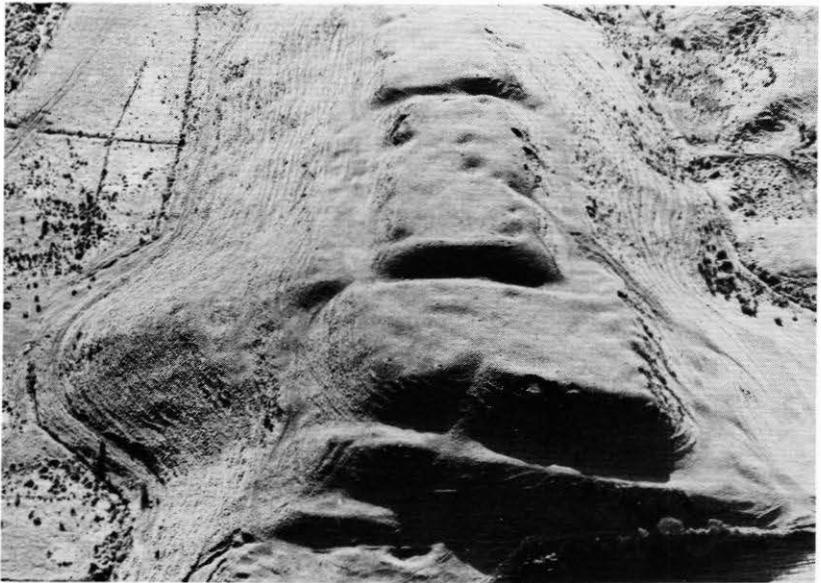
7. Flatland pa (gunfighters' type); Pakipaki, Hawkes Bay  
(N.Z. Aerial Mapping Ltd).



8. Ring-ditch pa; Taranaki (A.G. Buist).



9. Hill pa; Pakipaki, Hawkes Bay (N.Z. Aerial Mapping Ltd).



10. Ridge pa; Taranaki (A.G. Buist).



11. Headland pa; Taranaki (A.G. Buist).



12. Ditch and bank defence with scarp; Papamoa, Bay of Plenty  
(Anthropology Department, University of Auckland).



13. Pits, open type; Taranaki (A.G. Buist)



14. Pit, open type with raised rim; Paekakariki, Wellington (J.R.S. Daniels).



15. Pits, open type with raised rims; Paekakariki, Wellington (J.R.S. Daniels).



16. Terraces, volcanic cone; Ellett's Mountain, Auckland (Anthropology Department, University of Auckland).



17. Terraces; Papamoa, Bay of Plenty (Anthropology Department, University of Auckland).



18. Stone wall; Poor Knights Islands (Anthropology Department, University of Auckland).



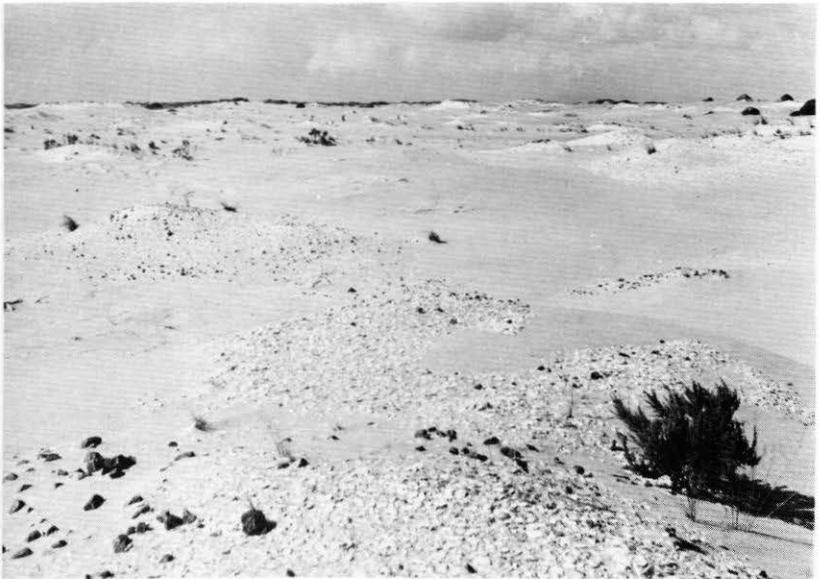
19. Stone row, remains of stone and earth wall; Long Lookout Point, Banks Peninsula (Canterbury Museum).



20. Upright stone formation; Tahanga Hill, Opito, Coromandel Peninsula (Anthropology Department, University of Auckland).



21. Eroding midden, note intact midden in the bank at the top; Mercury Island (Anthropology Department, University of Auckland).



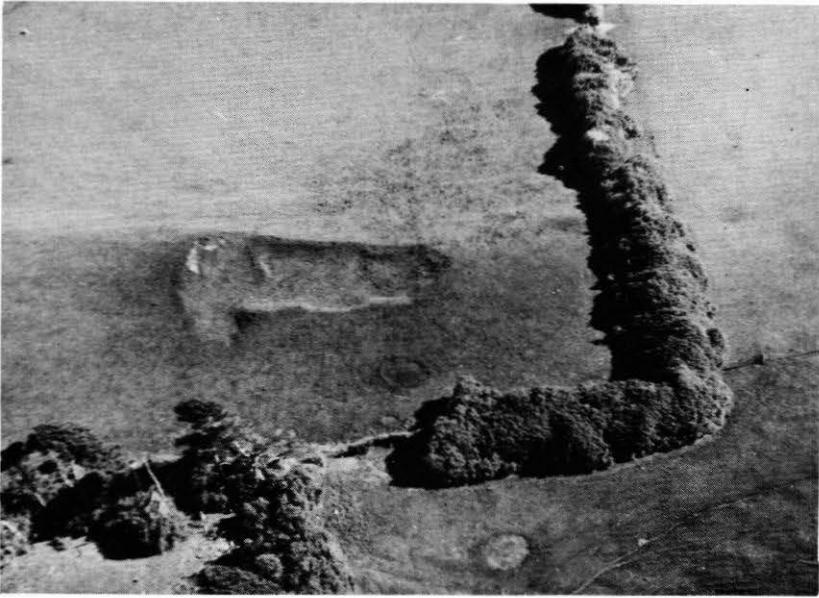
22. Eroding middens; Houhora, Northland (Anthropology Department, University of Auckland).



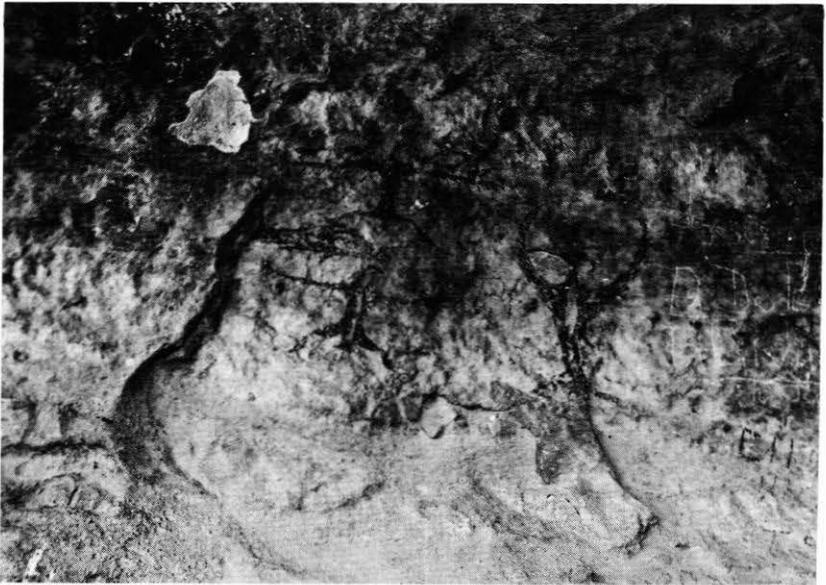
23. Stone hearth; Ragged Point, D'Urville Island (I.W. Keyes).



24. Stone-working area; Ragged Point, D'Urville Island (I.W. Keyes).



25. Source site, borrow pit in sand dune; Taranaki (A.G. Buist).



26. Rock drawing, figures drawn with charcoal on limestone (figure at right is 33 cm high); Frenchmans Gully, South Canterbury (M.M. Trotter and B. McCulloch).



27. Rock carving, incised curvilinear design in limestone (18 cm wide);  
Te Ana Raki, North Otago (M.M. Trotter and B. McCulloch).



28. Tree carving; Inland Patea (R.A.L. Batley).