



NEW ZEALAND
ARCHAEOLOGICAL
ASSOCIATION

ARCHAEOLOGY IN NEW ZEALAND



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NOTES AND NEWS

New members

Robert Warrington, Nick Keenleyside and David Horry.

Donations

Thank you to Tiffany James Lee, Peter Sheppard, Ian Hill, Jessie Hurford, Matt Sole and Janet Leatherby, who made donations.

Thank you to Wal Ambrose and Peter Sheppard who made donations to the 2014 NZAA conference, and CFG Heritage who made a donation to the Tony Walton Fund.

Facebook

Make sure to visit the NZAA's Facebook page and 'like us' to stay in touch about NZAA's activities and news. We would love to hear from you: www.facebook.com/NewZealandArchaeologicalAssociation

Professional Development Cell

On 24 June 2014, PDC ran its 21st workshop on Emergency Recording in Christchurch. Since 2006, workshops have been run on 14 different topics (see previous entries in Notes and News), in seven different locations – mainly in Auckland, but also in Hamilton, Havelock North, Cambridge, Wellington, Dunedin, Oamaru and now Christchurch.

The Emergency Recording workshop speakers discussed: how to do off-site surveying, recording buildings quickly, recovering the history of the place in a hurry (what is good to focus on), and useful samples and analysis. A key finding was the need to do inventories of local buildings with basic information (location, exterior photos, contact details of owner, building materials, age of building, structural modification or alteration, etcetera) before disaster strikes.

Frank van der Heijden, Canterbury Archaeological Officer from Heritage New Zealand, talked about the emergency provisions of the new *Heritage New Zealand Pouhere Taonga Act* which are based on the provisions from the Order in Council passed after February 2011. He also talked about what processes and systems were put in place under the urgent circumstances in Christchurch and provided suggestions for improvements and what can be done to be better prepared.

Wesley Maguire, Heritage Survey Consultants, provided the building recording element, including guidance for photography (so it can be used for photogrammetry at a later date) if there is no safe access to a structure, laser scanning or use of reflectorless total stations to produce elevations/plans without having to get close to the building, and recording when there is no survey technology available.

Carole-Lynne Kerrigan, built heritage specialist with Opus, talked about recording during, and as a result of, the quakes, including ‘on the ground’ statutory compliance (mandatory and failings), best practice and outcomes.

Andy Dodd, archaeologist with Subsurface Ltd/Underground Overground Archaeology Ltd, spoke about the below ground issues relating to the emergency provisions and illustrated this with a description of four excavations.

Although the speakers were describing their experiences in Christchurch they broadened the topic to address emergencies that might occur in other places and how as archaeologists and other heritage professionals we should all be prepared for the unexpected, in any case where access and time are restricted. The workshop concluded with an open forum in which the audience contributed to a lively discussion with their ideas and experiences. This discussion will be the subject of a future article for *Archaeology in New Zealand*.

The next workshop on Tikanga Māori will be held on 5 September 2014, at Te Papa Tongarewa, Wellington, with Anthony Tipene and Makere Rika-Heke of the Māori Heritage Unit, Heritage New Zealand. The workshop will discuss tikanga and its importance and the roles of the archaeologist and the iwi monitor. The speakers will also discuss tikanga in relation to being on archaeological sites, during excavation, when dealing with the discovery and handling of finds and kōiwi, and what occurs afterwards. Participants will be invited to discuss their experiences and raise issues based on their observations.

After this, another PDC questionnaire will be circulated, asking those on the distribution list what topics they wish to hear about.

PDC cell, workshop and list: if you feel you have something to contribute towards assisting the professionalism of our archaeological community, would like to share your area of expertise with others or organise a workshop, and/or would like to be part of this cell, please contact either Caroline Phillips phillips@orcon.net.nz or Ben Thorne ben@archaeology.co.nz. The current cell comprises: Caroline Phillips, Mary O’Keeffe and Amanda Young, with Ben Thorne as Administrative Support.

Finally – PDC Chair – Caroline Phillips, wishes to put out an invitation for anyone who might like to take on her role.

Professional Development Cell

Treasurer's Report 2013-2014

I am pleased to be able to report to members that NZAA continues to strengthen its financial position, which bodes well going forward. The following comments are to be read in conjunction with the financial statements which were pre-circulated to members.

STATEMENT OF FINANCIAL POSITION

The Accounts Payable of \$11,536 (2012 \$2355) are invoices received in December which were unpaid at the end of the year. The Department of Internal Affairs (DIA) income was a grant drawn down in 2011 for the completion of the Digital Site Recording Scheme (DSRS) audit, which was initiated in 2013, and will be offset against expenditure into 2014. The Accounts Receivable (\$8,138; 2012 \$14,779) reflect unpaid ArchSite subscriptions which were paid in January. The large increase in Property, Plant and Equipment (\$52,245; 2012 1,078) reflects the capitalisation of the first payment of the ArchSite upgrade. There will be two further payments due in 2014 to complete this project.

STATEMENT OF FINANCIAL PERFORMANCE

The General Account continues to reflect the good health of the organisation. Memberships remain steady and conference income was up as a result of an increased attendance at last year's event, along with strong sponsorship support. Expenditure was down due to not having incurred costs on the Strategic Plan, and because there were less travel requirements for Council meetings.

The Publications Account made a loss of (\$5,455) (2012; Profit \$3,837) which, on analysis, is due to the Debtors at 31 December 2012 mistakenly including \$5,011 of income that belonged in the 2013 year, thus overstating income in 2012 and understating the 2013 income. This error has self-corrected over the two years. In addition, sales of the new monograph have been slow in 2013.

The ongoing audit of the Digital Site Recording Scheme is being brought to account, and expenditure on this project will be offset against the DIA funding advance.

ArchSite is being run as a stand-alone business, with increasing levels of subscriptions funding the current upgrade project. The hosting fee includes both the ArchSite website and the monthly service agreement and hosting with Eagle Technology which, since November 2013, now also includes a cloud hosting fee. This will run in tandem with the current hosting regime until the

new site goes live, at which point the current hosting will be discarded. In the meantime, therefore, there will be two sets of hosting fees.

Overall statement: NZAA continues to be in good financial health. This has allowed us to continue to hold membership and conference fees at their same levels for another year, and will enable Council to address initiatives through the Strategic Plan.

Rick McGovern-Wilson, Treasurer

Webmaster’s Report 2013

There have been no material changes to the nzarchaeology.org site in the past year. The site sustains a Google page rank of six.

The utility of the content management system (CMS) to allow multiple managers is now being realised.

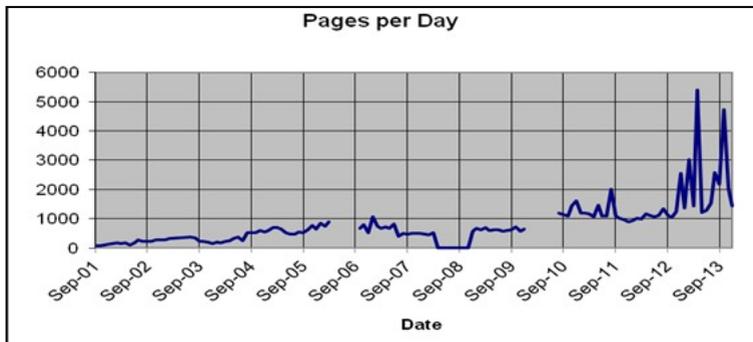
Statistics

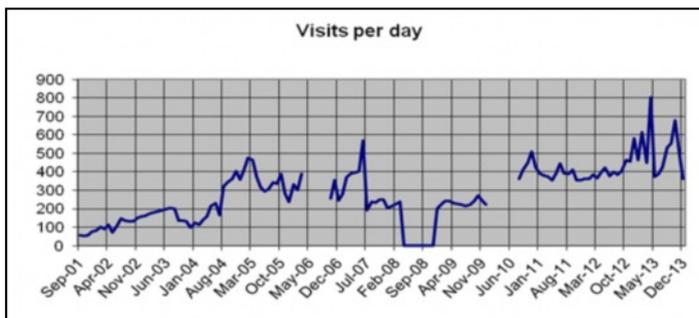
The visitor totals for the year and past years are shown below. We do not have complete records for 2006 due to a change of internet service provider (ISP), or for 2010 due to the former ISP becoming insolvent and suddenly ceasing service.

	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Hits	1,641,531	1,167,520	1,277,738	1,158,000*	1,115,552	997,274	1,012,299	-	1,085,022	720,020
Pages	854,233	450,647	428,851	334,000*	231,393	205,966	210,580	-	221,341	135,436
Visits	186,779	152,748	138,757	115,000*	85,683	96,760	105,510	-	129,298	88,996

* Estimated using 2009 figures for the missing months.

The growth in visits, pages and hits has accelerated this year.





Top Ten Entry Pages

The homepage is the most common entry page followed by the email listing page. Other pages rich in information follow.

	Hits	Visits	
1	11261	3314	Home page managed version
2	6	1716	Home page bare
3	141	123	Email listing
4	172	119	Career advice
5	95	82	Employment
6	112	72	Aerial photographs
7	125	63	New Zealand Journal of Archaeology (Contents of former -)
8	90	60	Sites to visit Waikato / Bay of Plenty
9	81	54	Sites to visit Northland
10	94	50	Archaeology in New Zealand

(December 2013)

Referrers / Top Ten Searches

Our most frequent referrer is Blogspot – where the eNews items are hosted - Google is next. The top key words which get referred to us (excluding ‘new’, ‘zealand’ and ‘archaeology’) are:

1	archaeological	7	first	13	historical
2	association	8	settlers	14	culture
3	nzaa	9	society	15	journal
4	maori	10	history	16	cultural
5	jobs	11	email	17	archaeologists
6	sites	12	early		

eNews

There are 574 subscribers to the email newsletter which appeared 57 times this year. Subscriptions to the eNews are stable.

Flipboard NZ Archaeology Magazine

flipboard.com/section/nz-archaeology-magazine-bynb21

This is a new venture commenced during the year. It is a more graphic version of the eNews but is not emailed. Page flips at year end were 3,400. Its page rank is a modest two.

Archaeopedia

Archaeopedia.com is a related site with many links back to the NZAA site and largely complements it. Its 2013 page views were 683,000, up from the previous year. Its page rank is now four.

	2013	2012	2011
Page Views	683,000	586,000	384,000

Thanks

To Simon Bickler who has been a great resource for the sites in the past year, as before.

Garry Law

ArchSite Board of Governors' Report 2014

[As presented at the 2014 NZAA conference, prior to the new ArchSite release]

When ArchSite first launched in 2009 it was envisaged that a Governance Board would be in place within a year but our Board has only been established in the last year or so. During that time the Board has focused on upgrades to the software and hosting environment since there has been no substantial investment in software since the initial launch. In terms of software lifecycle we have been in catchup mode since and the recent issues in performance reflect this lack of investment.

We are really excited about the new release due in early July which will give us the opportunity to re-engage with the aims of the Site recording Scheme – to create and maintain a high quality and accessible record of our heritage.

In accordance with the Terms of Reference, the Board is working on strategic and business planning for funding new developments. Many of the

things you are telling us you want in ArchSite are going to be much easier and faster to implement in the new release. These include such things as:

- Aerial photos
- Enhanced search capability
- Other maps and datasets

I would like to thank NZAA Council for supporting the Board over the last year.

The Board would also like to thank Nicola Molloy for her unceasing and good humoured work for the Board and the Association in relation to ArchSite. She has told us how much she is looking forward to the new release which will make her work so much easier in the future.

We would also like to thank our partners in Department of Conservation (DoC) and Heritage New Zealand including; at DoC, Raewyn Hutchins and at Heritage New Zealand, Nicola Jackson.

Finally we would like to thank Rick McGovern-Wilson for his work with ArchSite. For the last five years Rick has worked tirelessly in a voluntary capacity and has single handedly picked up the auditing of the regional files which will safeguard the record of our last 60 years of work.

Rick is stepping down from his role as ArchSite Administrator. Emma Brooks has taken on this role in the interim and very soon the Board will be approaching the NZAA Council with a recommendation to appoint a fulltime Administrator.

Richard Walter

2014 New Zealand Archaeological Association Conference¹

Conference Welcome Speech at RESURFACE Exhibition, Canterbury Museum

Simon Bickler, President NZAA 2013-2014

I would like to thank Anthony [Wright, Director of the Canterbury Museum] for his generous welcome to the Canterbury Museum and to the Resurface Exhibition. The exhibition represents the latest entanglement of the Canterbury Museum and the New Zealand Archaeological Association.

In thinking about how to encapsulate a theme for the conference and the exhibition the word that hit me was “Challenges”. Another cliché perhaps for Christchurch but one I think captures both the spirit of the work at the Canterbury Museum and the archaeological endeavours of the members of the NZAA.

¹ *Editor's note:* some of the following conference award citations and abstracts include the words ‘prehistory’ or ‘prehistoric’. The Editor acknowledges the subsequent discussions on the use of these words during the conference.

The museum and the NZAA have a long history of facing challenges. The Canterbury Museum's first director, Julius von Haast, was responsible for one of the earliest interpretations used by archaeologists regarding New Zealand's Māori, as 'moa-hunters'. A later director of the Museum, Roger Duff, contributed significantly to understanding prehistoric Maori life and *The Moahunter Period of Maori Culture* (1959) still inspires archaeologists and public alike. Archaeology was itself a young discipline in the world and the challenge, faced by its early exponents here, related to making relevant an engagement with a richly tapestried Māori past in a country looking at that time to manufacture a colonial future.

During the 1950s, archaeology in New Zealand was getting organised. Jack Golson's arrival in Auckland and subsequent creation of what is now the NZAA was underway. Sixty years on and more than 60,000 site records later, the NZAA remains at the forefront of archaeological work. In Canterbury, the Canterbury Museum Archaeological Club was formed in the late 1950s under the mentorship of Roger Duff, and was based on the premise that artefacts belonged to the public. In 1960 the club was reformed and renamed the Canterbury Museum Archaeological Society (CMAS) before coming under the umbrella of the NZAA in 1984.

Today the challenges of the Canterbury Museum continue as they care for a range of archaeological collections, including those from the activities of the CMAS. Under the guidance of Roger Fyfe, the museum continues to provide access and assistance to researchers and descendants alike to reconnect, draw inspiration from artefacts and share stories about past ways of life. ReSurface is a response to both its old challenges and its more recent ones.

The challenges for the NZAA have become increasingly daunting. At our 50th anniversary conference, Nigel Prickett (2005) in his public lecture argued that the NZAA had lost its way largely in the belief that preservation occurred primarily by identification without evaluation. He reflected that archaeologists needed to ensure the relevance of our work by prioritising and communicating our objectives to the wider community. As archaeologists working today, we are no longer a loud voice in a small shed, but part of a large choir singing in the heritage cathedral.

Ten years on, we can point to the difficulties and tribulations we have encountered as individuals, the loss of sites as places, and perhaps a loss of a unified direction. But we can also point to our successes. Despite our small numbers, we have more professional archaeologists working than ever before; more money going into the discipline; an extensive multi-faceted corpus of archaeological knowledge to describe and argue about; and most importantly: more engagement with the communities that make up our ever changing society.

Our challenges are really those of complexity, not of irrelevance.

It is fitting that our 60th celebrations take place here in Christchurch to acknowledge the impact of the Canterbury earthquakes in the region and to show our support for our archaeological colleagues in facing the resulting challenges. It is an opportunity to share some of the recent archaeological discoveries made following the earthquakes and during earthquake recovery work. Current archaeological work to preserve, via recording the remains of the past being demolished as a result of the earthquakes, is building a fascinating picture of life in 19th century Christchurch.

Thank you for the support of Canterbury Museum and the hard work of their curatorial, exhibitions and collections staff including Roger Fyfe, Neil Phillips, Chris O'Rourke and Dan Stirland. This is a great opportunity to communicate to the public what archaeology really is about and to raise awareness within the archaeological community about recent events in Christchurch. We know that it will stimulate discussion about what has been learnt and how we can better prepare for the next 60 years of archaeology in New Zealand.

The NZAA Council would also like to acknowledge the support of many others without which this exhibition would not be possible:

- o Katharine Watson, Underground Overground Archaeology Ltd and many of her team
- o Helen Brown and Joseph Hullen, Te Rūnanga o Ngāi Tahu,
- o Nick Cable, Opus International Consultants Ltd
- o Dan Witter, Witter Archaeology
- o Heritage New Zealand staff

We are grateful to the many owners of these artefacts who allowed them to be shared and their stories told. We hope that you have been able to learn some more about your past through this exhibition.

Other groups have contributed to the exhibition and we acknowledge the Kaiapoi District Historical Society, Te Rūnanga o Ngāi Tahu, The Press, Heritage New Zealand, New Regent Street property owners, CERA, Christchurch City Council, National Radio, This Way Up, UC CEISMIC Quake Studies, Te Ngāi Tūāhuriri Rūnanga, Hawkins Construction, Hereford Holdings Ltd, Ministry of Justice and Loyal Canterbury Lodge.

For myself and on behalf of the NZAA membership, I would also like to thank Amy McStay, who led the NZAA Council in making the exhibition happen. Amy has had her own challenges recently and I wish her all the best.

Finally, I would like to thank all the NZAA members past and present who have contributed over the sixty years of the organisation. To those members, newly joined, we hope that you enjoy the conference and take the opportunity to participate in all the aspects of the conference. Kia kaha and thank you.

Award citations

Roger C. Green Lifetime Achievement Award

Janet Davidson

M.A. (Auckland) D.Sc. (Otago), F.R.S.N.Z, O.N.Z.M.

Janet was born in the wartime village of the Hutt, to a family steeped in classical and modern languages. Her brother John was to become Professor of Classics at Victoria University of Wellington. This family environment must be the source to which Janet's achievement in plain writing and in editing can be traced.

In 1958 she became a vacation assistant to Sue Davis at the Dominion Museum. As well as digging at Paremata and elsewhere in Wellington, Janet would have learned from Sue about life as a student in the field of archaeology recently established in Auckland by Jack Golson. In 1959-60 Janet was excavating at Sarah's Gully working under the direction of Laurie and Helen Birks. Janet was also active in the University of Auckland Archaeological Society, taking a leading role in its site recording activities. These were the years when the NZAA was founded and before too long Janet was secretary (1966-72) and president (1972-74) of the association.

In 1962 Janet graduated from the University of Auckland, the archaeology side of her degree supervised by Golson, and subsequently gained her MA (1964) with a thesis on what was then the neglected topic of shell middens. In 1961-62, in the course of that degree work, she and Roger Green co-directed excavations in the 'Opunohu valley, Mo'orea, Polynésie Française, Janet directing her team in fluent French and Roger his in Tahitian.

Not long after, in 1963, Janet worked again with Roger on Tongatapu and Vava'u, Tonga, and on 'Upolu, Samoa. In Tonga it was an exploration of early mounds and on 'Upolu, excavations of a wider range of settlement features. Roger Green has said that her work on the Falefa valley was her major contribution there. The Samoan work was written and jointly edited by Roger and Janet as *Archaeology in Western Samoa* published in two volumes (1969 and 1974). The 1960s also saw Janet at work in Micronesia, starting a long engagement and interest in the western Pacific and the Polynesian Outliers. In 1965, on Nukuoro, she pioneered the archaeology of coral atolls in the Pacific.

From 1966-1979 Janet held the post of the Earle Vaile Archaeologist at the Auckland Institute and Museum. In the course of the post's duties, which must have included writing up the Samoan work, she excavated the Motutapu Station Bay undefended sites (with Anne Leahy) and the Station Bay pā, a pioneering effort to understand pā and place them in a local settlement pattern. Janet had a high public profile in the Museum role; she was often called upon

for interviews and comment on archaeological matters and she was a very effective advocate for Auckland's archaeological values.

Janet also got involved in what we would now call Cultural Resource Management (CRM) working in 1971-72 on a survey of Te Paki for the Department of Lands and Survey. Under instructions from the Council of the New Zealand Historic Places Trust, in 1968, she visited Kororipo pā in the Kerikeri Basin and salvaged that historic ground from a local proposal to make it a picnic area. Janet served on the New Zealand Historic Places Trust Council from 1968-78 and while taking a full interest in all of the Trust's activities she particularly advanced archaeology in the Trust. This was through helping develop its organisational capability, covering the commencement of the 1975 Act. She also got a site surveying programme funded which greatly expanded the number and quality of site records in the NZAA Recording Scheme and gave many in our community their first archaeological job.

In 1974-76 Janet was on leave as a Rhodes Visiting Fellow at Lady Margaret Hall, Oxford, where she worked on drafting *The Prehistory of New Zealand*, published in 1984.

This experience of English food reflects Janet's omnivorous taste in food. Foss Leach reports that she has even eaten the reef dweller keke, *Dactylosargus arctidens meandratus*, granite trout or marble fish, which no one else will eat because it tastes so bad.

On her return from Oxford, and now inextricably linked to Foss, she was involved in Roger Green's south-east Solomon Islands Culture History Project. In particular she and Foss, with experience on Nukuoro and Kapingamarangi, jumped at an opportunity offered by Roger to explore Taumako. This was done against the highly problematic and peculiar background that the outliers were distinguishable from neighbouring areas only by language, not by material culture or physical type. From Namu, 190 individual skeletons were sent for study at Otago. The Taumako monograph has been a 'retirement' project and was published in 2008.

From 1979 – 1987 Janet was an honorary lecturer at the University of Otago when *The Prehistory of New Zealand* was published (1984). It remains the only full book-length survey of New Zealand archaeology. In 1985 she became a Fellow of the Royal Society of New Zealand. In 1986, not long after publication of the *Prehistory of New Zealand*, the University of Otago granted her the rare degree of Doctor of Science. At this time too she became involved in the editing of the *New Zealand Journal of Archaeology*, serving as Assistant Editor from 1982-84 and Editor from 1985-2008 when the journal evolved into the *Journal of Pacific Archaeology* with Atholl Anderson at the helm.

In 1987 Janet took up the position of Senior Curator Ethnology at the National Museum, shortly to become Te Papa. In the latter institution she came to be involved particularly with the Pacific collections and a programme of

outreach to the many Pasifika communities of Wellington. With Foss Leach she was involved with the Archaeozoology laboratory and also with Foss set up the 'Bridge and Barrier' project. This built on Foss's longstanding interests in Palliser Bay and its connections about the Cook Strait. At this time too she delivered a number of papers on pā and Polynesian origins and the outliers. With Foss, Janet worked with Rangitāne ki Wairau and Ngati Hinewaka on experimental pits and experimental kumara gardens. As with so much in Janet's life, the gardens were remarkably productive.

Her professional and community work will have informed the award in 1997 of the New Zealand Royal Honour the ONZM. In 2007 Foss brought her to Te Papa on a subterfuge. When she entered a room brimming with friends and colleagues, she knew exactly what was up, burst into tears, and received the festschrift *Vastly Ingenious: the archaeology of Pacific material culture in honour of Janet M. Davidson*.

One final remark leads us back to what is arguably New Zealand's most famous archaeological site and wāhi tīpuna – Wairau Bar. Evidently Foss and Janet became close counsellors to Rangitāne ki Wairau on many archaeological topics, including the movement to repatriate the human remains long-stored at Canterbury Museum. It seems likely that the achieved results to date as part of that movement, to re-study the bones using DNA and forensic osteology, and to do further contextual excavation, must in part be due to wise counsel from Janet and Foss.

In some ways life has come full circle for Janet and Foss who now live in Martinborough, Foss in his tūrangawaewae and Janet over the hill from the wartime village of her early childhood. Some final words from Atholl Anderson:

‘...the success of such a career owes as much to the qualities of the person as to those of scholarship. Janet's collegial generosity, particularly to younger members of the profession, and her staunch support of them in the scholarly journals and conferences of New Zealand and Pacific archaeology is widely appreciated. She has not forgotten the perils of her own introduction to the deceptively simple life of the Pacific Islands.’

Kevin Jones



*Janet Davidson with NZAA President Matthew Campbell.
Photo: Ian Barber.*

Roger C. Green Lifetime Achievement Award

Michael Malthus Trotter

Michael is perhaps the only currently active Association member who can claim to have been a practising archaeologist before the Association was promulgated. Michael began his archaeological career in his teens as an enthusiastic amateur carrying out archaeological research in North Otago with

the encouragement and guidance of Otago Museum Director H.D. Skinner. Michael, then eighteen years old, first learnt of the establishment of the Association by reading an article in the *Otago Daily Times* newspaper on 28 August 1954, his interest particularly aroused by the report that two major excavations, one in his home patch Otago and the other in Auckland, were planned for early the following year. Although Michael was then probably blissfully unaware that he was soon to become an active participant in the development and application of many new scientific approaches to archaeology in New Zealand. There is little doubt that Michael's huge professional contribution to archaeology in New Zealand over the following 60 years had its genesis in his teenage willingness to observe, analyse and adopt the then emerging techniques of archaeological best practice.

Michael himself recalls four events during what might be described as his archaeological apprenticeship years between 1953 and 1958 that greatly influenced both his future career in archaeology and also the development of archaeology in New Zealand. In December 1954 he was invited by Les Lockerbie from the Otago Museum to be one of a team of seven to participate in one of the first New Zealand Archaeological Association promoted excavations (but organised by Otago Museum) in January 1955 at the moa hunter site at Hawkesburn in Central Otago where Les pioneered the use of the technique of 'three dimensional recording' in New Zealand. The next professional influence was Dr Bob Bell who in 1956 demonstrated to Les Lockerbie and Michael during excavations at the Papatowai site in the Catlins, South Otago the technique of 'clearing off' horizontal levels from which evidence of downward intrusion could then be seen. A standard method for delineating structures and observing stratigraphy had arrived in New Zealand archaeology.

In 1958 Michael and Dr Roger Duff, director of Canterbury Museum accompanied Wal Ambrose and Frank Davis to the Waitaki Gorge where they undertook the first salvage archaeology exercise involving Māori rock drawings. Michael recalls the technique of recording the drawings using a combination of photography and tracing onto transparent sheeting employed Ambrose and Davis set a standard of accuracy and detail previously unrealised in New Zealand. Michael in turn both applied this technique and taught others in its application for over 30 years, contributing greatly to a nationally significant archive of approximately 800 tracings and drawings held in Canterbury Museum. This archive which includes a large number of tracings of original drawings that have subsequently either disappeared or become shadows of the original art work, is soon to be digitised to facilitate ongoing research. The last chapter in Michael's induction to archaeology was his participation in the first official New Zealand Archaeological Association excavation at Moa Bone Point Cave, near Sumner, Christchurch in 1958. Michael recalls that this excavation

was his first and only opportunity to work with Jack Golson who demonstrated, and from whom Michael learnt, yet another new archaeological concept, excavation and recording by stratigraphic layers (see Trotter 2004:216-220). A description of Michael at the time as being ‘very young and quite shy’ by Baden Norris a fellow archaeologist and later friend and colleague at Canterbury Museum might bring a smile to Michael’s face.

Encouraged by Roger Duff, Michael joined the Association in the mid 1950s (the author is not sure of the exact year) and has remained a member continuously ever since. Michael has held office in the Association in many capacities, including Canterbury and Marlborough filekeeper for many years, Council member in 1970, Secretary between 1972 and 1977, Vice-President in 1978 and President from 1980 until 1982.

Excavations in North Otago were a feature of his early interest. A significant outcome of these was his paper on fishhook forms (Trotter 1965) which was a neat archaeological demonstration that culture change in the South Island was not all about replacement.

For most of his professional career Michael worked at Canterbury Museum where he was archaeologist from 1965 until 1983 and director from 1983 until 1995. Between 1965 and 1975 Michael was also field leader of the Canterbury Museum Archaeological Society, a group of enthusiastic amateurs who worked under the umbrella of Canterbury Museum. During his time as the museum’s archaeologist Michael worked extensively throughout the province, continuously undertaking site surveys and updating the NZAA site record files, leading numerous programmes to locate and record Māori rock drawings, researching and writing hundreds of detailed archaeological site reports, delivering countless public programmes on his archaeological work and of course regularly undertaking research and salvage excavations. From 1972 onwards one focus of Michael’s research was the archaeology of the Kaikoura region where his work, particularly at Takahanga pā, but also elsewhere throughout the Kaikoura rohe was supported by the local rūnanga whom he actively encouraged to participate in archaeology both as guiding cultural advisors and also as part of his ‘hands on’ excavation team. It must have given ‘Matua’ Michael considerable pleasure earlier this year to receive an invitation from Te Rūnanga o Kaikoura to attend a hui at Takahanga Marae where in the company of kaumātua he presented an illustrated archaeological retrospective of the pioneering archaeological work they did together. The heritage unit of Te Rūnanga o Ngāi Tahu has recognised and embraced the significance of Michael’s work by commissioning a separate video of Michael’s presentation for the iwi archives. On behalf of the Association Michael please accept our congratulations, for your career must surely have come full circle and now you are the mentor and hopefully the younger Association ‘apprentices’ will be

professionally influenced to add cultural inclusiveness to their repertoire of archaeological practice.

Michael's archaeological work also extends beyond Canterbury and Otago into the Polynesian Islands, first with his participation in the Canterbury Museum expedition to the Southern Cook Islands and the first archaeological survey of the island of Atiu in 1969 and then the archaeological survey of Niue Island in 1971 (Trotter 1974; 1979).

Perhaps the most tangible testimony to Michael's commitment and contribution to archaeology in New Zealand is best documented by his published record. Even a quick literature search, although likely to be incomplete, reveals an impressive record. Starting from 1959 onwards Michael has contributed no fewer than 28 articles to New Zealand Archaeological Association publications and co-authored a further 17 papers, many of these with Beverly McCulloch. If newer practitioners want examples on how to write accounts of fieldwork, accessible to a general reader, they could do no better than look there. In *The Records of Canterbury Museum* Michael contributed eleven papers and co-authored another six, once again mostly with Beverly McCulloch. In addition Michael contributed many articles to other publications such as *The Journal of the Polynesian Society* (four), *Asian Perspectives* (three), *Notornis* (one), *British Archaeological Reports* (one), *New Zealand Journal of Geology and Geophysics* (one) and the Canterbury Museum monograph series (three). Michael also contributed to and co-authored several books. In 1971 Michael and Beverly McCulloch published the first edition of *Prehistoric Rock Art of New Zealand*, which to this day remains a 'standard' popular reference on the subject. In 1977 Michael contributed a chapter on recent research to the third edition of Roger Duff's *The Moa-Hunter Period of Maori Culture* (being invited to do so must be an achievement in its own right) and in 1989 Michael and Beverly McCulloch wrote and edited *Unearthing New Zealand* and curated an exhibition with the same title at Canterbury Museum. This book was public archaeology at its best and did much to inform the public of the scope and embrace of contemporary archaeology in New Zealand.

Although the census might describe Michael as retired this is far from accurate because Michael continues to be an extremely busy archaeologist and the quality of his site reports continues to set the benchmark for colleagues to aspire to. Hopefully there is also the promise of further publications to look forward to as well.

Michael your contribution to the New Zealand Archaeological Association and archaeology in New Zealand in general is enormous and the Association and the whole archaeological profession salutes, congratulates and

thanks you for all your achievements and years of meritorious service to the profession.

Roger Fyfe, Canterbury Museum

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Michael Trotter accepting his award from NZAA President Matthew Campbell. Photo: Ian Barber.

Honorary Membership for Louise Furey

The award of Honorary Membership of the New Zealand Archaeological Association is made for services to the Association over and above the call of duty, and for a long period of time.

Louise's first official role in the Association was as council member for four years from 1984 to 1987. She was then Vice-President in 1988-89 and President 1990-91.

As a Council member in 1987 she was given a new role as Publications Liaison Officer, i.e. liaising between Council and those responsible for sending out publications. This was her first work in an area which has always been an important part of NZAA activities.

In 1996 she took up a new post as Publications Officer responsible for monograph sales and distribution. Most were mailed out, which was a time-consuming job. Other sales were made at the annual conference where over many years Louise has spent her tea breaks behind the sales table.

The role seems to have morphed into something larger because in the September 2006 issue of *Archaeology in New Zealand* (AINZ) she is described as Business Manager for AINZ and monographs. Later she was instrumental in setting up the business side of the *Journal of Pacific Archaeology* (JPA) and rolling over *New Zealand Journal of Archaeology* subscribers to JPA. She was responsible for monograph sales and other publication roles for 18 years.

Louise has long been interested in the Coromandel and Hauraki region, in which a major output has been her 1996 Auckland Museum bulletin *Oruarangi: the archaeology and material culture of a Hauraki pa*. A second Museum bulletin was *Houhora: a fourteenth century Maori village in Northland* (2002). Both of these were based on collections in the museum where she is now Curator of Archaeology. Among other publications she was co-author of *The Archaeology of Pouerua* with Doug Sutton and Yvonne Marshall, and with Simon Holdaway edited the Association's 50th anniversary volume *Change Through Time*. She is now involved in a programme on Great Mercury Island which continues her long Coromandel interest.

Louise's outstanding publication record resulted in the rare award of Doctor of Science from the University of Auckland on 6 May 2005. The only other archaeologists to receive this distinguished degree are Roger Duff and Janet Davidson. Alongside it, it is with great pleasure that we award Louise Honorary Membership of the New Zealand Archaeological Association.

The Groube Fieldwork Award

Matthew Schmidt

Matthew Schmidt has been awarded the Groube Fieldwork Award for his 2012-2014 work at the 1926-1932 Norwegian Whalers Base on Stewart Island/Rakiura.

This fieldwork resulted in the declaration and protection of this site as an archaeological site, this being New Zealand's first 20th century maritime heritage site to be protected as such.

Matt's efforts at the site have also resulted in an increasing public awareness of archaeology and the interesting New Zealand history that has occurred post-1900. This work and that history have caught the attention of local, regional, and national media, helping to educate the public on archaeological resources and what they can tell us.

Matt undertook almost all of the fieldwork in his own time including writing up the funding proposals, drawing the plans and compiling the declaration proposal for Heritage New Zealand. He also, in his own time, attended the Norwegian celebrations on the island in April 2014 where the declaration was unveiled by the Royal Norwegian Consul General.

The success of Matt's fieldwork for the Norwegian Whalers Base involved enlisting the help of a number of people and organisations, including: the locals and the museum of Stewart Island/Rakiura, the Royal Norwegian Consulate, Rowley Moffett (landowner where part of the site lies on), the Environment Management Committee of Environment Southland, the Otago/Southland Area Office of Heritage New Zealand, Subsurface Ltd (Andy Dodd & Matthew Carter), the Southland Coastal Heritage Inventory Project ('SCHIP') partners, the Southland Museum & Art Gallery (David Dudfield), the former Southland Branch of the New Zealand Historic Places Trust, the Rakiura Office of the Department of Conservation (Steve Meads, Sue Pasco), Phil Latham of the University of Otago Anthropology Department, and the Marine Archaeological Association of New Zealand (MAANZ). Matt's work in the field continues beyond this great project and the achievements here have been remarkable and worthy of recognition.



Matthew Schmidt accepting his award from NZAA President Matthew Campbell. Photo: Ian Barber.

Papers

Constructing monumentality at Nan Madol, Pohnpei, Federated States of Micronesia: a geochemical sourcing study of architectural basalt

Alderson, Helen A. and Mark D. McCoy, University of Otago

Nan Madol is a prehistoric mortuary, administrative and ritual complex built over 81 hectares into the lagoon of Pohnpei, a volcanic high island in the Federated States of Micronesia. The site consists of 90+ monumental artificial islets, built from columnar basalt and boulders between circa AD 900 and AD 1650. In this paper, we present the results of our 2012 field season, in which we conducted a portable XRF (pXRF) geochemical sourcing survey at Nan Madol. The geochemical data are used in conjunction with labour estimates and a new architectural seriation to examine both relative temporal trends in islet development, and monumental architecture construction. These results are then compared to several models of expected outcomes for best fit. As a result we

establish a trajectory of historical labour mobilisation over the site's construction and use.

Impacting vegetation communities: an investigation into the anthropogenic effects in early Polynesian settlement Purakānui

Allen, Francesca, University of Otago

Purakānui is an early Polynesian settlement site located on a dune system close to Otago Harbour. Initial excavations in the 1970s classified the site as a specialised fishing camp while more recent excavation and analysis has revealed a potentially more complex occupation. An anthracological investigation into how and why people were affecting the local vegetative communities at Purakānui was undertaken as a dissertation topic in 2013. Anthracology is an often underused field of archaeological investigation and the research marks an attempt to extend its scope within New Zealand. Charcoal samples from two distinct layers within excavated midden were taxonomically identified following anthracological practices. The purpose of the research was to understand which species were being included in the charcoal record through burning practices and how this changed over time.

Dim reflections

Ambrose, Wal, The Australian National University

In retrospect the mid-20th century archaeological scene in New Zealand was pretty rambunctious (an archaic word appropriate to the period), but advances of a serious kind were achieved. My role as an innocent bystander sometimes dwelt at the disrespectful edge of the audience, before being drawn into the magic circle of peg, line and plumb bob, at Waitaki, Oruarangi, Mercury Island, Kauri Point and others across my homeland. This survey of these early impressions is to be illustrated with selected images in an ancient silver bromide technology. The bromide may have had a long-lasting pacifying effect on the photographer's recollections.

A Pākehā artist's observational analysis of the rock drawing referred to as the 'birdman', of the Frenchman's Gully site (Te Manunui), south Canterbury

Andrew, Charlotte, University of Auckland

Frenchman's Gully is found at the termination of a U shaped valley. The shelter is at the eastern end of a limestone cliff north facing towards the Pareora River South Branch. The birdman is viewed from a frontal position, wings outstretched, with a bird's head and human lower limb flexion. There are 16 similar figures recorded by Tony Fomison in Canterbury and North Otago. A feature of this site is a feathered birdman with smaller flightless birds on the

wing. The aim of this research was to determine if the early rock drawings of Aotearoa are the first recorded communication of either cultural history or myth in New Zealand and analyse, as a case study, the visual language of the birdman located in Frenchman's Gully.

Any research on the birdman has to be acknowledged from the outset as speculative and in no way purports to be a Māori interpretation.

The review of published material identified 11 ancient societies using the eagle or anthropomorphised eagle to symbolise spiritual power. In addition for early Polynesian, Celtic, Christian and Egyptian societies the eagle or birdman symbolised ascension, transformation and protection. A study of the birds on the wing led to speculation of their function. This research has resulted in the development of a narrative that is synchronous with beliefs that can be traced to Māori culture.

Forensic archaeology

Ashby, Edward and Beatrice Hudson, Te Kawerau Iwi Tribal Authority and ArchOs Archaeology

The current status and potential scope of archaeological approaches to forensic casework in New Zealand is critically reviewed. The development and current practice of forensic archaeology is outlined, demonstrating that the discipline has been successfully incorporated into crime and disaster scene work in other countries as well as the international humanitarian arena. Despite the application of ostensibly archaeological techniques to clandestine graves by the police and Environmental Science & Research (ESR) forensic scientists, currently forensic archaeology is absent in New Zealand. International evidence shows that any case which requires physical spadework for the recovery of evidence is a case where archaeology can contribute positively, and the low frequency of such situations need not undermine the importance of maximising evidential recovery and interpretation and employing best practice. The state of knowledge among New Zealand archaeologists and forensic professionals regarding forensic archaeology is briefly examined. Case studies and best practice methodology are also explored. It is argued that the framework already exists for archaeological approaches to forensic casework in New Zealand, but has only to be integrated with greater training, cooperation and education.

Cannibals won for Christ: the archaeology of early missionisation on Aneityum, Southern Vanuatu

Bedford, Stuart, Matthew Spriggs, Matthew Prebble, Richard Shing and Martin Jones, The Australian National University

In the 1840s the London Missionary Society and the Presbyterian Church began establishing mission stations in the Melanesian region. Some of their

earliest efforts targeted the islands of Tanna and Aneityum in southern Vanuatu. The mission on Aneityum was planned to be a 'central station' from where Aneitymese teachers could be trained and then sent further afield to spread the gospel. The mission started on Aneityum with Samoan teachers and then subsequently Scottish missionaries arrived. The mission grew quickly with a whole range of buildings being constructed to accommodate an increasing growing community. However, the 'central station' concept and ultimately the mission station itself were doomed once the catastrophic depopulation of the island began to take effect. The local population was effectively reduced by some 90% by the later part of the 19th century. This paper reports on preliminary archaeological investigations at the site, including the oldest standing European building remains in Vanuatu.

Ship to shelter: salvage and reuse of abandoned vessel material located on Rangitoto Island, New Zealand

Bennett, Kurt, Flinders University

Between 1890 and 1947, Wreck Bay, located on the northern side of Rangitoto Island, New Zealand, was used as the abandonment site for 13 sea vessels. The vessels were stripped of all materials and machinery before being towed to Wreck Bay and either burnt or driven ashore. During this time, the island became a popular holiday destination for many families. Over 130 baches (small holiday homes) were constructed in three separate communities: Islington Bay, Rangitoto Wharf and Beacon End. Baches were commonly constructed with little capital and inexpensive resources, and owners became opportunistic in gathering building materials. Wreck Bay became a popular spot for many of the bach owners due to the availability and abundance of building material. This paper proposes to investigate the cultural interaction between the bach communities and the vessels located at Wreck Bay. The aims of this project are to document the archaeological remains at Wreck Bay and the reuse of material in the baches. Archaeological sites at Wreck Bay, along with oral histories from bach owners and other vessel remains that may be located at the remaining baches, will provide evidence for this investigation. The significance of this research is twofold; it will contribute to the study of abandoned vessels by investigating social interaction between vessels and people and to Rangitoto's built heritage before it disappears.

Regional population models in New Zealand prehistory

Brown, Andrew, University College London

Population dynamics are an important component of archaeological explanations of culture change in Polynesia. Within the region, population growth has been seen as both a primary cause of change and a useful proxy

measure of socio-political complexity, land tenure and subsistence practices. Typically, the pattern inferred in Polynesia consists of two phases: (1) initial rapid growth followed by (2) reduced growth as populations approach carrying capacity (Tuljapurkar *et al.* 2007). The logistic growth pattern is a useful basic model of population growth in Polynesia. However, as Kirch (1984; 2007) suggests, the pattern of population growth and expansion involves feedback between ecological, demographic and cultural factors. Therefore individual islands and island groups will exhibit unique patterns of change. In New Zealand, a logistic pattern of population growth is implicit in many culture change models, with the exception of southern New Zealand. This paper employs radiocarbon dates to develop three regional population models and test the conceptual models that currently pervade in New Zealand archaeology.

Lessons learned during marine archaeology

Campbell, John, University of Canterbury

Ships have been travelling vertically for centuries and are a storehouse of history. And other sites have sunk as the water rose for various reasons. I will talk about various aspects of the underwater archaeology I carried out in New Zealand and worldwide over 50 years. This will include the trustworthiness of first and second-hand accounts and official reports.

Camp as a row of tents? Preliminary results of excavations at the British camp of attack at Ruapekapeka

Carpenter, Jonathan, Australian National University

This paper reports on the results of recent fieldwork and research on the site of the British camp of attack at Ruapekapeka. Sixteen hundred British soldiers, sailors, Royal Marines, colonial volunteers and allied Māori began their attack on Ruapekapeka pā from this position in late December 1845. The camp, occupied for three weeks, comprised a defensive trench and breastwork, artillery and rocket batteries, hutments and associated structures for housing and supporting the troops, and an associated pā from which the Māori allies fought. I will discuss the results of excavation at the camp including the discovery of the remains of the defensive works and a number of artefacts left behind by the troops. I will also address the methodological difficulties military camps pose for the archaeologist, as informed by my own experience and from similar contexts overseas.

Rebuilding the gateway to Canterbury: archaeological management and 550 years of history at the Port of Lyttelton

Carter, Matt, Underground Overground Archaeology

For over 160 years Lyttelton has been the major entrepot for goods and people into Canterbury and, more broadly, the South Island. The history and development of the port has been closely linked to that of the surrounding province, most recently evidenced by the Canterbury earthquakes which caused extensive damage to both the city of Christchurch and the port of Lyttelton. In 2014 Underground Overground Archaeology were commissioned to prepare an archaeological assessment and management plan for the proposed repair and reconstruction of the port. This research provided an unprecedented investigation of the archaeological landscape of the area, revealing Māori occupation from c. 550 years ago, the establishment and evolution of a colonial port, and the construction of fortifications to protect the port and its valuable shipping.

Asking those affected: qualitative research methodologies to answer contemporary issues in archaeology

Clifford, Emma, University of Otago

This paper stems from my Master of Arts research and focuses on the use of qualitative research methodologies to investigate contemporary issues in archaeology. From Hodder's 'reflective archaeology' to Meskell's 'archaeological ethnography' and Sorenson's 'archaeological interview', those undertaking archaeological research into contemporary issues are increasingly drawing on methodologies focusing on the participation of interest groups. This paper will discuss key examples of the use of qualitative methods as well as my own use of this methodology in my thesis research.

Prehistoric whale bone technology in southern New Zealand

Cunliffe, Emily, University of Otago

This paper presents a new methodological framework for the analysis of whale bone processing methods and provides new information about opportunistic use of whales prior to the arrival of Europeans. Whale bone was used by Māori throughout New Zealand prehistory as an industrial resource for the manufacture of a range of artefacts. However, the selection of these bones, and the methods used to process them are poorly understood. This paper details the analysis of a southern right whale (*Eubalaena australis*) bone working floor which was excavated from a fifteenth century coastal fishing camp at Kahukura, on the southeast coast of New Zealand. The whale bone working floor assemblage was used to reconstruct reduction methods, and determine the products being made at the site. Rib bones were the main element being worked

at the site, which were reduced longitudinally using a chipping technique. The intensive bone working at Kahukura was a strategy focused on reducing the bones into workable portions so that they could be easily transported to another location, where they were likely further reduced into artefacts.

Excavations at Sarah's Gully, Coromandel Peninsula, in the 1950s: what is their significance today?

Davidson, Janet, Museum of New Zealand Te Papa Tongarewa

Jack Golson initiated excavations at Sarah's Gully in 1956 as part of his quest for North Island sites to compare with the large, well known, South Island moa-hunter sites such as Wairau Bar, Shag River Mouth and Papatowai. Over four summer seasons, the excavations spread out over six locations in the northern end of one small bay, exposing areas of more than 1400 m², surely a major landmark in New Zealand archaeology. The place was remote, living conditions were very basic, and a great time was had by all involved. But only preliminary reports were ever published. What, if anything, is the significance of Sarah's Gully today?

Marquesan pig husbandry: investigating diet and drinking water through dental calculus

Dawson, Laura, University of Auckland

The changing care of animals throughout prehistory is often linked to broader social and environmental processes. The development of chiefly hierarchies and the increasingly unstable climate in the Marquesas Islands, French Polynesia, are factors which likely influenced husbandry traditions. Specific details regarding the care can be difficult to uncover, however, and are traditionally restricted to stable isotope and osteological analyses on the animal remains. Here, dental calculus from Marquesan pig teeth was processed to extract starch grains and diatoms, direct evidence of plant diet and water consumption. Teeth from early occupation through to late pre-contact were used to understand changes through time. The yields of both were substantial enough to gather insight into this limited topic, where information was used to inform on husbandry practises, like mobility and diet. Diatom evidence indicates increasingly limited access to clean water through time; this is interpreted as a reduction in mobility due to greater tethering and penning of the animals. The starch grain evidence, analysed through a discriminant function analysis, shows that pigs were fed agricultural cultivars throughout prehistory, including during periods when environmental conditions were poor and food resources limited.

Archaeological gold: managing archaeology in the Clutha catchment

Daniel Druce, Contact Energy

Since the damming of the Clutha River/Mata-au in the 1950s, Contact Energy's involvement and interest in archaeology and site preservation has changed dramatically. This has been driven by an increased awareness over time of the value of archaeological sites in the Clutha catchment.

In 2003 Contact Energy entered into an agreement with the then New Zealand Historic Places Trust to mitigate effects of the Company's hydro-electric operations on archaeology within the Clutha catchment. This agreement set the framework for integrated management and preservation of archaeological sites.

Contact Energy now has an active and ongoing obligation to monitor and manage multiple archaeological sites along the length of the Clutha River/Mata-au. These sites range from early Māori moa campsites to sites reflecting Otago's more recent goldfield history (including the well-known Mrs Heron's cottage).

This paper explores the role Contact Energy is playing in the management of archaeological sites in the Clutha catchment and presents case studies of recent projects.

The archaeology of demolition: archaeological building recording in an earthquake context – Christ Church Cathedral tower

Farminer, Andrea, Jackie Gillies+Associates, Dunedin

On 22 February 2011 Christchurch suffered a shattering earthquake that not only took the lives of 185 people, but catastrophically changed many features of the city's heritage townscape. One of these features, Christ Church Cathedral, has since become the focus of a 'conservation *versus* demolition' debate that has extended beyond New Zealand's shores. In January 2012, the tower of the cathedral was consented to be 'deconstructed' under an archaeological authority and was subsequently demolished under emergency conditions. This paper argues and discusses three issues that the demolition of the cathedral tower raised. Firstly, in archaeological terms, a partial record is better than no record even in the most constrained circumstances such as a major disaster. Secondly, in natural disaster contexts such as the Christchurch earthquake, standard practices of archaeological recording may simply not be possible and require a more flexible and creative approach to producing a record. Finally, the emergency recording of the tower clearly demonstrates the wider need for the development of a 'pre-emptive' recording programme for our most significant heritage sites beyond the level of a conservation plan.

Archaeology in the shadow of Maungarei: problems and prospects in the study of mid-sequence change at Tamaki

Matthew Felgate, Opus International Consultants Ltd

Salvage archaeology during construction of extensive new road and rail facilities to the east of Maungarei from 2012 to 2014 has added significantly to understanding the pre-colonial Māori archaeological landscape in this area. A particular technological problem facing archaeological research into change in the mid-sequence arises from the broad age spans provided by radiocarbon dating in the mid-sequence of New Zealand's human past. This paper seeks to provide a sequence analysis of radiocarbon dates based on seriation and stratigraphic relationships, to examine the prospects for improving chronological resolution by these methods. Five separate occupation sites are seriated based on the suite of materials present, with stratigraphic superposition also used to add additional sequence information. A sequence analysis of radiocarbon dates is examined.

Early Māori ornaments in museum collections

Furey, Louise, Auckland Museum

Ornament styles brought to Aotearoa from tropical Polynesia are distinctive and well known. It is estimated that soon after settlement new ornament styles proliferated, inspired by a range of new materials in stone, bone and shell. A study of ornaments in North Island museum collections has identified a range of objects which can be interpreted as 'early', and are very different to their Polynesian archetypes. Preliminary results from a review of styles, their geographic distribution and material type suggest there are some patterns. Cultural meaning is explored with reference to Pacific cultures.

Brewery to bonded store: the archaeology of trade in 19th century Christchurch

Garland, Jessie, Underground Overground Archaeology

The 2013 excavation of the site of Christchurch's Avon Bonded Store, established in 1874, revealed numerous features and artefacts associated with the business, presenting a unique opportunity to explore the archaeology of local and international trade in the city. Essentially functioning as the middle man between international exporters and importers and local retailers, the bonded store is a commercial enterprise unlike any other investigated archaeologically in Christchurch so far.

Amongst the material culture recovered from the site are hundreds of still sealed beer bottles from breweries in England and Scotland, as well as numerous complete stoneware mineral water bottles from Germany. In context, these artefacts, along with others found at the site, offer insights into the

specifics of the trading relationship between Christchurch and the Northern Hemisphere, as well as physical evidence of the perils of such long distance trade with New Zealand during the 1870s and 1880s. This paper discusses the results of our investigation into this side of Victorian Christchurch, and considers how this site contributes to our understanding of New Zealand's role in the global trading networks of the 19th century.

Archaeology of the Christchurch Justice and Emergency Services Precinct

Geary Nichol, Rosie and Hamish Williams, Underground Overground Archaeology

The Christchurch Justice and Emergency Services Precinct (CJESP) is one of the 16 'anchor projects' that make up a key part of the Canterbury Earthquake Recovery Authority's (CERA) strategic plan for the post-earthquake central Christchurch rebuild. Located on the city block bounded by Colombo, Durham, Tuam and Lichfield Streets, ongoing excavations as part of preliminary ground improvement works have revealed a wide variety of archaeological features associated with 19th century domestic and industrial activity. One of the sites found contains evidence of early European domestic occupation – this paper discusses some of our interpretations about this site.

Practical applications of laser scanning for heritage management: case studies of sites from New Zealand, USA and the Antarctic

Gibb, Russell and Daniel McCurdy, Geometria Ltd

Over the last decade laser scanners have become more accessible to a disparate range of users as hardware costs have decreased and more advanced software has been developed, enabling a wider range of analyses to be undertaken. Laser scanners can now record at extremely high precision (microns), at extremely long range (kilometres), and are used to capture a highly accurate record of subjects such as heritage structures and sites, archaeological excavations and artefacts. Making a reliable and accurate record of the physical characteristics of heritage elements not only captures the element at a specific point in time but also enables better analysis and interpretation of those elements and their heritage values and can reveal the processes of development, decay, and distinctiveness that inform appropriate directions in the conservation decision-making process. Dissemination of this data allows collaboration amongst a broad spectrum of users with disparate needs, such as archaeologists, conservation architects, conservators, planners, iwi or anyone interested in the interpretation of aspects of the cultural heritage and history of a surveyed element.

This paper presents an overview of a decade of laser scanner work undertaken by Geometria, in New Zealand and around the world. It shows

examples of a number of heritage and archaeological applications of laser scanning including the South Georgia Island whaling stations, Heroic Era huts in Antarctica, the old Apia court house in Samoa, the Wilson Cement Works in Warkworth, Devonport's Masonic Tavern excavation site and Freemont Indian and rock art sites from Paradox Valley in the USA. We discuss the collection and integration of these multi-resolution spatial data sets and the specific data requirements of various users, as well as the numerous challenges faced when constructing and transmitting models of three-dimensional spaces.

Please note that this talk may include images and objects that some viewers may find sensitive, such as laser scans and 3D prints of human remains.

Note: This talk will include 3D graphics and movies. 3D glasses will be provided for all attendees.

Old dogs, new tricks: ancient DNA analysis of dog bones from early New Zealand sites

Greig, Karen, University of Otago

Dogs were the first domesticated animal to be introduced to New Zealand, arriving with Polynesian colonists around AD 1300. Dog bones are plentiful in early sites throughout the country. The potential use of dog remains to reconstruct connections between human communities has been noted by archaeologists for some time. Initial attempts to do this using dental abnormalities, however, proved inconclusive. This paper describes the application of ancient DNA analysis and emerging molecular genetic technologies to investigate the origins and dispersal of New Zealand dogs. The implications of the preliminary results of this study are then considered in relation to models for human settlement and interactions.

Introduction to the earthquake sessions

Hall, Rob, Heritage New Zealand

Rob Hall is the General Manager of Heritage New Zealand, based in Christchurch. This talk is a brief introduction to the role of Heritage New Zealand in post-earthquake Canterbury.

A roller skate amongst the rubble: the archaeology of New Regent Street, Christchurch

Harsveldt, Patrick, Opus International Consultants Ltd

During 2012-13 archaeologists from Opus International Consultants Ltd monitored the earthquake strengthening work of the New Regent Street shops, Christchurch. This archaeological worksite was located within the former Christchurch CBD red zone following the 2010-2011 Canterbury earthquakes. This street of 1930s Spanish Mission style shops is unique as it is one of the

most complete intact streetscapes left in the Christchurch CBD following the earthquake and subsequent demolition work.

The street is located on an early town plot which had been used as a paddock for travelling circuses. In the 1880s, the largest skating rink in the southern hemisphere was erected on this land. This large building was converted into a boot factory in the 1890s and later used as a skating rink and movie theatre during the early 20th century. The building was demolished in the late 1920s to make way for a new shopping street development called New Regent Street.

Concrete foundation remains of the 1880s skating rink were found in almost every shop along New Regent Street. Material evidence of almost every historic phase of activity was recorded during excavations of the shops, alleys and street.

The changing role of Māori within archaeology

Hullen, Joseph, Ngāi Tūāhuriri/Ngāi Tahu

Ngāi Tahu involvement in archaeology has grown from the participation by Kati Kurī in the survey and excavations at Takahanga Marae to the requirement for Ngāi Tūāhuriri Cultural Monitors to be present during the earth work phase of Pegasus Town.

Following the 2011 Christchurch earthquake the involvement of tangata whenua has escalated from merely being on the ground monitoring earthworks to identifying potential risk areas; providing appropriate statements of cultural values for archaeological authority applications; and providing cultural briefings at site inductions for contractors engaged in major infrastructure replacement works, residential subdivisions and other projects.

This presentation will give an update of the processes, opportunities and pitfalls encountered over the past three years.

Te Ika Hari Raumati – happy summer fishing – live archaeology for children

Jamieson, Brooke, Heritage New Zealand

Heritage New Zealand has for the last two summers taken local Kerikeri school children fishing on their school holidays using an archaeological stone fish trap in the Kerikeri Inlet. The project was designed as community based outreach project which encompassed cultural and archaeological components. The fish trap was chosen as a safe, fun and effective way to engage all members of the community, especially children and families in relation to cultural and archaeological sites. Part of the project's aim was to demonstrate that history and archaeology are not just about dusty old relics, but can be used and enjoyed today. The project was targeted at children between the ages of 5 to 12 years in an attempt to showcase that history can be fun and to provide hands on

experiences about how local people lived in the past. This paper will provide a brief archaeological and cultural background on traditional stone fish traps in the area, a breakdown on the project itself, public information, education opportunities and involvement with local tangata whenua and their experiences of using the fish trap. The end result of the outreach project was an increased public awareness and appreciation of local heritage.

Tracing the resilience and revitalization of historic kalo/ taro agriculture in the Waipi'o valley, Hawaii

Jones, Benjamin, University of Auckland

The resilience and revitalisation of taro/kalo agriculture in the Hawaiian contact period is analysed in the Waipi'o Valley, on the big island of Hawaii. Historic work has demonstrated the effects of the great Māhele period on cultural traditions; census information and missionary records were combined to paint a picture of how life unfolded in the Waipi'o Valley. What is alluded to, and yet unexplored, is a changing production system; an overall trend of decreasing and fluctuating wetland taro production, where traditional cultivation is transformed by the introduction of rice farming. Later in time this too fades out, where taro then again becomes dominant. Interestingly, wetland taro cultivation in Waipi'o is still practiced today, with interest in revitalizing the capacity of a once intensively cultivated valley. Here, the impact of rice, and other crop introductions, is explored in terms of revitalising these wetland traditions. This was done by generating 'snapshots' of the Waipi'o landscape through time. Information detailing traditional owners, plot locations and pond-field metrics were derived from digitised historic survey maps, and modern remote sensing techniques such as high resolution LiDAR imagery. Combining this information not only catalogued the historic trend of declining wetland irrigation, but directly illustrates the influence of past agri-choices on modern wetland revitalization agendas.

Finding taonga tūturu and the Protected Objects Act 1975

Love, Honiana, Ministry for Culture and Heritage

Following the review of Historic Places Act 1993 and subsequent new legislation, the Ministry for Culture and Heritage is about to embark on a review of the *Protected Objects Act 1975*.

Of particular interest to archaeologists will be the provisions in the Act surrounding the finding, custody and ownership of newly-found taonga tūturu. Many issues are already being raised about the practical implications of the current Act and any future legislation needs to consider how best to address these issues. This paper examines some of the issues raised in relation to the POA and discusses approaches that might be taken in responding.

The longest journey: from Africa to Aotearoa

Matisoo-Smith, Lisa, University of Otago

What does it mean to be a New Zealander? This is a compelling social question facing an increasingly multicultural New Zealand. Genetic studies indicate that we can all ultimately trace our origins to Africa. About 65,000 years ago modern humans started expanding across the globe. The final landmass settled by humans was Aotearoa/New Zealand, just 750 years ago. While Māori were the first to arrive, they were joined by later migrants, primarily from Europe, Asia and the Pacific Islands. A genetic study of the population of New Zealand today will map the many pathways our ancestors took which ultimately brought each of us here. Preliminary results from our first year of sampling the genetic diversity of New Zealand will be presented and discussed in terms of the implications for understanding New Zealand's settlement history.

A re-evaluation of Moriori subsistence and settlement using ethnobotanical tools

Maxwell, Justin and Ian Barber, University of Otago

Rēkohu (Chatham Island) was a challenging environment requiring local innovation for long term Polynesian settlement. Previous archaeological investigations concluded that the inability due to environmental factors to introduce the staple domesticated Polynesian crops, taro (*Colocasia esculenta*), kumara (*Ipomoea batatas*) and bottler gourd (*Dioscorea sp.*) were not replaced in Moriori subsistence practices by endemic or introduced terrestrial plants but by marine protein and fat, in particular the New Zealand fur seal (*Arctocephalus forsteri*). In new research the importance of the coastal broad leaf forests which include the introduced kopi (*Corynocarpus laevigatus*) are evaluated as a resource for Moriori subsistence. The approach combines ethnography, archaeology, palynology and anthracology data sets. This holistic approach has been successful in identifying Moriori agroforestry practices and could be applied to any Polynesian site where there are available data sets for anthracology and palynology.

The archaeology of memory lane

McFadgen, Bruce, Victoria University

Fifty years of digging in the dirt; what has it yielded? Does it tell us anything about the future? Let's see what more than 50 years of reminiscences tells us.

What archaeology and earth science tell us about past earthquakes and related hazards, with particular reference to Central Canterbury

McFadgen, Bruce and James Goff, Victoria University and University of New South Wales

Earthquakes are a driver of environmental change, and they are also a significant factor in culture change. Archaeology is important for understanding the effects of earthquakes on both culture and the landscape. This paper discusses earthquakes as hazards, and outlines a model of earthquake-induced change in the Central Canterbury landscape and archaeology over the last millennium. Implications for the future of Christchurch are outlined. Archaeology has an important role to test this model.

A monumental ideology: a GIS-based analysis of internal earthwork features of Mata Kawanu pā, Ahuahu

McIvor, Isaac, University of Auckland

Archaeologists often restrict the function of fortified spaces, or pā, in New Zealand to defence. This research contrasts such literature by developing further upon Sutton's (1990a, 1991, 1993) interpretations of pā as symbols of community prestige. Pā were not merely expressions of solidarity and authority of a community. They were mechanisms of ideological maintenance. The mana of different tiers in pre-European Māori society are argued to be materialised in the divisions of space within pā. In this sense, one physically experienced the one's ideological position in society on a daily basis by living within pā.

This analysis involved a GIS-based analysis of terrestrial laser scanning data of Mata Kawanu pā, on Ahuahu, in the Coromandel. Two tiers of a social hierarchy were found materialised at Mata Kawanu pā. The physical layout of features was experienced on a daily basis by the inhabitants and was a mechanism for leading individuals to maintain their mana in the 17th and 18th centuries.

Railways and landscape in 19th century Otago: a spatial analysis of the Nenthorn construction camp

Mitchell, Peter and Timothy Thomas, University of Otago

The development of overland transport infrastructure represents the second phase of the European colonisation of New Zealand. In order to establish roads and railways the land had to be quantified and modified, and this effectively produced a new socio-cultural landscape. Surveying and construction tasks along planned transport corridors led to the establishment of temporary settlements and camps in the spaces between towns, often in remote locations. This paper presents the initial findings of the archaeological excavations of one such camp, associated with the construction of the Otago Central Railway. Our

analysis focuses on the spatial layout and activity zones at the site, addressing the contrast between ephemeral versus relatively permanent structures, and between domestic and work oriented activities. We link the particularities of the site's taskscape to broader trends in the production of colonial landscapes.

Building better relationships: the potential of archaeological databases

Moyle, Jeremy and Laura Davies, New Zealand Heritage Properties

Relational databases are tools now widely available as relatively user friendly computer programmes such as Microsoft Access. This paper explores the EAMC database, an Australian program built for the storage and comparison of historical archaeological data. From this three key points are identified. Firstly, caution must be taken to devise a robust classificatory system as part of an archaeological database design. Secondly, the design of an archaeological database should fully utilise the framework of related tables that is available in a database program. Thirdly, a number of features exist beyond the basic framework of a database which can aid in the recording, identifying, interpreting, and sharing of archaeological collections.

The Wairau affray reconsidered

Nichol, Reg, Mamaku Archaeology

The term "Wairau Affray" is now used to cover a series of events that took place at Tuamarina, on a minor tributary of the Wairau River, on the morning of 17 June 1843. These included, in quick succession: a failed attempt by the Nelson Police Magistrate and his party to arrest Te Rauparaha and his nephew Te Rangihaeata; a brief skirmish involving gunfire across the Tuamarina Stream; a retreat under fire up the ridge opposite by part of the European contingent, while others scattered in various directions; the surrender of a group of ten Europeans including the four "gentlemen" and the start of their negotiation for their own ransom; and, on the insistence of Te Rangihaeata, the murder of nine of the captives, most immediately as utu for the death of his wife Te Rongo during the skirmish at the bottom of the hill. As is often pointed out, the Affray was the only armed conflict between Māori and Pākehā in the South Island, and the first anywhere in New Zealand after the signing of the Treaty of Waitangi. Unfortunately, previous "analyses" of the events have stopped at this point. The events have received some attention in general histories of Marlborough, though any analysis in depth is not to be expected in those works. However, authors such as James Cowan, Keith Sinclair, Michael King and James Belich, who might have been expected to produce more scholarly treatments, all give only the briefest outline of events and provide no analysis at all. It is as though the Affray has nothing of importance to say to us.

In my opinion this is entirely mistaken, and features of the conflict foreshadow in a striking fashion aspects of the far greater catastrophe that was to play out over much of the North Island in the next 30 years. In addition, other important aspects of the conflict and its aftermath appear to have been almost completely forgotten. In this paper I will try to put the record straight.

Ngāi Tahu Cultural Mapping Project

Norton, Takerei, Ngāi Tahu

Since 2007 Te Rūnanga o Ngāi Tahu has worked with kaitiaki Ngāi Tahu Papatipu Rūnaka on recording traditional and contemporary Ngāi Tahu knowledge on a tribal Geographical Information System (GIS) to ensure this knowledge is protected for future generations. This project is a continuation of the research undertaken by the Ngāi Tahu Māori Trust Board in gathering evidence presented to the Waitangi Tribunal as part of the Ngāi Tahu Claim in the 1980s. To date the research has specifically focused on mapping Māori place names, traditional Māori trails and the original Māori land allocations within the Ngāi Tahu Takiwā. This presentation will provide an overview of the research process to date, an insight into the issues surrounding the development of a traditional knowledge database and the future possibilities of the Ngāi Tahu Cultural Mapping Project.

Models of exploration in southern New Zealand

Petchey, Peter, Southern Archaeology Ltd

Historical and prehistoric archaeology have often not been well integrated in New Zealand, partly due to the difference in subject matter. This paper considers whether the history and archaeology of the European exploration of the interior of southern New Zealand can be used to throw light on the previous wave of exploration by early Māori.

Although many differences exist between the two waves of exploration, a key one being that Māori had altered the landscape by burning by the time the Europeans arrived, many similarities also exist. Both waves were carried out by people with a maritime background and established coastal footholds, both were associated with resource identification and exploitation, and both were carried out largely on foot.

Engagements between Māori and Europeans at Grantham Street, Hamilton

Phillips, Caroline

Archaeological data often identifies trade as the main type of engagement between Māori and Europeans, with Māori gradually adopting more European goods over time. However, detailed archaeological investigations together with historical accounts can sometimes reveal more complex relationships. At

Grantham Street in Hamilton, three phases of engagement were discovered: pre-1864, 1864, and post-1864. The first phase identifies Māori adoption of European pigs, but is set in an otherwise traditional landscape; the second phase marks the Māori abandonment of the site, with the use of Māori features (and possibly foods) by European soldiers; while the third phase marks the appropriation of the site as part of a military township, in addition to the use and discard of Māori objects.

Teaching geospatial technology and data management as part of archaeology field schools

Phillips, Rebecca, Alex Jorgensen, Josh Emmitt, Simon Holdaway, Thegn Ladefoged and Louise Furey, University of Auckland and Auckland Museum

Teaching geospatial technology during archaeology field schools provides students with a number of skills that supplement those traditionally taught. Increasingly, students are both familiar and competent with computing and geospatial interfaces (e.g. Google Earth). Focusing on training students in use of instruments to record spatial data in archaeological survey and excavation, and data management through ArcGIS, provides a valuable skill set. Teaching these skills also meets the desire of a research project to practice common methods of data acquisition that preserve data integrity and uniformity, and develop a best practice for data management. Acquiring and managing spatial data on an archaeological project is often the job of specialists, however, integration of students into the data acquisition phase of the field work ensures students are familiar with the structure of such data sets when they carry out subsequent individual research projects. A case study from The University of Auckland archaeology field school taught on Ahuahu Great Mercury Island is presented to highlight developing methods for teaching geospatial technology.

Southern South Island pā: why so few?

Potts, Kirsty, Anthropos Australis (WA) Pty Ltd

This paper presents research on why there are few recorded pā (fortification) sites in Murihiku, the southern-most region of New Zealand. Previous research in the area has proposed a number of theories on the low number of recorded pā sites under the major themes of chronology, population and warfare. A testable methodology was formulated to critically establish a data set of archaeologically visible pā sites within Murihiku and assess the nature of the archaeological and traditional evidence. Archaeological and early historical sources were critically reviewed in order to explore the nature and role of pā and evaluate past theories regarding the lesser numbers of sites within the study area.

Harington Point and the archaeology of Dunedin's coastal military fortifications 1885 – 1945

Scahill, Alex, University of Otago

Harington Point Battery was constructed on the Otago Peninsula in the 1890s as part of a larger coastal defence network, built to defend Dunedin during a period in which New Zealand was under threat of invasion from the Russian Empire. These defences were manned and operated through the Russian Scare and the First World War, until being decommissioned following the end of the Second World War. This paper examines the nature and extent of the fortifications at Harington Point through its archaeological remains, providing insight into fortification construction methods and temporal change throughout this period. Harington Point Battery is placed in both a local and national context and is used to examine the mindset of a young nation, reacting for the first time to a serious external threat to their way of life.

Mrs Heron's cottage – conservation of a goldfields cottage from Lake Roxburgh

Schmidt, Matthew, Heritage New Zealand

Mrs Heron's cottage, located today on the shore of Lake Roxburgh, is an iconic schist house built in c. 1863 at a time when Central Otago was still drawing gold miners to the gold rich shores of the Clutha/Mata-au River. This cottage is the only remaining substantial goldfields house left in the Clutha Valley which is relatively intact and directly linked to the early mining history of the Clutha. The cottage also has a known history meaning this cultural heritage site has both high tangible and intangible values associated with it. Since 2010, Heritage New Zealand has been working closely with Contact Energy to preserve, protect and manage Mrs Heron's cottage to ensure the public can continue to visit and enjoy this historically important heritage structure. In 2010, a wave wall was constructed to protect the site from further erosion and in 2013 and 2014, Heritage New Zealand commissioned an archaeological assessment and a conservation management plan to inform on how best to maintain the cottage as an abandoned goldfields house. This paper presents progress so far on preserving the site and illustrates the current best practice techniques being used (such as 3D imaging of the cottage) to achieve this.

Culture change in early Pākehā New Zealand: an archaeological perspective

Smith, Ian, University of Otago

This paper is a first attempt to develop a big picture view of the nature of culture change in New Zealand during the century prior to 1860. Although informed by the historical record, the focus is on themes that would be expected

in any analysis of culture change in prehistoric archaeology: settlement patterns, subsistence and other economic activities, material culture, and cross-cultural engagement. It will be shown that there were significant changes in each of these spheres that are observable through the archaeological record. While the primary focus is on changes in Pākehā culture, some consideration will be given to contemporary transformations in the Māori world.

New lithic data from Taurama: further insight into the south Papuan cultural sequence

Sutton, Nick, University of Otago

Archaeological investigations in south Papua since the 1960s have led to the development of a general cultural sequence for the region. The Papuan Hiccup (c. 1200-800 BP) is a poorly understood transition period in this sequence that is typified by widespread socio-economic system disruptions and ceramic style transformations. A clearer understanding of events during the Papuan Hiccup is important because it has been suggested that the origins of the highly specialised exchange systems described centuries later by European anthropologists can be traced to this period. To that end, this paper presents the results of a study of flaked chert artefacts from Taurama, a site in the Port Moresby region, which employed complimentary chemical characterisation and technological analysis methodologies. These results suggest that the post-Hiccup occupation at Taurama differed from earlier periods in terms of the exploitation of fewer chert sources and more intensive reduction of high quality chert cores.

Sixty years of archaeology

Trotter, Michael

Personal recollections of over sixty years of archaeology, mainly in Otago, Canterbury and Marlborough, noting changes in aims and methods over that time. The decline of amateur participation and the costs of laboratory analyses will also be touched on.

The Avon Loop: the buildings archaeology of a working class suburb

Watson, Katharine and Kirsa Webb, Underground Overground Archaeology

To date, archaeologists from Underground Overground Archaeology have recorded eleven buildings in a small working class suburb in central Christchurch, today known as the Avon Loop. These houses were all built within a twenty year period. Together, the archaeology and history of these homes reveal more about the lives of the occupants of the Avon Loop.

A late archaic living floor at Waikuku

Witter, Dan

A subdivision development at Waikuku near the Ashley River mouth produced a series of sites. These were mostly middens on dunes overlooking the floodplain. One of the sites was found to be a living floor with a considerable amount of stone and bone artefacts, estuarine shells, and bird bones. A small amount of moa bone was present, most of which was non-industrial. There was a substantial amount of argillite flaking but no greenstone, and fragments of a slate ulu were present. The floor was about 4 metres across with an ash-filled fireplace in the middle. No postholes were found. It appears to have been lean-to structure built over an old blowout opening to the north and next to a midden deposit.

Attribute and reduction analyses as well as usewear examination was done on the lithics showing the different treatment of the various stone material types. Bird spears and awls were being made from wing bones. There was a very large representation of parakeet (and some tui) leg and wing bones. Other bird and dog bones were present, but surprisingly, fish was rare. The distribution of lithics, bone artefacts, fauna and shell on the floor showed the localisation and partitioning of various activities on the floor.

The site seems to be an outlier of a large complex of other sites, also thought to be late Archaic, about three kilometres to the south on Pegasus. It appears to be primarily a birding camp for preserving parakeets and tui. Lithic reduction techniques were used to maximize the use of imported stone. The occupation would have been at the time of the last of the moa in Canterbury, and on the “transition” into a different economy, pattern of movement and organisation.

Velocipede mania hits Wanganui

Woods, Naomi, University of Otago

For the last two years of the 1860s, New Zealand, like the rest of the world, was gripped by an epidemic of velocipede mania. This disease was characterised by an obsession for new two-wheeled vehicles which were powered solely by the feet. Excavations at the Victoria Retail Centre site, Whanganui, in 2010 unearthed a huge amount of archaeological material, including the rusted frame of such a machine. This paper provides a brief introduction to velocipedes and explores why they had such a huge but brief impact on the Victorian world.

Poster abstracts

Did Māori carve living karaka (*Corynocarpus laevigatus*) trees in pre-19th century New Zealand?

Barber, Ian, University of Otago

In late 1959, field workers in the Wellington region recorded evidence of possible pre-19th century Māori carvings on live karaka (*Corynocarpus laevigatus*) trees. Several years later, Keyes (1968) published details of reported archaeological karaka tree carvings from “eastern Wellington” in the *New Zealand Archaeological Association Newsletter*. Successive editions of the Association’s site recording handbook have identified “tree carvings” as a rare “prehistoric/Māori” archaeological site class (Walton 1999: 71). I evaluate this evidence, including the results of a recent field assessment of the reported Wellington tree carvings. As well, I consider how this evaluation might inform our understanding of traditional Māori and (Chatham Island) Moriori tree modification.

Using viewshed analysis to investigate the placement of defensive structures: a case study from the Bay of Islands, New Zealand

Barrett, Matthew, University of Auckland

Understanding why people fight over status, land and resources is an important issue in anthropology. In the space of a few centuries, pre-contact Māori in New Zealand constructed many defensive structures known as pā. It is suggested that pā may have emerged at a time of major socio-political change associated with rising levels of competition for horticultural land and territorial behaviour. Therefore, New Zealand presents a unique opportunity for investigating questions of territoriality. A key aspect of territoriality is enforcing control over an area. This would involve having good views of the surrounding landscape and other areas of activity. Using the Bay of Islands as a case study, this hypothesis is investigated using viewshed analysis. Viewshed is a form of spatial analysis tool that defines the area that can be seen from any given location in a landscape. While viewshed analysis is often critiqued, it can provide some useful information. The size of the viewsheds of a number of pā in the Bay of Islands is investigated, as well as whether or not these structures were located respective of others. Results show that when compared to a randomly generated background sample of sites, pā have significantly larger views of the surrounding landscape as well as a significantly greater proportion of other pā falling within their view. These results contribute a small piece to the overall understanding of expressions of territorial behaviour and highlight the utility of viewshed analysis as a preliminary investigative tool.

Excavations at Opito Bay, T10/777, Coromandel

Bickler, Simon, Clough & Associates Ltd

Opito Bay on the Coromandel Peninsula has been one of the main hotspots for archaeological research over the last few decades. Initial investigations by Gumbley and Hoffman in 2007 identified two new areas of interest at the northern end of Opito Bay, T10/777. This included a midden dated to the late 15th or early 16th centuries and the remains of structures and food storage pits nearby. Large scale areal excavations of T10/777 in 2012 by Clough and Associates assisted by students from the University of Auckland exposed a large number of storage features and a probable whare. Radiocarbon dates suggest intermittent occupation at different times from the middle of the 15th century AD through to the mid-18th century AD. Changing environmental conditions in the broader landscape during that time were identified with some areas near T10/777 converted from successional climax forest to a more diverse mosaic of plants useful both for fuel and food. Intriguingly, despite the relative proximity to Tahanga quarries, only a relatively small number of stone artefacts were identified.

The Victorian child in Christchurch, New Zealand

Bone, Kim, Underground Overground Archaeology

The archaeology of children is a relatively unexplored field of research in New Zealand. The recovery of thousands of artefacts as a result of the 2011 Christchurch earthquake has seen the excavation of a number of children's toys, foods and objects. The study of these archaeological remains informs us of the activities the children engaged in, their education, the toys they played with and what they were fed. This collection of artefacts provides a rare window into the life of the Victorian Christchurch child.

Anaglyphs – a simple way to view stereo pairs

Campbell, Matthew, CFG Heritage

Anaglyphs are stereo images viewed through red and cyan lenses. They are easily and quickly made with free software and viewed through \$1.00 glasses. They can be easily shared without the need for using stereoscopes and are frequently quite adequate for archaeological purposes.

Te Pua a Te Marama

Campbell, Matthew and Robert Brassey, CFG Heritage and Auckland Council

The construction of large, elaborately decorated meeting houses (whareniui or whare whakairo) has been linked to a fundamental transformation of Māori society (Sissons 2010). They are generally considered to be a relatively

recent phenomenon, appearing or at least gaining popularity in the European contact period. But was the origin and development of large houses primarily intended to accommodate guests a direct result of European influence? The example at Oropuriri (Holdaway and Wallace 2103) shows that large wharepuni can date to the 1850s, earlier than Sissons suggests. Te Pua a Te Marama on the South Kaipara peninsula is a rare and notable example of a very large house site in the archaeological record, dating to 1820 if not earlier. We describe and interpret the archaeological and documentary evidence for its history and construction, and discuss whether this supports conventional views on the origins of large meeting houses, or whether these structures were already developing prior to direct European contact.

A typology of 19th century leather shoes from Christchurch

Dickson, Chelsea, Underground Overground Archaeology

Since the 2011 earthquake, a large number of leather shoes have been recovered from archaeological sites in Christchurch. This poster showcases our attempt to form a typology of leather shoes from the Christchurch assemblages.

Recovery of the EOC 8-inch Armstrong BL disappearing gun, Fort Gordon, Miramar Peninsula, Wellington

Dodd, Andy, Subsurface Ltd

A 13-tonne EOC 8-inch Armstrong BL gun was recovered from the slope below Fort Gordon on the Miramar Peninsula in March 2013. Many heavy artillery pieces have been recovered from New Zealand sites, but few have been subject to archaeological monitoring and recording. This poster outlines some of the findings and outcomes of this work.

Seen one pit, seen them all? – Use of a ‘two-tonne trowel’ to recover fine detail on large-scale excavations

Gedson, Greg and Brigid Gallagher

Numerous large subterranean food storage pits are a regular part of the archaeological landscape in the Western Bay of Plenty and these features are often encountered in great numbers by large development-driven excavations in this region. They represent a key adaptive strategy for horticulture in pre- and proto-historic New Zealand, but due to inevitable restraints of time and budget on commercial archaeological excavations, it is common for large parts of these features to remain un-excavated. This poster gives some examples of how judicious use of machine excavation of pits can recover detail in these features en masse. Results of this approach highlight the great variety of form, structure and uses of these crop storage pits.

Ceramic production in the Cagayan Valley, Philippines

Heath, Helen, University of Otago

The research presented involved the physico-chemical analysis of a ceramic assemblage from the site of Nagsabaran located in Lal-lo, Cagayan Valley, Northern Luzon, Philippines. The aim of this research was to answer two questions. The first was to identify the nature of the early Austronesian settlement through pottery production in Nagsabaran, the second to assess a change through time from pottery production in the Neolithic to the Iron Age. These questions were to be addressed through two methods. The first was to undertake the first physico-chemical analysis on ceramics from the site to study the mobility patterns of the early Austronesian settlement in the Philippines. The second method involved assessing mobility and sedentism through the use of models proposed by Summerhayes (2000). These models theorise that pottery can identify the nature of settlement, whether it be mobile or sedentary. A physico-chemical analysis was used to examine the clay matrix and mineral inclusions of the ceramic assemblage from Nagsabaran. The organisation of this data through the use of multivariate statistical techniques enabled the creation of groups based on chemical similarity. The research carried out through the physico-chemical analysis identifies a mobile society during the Neolithic in the Cagayan Valley changing through time to a sedentary society in the Iron Age. The research in turn validates the models proposed by Summerhayes (2000).

A case study of domestic rubbish disposal in Christchurch

Hughes, Julia, Underground Overground Archaeology

An investigation of domestic rubbish pits at 89 Chester Street, comparing the historical evidence of rubbish disposal practices with the archaeological evidence.

Mori tree carving on Rēkohu: a stylistic analysis of *rākau momori*

Hurford, Jessie, University of Otago

In this research, a stylistic analysis was conducted on the novel, archaeological Mori tree carvings of Rēkohu (Chatham Island). The tree carving data sets were sourced from historic records, including sketches and photographs, and more recent University of Otago survey work, including digital photographs and 3-D scans. The resulting analysis included two primary components. Firstly, the frequency and distribution of carving attributes were identified from defined localities on Rēkohu. Secondly, the frequencies of attributes were examined between localities to test for the distinctive carving styles argued by Simmons (1980). Cladistical and hierarchical clustering models were employed to assess the degree to which cultural transmission occurred

between defined localities of rākau momori (lit. “memorial tree”). This research contributes to our understanding of pre-contact Moriori social organization and distribution on Rēkohu.

Untitled

Kurmann, Sam, University of Otago

The Sumner/Redcliffs area is home to some of Christchurch’s most well investigated and interesting prehistoric archaeology. Sites such as Moncks Cave, Moa-Bone Point Cave and the Redcliffs Flat Burials have been well recorded and investigated. Whilst early prehistoric sites are well documented, there are two gaps in the archaeological record within this area. Little has been recorded about the Classic Māori period and the historic period. Two sites (44 Main Road and 5 Main Road) offer more detail about the early Māori period and the post-contact period within Sumner/Redcliffs.

Moa remains from Wairau Bar

Lewis, Julia

This poster focuses on an assemblage of moa remains from a Wairau Bar midden. The material dates from the earliest phase of New Zealand settlement and is the result of the disposal of the waste after a single feast event that occurred at the site. A taphonomic analysis of the remains was undertaken with a specific interest in the pre-depositional modifications. The various modifications caused by both human and animal taphonomic agents are used to develop interpretations and hypotheses about early Māori practices around food procurement, preparation, and disposal.

Grog, liquor and booze: a study of alcohol in 19th century Canterbury

Paterson, Christina, Underground Overground Archaeology

Research into the legislative change and import and export fluctuations surrounding alcohol in 19th century Canterbury, including their potential implications for the archaeological record.

Hospital buildings and social attitudes to medicine

Tremlett, Luke, University of Otago

This poster presents on my masters research to date. My thesis investigates the extent to which hospital buildings reflect the social attitudes towards health in the 19th and early 20th centuries. The Ashburton Hospital is used as a case study.