



NEW ZEALAND
ARCHAEOLOGICAL
ASSOCIATION

ARCHAEOLOGY IN NEW ZEALAND



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NOTES AND NEWS

New Members

Rachael Egerton, Jackie Breen, Audrey Holmes, Joanne Price, Roi McCabe, Trevor Worthy, John Wilson, Katerina Beu, Graham Harris, Kimberley Parlane, Greg Walter and Christophe Sand.

NZAA Council Meeting

At the 11 August meeting of the of the New Zealand Archaeological Association Council, General Business included the following matters:

Upgrade Project

Selwyn District has agreed to participate in the project and fieldwork is starting in Kapiti Coast District. Kim Tatton will be assisting with project management during the period November 2001 – April 2002. Attempts to source more reliable funding continue.

Filekeeping issues

The draft of the next filekeepers newsletter was circulated. Will check with filekeepers if they are happy to have their contact address posted on the website. Kim Tatton ready to take over the job of Auckland filekeeper. Suggest that the Central Filekeeper forwards more enquiries on to regional filekeepers.

Directory of Archaeologists

The Directory is up and running. Some fine-tuning suggested: we need to ensure that any Directory printout from the website includes the NZAA letterhead and disclaimers. Need to check that the whole list prints in reply to an enquiry. Also include a "last updated" date.

Conference 2002

Three possible locations discussed: Russell, Havelock North, and Warkworth. Kath Prickett will co-ordinate the checking of possible venues and resources. Looking at the last week of May as a possible date. Timetable fieldtrips at either end and hold a half-day single-issue workshop and a half-day field trip in the middle.

Strategy to increase membership

Following the motion at the 2001 AGM, Council discussed possible strategies for increasing membership of NZAA. Resolved to have a copy of the membership form on the website and to ask regional museums if they would carry copies of our pamphlet. This item will remain on the Agenda.

Waiata

Pam Bain has volunteered to ask someone to compose a possible waiata for NZAA. Will follow this up and look at options in preparation for 2002 Conference.

CINZAS

Strongly disagree with the suggestion of posting CINZAS on the DoC website.

Royal Society Meeting

The President attended a special meeting of representatives of member bodies of the Royal Society, in Wellington in July. R.S. have offered to train a nominated individual as a media spokesperson. Have also asked for one or two contacts that could be consulted if an archaeological issue comes up. Another such conference is planned for next year.

The NZAA Site Recording Scheme Upgrade Project

Over the winter months there has not been a great deal of fieldwork happening for the Upgrade Project, but steady progress has still been made.

John Coster, Kim Tatton, Sally Burgess and Jan Worrall have all been involved in the completion of fieldwork in the Opotiki district. There are a few sites left to assess, but the bulk of work has been completed. Data is being processed and will begin to be returned to the district council and landowners within the next two months.

Ken Phillips and Mary O'Keeffe are continuing with the task of preparing for fieldwork in the Western Bay of Plenty and Tauranga districts. This fieldwork is scheduled to begin in about November, and is being preceded by a series of press releases and a staged programme of consultation with landowners due to the high number of properties involved in the resurvey project. This work is

being co-operatively undertaken with the Bay of Plenty Regional Council and the district councils.

In July Sally Maingay and Kim Tatton began a paper based review of the Northland file in preparation for the upgrade of the file. This is proving to be a substantial task as the file contains over 10,000 records. It is hoped that the results of this review will be available in September.

Gisborne District Council staff have been utilising the upgraded data returned over the last few months to implement variations to their proposed district plan. These include designated buffer zones for archaeological sites, the identification of archaeological areas, and the scheduling of sites recommended for inclusion in the plan. The upgraded data is being incorporated into the councils land information system, making accurate information about the location of archaeological sites more accessible to landowners and purchasers.

In the Canterbury region Selwyn District Council has confirmed its support for the upgrade project, so it is hoped that fieldwork in the Canterbury region will be able to be completed within the next few months.

Kapiti Coast District Council has recently become involved in the upgrade project. Susan Forbes will be undertaking fieldwork in the district on behalf of NZAA. It is hoped that work to upgrade the records for the district will be completed by December 2001, and that this will lead onto further work within the Wellington file district.

During June the project manager visited the West Coast and Nelson file districts to meet with the filekeepers. Options for the upgrade of these files are currently being considered, and it is likely that the upgrade project will move onto one of these files after the completion of work on the Canterbury file.

Finally, my usual plea. Remember that, if members are completing update work on a voluntary basis, we may be able to assist with costs such as petrol, photocopying and camera film. Please contact me if you want to know more.

Lynda Bowers,
Project Manager.
Telephone tollfree 0508 272 423

NZAA Annual General Meeting

The 2001 Annual General Meeting of the New Zealand Archaeological Association was held at the Akaroa Village Boat Club at Akaroa on Saturday 2 June. Approximately 40 members attended.

General Business included discussion of the following items:

Increase in subscriptions: The meeting agreed to an increase in subscription rates but amended the original motion so that the sums agreed were as follows:

Unwaged/student/OAP: \$40 or \$35 if paid by 31 March

Ordinary Member: \$55 or \$50 if paid by 31 March

Joint membership: \$60 or \$55 if paid by 31 March

Corporate membership: \$65 with no discount offered (i.e. your membership is paid by your employer)

NZ Institution: \$70

Overseas member: \$80

Overseas institution: NZ\$100.

Moved (Garry law/Ian Barber) that Council set a target membership of 500 by 2004 and set a plan to that effect.

Election of Council was as follows:

President	Kath Prickett
Vice-President	Rick McGovern-Wilson
Secretary	Moira White
Council	Ian Barber
	Lynda Bowers
	Sarah Ross
	Rod Clough

Election of a Treasurer: No nominations for this position had been received prior to the meeting. Karen Greig was nominated from the floor and accepted the nomination, which was duly confirmed

Mary O'Keefe had formulated three resolutions representing feedback from the workshops. These were presented to the AGM and passed. One concerned setting up a subgroup to consider the formation of a professional subgroup of the Association; one with the formation of a subgroup to consider present and future needs of the Site Recording Scheme and CINZAS; and the third was that Council continue to consider the future role and contribution to New Zealand of the Association.

The NZAA's award this year was for an outstanding contribution to public archaeology. The recipients were the Queen's Redoubt Trust who succeeded in raising \$310,000 after many difficult and lengthy negotiations towards the purchase for a reserve at Queen's Redoubt at Pokeno.

The prize for the best student paper was awarded to Emma Brooks of Otago University for her paper 'Selective Coastal Resource Use in Western Golden Bay'. The \$100 prize was donated by the Wellington Branch of the Royal Society. The standard of papers presented by the Otago students was very high. The NZAA Council congratulates students on the magnificent quality of their presentation.

A one-off special award was presented to Rick McGovern-Wilson for his work with the Historic Places Trust in raising the public awareness of the value of heritage.

President's Report

The culmination of effort poured in to submissions to the Resource Management Act Amendment Bill was an appearance before the Select Committee in Wellington, on behalf of the Association, by Ian Barber and Rick McGovern-Wilson. We learned in the past week, that the Select Committee report is out, and Council will be getting a copy to work further on issues of importance to us. The relevant sections of the report will be circulated to members, and we will keep you informed of further developments.

With fewer legislative distractions this year, Council has been putting effort into core activities. The Site Recording Scheme, under Project Manager Lynda Bowers' excellent direction, has gone from strength to strength. The success of the project in Gisborne and Eastern Bay of Plenty has generated a high level of expectation from other local authorities and a pleasing degree of support from iwi/hapu and Federated Farmers groups, which have already taken part. It has attracted substantial funding from the Bay of Plenty Regional Council.

I would like to thank Lynda for the monumental amount of work she has achieved for the project in the Gisborne District along with Pam Bain. And for the work completed in Canterbury, carried out by Chris Jacomb and Mary O'Keefe, and for the Bay Of Plenty efforts. It was with relief then, that we heard we had secured further funding from Lottery Environment and Heritage this year. Our thanks to Rick McGovern-Wilson, the Project Co-ordinator, and Lynda for the work put in to the application process. But while the grant covers

the project manager's salary, basic database costs and iwi participation, it leaves us short of money for operational costs which Lotteries does not fund.

Council has been corresponding with the heritage agency ministers in a bid to find extra funding support for the maintenance of the Association's Site Record Files. We are currently initiating a joint meeting with DoC and the Historic Places Trust to seek financial input from these institutions. Associate Minister for Arts, Culture and Heritage, Judith Tizard, has indicated a willingness to explore the possibility of reversing the policy of the Ministry for Research, Science and Technology not to fund databases.

A major issue for the Association is maintaining sufficient financial strength to continue our present activities. With falling membership reducing income, Council has had to examine ways of cutting costs. A resolution was passed by Council to consolidate banking and taxation arrangements, but this was met by strong opposition from the Journal team and the Sales Manager.

A publications subcommittee was formed to discuss ways of improving co-ordination and communication and of trimming production costs. In March a special meeting was held to try to resolve the issue of consolidation of the accounts. This was not achieved, but the Sales Manager and 'Archaeology in New Zealand' editor offered to take immediate steps to seek savings on production of AINZ.

We were delighted to be able to appoint Simon Holdaway and Dorothy Brown to succeed Nigel Prickett as Monograph Editors. It is satisfying to know that two monographs are firmly in the pipeline, that will not only maintain the Association's profile overseas, but will be financially beneficial to us.

The 'Best Practice' standing committee has been working on a directory of NZAA members available for contract archaeology. This will replace the list previously supplied by the Historic Places Trust. Council has assisted Tony Walton with comment on his 'Standards and Guidelines for Archaeological Evaluations' document.

Council members have also been active at a regional and local level. My thanks to Sue Bulmer for sustained efforts to convene our meetings on the Otuataua Stonefields. These resulted in the contribution of two submissions to the management plan process, and the practical presence of a number of Auckland archaeologists as guides on the grand opening day.

I have attended meetings for the Association at the Auckland Regional Council's Monitoring Forum and for the establishment of a regional Human Remains Policy, and at the Matukutureia Stonefields at the invitation of Winstones Quarries. Together with the Historic Places Trust, the Association was successful in helping Marlborough District Council decline an application to further subdivide at Moawhitu, D'Urville Island. This experience highlighted for me the need for the role that NZAA must play in reminding all players – the Trust, District Councils and Regional Councils - of the cumulative effect of development on archaeological sites. Tony Walton is currently acting as a coordinator for site threat issues, liaising between Council and individuals who are raising specific concerns.

In a move to create a more active role for our wider membership, the Auckland Branch of NZAA was established. There have been three meetings so far. Members are waiting in the wings to fly into action if needs be over the resource consent application by Winstones to quarry the Matukutureia Stonefields, and have submitted to the issue of Transit New Zealand wanting part of Mt Roskill for a new arterial road. It is hoped that more branches can be re-activated to provide the grass/flax roots in-put into site protection.

The membership recruitment and retention problem continues to be of concern. With the feedback from Tuesday's workshop on the Future Role of NZAA fresh on our minds, a questionnaire will be sent out to members shortly to seek ideas on this issue.

I would like to take this opportunity to thank the members of Council for the work they have put in during this busy and difficult year. To Moira White and Lynda Bowers for the enormous load they have carried, and for the support they have given in easing me in to my new role. It is with regret that we lose the services of Lynda as Treasurer. I would like to thank you for the years you have given to this position and to wish you all the best for the new demands of an addition to the family.

And to Ian Barber, Sue Bulmer, Rick McGovern-Wilson, Tony Walton and Sarah Ross, many thanks for all the jobs you have undertaken as Councillors. My thanks too, to those who give us something tangible for our money – to Joan Lawrence for her wonderful production of AINZ, to Louise Furey for so ably handling all the sales, and to Janet Davidson, Foss Leach and Karen Greig, who are to be congratulated for producing two Journals in one year.

Finally, I would like to acknowledge the work and support given to the Association by Garry Law this year. Garry has put a great deal of effort into the Association's web site, which has now been moved from Waikato University to Garry's server. There have been many compliments on how good it is, and it is one of our public interfaces that we can continue to develop.

Kath Prickett, President

Treasurer's Report- 2000 Financial Year

2000 was a very active financial year for the Association, the general account had some cash flow difficulties during the year, however, the Association ended the year with total accumulated funds of \$56,700.00. This is a decrease of \$4,800 from the 1999 financial year. The comments that follow should be read in conjunction with the annual accounts, which have been posted to all members.

As in the previous year the General Account had a high level of activity during 2000 due to the Site Recording Scheme Upgrade Project. The project has remained within budget, and it has not been necessary to subsidise the project from general Association funds. Cash flow throughout the financial year was an issue for the General Account, however, as the account supported the Upgrade Project, the regular production of *Archaeology in New Zealand*, and general expenditure. The printing of Volume 43(3) was funded by the Publication's Account as there were not sufficient funds available in the General Account, at the time of its production, to meet this cost.

The mainstay of the Association's income in the General Account is membership subscriptions. During 2000 this base income for the Association was \$14,629.00. The cost of production and mailing of *Archaeology in New Zealand* was \$13,611 (taking into account the \$2695 paid by the Publication's Account). Clearly this does not leave sufficient surplus income to run the general affairs of the Association, even when income from search fees is taken into account. The cost of production and mailing of *Archaeology in New Zealand* has steadily increased from \$8,460 in 1995. During this period the General Account has had some surplus funds available to support any shortfall of subscription income. This surplus, however, has been exhausted. A publications sub-committee was formed during 2000 in order to address matters relating to all publications, and in particular the production of *Archaeology in New Zealand*.

The 2000 conference was subsidised from general funds in an amount of \$500. Most other areas of expenditure in the General Account were consistent with 1999, although there was a significant increase in the amount of photocopying. A new item of expenditure has appeared representing the hire of a document storage facility in Rotorua. Travelling expenses increased slightly on the 1999 level, although this was partly due to a carry over of some of the costs of the last council meeting in December 1999.

The Publication Account had a strong sales year. As mentioned earlier, the Publications Account paid for the printing cost of one issue of *Archaeology in New Zealand*. The account ended the year with a surplus of \$2,000. The Journal Account had a good sales year, and produced two volumes of the *New Zealand Journal of Archaeology*. The surplus that had been accumulated to the end of 1999, was used to fund the purchase of computer equipment and software to assist the production of the Journal. These items appear in the Depreciation Schedule.

The annual accounts presented to members this year are unaudited, in accordance with the constitution change agreed at the last AGM. It was necessary to get the 1999 accounts audited for the most recent application to Lotteries Environment and Heritage, but this was done at minimal cost, by special arrangement with the Association's accountant.

This is my final annual report to the Association as Treasurer. Thanks to the all those people who have supported and assisted me in this role.

Lynda Bowers

***Archaeology in New Zealand*, Editor's Report**

Over the past few years there has been a steady rise in the cost of producing *Archaeology in New Zealand*. The price of paper has escalated steeply as have the other processes in producing and printing the newsletter. I had already saved money by having the covers for a complete year produced in one print-run. But this was not enough. There was a suggestion that if things became too tough the number of issues could be cut from four a year to three, an idea that was not favoured by council members. I decided to investigate ways to cut costs yet still turn out a quality journal on a quarterly basis.

With the help of Mark, the very cooperative printer at Albion Press, we managed to purchase paper ahead of time at a very good rate and use a new

electronic system of setting up the copy. This has meant a saving of approximately \$400 per run and an overall yearly saving of about \$1600. Hopefully this will go some way to keeping our core publication of NZAA viable.

To my regular contributors I am grateful as always. With a quarterly publication there are constant demands from these unsung heroes. Welcome to my new contributor, Cathy Barr, who is replacing Joan Maingay in Northland. Kath Prickett, Pam Bain, Owen Wilkes, Tony Walton, Michael Trotter and Beverley McCulloch, Ian Barber, Richard Walter, Lynda Bowers and Rick McGovern-Wilson all keep NZAA members well informed about activities in their particular areas and organisations. We still have some areas without good representation. I would love to have some contributions from Nelson/Marlborough and the Bay of Plenty. Are there any volunteers?

Joan Lawrence
Editor, *Archaeology in New Zealand*

Abstracts from Papers Presented at the NZAA Conference, Akaroa

Interfaces of archaeology

Te Kenehi Teira
Kaihautu Maori
Historic Places Trust Pouhere Taonga
The interface between archaeology and Maori values

In the NZ Historic Places Trust the work of Archaeologists and Maori Heritage Advisers intersects every day. Both teams of workers also regularly come into contact with Iwi entities and archaeologists who do outside contract work or other work requiring the Trusts involvement. All the above parties have differing professional, value and cultural dimensions that they bring to their work and to the interface with the other parties. It is by studying the differences, values and dimensions that the difficulties that the various parties have with understanding one another can be appreciated and hopefully overcome.

Peter Pearce
University of Auckland
Linking schools to Anthropology/Archaeology

This is a paper outlining the years program I am undertaking to try and increase the links between schools and anthropology/archaeology. I have been enabled to do this as part of a NZ Science, Mathematics and Technology Teaching Fellowship that I was awarded for the year 2001. My program has several facets to it but its main thrust is to try and improve or increase the inputs that anthropology makes to schools. It is hoped this will increase the knowledge and understanding of what anthropology does.

How have things changed since 1977?

How has the Teacher Fellowship helped?

What do teachers want from professionals?

How can the professionals best deliver the information?

How do we get more involvement at all levels of society in anthropology/archaeology?

Site management and interpretation

Tim Thomas

PhD Student

University of Otago

Data and Discipline in the Field: Archaeology, History, and Ethnography in Roviana Lagoon

This paper describes fieldwork carried out in Roviana Lagoon, Solomon Islands documenting the material culture of a contact era headhunting chiefdom. The research crosscuts standard anthropological subdivisions of History and Prehistory, Oral Tradition and Archaeology, and entails a critique of such disciplinary/data boundaries. Different forms of data inform different narratives of the past, and juxtaposing these allows a critical approach that might ultimately result in richer and more aware versions of the past.

Bridget Mosley

PhD student, Macquarie University

Culture and nature in heritage management and archaeology

Culture and nature are frequently presented as dichotomies in heritage planning documents. Both are areas of perceived social value which, especially in urban areas, are threatened by economic uses of land and should therefore be managed with a view to preserving those values. Areas of 'natural' heritage are often those which have apparently remained untouched by people; a common assumption appears to be that, by default, cultural areas can be defined as where actions of people in the past can be seen in the landscape; a similar description

is often applied to archaeological sites. In this paper I'm going to look at how the overlap between culture/nature affects the general perception of heritage value.

Tony Walton

Dept of Conservation

Predictive models of archaeological site distributions

DoC recently contracted Landcare to undertake a pilot study of archaeological site distributions. Using CINZAS data on pa and pit sites, the study identified key environmental variables underlying the distribution at a broad geographical level. The result is a model that predicts and maps the probability of occurrence of these sites across New Zealand. Highest probability is associated with high insolation, warm, summer-dry locations, mostly in northern and eastern NZ, and with certain rock types, the coast, and water bodies.

Russell Gibb & Hans-Dieter Bader

Auckland

Surveying in dense bush - the example of Te Maketu

Te Maketu is a pa site with an adjoining early European cemetery located at Ramarama, South Auckland. It is part of a cluster of three pa guarding one of the main access routes to the Waikato from the Auckland isthmus. Late last year Geometria surveyed the pa site and the adjacent cemetery with a laser theodolite for the Auckland Regional Council. The survey proved to be successful, especially in the dense bush encountered on the main section of the pa. Other survey methods would have encountered major problems in doing so, particularly given the desired survey resolution and time constraints imposed on the survey.

The resulting data fits seamlessly into a landscape recorded at a greater resolution, offering insights into the relationship between the pa and the surrounding hinterland. Associating the survey information with oral traditions and historical information, it seems possible to follow the general history of the site and separate two distinct phases of the pa's history by interpreting the archaeological elements recognised during the survey.

Future additional surveys, such as geophysical investigations, will be used to further explore some aspects of the site. The survey datasets make accurate 3D modeling of the site possible and are beneficial for any future public presentation of the history of Te Maketu.

Karen Greig

Regional Archaeologist

Historic Places Trust, Pouhere Taonga

Interpretation of archaeological sites in Japan

In Japan more than 10,000 "new" archaeological sites are discovered each year. The vast majority of these are investigated, documented and then destroyed by development projects. Sites that are recognised as having special importance can however be designated and purchased by the municipal or central government. Sites that are preserved in this way must be utilised for the public good. This utilisation is centred around preservation of the archaeological remains and public interpretation. Methods of interpretation include constructing replicas of the archaeological remains, representing the site on the ground with markers or landscape design, or building replicas of the original structures. This paper considers the value of this interpretive approach through case studies of the Heijo Palace Site and the Yoshinogari Site.

Kevin Jones

Archaeologist

Department of Conservation

Practical site conservation methods

Earthwork fortifications are a common form of surface-visible site in New Zealand and their continued existence with a minimum of deterioration is a key objective of historic heritage management. Both surface erosion by farm animals and planting in pine forests cause significant problems in site erosion. Sub-surface sites also need specific management attention. Both classes of site will exist in one of five broad classes of ecological setting: native grassland, exotic (pasture) grassland, native shrubland, indigenous forest, exotic (plantation) forest. Techniques recommended include encouragement of native grass covers, site-adapted mowing regimes, stock management, fencing patterns and methods, manipulation of native forest succession, native ground cover establishment, tree felling and removal practices; artificial covers such as geosynthetic cloths and deliberate site burial. The management of archaeological sites requires close consideration of plant ecology (as forms of stabilising cover), and could accommodate a greater degree of protection or enhancement of threatened plant species, culturally valuable species and fauna. Wider cultural or historic landscape design needs to be considered particularly for reserves of large area. All land managers will need to consider a broad range of values - cultural, policy, local community relations, resource management and logistical matters. Any conflict in values will need to be resolved by good conservation planning.

Kevin Jones

Archaeologist

Department of Conservation

Impressions of site interpretation and museums at Lyon and its environs, France

A wide range of sites from Neolithic flint scatters through Roman amphitheatres to Mediaeval town plans and building fabric are interpreted with a very high standard of conceptual and graphic design. Central Lyon is a World Heritage Site and incorporates a wide range of Roman through to 18th century architecture. There are two outstanding recently built museums devoted to the Gallo Roman period in central Lyon and at Vienne. Lyon was also the centre of much French missionary endeavour in the Pacific and the home parishes of some prominent figures such as Mother Aubert are discussed. School classes on site visits are a constant presence during the day on French heritage sites.

Ian Barber

University of Otago

Archaeology and development at Motutangi swamp, Northland

Motutangi Swamp incorporates a rare northern New Zealand complex of extensive Maori archaeological ditch systems. There is evidence that these systems once carried water for the management and cultivation of Motutangi wetlands. Remnant early European canals constructed for pastoral drainage and water supply purposes are also preserved. The archaeological effects of a recent citrus development and the interim results of an associated investigation at the northwestern margins of Motutangi Swamp are considered. This case study has important implications for the identification and preservation of other extensive rural archaeological landscapes in New Zealand.

Mary O'Keeffe

Consultant archaeologist

Wellington

The shipwreck in the lake: maritime archaeology in Lake Waikaremoana

Two boats were sunk in Lake Waikaremoana in 1869, as part of the Urewera campaign of the New Zealand Wars. Divers in 1969 rediscovered the boat resulting in one being raised and the remaining boat being severely "fossicked". In 2001 divers assessed the remaining boat to prepare a condition report and maintenance plan for Dept. of Conservation and Tuhoe. Management and maintenance of the historic boat in such an environment presents some interesting and challenging practical and philosophical questions.

People: Living and Eating

Nancy Beavan-Athfield and Rodger Sparks

Rafter Radiocarbon Laboratory, Institute of Geological and Nuclear Sciences
Lower Hutt

*Radiocarbon anomalies in *Rattus exulans* bone: consideration of site effects at Pleasant River, Otago*

Radiocarbon ages of *R. exulans* bone recovered from Pleasant River, Otago, archaeological site were originally rejected on the basis of ^{14}C variability allegedly caused by laboratory processing. While burial effects can cause radiocarbon anomalies in bone, our analysis of soil and humic acid extractions from the Pleasant River site revealed no burial contaminant that could have affected the results on bone protein as processed. In an investigation of other bone from the site, diet was shown to have altered radiocarbon ages in certain bird species by an average 213 yrs, while maintaining typically terrestrial $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values. The dietary effect that offsets marshland waterfowl ^{14}C ages at Pleasant River suggested there was a similar, diet-based vector for some "anomalous" radiocarbon ages for *R. exulans* at the site, rather than a laboratory contamination or processing effect.

Fiona Petchey

Radiocarbon Dating Laboratory
University of Waikato

The Influence of Diet and Degradation on Human Bone Radiocarbon Determinations from New Zealand

In archaeological dating the greatest confidence is usually placed on radiocarbon results of material that can be related directly to a defined archaeological event. Human remains often fulfil this requirement, and in the period between 1966 and 1979, twenty human bone collagen determinations from New Zealand archaeological sites were measured at the Rafter Radiocarbon Dating Laboratory, Wellington. Unfortunately, the dating of human bone met with little success because results were often inconsistent with the stratigraphic and cultural evidence (Rafter 1978:138). It is now known that ^{14}C from a range of different reservoirs may be incorporated into human collagen via diet and significantly affect the radiocarbon age (Lanting and van der Plicht 1998). In this paper, the influence of diet and collagen degradation on human bone radiocarbon determinations from archaeological sites in New Zealand is addressed. This is part of continuing research into radiocarbon determinations of human bone from archaeological sites in the Pacific.

- Lanting, J.N., & J. Van der Plicht, 1998. Reservoir effects and apparent 14C-ages. *The Journal of Irish Archaeology*, IX:151-165.
- Rafter, T. A., 1978. *Report on the Work of the Institute of Nuclear Sciences, Vol 28*. Department of Scientific and Industrial Research, Lower Hutt, New Zealand, Jan-Dec 1977.

Janet Davidson

Curator of Pacific Collections

Museum of New Zealand Te Papa Tongarewa

New perspectives on pre-European Maori shellfish gathering

One of the objectives of the Bridge and Barrier research programme is to improve understanding of pre-European Maori shellfish gathering and its role in the subsistence economy of the Cook Strait region. Large quantities of shell midden recovered during recent rescue investigations at several coastal sites north of Wellington required the development of a consistent and stream-lined processing methodology in order to contribute to this objective. The results of these analyses throw new light on this aspect of Maori subsistence activity. In addition, the research has provided valuable information on local environmental history.

Joanna Wylie

BA (Hons) student

University of Otago

Tutu - Poison Versus Pleasure: 18th and 19th Century Historical Accounts

The toxic properties of tutu are well known due to modern incidences of stock poisoning in New Zealand, yet in prehistoric and historic times, the juice of tutu berries was actually drunk by both Maori and Europeans. This paper will compare historical accounts of tutu poisoning with those describing the consumption of tutu juice, drawing on information from newspapers, medical journals and the diaries of early travellers within New Zealand. By drawing such a comparison, I hope to provide a background for the ultimate paradox concerning tutu consumption in prehistoric New Zealand. That is, given the toxicity of the tutu berry, why did both Maori and Europeans bother to prepare the juice?

Helen Leach

University of Otago

Food on the Move - Mobility and Diet in Pre-European Aotearoa

From 1769 until European settlement began to enclose the New Zealand landscape, much evidence of Maori mobility was recorded. Warfare and commerce were important but not the only causal factors. The practice of dispersed cultivation was widespread even in regions where conditions might have supported permanent settlement and intensive horticulture. How were groups on the move provisioned? Potatoes were stored close to isolated gardens in the 19th century and this may have been the case for kumara in prehistory. But vegetables with high water content were less easily transported and stored than bracken fernroot which when dried lasted a year or more. It will be argued that dried fernroot was the key not just to survival of groups under stress, but was vital to the successful utilization of many widely scattered resources, providing the core energy component for groups on the move, to be supplemented with fish, fowl or shellfish.

Mike Burtenshaw

Natural Resources Centre

The Open Polytechnic of New Zealand

Pre-European kumara production and "the hungry gap": An interpretation of some results from experimental kumara gardens

This presentation presents some further results from and interpretation of the results from the ongoing experimental kumara gardens. Some results from experimental kumara gardens in the Cook Strait region associated with the Bridge and Barrier Project support the view kumara was a seasonal food item. A situation analogous to what has been reported with peasant agriculturists in the Middle Ages occurs where after the new seasons crop has been planted there comes the "hungry gap" and other sources of carbohydrate are required.

Carla Purdue

MA Student

University of Otago

Braving the elements: Critical climatic periods and some physical manifestations of cold injury possibly sustained as a result of prehistoric life in Murihiku

The marked regional variation in climate throughout New Zealand is clearly evidenced. From the cold alpine regions of both the central North and South Islands to the humid, warm temperatures of the top of the North Island, it is clear that the initial Polynesian settlers to Aotearoa/New Zealand would have had a selection of environments in which to settle. The southern coast of the South Island is regularly exposed to strong, cold south/south westerly winds and cool weather systems originating in the Antarctic. Rainfall is frequent, and the

waters of Foveaux Strait are cold and rough. This paper will discuss the climatic parameters for critical periods where compounding factors would have made life in Murihiku demanding, dangerous and uncomfortable for prehistoric Maori. The physical manifestations of cold exposure will be assessed, including several forms of cold injury, respiratory and ocular complaints that affected southern Maori. The possibility of New Zealand 'Leprosy' actually being a severe form of cold injury will also be considered. The extent to which these conditions affect the quality of life will be assessed in an appraisal of how effective their clothing would have been in protecting their bodies from the elements

Contact Archaeology

Angela Middleton

PhD student

Auckland University

Heaven and Hell: Maori, missionary and whaler landscapes in early NZ

In early nineteenth century New Zealand, the arrival of missionaries and whalers initiated two different kinds of European relationships with indigenous Maori, both impacting on the indigenous landscape. Through the archaeology of an abandoned historical landscape, my work examines the details of indigenous and European interaction in the Bay of Islands, northern New Zealand, and the way these cultures intersected. Within this landscape there is evidence of agricultural intensification, fortification, and early missionary villages, all of which were deserted by the mid-nineteenth century. In this landscape, Maori actively appropriated European materials and ideas to their own means and ends, incorporating these into a traditional Maori culture and developing trading responses to the expanding globalisation and world system of the early nineteenth century. My methods combine historical archaeology and an anthropological approach to history to re-examine the landscape, inhabitants, and events of early nineteenth century cultural interaction, and the changes in the balance of power between Maori, missionaries, whalers and traders, during this time.

Ian Smith

University of Otago

European Sealing in New Zealand: an Overview

A major study of the commercial sealing industry in New Zealand has recently been completed, and this paper summarises its findings. The history of the industry from 1791 to 1946 is outlined, modes of activity are reconstructed and

areas of activity identified. Specific historic places that can be associated confidently with the industry are described.

Nigel Prickett
Archaeologist
Auckland Museum

The economics of shore whaling

In the 1830s and early 1840s shore whaling was New Zealand's largest employer and export industry. The market for oil and whalebone depended on industrial economies in the northern hemisphere, particularly the United Kingdom. Shore stations were much cheaper to outfit and run than whaling vessels – so long as whales were available on the coast. The collapse of the Greenland fishery helped make the southern industry highly profitable, offset by periodic failures of the London market. By the mid-1840s right whales were largely exterminated on the New Zealand coast. Work on the archaeology of shore whaling was paid for by a Department of Conservation grant. A total of 87 stations are confirmed by archaeological and/or historical data, 49 of which have site records, while at least 19 are destroyed. There are also 20 unconfirmed stations. Excavation is needed for the description of whaling sites and their material culture, to help identify surface evidence, and to improve knowledge of an important aspect of contact period history.

Current Fieldwork

Brooke Tucker & Helena Christie
MA students
University of Otago

Watson's Beach: Some comments on coastal management in reference to the Otago Archaic.

Coastal Otago contains many archaeological sites from the Archaic period, most of which are threatened by some form of erosion. We discuss the archaeological context and resource management implications of one such site at Watson's Beach, 10kms south of Taieri River Mouth. This coastal site complex has been brought to the attention of the Anthropology Department at Otago University by local members of Ngai Tahu. The site is threatened by stock grazing, tidal scouring and burrowing animals. Bands of cultural material are exposed along the length of the beach, with several discrete areas of sealed deposit. Staff and students from the department have mapped the site and have monitored site degradation over the past twelve months.

Over the last decade local iwi have salvaged artefacts exposed by erosion. This collection suggests that Watson's Beach may be an Archaic site and the broader regional context of Archaic archaeology is discussed. We also present the developed map. Surveying techniques are examined and advantages and limitations of mapping processes are evaluated. The map is also discussed as a resource management tool and an introduction to further archaeological investigation.

Emma Brooks

MA Student

University of Otago

Selective Coastal Resource Use in Western Golden Bay

Recent excavations of four sites at Triangle Flat, western Golden Bay, have revealed patterns of selective coastal resource use by precontact Maori in the area. These findings illustrate targeting of both estuarine and open beach shellfish species in addition to rocky shore species. The fish remains also provide interesting information about selectivity. The absence of snapper remains is consistent with findings in sites of a similar age (16th - 17th centuries) in eastern Golden Bay. Whether this reflects fish population structure or selective human predation is still unclear. The dominance of barracouta and red cod, however, is consistent with the selection of these fish species in other parts of the South Island.

Mat Campbell

University of Auckland

Ritual and Society in late pre-contact Rarotonga

The Rarotongan settlement pattern is based on habitation of the island's coastal plain and valley floors. The land tenure system was one where each corporate group, or *matakeinanga*, led by a ramage head, the *mata'iapo*, lived in a *tapere*, each *tapere* based on one of the radiating valleys, and including a section of the coastal plain, lagoon and reef. Settlement can be described in terms of economy, environment and resource distributions, but in order to describe settlement with respect to ritual or political factors the settlement approach must be extended to incorporate the idea of landscape. This paper examines landscapes of cognition and ritual, focusing on the Ara Metua, a paved road that encircled the entire island, and as such was unique in Polynesia. It focuses the road and on *marae*, using a GIS to analyse their role in society.

Stuart Bedford

Regional archaeologist

Historic Places Trust Pouhere Taonga

Lapita at Mangaasi...the plot thickens

This paper outlines recent archaeological research that has been carried out on the west coast of Efate in Vanuatu. Excavations began in 1996 as a combined research and training program for staff of the Vanuatu Cultural Centre. The initial focus was the site of Mangaasi first excavated by Jose Garanger in the 1960s. The results led to a major reassessment of his earlier conclusions. In 1999 excavation commenced at the site of Arapus an area which is located immediately southwest of the Mangaasi site. This new site has revealed extensive midden remains which includes an earlier ceramic phase not previously identified at Mangaasi. These earlier plainware ceramic remains are also associated with extinct faunal remains and concentrated deposits of very large shellfish. To date dentate stamping at the site remains elusive but it is argued that these plainware ceramics represent the domestic component of a Lapita assemblage.

Katharine Watson

Consultant archaeologist

Christchurch

Bickerton's Basement: Excavations at the University of Canterbury's First Science Building

The University of Canterbury's first science building was a corrugated iron structure, which quickly earned it the nickname "Old Tin Shed". It was designed by B. W. Mounfort, built in 1876-6 and knocked down in 1916. It was in this building that Ernest Rutherford received his earliest lectures in science. Excavations were undertaken here in 1999 and 2000, following the discovery of plans of the building and the use of ground-penetrating radar. The focus of the 2000 excavations was locating the basement of the building, where Professor Bickerton had stored chemicals. This paper presents the results of these excavations.

Warren Gumbley

Consultant archaeologist

Hamilton

Alexandra East Redoubt

The Alexandra East Redoubt was constructed in August 1864 and was one of a pair sited on either bank of the Waipa River at its navigable limit. They were both large, each requiring 300 men to defend. The Alexandra East Redoubt was

also accompanied by a range of external structures, a hospital, commissariat store, stable and served as the headquarters for the 3rd Waikato Militia, a unit 2000 strong. Alexandra was to be the strongest point on the line of border forts to stretch from coast to coast (a 19th century Hadrian's Wall). Following the rundown and eventual disbanding of the militia's the site became the base for Von Tempsky's unit of Armed Constabulary. Eventually the redoubt was entirely abandoned in favour of a smaller one site 400 metres to the south, but the camp area continued to be used until the 1880s when the Armed constabulary were themselves disbanded.

The excavation of the redoubt and camp were carried out between October 1997 and February 1998 in response to the Waipa District Council's development of the site as a residential subdivision. During the investigation the entire area of the redoubt was excavated and a little less than half of the camp was also excavated. Altogether approximately 5000 square metres were investigated.

Peter Petchey
Consultant archaeologist
Dunedin

Fear and loathing in Queenstown

Queenstown and the Wakatipu Basin have been in the public eye lately, with the very open debate between Sam Neil (and the environmental lobby) and Warren Cooper (and the developers) receiving a great deal of media attention. In the midst of all of this, the last two years have seen some of the largest urban archaeological excavations to have happened to date in the South Island. This paper (briefly) presents a few of the planning and environmental issues involved, together with a review of some of the archaeological excavations and what was found.

Caution: Contains graphic archaeological evidence of SEX and DEBAUCHERY

SIZE OF CENTRAL FILE as of 31 March 2001

On 31 March 2001 the Central File held a total of 54,044 records. This is an increase of 913 on last year's figure of 53,131. This represents an increase of about 1.7%.

Regional totals are as follows:

Region	2000	2001	Change
Northland	9761	10099	+ 338
Auckland	8579	8711	+ 132
Coromandel	4035	4093	+ 58
Waikato	3255	3264	+ 9
Bay of Plenty	7824	7932	+ 108
Taupo	455	455	
East Coast	2710	2788	+ 78
Taranaki	1535	1537	+ 2
Inland Patea	294	296	+ 2
Hawkes Bay	1885	1901	+ 16
Wanganui	846	869	+ 23
Wellington	1018	1035	+ 17
Nelson	1536	1536	
Marlborough	526	526	
Canterbury	1242	1334	+ 92
West Coast	853	855	+ 2
Otago	2458	2475	+ 17
Central Otago	2033	2048	+ 15
Southland	1454	1459	+ 5
Outlying Islands	832	831	- 1
	53131	54044	+ 913
Summary			
North Island Files	42197	42980	+ 783
South Island Files	10102	10233	+ 131
Outlying Islands	832	831	- 1
	53131	54044	+ 913

A. Walton
Central Filekeeper
31 March 2001