Reference

Frank, R.M. 1972 *Sedimentological and morphological study of selected cave systems in eastern New South Wales, Australia.* PhD Thesis, Australian National University

Appendix 1

List of Participants

Australian National University - K. Aplin, F. Baas-Becking, K. Barz, D. Bulbeck, E. Bunn, B. Cundy, D. Gaughwin, E. Hawke, P. Hiscock, M. Janssen, I. Johnson, M. Jones, D. Kaus, D. Llewellyn, M. Morwood, M. Nizette, F. Poldy, J. Robertson, O. Sananikone, V. Solo, H. Sullivan, L. Worrall, S. Wild

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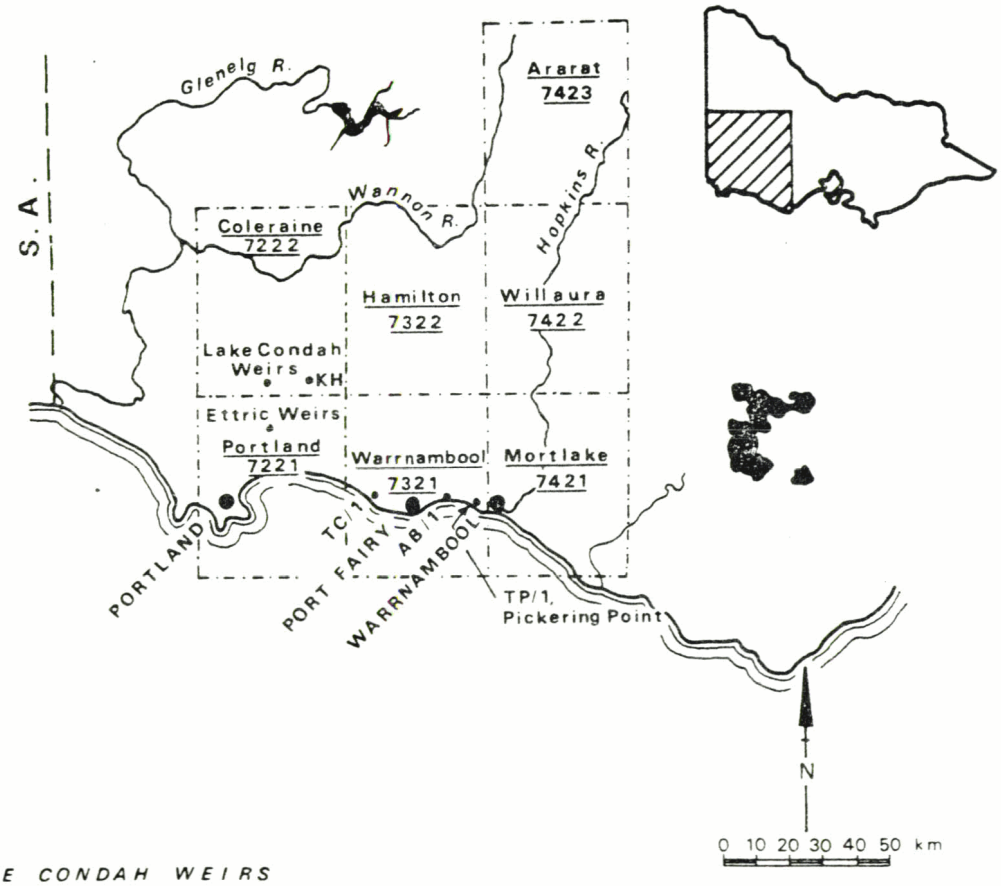
SUMMER FIELD PROGRAMME OF THE VICTORIA ARCHAEOLOGICAL SURVEY

Introduction

The Summer Field Programme was devised to service the needs of the annual Field School (Witter 1976). This year the School was based at Yambuk, a hamlet located approximately 20 km west of Port Fairy in the Western District (Fig. 1).

The School ran over a period of eight weeks in two four week cycles, each one offering a range of courses in archaeology. These included an Introduction to Archaeology (8 lectures), North American Prehistory (4 lectures), South-East Asian Prehistory (2 lectures), an Introduction to Australian Archaeology (2 lectures), an Introduction to Melanesian

FIGURE 1: LOCATIONS MENTIONED IN TEXT



LAKE CONDAH WEIRS

ETTRIC WEIRS

KH – KINGHORN HOUSE SITES, SWAMP SURVEY & EXCAVATIONS

AB/1 – ARMSTRONG BAY

TC/1 – THE CRAIGS

TP/1 – THUNDER POINT

PICKERING POINT – TEST EXCAVATION

Prehistory (2 lectures), an Introduction to Historical Archaeology (2 lectures), and Hominid Evolution (4 lectures). Other lectures covered a variety of special topics such as stone technology, excavation and field recording techniques, relics legislation, photography, map reading and public relations. The courses were supplemented by intensive training in both the field and laboratory.

The Survey offers its students the opportunity of enroling in an Accreditisation programme which aims to train people in specific aspects of archaeology and qualify them at each stage of their training. Assessment is continuous from one year to the next and students can rise through the ranks as they successfully complete each phase of their training. Certification enables students to carry out the categories of fieldwork for which they have qualified, on their own initiative, or at the request of the Survey. Holders of higher certificates may excavate sites, but only in close liaison with the Survey; the Survey in fact assumes full responsibility for what its students do in the field and for this reason the higher certificates which permit their holders to excavate are awarded only in exceptional cases.

The Yambuk State School was lent to the Survey by the Education Department for the duration of the project. The Schools are run on a non-profit basis, the underlying philosophy being that amateurs can and do play an important role in protecting the Aboriginal component of the Australian national heritage. The Survey merely provides the public with the opportunity, the trained staff and the equipment, the aim being a healthy partnership between the government and the people. Funds derived from registration fees are used to purchase equipment necessary for running the domestic side of the camp. A laboratory was established at the School and appropriate field programmes were devised to meet the Survey's objectives and the training needs of the students.

The Daily Routine

The School worked six days a week, with morning lectures commencing at 7.00 a.m., field programme commencing at 8.15 and finishing about 6.00 p.m. This was followed by an evening lecture programme four days a week between 8.00 and 10.00 p.m. Field, oral and written exams were held on alternate Sundays. Students were assigned to field (excavations and field surveys) and laboratory projects for one week at a time.

Field Objectives

1. To survey the Warrnambool 1:100,000 map sheet, to compile an inventory of archaeological sites and assess their state of preservation and prepare recommendations for the protection of key sites.

2. To conduct full scale excavations of two coastal sites, one at Thunder Point and the other at the Craigs in order to establish sequences for the Late Prehistoric period for this area.

3. To test a site at Armstrong Bay with a view to establishing its archaeological credentials and relevance to important sites described by E.D. Gill (1951; 1955; 1967) in several recent papers.

4. To establish the relationship, if any, of the recent archaeological sequences in the Warrnambool district to the Tower Hill volcanic eruption.

5. To investigate the contention that Aboriginal artefacts and faunal remains had derived from deposits under the Tower Hill tuff deposits at Bushfield (Gill 1953).

6. To extend and complete the survey of stone houses and mound sites around a large swamp near Macarthur.

7. To test a number of mound sites in the vicinity of the stone house sites around the above mentioned swamp in order to establish their characteristics so as to enable comparisons to be made with the mounds in the central Western District.

8. To look for sites which are referred to in the historical sources. For example the fishtraps at Lake Condah and Ettric and stone house sites which are supposed to be located somewhere near Mt. Napier.

9. To complete intensive ground surveys of select areas of the Willaura map sheet as part of a project to test the reliability of field surveys conducted in that area over the past three years.

Education Objectives

1. To advertise the work of the Survey and the Ministry for Conservation in the Warrnambool district through the press, radio, television and personal contacts with the rural population. The object was to make landholders aware of their responsibilities in respect of relics which they might own and to encourage the public to adopt a more responsible attitude towards the conservation of Aboriginal relics.

2. To initiate an intensive training programme in both field and laboratory techniques for members attending the Summer School.

Results

Summary statistics concerning the School are present in Table 1 below.

Week	No. of Students Attending School	%No. of Students Returning from 1975 School	No. of New Enrolments Each Week	No. of Drop-outs	Man Hours Work Achieved
1	26	7.6	26	1	1,200
2	29	17.2	16	-	1,392
3	31	16.1	10	3	1,344
4	26	19.2	11	2	960
5	33	18.2	22	3	1,320
6	36	25.0	12	1	1,680
7	42	23.8	13	1	1,968
8	35	31.4	8		1,680
	TOTALS		118	11	11,544

TABLE 1 STATISTICS RELATIVE TO THE 1976/77 SUMMER SCHOOL

It may be seen that 118 students attended the School altogether, for periods of time ranging between one and eight weeks. Although the drop-out rate was relatively high (approximately 10%) the returns from previous schools exceeded the drop-out rate and work achieved in terms of man hours was maintained at a high level. Based on a salary of $130 per week for a 37½ hour working week, this represents $45,224 of man-power or the equivalent of employing seven people full time for one year.

Of a total of 118 students who attended the School, 78 were enrolled for Accreditisation. Preliminary assessments suggest that of these, 44 will be accredited including 5 at the C grade level, 23 at D grade level and 6 at E grade level. Many of the gradings will be provisional, subject to the students obtaining more experience in certain categories of archaeological work.

Throughout the course of the School, the local press gave good weekly coverage of our activities. This type of publicity was supplemented by frequent radio bulletins, some television coverage and two news stories published in the *Age*. In addition 570 house calls were made in the course of our field surveys, and Survey publications were on sale at local newsagents. Some schools were visited prior to the beginning of the School in late November and posters describing the range of activities which are carried out by the Survey were distributed to students.

At the end of the School the Survey conducted a follow up poll to gauge the effectiveness of its educational programme. A total of 329 people were interviewed both in urban and rural areas representing about 1% of the local population. People were asked a standard set of questions. The results were interesting. Only 33% of those people interviewed had ever heard of the Victoria Archaeological Survey and of these 10% knew it was a government department. When asked where they had first heard of the Survey it turned out that the papers were the most successful media - (66%), followed by personal contacts

15%, radio (1%), and television (1%)*

People had very little idea of what the Survey does and what it was doing in the area: 75% didn't know, others thought we were excavating (16%), site recording (10%), preserving sites (3%), digging up bones (2%), writing the history of the area (4%), investigating the Mahogany Ship (4%), or doing geology (1%). Again 56% of the people interviewed had no idea where we were working and another 2% made incorrect guesses. 49% knew that the government had passed legislation to protect Aboriginal relics, of these 9% thought the Act was passed to protect sites, 6% to protect them, 4% to secure Aboriginal land rights, and 86% didn't know anything about the Act. Thus, our educational programme was a failure, though the reasons for this are not entirely clear. Again it is obvious that local people read their newspapers selectively. The end results of these findings is that the Survey will have to investigate alternative and more productive methods of reaching the public.

Field Programme

All told, 68 new sites were located and recorded in the Warrnambool area. These included 31 mound sites and 32 coastal middens. The Survey confirmed predictions that many sites have been ploughed and lost, and few if any, *in situ* examples were found. Few traces of sites were found in the many large areas of developed land which we suspect could have been associated with sites in the past. Other sites recorded outside the Warrnambool area are listed in Table 2 below.

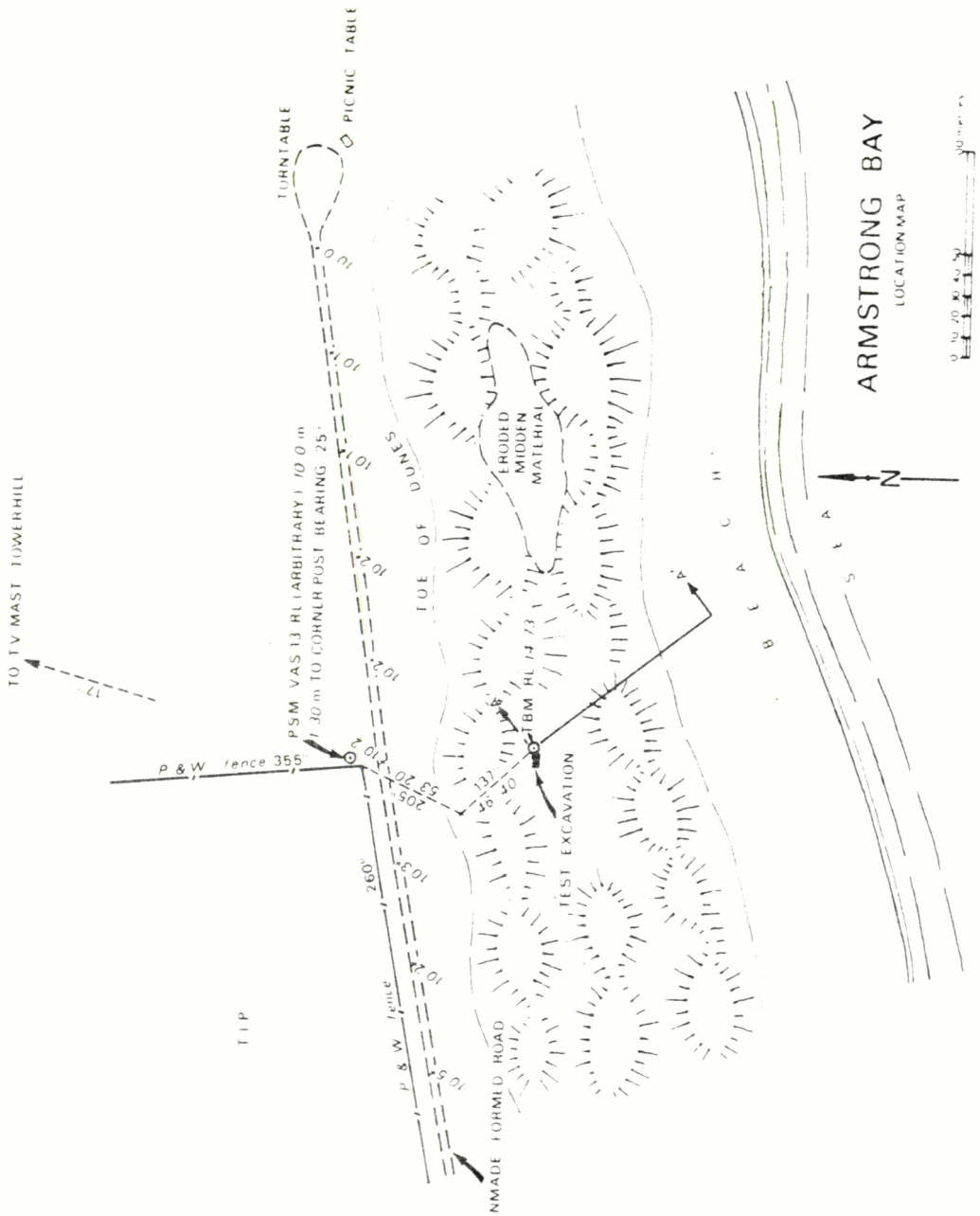
Map	Mounds	Coastal Middens	Quarry Sites	Stone House Sites	Weirs/ Fish-traps	Burial Sites	Caves/ Rock Shelters	Surface Sites
Willaura 7422	5		1					2
Portland 7221	27			34	8			
Coleraine 7222	121			15				1
Warrnambool 7321	31	32				4	1	22
Mortlake 7421	3						1	
Total	187	32	1	49	8	4	2	25
TOTAL NUMBER OF SITES								308

TABLE 2 SITES RECORDED DURING THE SUMMER FIELD PROGRAMME

Of particular interest were the new stone house sites and associated structures located on the margins of a large swamp near Macarthur which appear to be part of a complex recorded previously. 121 mound sites were found on the margins of this same swamp. Many of the mounds occur in clusters, some in unploughed paddocks and in a reasonable state of preservation. Methods for ensuring their continued protection are being considered.

* These figures do not add up to 100%. The reason for this is that some people gave multiple answers.

FIGURE 2: PLAN OF ARMSTRONG BAY AREA



The most spectacular finds however were made further west at Lake Condah where a large series of well preserved fishtraps, dry stone walls, stone arrangements and stone houses were discovered. The recording and further study of these monuments has not yet been completed but preliminary results indicate that the Aborigines who were responsible for building them had a very refined knowledge of hydrodynamics, and were able to make use of flood levels to optimise their fishing strategies. The site is also important because it is the second locality in Victoria where Aboriginal stone house sites have been found. We have not yet been able to examine the Mt. Napier district to see if this is indeed a third area.

The Willaura map sheet was divided into physiographic zones, which were in turn divided into 1 km^2 units and several areas in each zone were selected for detailed survey using a book of random numbers. The selected areas were covered intensively by field teams on foot. The results of these surveys will be used to estimate the numbers of sites which might have been overlooked in our general coverage of the area conducted between 1973 and 1975.

Excavations

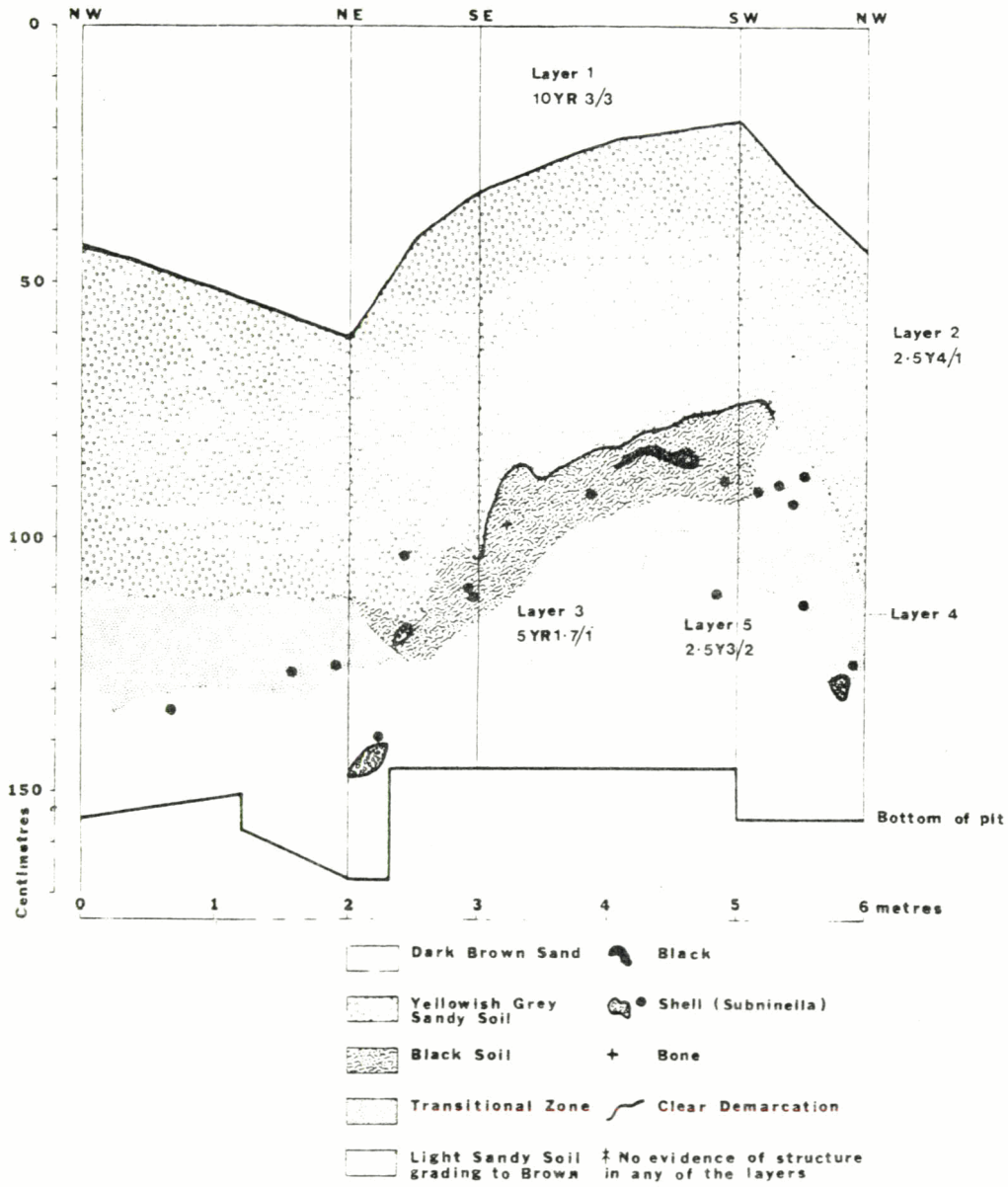
Two major excavations were carried out - one at Thunder Point near Warrnambool, the other at the Craigs near Yambuk. Both are multiple layered midden deposits situated on the present coastline. They are contained within thick, chocolate coloured soils which cap Pleistocene dune limestone cliffs. Rock platforms shelve offshore and today the same range of shellfish species which occur in the midden deposits can be collected from these areas.

The Craigs and Thunder Point. At the Craigs the excavations extended over 20 m^2 of earth was excavated. At Thunder Point the excavation covered 16 m^2 and approximately 12 m^3 of soil was removed. Several hundred kilograms of archaeological materials were recovered including shells, crayfish remains, some bone fragments and soil, seed and charcoal samples. The Thunder Point site revealed five cultural layers, the Craigs two. Although both sites yielded some flake material, it was not abundant and most was flint debris. All archaeological material were washed and processed in the field laboratory.

At both sites the predominant shellfish species were rock platform ones. At the Craigs *Subninella* (wavy turbo) predominated and at Thunder Point both *Subninella* and *Cellana* (a limpet). Hearths were found at both sites.

Tower Hill Beach. Tower Hill Beach or Armstrong Bay is situated midway between Warrnambool and Port Fairy (Figure 2). Edmund Gill, retired Deputy Director of the National Museum of Victoria, has described impressive surface deposits in this area which contain hundreds of bone points, great amounts of bird and animal remains and abundant stone tools. In recent years he has distinguished two major occupation horizons on the basis of dune stratigraphy and his radiocarbon dates

FIGURE 3: STRATIGRAPHY OF TEST EXCAVATION AT ARMSTRONG BAY



suggest that the deposits date somewhere between 2,000 and 5,000 years B.P. Today there is no obvious visible evidence for these sites as they have been completely covered up by dune sands. However there are still one or two eroding areas where old soil horizons containing original deposits are exposed. Unfortunately the overburden in most places is considerable.

It was with the object of examining Gill's observations that a test pit was sunk in one such area. A large pit (3 m x 2 m x 2 m deep) was dug through the overlying dune sands down to the cultural layers. The dune sands were stabilised by building a shaft out of timber and sheet iron. A 2 m x 1 m test pit was then laid out and excavated. The results indicate that the soil was approximately 1 m deep and about half way through the deposit a single occupation horizon was unearthed (Fig. 3). It was found that the deposit dipped sharply from south to north suggesting that we were in fact on its northerly margin and indeed the cultural material tended to disappear as we excavated across the square from south to north.

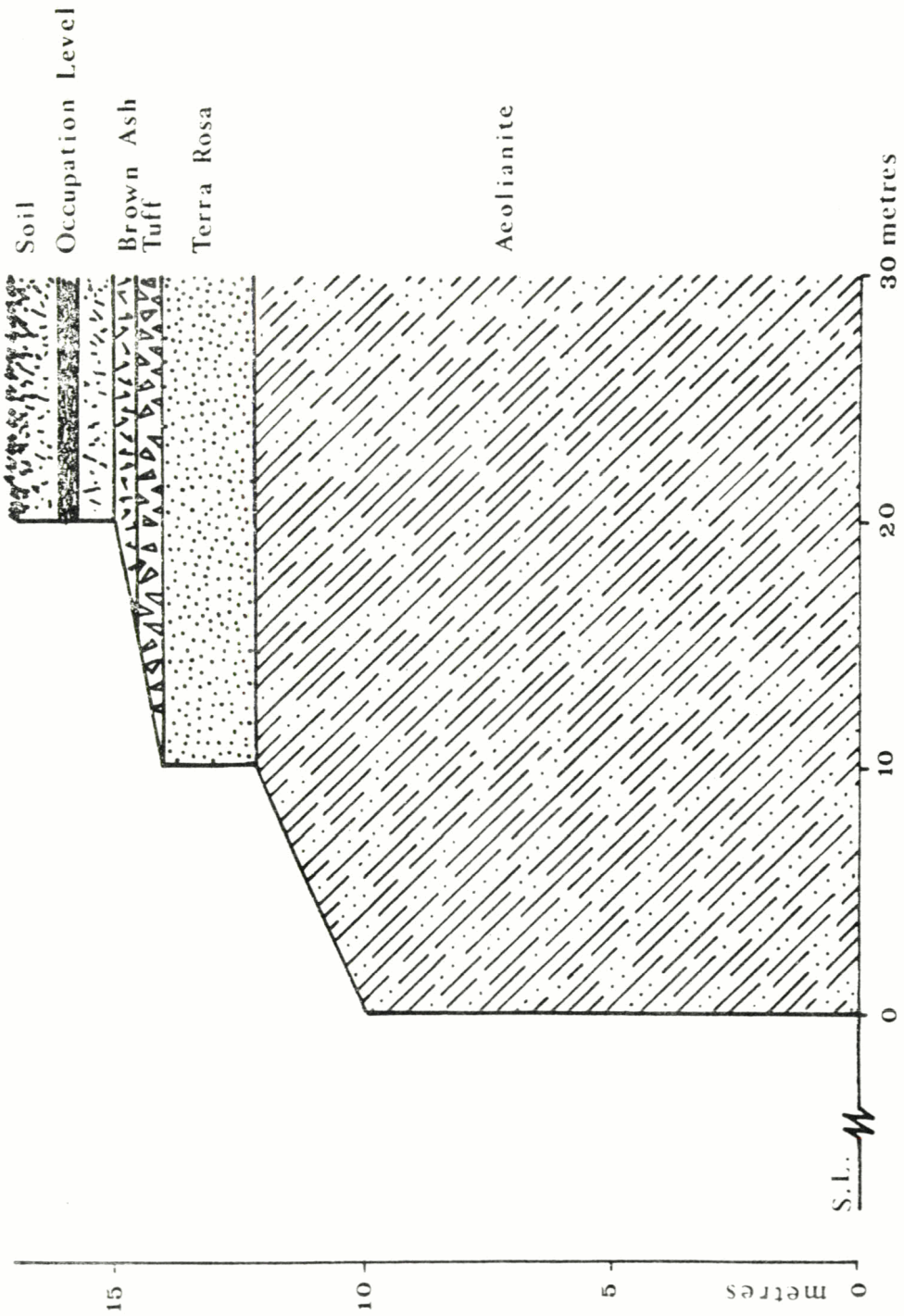
In spite of the size of the test pit, the cultural horizon revealed a rich assemblage of shellfish, crayfish, bird, animal, reptile and fish remains and stone tools. The contents of this site stand in contrast to those excavated at Thunder Point and the Craigs. The type and variety of stone tools are different, being well made and from fine grained materials. However a similar range of shellfish was in evidence at all three sites. The data available suggest that there cannot be too much difference in age between the three sites excavated and indeed we expect there to be a considerable overlap when radiocarbon dates become available. Therefore we are of the opinion that at Armstrong Bay we have a functionally different type site - possibly a base camp - in contrast to Thunder Point and the Craigs which were probably more utilitarian or function-specific sites, associated with the exploitation of shellfish.

Vulcanism

Another intriguing problem which attracted our attention while we were in the area was to try to determine how the eruption of the Tower Hill volcano affected man/land relationships in this area. Gill has tentatively dated the eruption at approximately 7,300 B.P. by using charcoal from a midden deposit which he obtained at Pickering Point and which he claims was deposited during the actual eruption. The key to his hypothesis is the presence of olivine - a component of volcanic ash - in the prehistoric cultural deposits.

We have examined the soils from which Gill obtained his radiocarbon samples and stratigraphically they appear to be linked with the earlier phases of the same occupation soil which we have been excavating at Thunder Point. Indeed next to the excavation there is a tuff deposit which appears to stratigraphically underly the archaeological horizons (Fig. 4). Hence a radiocarbon date from the lowest culture

FIGURE 4: SCHEMATIC STRATIGRAPHY AT THUNDER POINT



bearing horizon at Thunder Point should give a *terminus post quem* for the ash shower. A wider search of the area suggests that the tuff must have been trapped discriminately in pockets as it is not found universally throughout the area. In one area at least, there are indications that the ash shower occurred before an underlying, and much earlier, *terra rossa* soil had eroded. Indeed it is possible that the ash rain may have occurred whilst the *terra rossa* was still vegetated as there is at least one exposed section of a well preserved *terra rossa* profile capped by the harder tuff. In most other areas however, the *terra rossa* is badly eroded and has been covered by a capping of either chocolate soil or consolidated aeolianite.

To investigate the problem of vulcanism further, a small 1 m^2 test pit was dug into a soil remnant overlying the older dune limestone and probably containing occupational debris as well as volcanic ash. The site was located in the vicinity of the place where Gill obtained his original charcoal sample. A large pit was also dug into a section of uneroded chocolate soil nearby. Soil samples were taken at regular intervals for analysis. It is notable that this particular soil contained no occupational debris and a superficial examination of the material in the first pit suggested that the occupation soil may be secondarily deposited.

We anticipate that there will be a cut off point within the soil profile when olivine will no longer occur and which should be synonomous with the end of the volcanic eruption. This would also mean that there should be little or no olivine in the lower soils in the Thunder Point excavation. In other words, we hope to establish a sequence which covers and post-dates the volcanic eruption. However we note the "ash" bearing soil tends to be much harder and more resistent to erosion than the underlying soil so there is a possibility of a hiatus between these and the later occupational horizons.

Kinghorn Sites

A series of test pits each 1 m^2 in area were sunk into three of the mounds associated with the swamp near Macarthur, and charcoal samples were obtained for dating. Small quantities of lithic material were recovered and a hearth was revealed in one mound. The radiocarbon dates should give us some idea of when these sites were first occupied and later abandoned.

Bushfield

Unfortunately we were unable to excavate the Bushfield site as the owner refused us permission to carry out investigations there.

Conclusions

A great deal of work now remains to complete the analysis of the material recovered from this season's fieldwork. However we feel that sufficient results have been obtained to enable us to develop and construct the framework of the late prehistoric period for this area to Victoria. As the work progresses, periodic bulletins will be published through the *Records of the Victorian Archaeological Survey*.

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P.J.F. Coutts and
D.C. Witter

Victoria Archaeological Survey

SUMMARY REPORT ON CURRENT ARCHAEOLOGICAL RESEARCH SUPPORTED BY THE AUSTRALIAN INSTITUTE OF ABORIGINAL STUDIES

Grants

Grants were awarded in September 1975, April and October 1976 and March 1977. Current lists are published in AIAS Newsletters twice annually. Grants likely to be of interest to the members of the Australian Archaeological Association are listed below, in no particular order. No attempt is made to show whether the extent of support by the Institute is a major or minor contribution to the total cost of the project.

H.J. Lourandos	A study of Aboriginal subsistence and settlement in southwestern Victoria.
R.H. Pearce	An investigation of Australian small tool industries with particular reference to Western Australia.
A. Rosenfeld	A study of prehistoric rock art in the Laura area.
Archaeological & Aboriginal Relics Officer, Victoria	Library search for information relating to Aboriginal sites in Victoria.