

Fig 1. Barapa Swamp, southern NSW, c. Google Earth

Abstract: Traces of Incipient Aboriginal Urbanism in South-Eastern Australia

The recent World Heritage listing of Budj Bim in western Victoria has demonstrated that Indigenous peoples of south eastern Australia constructed large-scale engineering works that provided them with reliable seasonal, if not year-round, food sources.

Whether or not one accepts the thesis of Indigenous Australian agriculture postulated by Rupert Gerritsen in *Australia and the Origins of Agriculture* and by Bruce Pascoe in *Dark Emu*, the Budj Bim fish traps and eel farms appear to have been the economic basis for multi-seasonal and, perhaps, permanent settlements in Western Victoria including some structures built of stone that are currently the subject of much archaeological interest.

There are numerous accounts of Indigenous settlements, villages, even what are sometimes called “towns”, in early colonial historical records. These accounts are mostly confined to western Victoria, and to the very earliest period of contact between Europeans and Indigenous Australians. It has been argued by several authors that these settlements may be analogous to accounts of incipient urbanism in other parts of the world.

There are also traces in early Victorian colonial literature of Indigenous civil engineering works on wider scale across the present state. These traces hint at the possibilities of permanent and semi-permanent settlements in the Murray River and other regions. These are settlements that may have been disrupted in the decades *before* direct contact between the Indigenous people and European explorers and colonists.

This paper will examine the extant evidence for permanent and semi-permanent Indigenous settlements in Victoria. It will compare what we know about pre- and early colonial settlements in Australia with some peri-Neolithic settlements in other parts of the world, and will argue that disease played a significant part in the demise of incipient urbanism along the Murray River corridor in the 1820s and 30s.

Traces of Incipient Aboriginal Urbanism in South-Eastern Australia

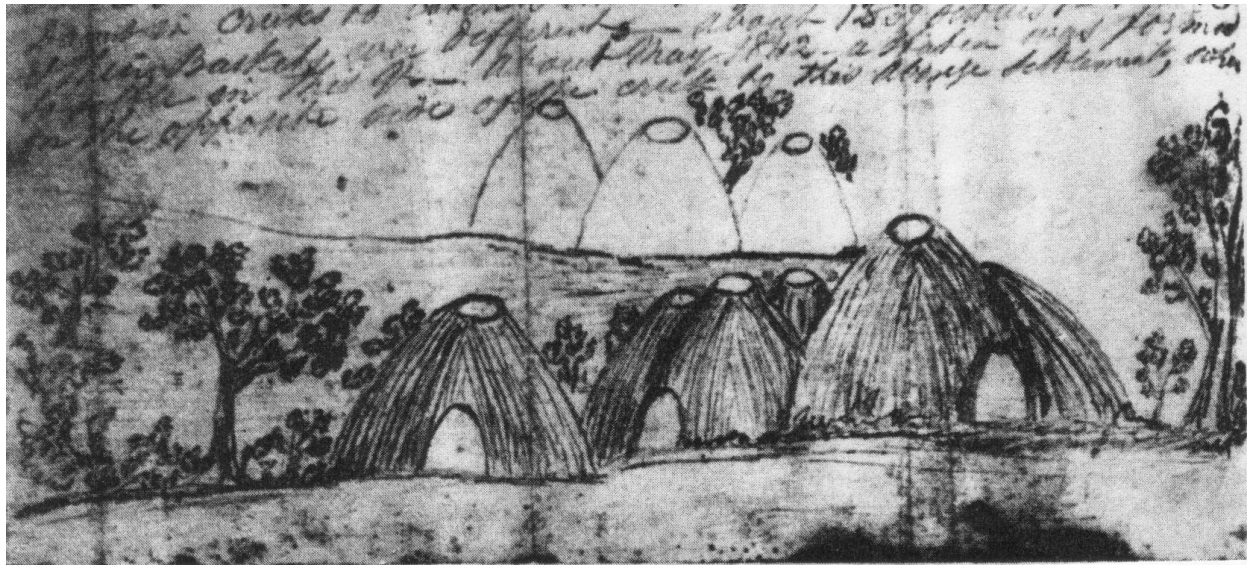


Fig 2. Gundjtmara village near Caramut, Western Victoria in 1840, from notebook of William Thomas.

INTRODUCTION

The widely held and longstanding belief that pre-colonial Australian aborigines were “simple nomads” who did not build permanent structures and did not live a settled way of life has been challenged in recent years. In fact evidence of substantial traditional indigenous settlements throughout Australia has been building for many years, and the case for many traditional aborigines as largely sedentary now rests on solid historical and evidential grounds.

This paper explores the evidence for permanent and semi-permanent settlements, as well as for large seasonal gatherings South Eastern Australia, looking, in particular, at the Western District of Victoria and also on the Upper Murray.

The paper forms part of the research for my PHD, a typological study of traditional indigenous dwellings in Victoria (areas immediately adjacent), which I commenced at Deakin University in March 2019.

Research to date draws on historical sources and archaeological evidence as part of the literature review, as well as on the writings of Rupert Gerritsen who has provided the overview and theoretical framework that informs this discussion. Pending ethics approval, further research will include engagement with indigenous groups in selected Countries, if they are willing.

SEDENTISM

Traditional aboriginal populations “*were densest and sedentism most pronounced where resources were abundant, reliable and accessible*”:ⁱ. In Victoria these conditions were met in several regions, notably in the Western District and on the Upper Murray, the principle subjects of this paper. While settlement and sedentism may have occurred in other regions, for example in alpine areas, where the rich harvest of Bogong moths provided, at minimum, the basis for large seasonal gatheringsⁱⁱ, the evidence for this is currently more limited than that in the Western District and the Upper Murray. The present paper therefore confines itself to the evidence for sedentism in those locations.

I am indebted to the work of Paul Memmottⁱⁱⁱ who has documented the indigenous building and settlement tradition across Australia. Detailed examinations of historical and ethnographic accounts of indigenous settlements can also be found in the work of Rupert Gerritsen, who died in 2013. Gerritsen wrote widely on the topic, and made a case for an indigenous agriculture. His pioneering work in this field has been expanded and popularized by Bruce Pascoe in his 2014 book *Dark Emu*^{iv}. Groundbreaking in many respects, it remains contentious. Gerritsen has been criticized for overstating the case for indigenous agriculture by, amongst others, the archeologists Harry Lourandos and Ian Gilligan^v.

The question of agriculture aside, the classical era aborigines of south eastern Australia practiced aquaculture, built extensive civil engineering works including dams, weirs, drainage channels and levees,

made very large nets and baskets of high quality, built fences and corrals, used gypsum clay as bowls and headdresses, made ground edge stone tools, and, as argued above, practiced certain forms of agriculture. They even had, according to Bruce Pascoe,^{vi} the beginnings of ceramic technology.

In comparison, examples of early sedentism *without* agriculture (in the narrow sense) include ancient peoples such as the Natufian people (c. 15 000 BP – 9 500 BP)^{vii} of the Levant and the Jomon (c. 14 000BP- 3000 BP)^{viii} in Japan. Both were sedentary (or semi-sedentary) and yet neither appears to have practiced “true agriculture” at the time they transitioned from a nomadic to a settled way of life.

Early Jomon and Natufian cultures compared with pre-1850 SE Australia	Early Natufians, c. 15 000 BP	Early Jomon c. 14 000 BP	SE Australia Pre-1850
Permanent and semi-permanent settlements.	Yes	Yes	Yes
Housing types	Stone walls, skin / reed mat roofing, sunken floors	Timber frames, thatch walling / roofing, sunken floors	Stone walls, timber frames and thatch, bark, sod, clay, reed mat roofing / walls, sunken floors
Cultivation, harvesting, storage of food.	Yes	Yes	Yes
Large scale aquaculture	?	?	Yes
Civil engineering: including dams, weirs, drainage channels and levees	Probably	Probably	Yes
Net and baskets	Probably	Yes	Yes
Fences and corrals	Yes	Yes	Yes
Gypsum	Yes	?	Yes
Ceramics	No	Yes	?
Trade	Yes	Yes	Yes

P Hogg, 2020

In Southern Australia, the archeological and historical records provide evidence for quite large settlements with many hundreds of inhabitants. These were occupied for months at a time, if not for all or most of the year. In one example in Eastern Victoria, Rupert Gerritsen arrives at a population for one permanent or multi-seasonal village of around 500 people by multiplying the number of dwellings with the apparent number of occupants, cross referenced against various historical accounts. Pascoe gives a figure of 1000 for what seems to be the same village, but without any supporting explanation.^{ix}

While Gerritsen's methodology may be open to question, settlements of considerable size (i.e. in the hundreds) existed pre-contact, and which stand comparison to those of other early sedentary cultures such as the Jomon and Natufians. There is also evidence for very large gatherings of sometimes *thousands of people* for periods of weeks or possibly months. In most cases, these permanent or temporary communities were supported by aquatic resources and by aquaculture. In all cases access to fresh water was crucial.

Gerritsen and others have compiled evidence for a variety of indigenous settlements in the pre-colonial and early colonial eras. Adapting the schema of settlement hierarchy from the Israeli scholar David Grossman^x, Gerritsen categorizes traditional indigenous settlements as follows:

- **Homesteads:** single structures occupied by twenty persons or less, at least one kilometer from any other structure (e.g. Cupola on a Mound, as reported by G.A. Robinson, May 1841)
- **Lodges:** Single structures occupied by twenty to forty persons at least one kilometer from any other structures (e.g. the White Lake Structure?).
- **Dispersed Settlements:** Non-contiguous structures, or contiguous clusters of structures with less than forty persons, placed at least 150 apart, but closer than one kilometer. (e.g. "20 well built worns" fringing the Great Swamp.)
- **Hamlets:** Contiguous structures having a total population of forty to one hundred persons (e.g. Lake Elingamite cluster).

- **Villages:** Contiguous structures having a total population of more than one hundred persons (e.g. Scrubby Creek Village).^{xi}

Permanence of settlement is an important dimension of sedentism. In general, the higher the level of permanence, in terms of the annual cycle, the higher the level of sedentism. Traditional indigenous settlement patterns might be categorized by the length of occupation at each site, ranging from:

- **Transitory Camps:** occupied for single night, or for a few nights. Shelters are temporary, and are kept simple, often taking the form of lean-tos, and are readily erected and providing only limited protection from the elements, are mostly built in the warmer seasons.^{xii}

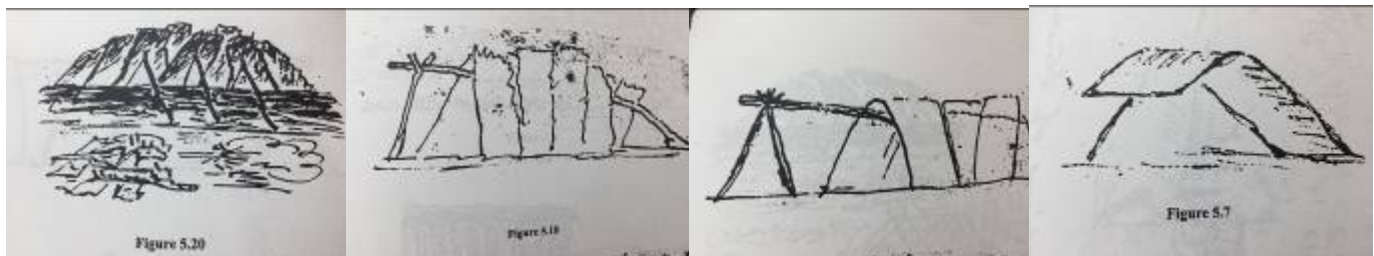


Fig. 03 *Transitory and temporary shelters, from notebook of George Augustus Robinson*

- **Temporary Camps:** occupied for a period of a few days or weeks. As above these shelters were generally quite simple, often taking the form of lean-tos or domes left open on one side. They were readily erected, provided only limited protection from the elements, and were mostly built in the warmer seasons. Large groupings of such structures were reported in early colonial accounts when clans or groups of clans came together for major ceremonial events, trade or for other cultural reasons (or all of the above).^{xiii}



Fig. 4 *Domed temporary shelters, detail from Aborigines met on the road to the Diggings, 1854. Eugene Von Guerard, Geelong Gallery.*



Fig. 5 Domed temporary / seasonal shelter, from notebook of George Augustus Robinson

- **Seasonal Settlements:** When conditions permitted, sites would be occupied for the duration of a season: generally while a particular food source at a particular location was abundant. The group would move on once the season was over, either to the next place of abundance or dispersing into smaller groups until the next major food source became available.



Fig. 6 A large assemblage of huts, detail from Blandowskis' Australia / Australien: fig 80: p.99. Plate (?): "In November when the season is heading for hot summer, the tribes gather in the lowlands where the first manna flows out of the Eucalyptus radiata....". Drawing by Blandowski.

- **Multi-Seasonal / Permanent Settlements:** many "classical" indigenous groups would in some cases occupy settlement sites for several seasons while a particular food source at a particular location was abundant, or where there was access to a variety of different food sources at or near the location of the settlement. As with seasonal settlements, the occupation of a site over several months provided the opportunity to construct substantial, elaborate and *weatherproof* structures.^{xiv} such as the now famous "stone houses" of the Gundjitrara, or the cupolas of Scrubby Creek drawn by George Augustus Robinson (Fig 9)., or the "Cone House" at White lake described by Major Mitchell (Fig 10).

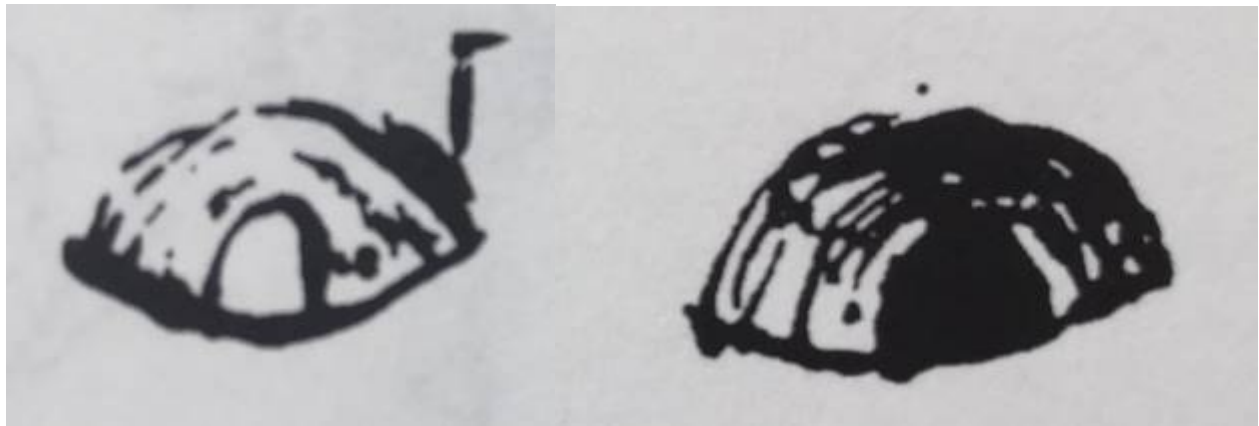


Fig. 7 Cupola houses, from notebook of George Augustus Robinson

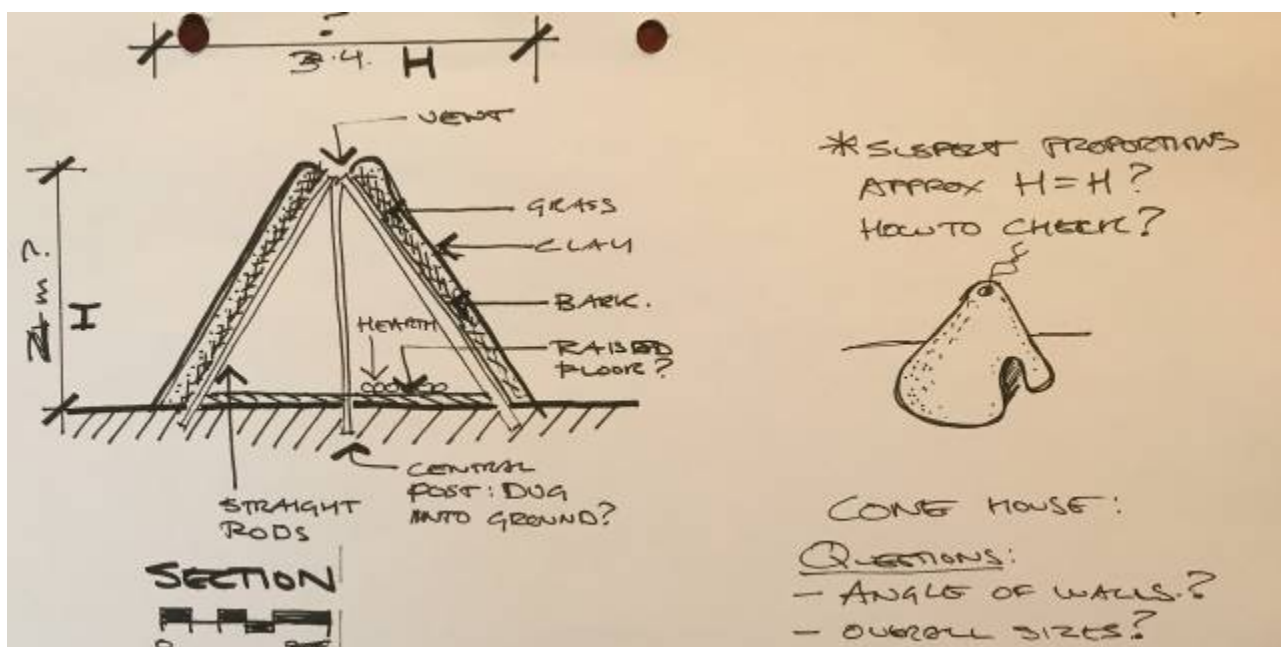


Fig. 8. Cone houses, taken from description of houses at White Lake, diaries of July 26, 1836, p. 94. Major Mitchell, drawing P. Hogg

Provisional and possibly inadequate as the above categories may be, I will use the above framework as an aid to discussion for the rest of this paper.

Perhaps the most famous example of a traditional aboriginal village, as defined above, in South Eastern Australia comes from the notebook of William Thomas' (Fig 2, above) gives an excellent description of a Gundjitmara village and the buildings comprising it near Caramut, Western Victoria in 1840:

"...by Mustons and Scrubby Creek to the westward....first settlers found a regular aboriginal settlement....about 50 miles NE of Port Fairy. There was on the banks on the creek between 20 and 30

huts of the form of a beehive or sugar loaf, some of them capable of holding a dozen people. These huts were about 6 ' high or (a) little more, about 10' in diameter an opening about 3'6" high for a door which they closed at night if they required with sheet of bark, an aperture at the top 8 or 9" to let out the smoke which in wet weather they covered with a sod. These buildings were all made of a circular form, closely worked and then covered with mud, they would bear the weight of a man on them without injury. These blacks made various well constructed dams in the creek which by certain heights acted as sluice gates in the flooding season."^{xv}

Thomas did not see this village himself, his account and depiction is based on information provided by one George Arabin, who had seen the village at first hand.^{xvi}

Using the Gerritsen / Grossman schema for traditional indigenous settlements the above would indeed seem to merit the name of "village", and the size of the settlements and the effort put into the construction implies that the settlement was at minimum seasonal or multi-seasonal. It is significant that Thomas mentions the proximity of a creek and that the creek was dammed and controlled by villagers. Proximity to water, aquaculture and the control of water via dams, weirs and channels is an important factor in allowing a settled existence.

Few early pre- colonial accounts of settlements have left any physical trace, but they were no doubt widespread. In 1826, in Boonwurrung country around Western Port Bay French explorer Dumont D'Urville described a settlement of "30 or 40 quite well built, but recently deserted huts thatched with bark".^{xvii} In 1835, John Batman wrote of "a village of seven large huts" ^{xviii} near the Werribee River.^{xix} There are similar accounts of village in the Coorong and near Mount Gambier both in South Australia, implying that substantial settlements were common across south-eastern Australia.

James Dawson, who farmed cattle and sheep near Macarthur (Gundaitmara Country, north of Port Fairy in the Western District), for 20 years from the mid 1840s, and then moved to a property on lake Bullen

Merri (in Dja Dja Wurrung Country, south of Camperdown) described clusters of similar dwellings, and is explicit about the level of permanence and the construction:

“Habitation- wurrns- are of various kinds, and are constructed to suit the seasons. The principal one is the permanent family dwelling, which is mad of strong limbs of trees stuck up in dome shape, high enough to allow a tall man to stand upright underneath them. Small limbs fill up the intermediate spaces, and these are covered with sheets of bark, thatch, sods and earth till the roof and sides are proof against wind and rain. The doorway is low, and generally faces the morning sun or a sheltering rock. The family wuurn is sufficiently large to accommodate a dozen or more persons; and when the family is grownup the wuurn is partitioned off into apartments, each facing the fire on the centre. One of these is appropriated to the parents and children, one to the young unmarried women and widows, and one to the bachelors and widowers. While travelling or occupying temporary habitations, each of these parties must erect separate wuurns. When several families live together, each builds its wuurn facing one central fire. The fire is not much used for cooking, which is generally done outside. Thus in what appears to be one dwelling, fifty or more persons can be accommodated, when, to use the words of the aborigines, they are “like bees in a hive...”

And...

“These comfortable and healthy habitations are occupied by the owners of the land in the neighbourhood, and are situated on dry spots on the bank of a lake, stream, or healthy swamp, but never near a malarious morass, nor under large trees, which might fall or be struck down by lightening. When it is necessary to abandon them for a season in search of variety of food, or for visiting neighboring families and tribes,^{xx} the doorway is closed with sheets of bark or bushes, and, for the information of visitors, a crooked stick is placed above it pointing in the direction which the family intends to go. They then depart, with the remark: “Muurtee bunna meen,”- “close the door and pull away.”^{xxi}

There are no intact traditional aboriginal villages remaining in Victoria or adjacent areas today, begging the question: what happened to them? Many traditional aboriginal settlements were deliberately destroyed by early colonists as part of the process of dispossession and “extirpation”. For example,

Assistant Protector William Thomas records that: *"white people set fire to and demolished the aboriginal settlement....while the Blacks were from their village, up the creek, seeking their daily fare."*^{xxii}

Clearly, those who remained in their established villages were vulnerable to attack as the colonists would know where to find them: survival often meant retreating to mobile camps in more inaccessible areas. The Gunjitmara people were forced to do this during the "Eumeralla Wars" from the late 1830s to the 1850s.^{xxiii}

Dwellings were often made of perishable materials, timber, bark, thatch, netting, clay and earth sod, materials which would leave little trace after only a few years without maintenance. In addition, the intense fires which followed the cessation of cultural burning after colonization would have destroyed remaining structures made of flammable materials. Traditional buildings most likely to survive were made in whole or in part of stone, the favoured building material in the volcanic landscapes of Western Victoria, although there are also some accounts (and drawings!) of stone huts in the alpine regions.

"In some parts of the country where it is easier to get stones than wood and bark for dwellings, the walls are built of flat stones, and roofed with limbs thatch. A stony point of land on the south side of a lake near Camperdown (Lake Bullen Merri?) is called "karm karm" which means "building of stones", but no marks or remains are now to be seen indicating the former existence of a building there.....These permanent residences being proof against all kinds of weather, from excessive heat in summer to frost in winter..... In cold weather a fire is kept burning day and night in the center of the floor; and, the habitations being easily heated, a very small one suffices....."^{xxiv}

At Darlots Creek, in Gunditmara Country, the remains of a cluster of stone dwellings were investigated by Dr. Heather Bulth and others in the early 2000s. She found the remains small houses built in clusters, with internal dimensions of 2 to 2.5 meters, some with multiple chambers and what appear to be small stone storage structures nearby. The remains described would be consistent with a domed or possibly

conical or “beehive” structure. Stone walls, typically 1 meter high, formed the base, with a roof made of timber and covered with clay, thatch or bark for weatherproofing.

While building in stone does not necessarily equate with permanency of occupation, it is structures made of stone which survive to the present day. Even then, many stone structures were demolished by colonists and livestock, the stone being used to build the drystone walls and rural buildings common in the western district.



Fig. 9 Remains of base of Gundjitmara house, near Lake Condah, Western Victoria c. 6700 BP, Photo: P Hogg

MOUNDS

Settlement sites are often associated with lakes, wetlands, creeks and rivers, providing sources of food, water and materials for making tools, nets, baskets and other artifacts. As noted in Dawson (above) habitations are: “.....situated on dry spots on the bank of a lake, stream, or healthy swamp, but never near a malarious morass, nor under large trees...”, many permanent / multi-seasonal villages were located near permanent water features, but there is also evidence of very large seasonal gatherings at some of these lakes.

At Lake Bolac in central Western Victoria *thousands of people* are reported to have gathered for up to 2 months at a time during the eel season, inhabiting a “semi-permanent village extending for a distance of 35 kilometers along the river-bank”.^{xxv} The significance of this site, and the event, is indicated by the fact that Lake Bolac is also the site of a large stone arrangement, one of only a few in Victoria.^{xxvi} Although the primary driver for large seasonal gatherings appears to have been *economic*, i.e. the eel harvest, these gatherings were also important cultural occasions: a time for ceremonies, trade, socialization, reunions, corroborees, sports, marriages and betrothals, dispute resolution and so on. This annual event was disrupted by colonization, but is today continued and celebrated in the bi-annual Lake Bolac Eel Festival.

The form of the shelters / huts / houses used at the gathering is unclear, but as the “Village” was temporary and occupied in early autumn the shelters may have been of more a temporary nature than those at more permanent sites. These could take several forms, (see Fig. 05 above), including lean-tos and tent-like structures made of large sheets of bark. We can get some idea of the layout of these seasonal “towns” from the sketches in the notebooks of William Thomas, who drew similar large scale

encampment of more than 800 at a “major gathering of the tribes” which formed when aboriginal groups converged at Melbourne in the late 1843 and early 1844 to attend the trial of two indigenous men. (see Fig. 10 below), Thomas writes:

"I have often been struck with the exact position each tribe takes in a general assemblage of the tribes, precisely in position by the compass..."^{xxvii} The shelters shown are of the lean-to type.

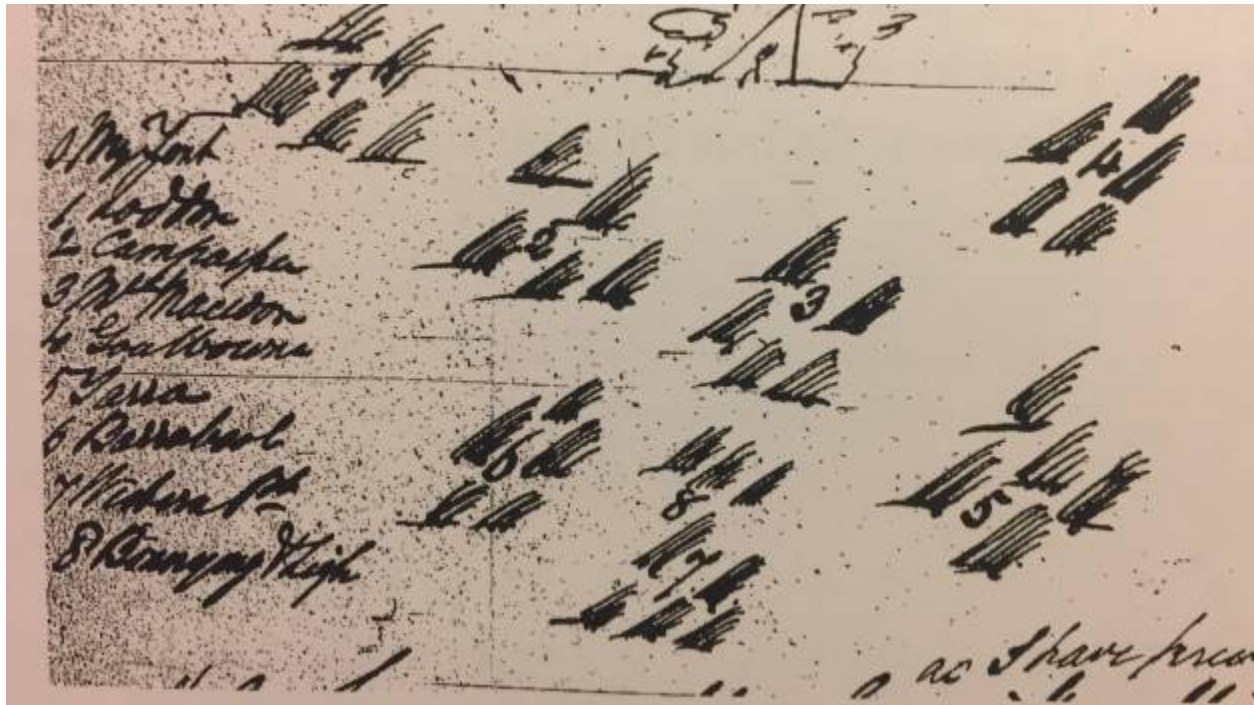


Fig. 10 *Sketch of Gathering of the Tribes, Melbourne, 1843-44, from notebook of William Thomas.*

As at Budj Bim and the village at Carramat, natural water systems were often artificially modified to enhance productivity. For example, extensive civil engineering works were carried out at Toolondo in Western Victoria which enhanced the natural productivity of two wetlands more than 3 kilometres apart, simultaneously draining the land between and enhancing its productivity and hence food supply for the local people.^{xxviii}

Many creeks, lakes and wetlands were associated with pre-colonial aboriginal villages, for example White Lake in Western Victoria, Barapa swamp near the Murray, and at Lake Boort in Northern Victoria.

Western Victoria is dotted with similar lakes and wetlands, (see Fig 11, below) and, before colonial farmers drained many of them (they make good farmland) there were a great many more. Many of these wetlands and lakes would have made excellent sites for indigenous settlements, and it is likely that many of them were occupied in the past.



Fig. 11. *Lakes and wetlands associated with aboriginal settlements and mounds: Barapa Swamp (L, above), lake Boort (R above), White lake (l, blow), Western Distrit lakes (R, below). C. Google Earth*

Another feature of the traditional indigenous landscape, also closely associated with lakes, wetlands and settlements, is the oven mound, often referred to as the “Mirnyong”.

Earth ovens are used to steam food, meat, fish, eel, reeds and other plants. Mirnyongs form as a result of the accumulation of earth, charcoal, rocks and baked clay as the oven is used again and again over time. The oldest mirnyongs date to around 2500 years ago, reflecting either a change in culture or perhaps, the process of “intensification” postulated by some archeologists (but disputed by others).

Mirnyongs occur over a wide area and are generally in close proximity with (fresh) water, in particular, wetlands and lakes, which are a rich source of food: fish, shellfish, birds, and the animals that come to drink at the water, as well as plants such as the roots of *Typha slothenhymi*. They are therefore both caused by settlement and also form attractive places to settle. Over time the accumulation of material built up, one upon the other, forming a platform raised above the flood waters of the nearby creek, lake or wetland, becoming ideal places for camp sites and permanent settlement. Houses and settlements are found on top of some Mirnyongs, as illustrated by the sketch below (Fig 06).

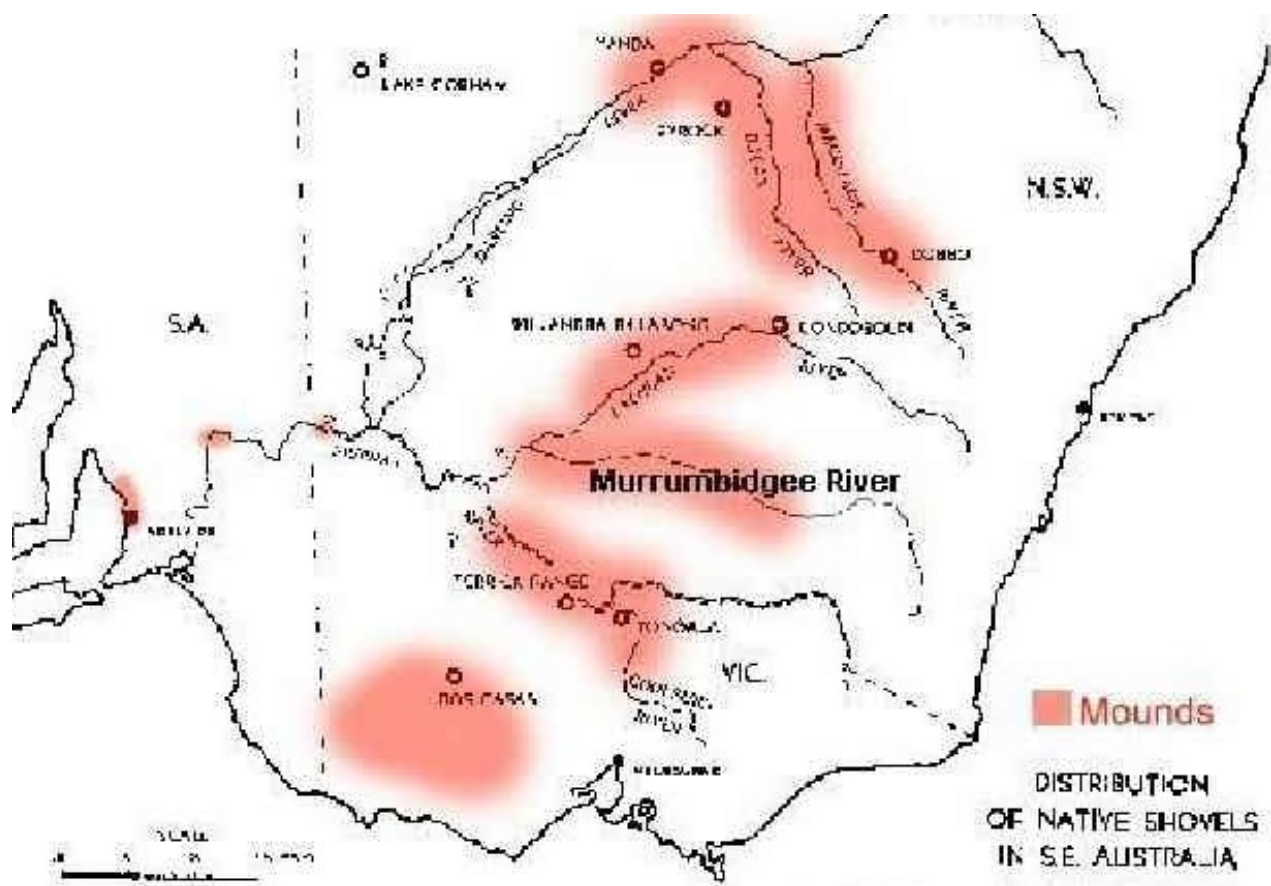


Fig. 12. Map showing distribution of mounds, Aldo Massola 1959



Fig 13. Detail of fig 32, p. 51. Plate 127, from Balndowskis "Australien": Oven mounds being used to preparing staple food of *Typha slothenhymi* roots.



Fig. 14 Mirnyongs (native ovens) forming a mound, from notebook of George Augustus Robinson



Fig 15. "I passed at least 20 well built worns or native huts..... On the top of an eminence was erected a mound of earth thus", from Journals of George Augustus Robinson, 11 May 1841^{xxix}

Mirnyongs could be very large. R. Brough-Smythe documents clusters of large mounds at the outlet to Lake Connewarren, 8 kilometers south west of Mortlake, one of which measures 102 by 90 feet (round 35 x 30 meters) across and between 2 to 2.5 meters high. He describes it as being of "great antiquity".

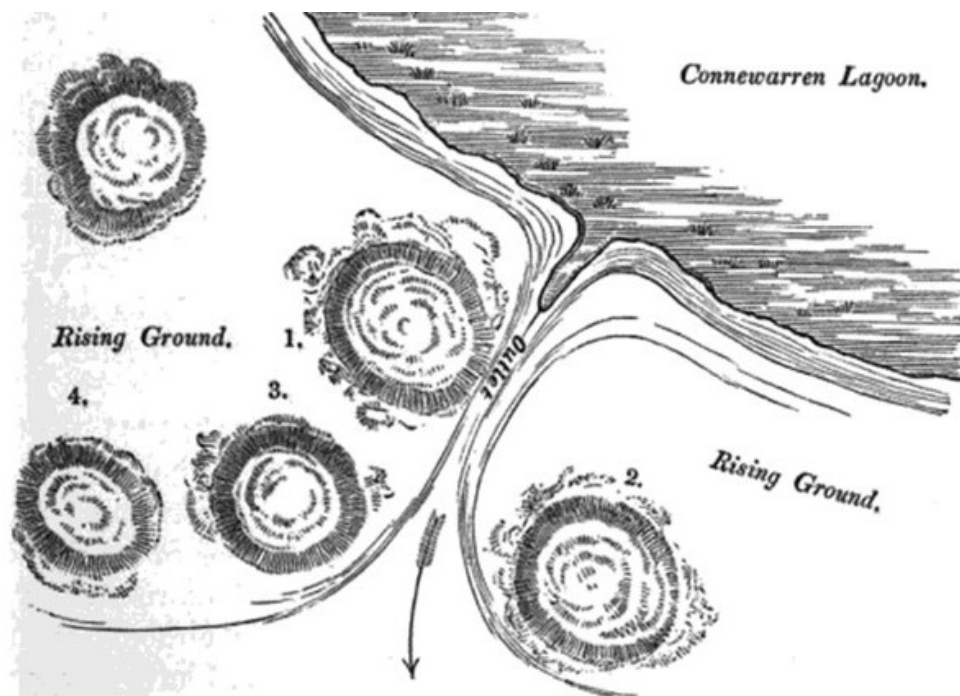


Fig 16. Mound cluster, Lake Connewarren, from R Brough-Smythe, *The Aborigines of Victoria*, 1878^{xxx}

Accounts and drawings of aboriginal mirnyongs are widespread in early colonial sources. While many mounds have been destroyed (the high charcoal content makes for good soil), others have been investigated by archeologists. Archaeologist Elizabeth Williams excavated a mound site at McArthur Creek near Caramut, Western Victoria in the 1980s. She observed that dwellings were built on top of *artificial mounds* with timber framing members “set into the surface of the mound. The position of the foundations suggests that the hut was circular in plan and thus the upper framework consisted of “boughs set into a domed shape”. No mention is made of stone walls or foundations. Williams suggests that the McArthur Creek site may be the same one as the village sketched in the William Thomas’ notebook. Another nearby mound was ploughed over and destroyed before she could excavate it. ^{xxxi}



Fig 17. Probable mound, Merrin Merrin Swamp, Dja Dja Wurrung Country, Photo: P Hogg

If even a fraction of the mirnyongs were associated with traditional settlements, then settlements must have been both widespread and common.

THE UPPER MURRAY

The Murray Darling system, Australias' largest rivers system, today is the food-bowl for the country, and it was undoubtedly highly productive in the pre-colonial times. Major Mitchells 1836 expedition documented numerous indigenous settlements on the Darling.^{xxxii}: since the Murray is a larger and more reliable watercourse than the Darling, it would be expected to support an equal or greater population. In fact, there is reason to think that there was considerable settlement along the Murray River corridor in pre-colonial times.

An example of an indigenous village on the Upper Murray (or dispersed settlement in the Gerritsen / Grossman schema) is found at the Barapa Swamp in NSW on the north bank of the Murray between Echucha and Swan Hill, where archeologist Colin Pardoe has documented more than 150 large mounds, clustered around the swamp. The mounds were the sites for huts and houses, and Pardoe refers to the clusters of mounds as *suburbs* (see Figs 18 and 19 below). He associates the mounds with flood control and aquaculture and the enhancement of the natural productivity of the river and wetlands.

At Barapa Swamp, habitations were built on top of the mounds, raising them above the flood level. Pardoe notes that the Barapa people practiced aquaculture and constructed civil engineering works, including: dams, ponds and weirs to catch shoals of fish. Dwellings were arranged in clusters around fish and plant resources, consisting of small day camps or large thatched houses.^{xxxiii} The mounds formed levees which held back the flood waters and provided ideal breeding grounds for fish and also promoted the growth of rushes (*Typha slothenhymi*) which provided a rich source of starch with formed one of the staples of the Barapa people. Both fish, meat and plant foods were cooked in over mounds, which further enlarged the levee system. The flood control / water management system was further enhanced by the construction of additional weirs and dikes.

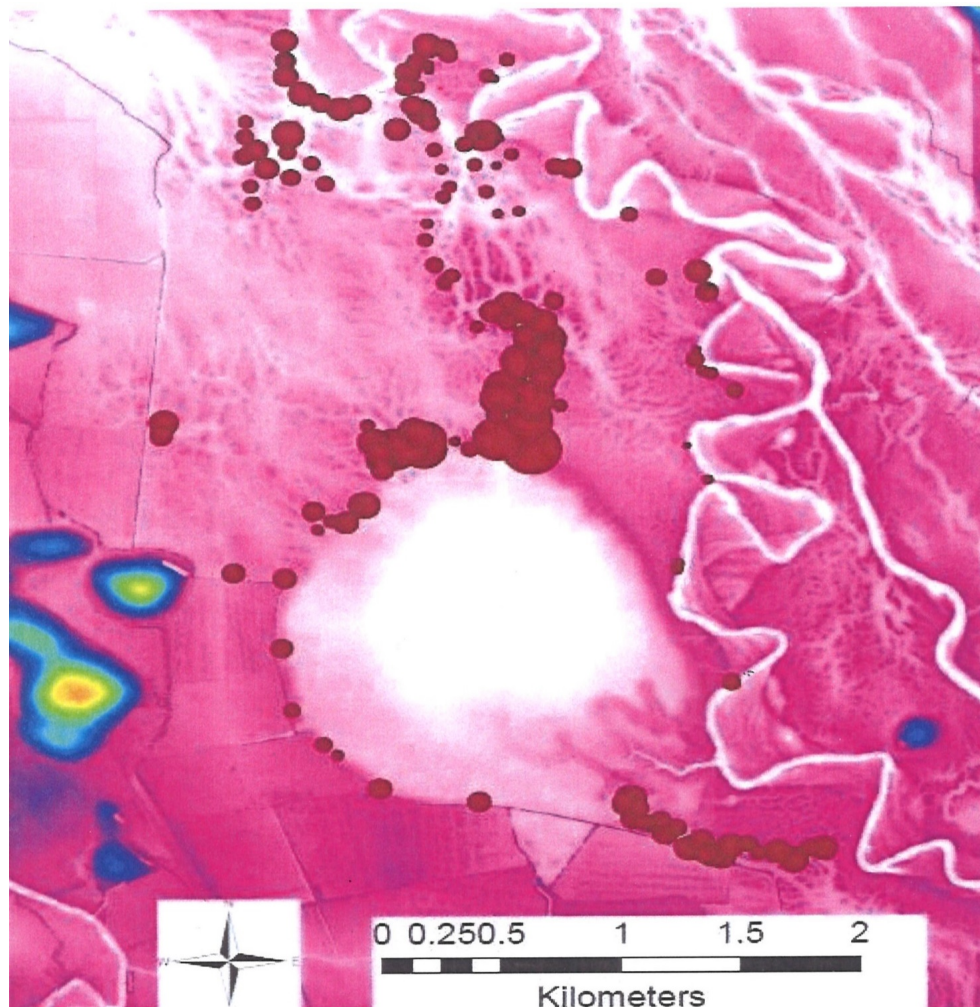


Fig 18. Lidar Map of Mounds at Barapa Swamp indicating size of mounds. PARDOE, Colin,

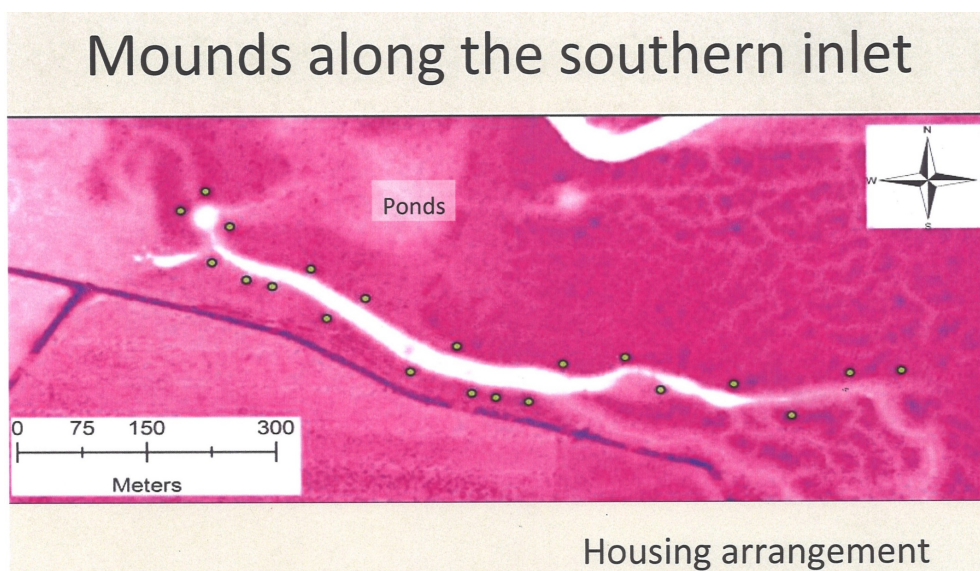


Fig 19. Lidar Map of Mounds at Barapa Swamp showing mound distribution along southern inlet. PARDOE, Colin

Archeological evidence is supported by historical accounts. The early pastoralist / colonist Peter Beveridge (1829-85), described many aspects of indigenous life as he encountered it over a 20 year period from the mid 1840s^{xxxiv}, and is an invaluable source of information in regards housing, settlements (always temporary in his writings), bark technology, nets and netmaking, hunting and fishing as well as many other aspects of traditional life.

Of particular interest is Beveridge's description of weirs and fish traps on the Murray:

"In the Swan Hill district the Murray River runs through an immense area of reedy plains. On the immediate banks of the river, for as far as these reedy plains extend, there is an artificial looking dike, having an elevation of three or more feet above the plains which shelve away behind it, consequently when the whole of these plains are inundated (which they are five months every year, from August to January inclusive) the dikes referred to act the part of dams, and so prevent the water from receding too rapidly.....the various kinds of fish find delectable grounds in the shallow, semi-tepid fluid wherein to pursue the prey upon which they feed.

In the artificial-looking banks at irregular intervals there are drains three or four feet wide, through which, when the river commences to fall, the waters of the plains find their way back to their parent stream. As a matter of course the fish instinctively return to the river with the receding water. At those seasons the aborigines are in their glory, and no small wonder either, as these times are actual harvests to them. They make stake weirs across the drains, the stakes being driven firmly into the soil.....Without any great stretch of imagination, the reader can easily fancy the shoals of fish which congregate behind these weirs when the river is falling, and what a very simple matter the taking of them must be.....The water continues to run through these drains for five or six weeks, and during all that time the natives slay and eat to their hearts' content"^{xxxv}

It does not take much imagination to see that the “artificial looking dike” might in fact be an *artificial dike*, in fact a kind of fish farm and that the “actual harvest” that Beveridge describes is in fact a *real actual harvest*.

The weirs Beveridge describes are considerable and extensive, extending across “*an immense area of reedy plans*” (how big is unclear, but the impression is kilometres in extent), and with a height of a meter or more. This is a massive undertaking. Beveridge is unable to credit the local indigenous people with constructing them, but he is forced to concede the dikes are “*artificial looking*” and it is hard to see what kind of natural process might have caused them.

The obvious conclusion is that these weirs / dikes/ holding ponds, channels are in fact *artificial fish farms* and the work of the indigenous people who had inhabited the area for millennia. Clearly, if they are indeed artificial, they are the work of a large labour force over many generations. It is easy to see how this may have come about: a small weir in a limited area would trap a small quantity of fish. With each passing year the dike wall is enlarged, expanded and reinforced until the whole district is part of a system of *artificial fish farms*, requiring a large labour force to maintain, but also creating the reliable food surplus that maintains that same population.

Further evidence for large populations comes, obliquely, from the Polish and German scientists William Blandowski (1822-78) and Gerard Kreft (1830-81) , who led a Victorian Philosophical Institute expedition to Mildura Station in 1856-57 to observe the lives of the indigenous people and to document the native animals and plants. Blandowski and Kreft both made numerous sketches of traditional indigenous people and their way of life which, even then, were fast disappearing. Blandowski took numerous

photographs, now lost. On his return to Berlin (after being hounded out of Melbourne society after a scandal: he named an ugly looking fish after another member of the Philosophical Institute!) the photographs formed the basis of illustrations in his book *"Australien"*.



Fig. 20. Detail from fig 40, p.198. Plate (?): fish trap across creek, 4 (or more) domed huts covered in grass or leaves all facing same direction, nom. 1.5 m high x 2m diam. From Blandowskis *"Australien"*.

Produced by a German artist who had never actually been to Australia, the illustrations are somewhat stylized and, in some cases, clearly made up of composites from several sources. They offer a fascinating, if unreliable, insight into traditional aboriginal life on the Murray before it was swept away by European invaders. The illustrations include depictions of indigenous shelters, earth ovens, weirs, nets, hunting practices and other aspects of traditional culture. For the most part the shelters depicted are relatively simple and would appear to be of temporary / transitory structures.

Intriguingly, funerary houses also depicted. Many of these take the form of larger and more substantial buildings. It is noted that these funerary houses were maintained for many years after they were built as

an act of reverence for the deceased, but that once active maintenance ceased, they fell into disrepair and decay, and, within with a few years nothing remained of them.



Fig 21. Barrel vaulted funerary house made from matting, bark or thatch. Ends sealed with bark slabs. On the Murray river (but where?). *from Blandowskis Australien: (fig 132 p.151. Plate 144) Drawing by Mutzel based on Krefft description.*

The possibility that these funerary houses are likely built in the image of *real, inhabited permanent houses* should not be discounted, but no such buildings are recorded in early colonial sources. If actual villages consisted of similar buildings, that, along with the large scale civil engineering works (dikes and weirs) hints at a large and sedentary pre-colonial population.

Although there is evidence for large pre-colonial populations in the archaeological record.

(Lourandos)^{xxxvi}, Beveridge, Blandowski, and other early Europeans in the Upper Murray do not describe any such large population, nor do they describe permanent settlements and structures.^{xxxvii}

But in Beveridges writings in the 1860s, we get a glimpse of what happened *before the coming of the white man*:

"All the old men in these tribes show distinct smallpox traces. In speaking of this scourge they say that it came with the waters, that is to say, it followed down the rivers in the flood season, laying its death clutch on every tribe in its prime until the whole country became perfectly decimated. During the early stages of its ravages the natives gave proper sepulture to its victims; but at last the death rate became so heavy, and naturally, the panic so great, burying the bodies was no longer attempted- the survivors merely moved their camps leaving the sick behind to die, unattended, and the dead to fester in the sun, or as food for wild dogs and carrion birds, until in a short time the whole atmosphere became tainted with the odour arising from the decomposing bodies...When the bright torrid summer displaced the moister spring, after devastating these tribes, gradually died out, leaving but a sorry remnant of the aborigines behind, to mourn the depopulation of the land, and many, many moons waxed and waned before the fell destroyer's foul presence was even partially forgotten. To this day the old men who bear such patent traces of the loathed distemper speak shudderingly and with so much genuine horror as it is impossible for any other evil to elicit from them their inherent stolidity."

Beveridge left the Murray region in 1868, so if these "old men" were in their 50s or 60s at the time Beveridge met them in the 1850s and 60s, that would place the smallpox epidemic(s) in the 1810s or 1820s, before European exploration of the Murray had taken place, but well after the initial colonization of New South Wales had commenced. This was *before the killing times*, before the frontier came and before the dispossession.

As described above by Beveridge and others elsewhere, the arrival of European diseases and colonists disrupted traditional aboriginal society, and, almost immediately, led to the cessation of occupation and construction of permanent villages. Beverage describes what might be best considered temporary and

transient structures, but there are strong hints in descriptions of funerary structures that more permanent dwellings had been built in earlier times. However, if more permanent habitations and villages had been built, particularly if stone was not used, little evidence of these would remain decades later when Beveridge encountered the surviving remnant populations, and what he observed of their dwellings and lifestyle.

CONCLUSION

It seems that the Upper Murray in late pre-colonial times was the site of relatively large (by Australian standards) populations and settlements displaying a high degree of sedentism. Foreign diseases, principally smallpox, devastated traditional aboriginal society before colonization commenced in the region. Populations plummeted and permanent settlements were abandoned, not unreasonably, out of fear of disease. In the decades that followed, people resumed a more transient way of life, while still using the intact aquaculture infrastructure.

The permanent dwellings of the pre-smallpox era on the Upper Murray, being made of perishable materials and having been abandoned, decayed away, and were not seen by early European explorers and colonists.

A hint of the more substantial housing types of pre-smallpox times remains in historical accounts of the funerary houses, which were maintained for some time *after* the population crash.

Along with the better-known indigenous settlements of the Western District, the Upper Murray was a major center of indigenous settlement in South Eastern Australia in the late classical aboriginal period, and the settlement and architectural tradition merits further investigation.

ENDNOTES

ⁱ **LOURANDOS, Harry.** "Continent of Hunter Gatherers: New Perspectives in Australian Pre-History Cambridge University Press, 1997, pp. 64.

ⁱⁱ **MEMMOTT, Paul,** "*Gunyah, Goondie and Wurley*", University of Queensland Press, 2007, p. 185

ⁱⁱⁱ **MEMMOTT, Paul,** "*Gunyah, Goondie and Wurley*", University of Queensland Press, 2007

^{iv} **PASCOE, Bruce.** "*Dark Emu, Black seeds: Agriculture or Accident?*", Magabala Books aboriginal Corporation, Broome, 2014

^v **GILLIGAN, Ian** "Agriculture in Aboriginal Australia: Why Not?" Journal of Indo-Pacific Archaeology, January 2010,
https://www.researchgate.net/publication/262726434_Agriculture_in_Aboriginal_Australia_Why_Not

And

LOURANDOS, Harry, "Review of Australia and the Origins of Agriculture by Rupert Gerritsen," Australian Journal of Archaeology Online, 1st June, 2010.
<https://australianarchaeologicalassociation.com.au/journal/review-of-australia-and-the-origins-of-agriculture/>

^{vi} **PASCOE, Bruce.** "*Dark Emu, Black seeds: Agriculture or Accident?*", Magabala Books aboriginal Corporation, Broome, 2014, p. 111

^{vii} **GROSMAN, Leore; MUNRO, Natalie; BELFER-COHEN, Anna.** (2008-12-01). "A 12,000-year-old Shaman Burial from the Southern Levant (Israel)". Proceedings of the National Academy of Sciences of the United States of America. **105** (46): 17665–9.

^{viii} **IMAMURA, Keiji.** "*Prehistoric Japan: New Perspectives on Insular East Asia*", University of Hawai'i Press, Honolulu, 1996

^{ix} **GERRITSEN, Rupert,** "*The Traditional Settlement Pattern of South west Victoria Reconsidered*", Intellectual Property Publications, ANU, Canberra, ACT, 2000 / 2011

^x **GROSSMAN, David,** "*Rural Process-Pattern Relationships: Nomadiztion, Sedentarianization and Settlement Fixation*", New York, Prager, 1992, in Gerritsen.

^{xi} **GERRITSEN, Rupert,** "*The Traditional Settlement Pattern of South west Victoria Reconsidered*", Intellectual Property Publications, ANU, Canberra, ACT, 2000 / 2011

^{xii} There are descriptions of such camps being built in a matter of an hour or so. Watkin Tench noted that single structures, or small groups of such structures near early Sydney were described to him as hunting lodges, and might be thought of as analogous to tents. Much larger groupings of similar structures were constructed when whole families or clan groups were on the move.

^{xiii} While some early European authors (e.g. Dawson) are scathing about the apparent lack of organization and the "primitive" natures of such gatherings and structures, others (e.g. William Thomas)

note that the spatial arrangements pertaining at such large gatherings were highly structured, and based on strict and well understood rules governing where each clan and family group were to set up camp, as well as where the individual members of each group (e.g. unmarried men, unmarried women, nuclear family groups, old people etc.) were sited.

^{xiv} **GERRITSEN, Rupert.** *"Australia and the Origins of Agriculture"*, BAR International series 1874, BSR Publishing, Oxford 2008. P. 11,

^{xv} **THOMAS, William,** "Papers of William Thomas", as quoted in *"Documentation and Archaeological Investigation of an Aboriginal Village Site in South Western Victoria"*, Elizabeth Williams, Aboriginal History, Vol 8, pp. 174, ANU 1984

^{xvi} The drawing in Thomas' notebook shows 5 or 6 dwellings situated on a slight rise (or possibly a mound), in a lightly timbered area. As the written description is of *"20 or 30 huts"* it would seem that only part of the village has been drawn. There is *second group* of 3 dwellings a short distance away on another rise, suggesting that the settlement was made up of several sub-clusters. The dwellings take the form of pointed domes. The artist shows vertical striations on the surface, indicting a mud or sod covering (in other similar accounts, similar structures are described as being thatched). The roof / wall covering extends all the way to the ground, essential if water is to be kept out.

^{xvii} The question arises as to why the village was "recently deserted". Two possibilities suggest themselves: the first being that the village was a seasonal multi-seasonal village, and that the inhabitants had departed to attend ceremonial gatherings or to take advantage of food sources elsewhere (or both). The second possibility is that the inhabitants, being familiar with the weapons and violent tendencies of Europeans from earlier encounters with whalers and sealer, or possibly even the abandoned attempt at settlement at Sullivans Cove in 1803, had decided to make themselves scarce at the site of D'Urville's ship.

^{xviii} **BATMAN, John,** *"John Batmans Journal"*, SLV, Melbourne, May 31 / June 1835

^{xix} **IBID**

^{xx} Dawson writes: *"...when it is necessary to abandon them for a season..."* which gives two significant pieces of information. The first is, in using the word "them" in referring to the habitations, he implies a plural, reinforcing the notion that there are multiple dwellings, and not a single large one in the village, because if it were a singular structure he would have written "it" and not "them". The second fact he gives, or at least strongly suggests, is that the village is occupied for most of the year, since it is only abandoned "for a season". The village(s) in question would therefore appear to be occupied on a permanent or, at minimum, multi-seasonal, basis.

^{xxi} **DAWSON, James.** *"Australian Aborigines: The Customs of Several Tribes of Aborigines in the Western District of Victoria"*, CHAPTER VI. HABITATIONS, George Robertson, Melbourne, Sydney, Adelaide 1881. P. 10.

xxii **THOMAS, William**, "*Papers of William Thomas*", MSS 214, Box 24, Item 11: "Aborigines Superior Race" 1858.

xxiii **CLARKE, Ian D.** "*Scars in the Landscape*", Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra ACT, 1995 see also www.c21ch.newcastle.edu.au Colonial Frontier Massacres 1780- 1930

xxiv **DAWSON, James.** "*Australian Aborigines: The Customs of Several Tribes of Aborigines in the Western District of Victoria*", CHAPTER VI. HABITATIONS, George Robertson, Melbourne, Sydney, Adelaide 1881. P 11.

xxv **LOURANDOS, Harry.** "*Continent of Hunter Gatherers: New Perspectives in Australian Pre-History*", Cambridge University Press, 1997. P. 65

xxvi **THREADGOLD, Heather.** 2017, "*Confirmation of Candidature Report, Master of Architecture Research / PhD Candidature*," Deakin University 2017, pp. 29 / Records of the Victorian Archaeological Survey, Number 10. June 1980.

xxvii **THOMAS, William**, "*Papers of William Thomas*", MSS 214, Box 24, Item 11: "Aborigines Superior Race" 1858.

xxviii **LOURANDOS, Harry.** "*Continent of Hunter Gatherers: New Perspectives in Australian Pre-History*", Cambridge University Press, 1997. Pp. 218-221

xxix **ROBINSON, George Augustus**, "*Journals of George August Robinson Vol II*," , edited by Ian Clarke

xxx **BROUGH-SMYTH, R.** "*The Aborigines of Victoria, with notes Relating to Their Habits of the Natives of Other Parts of Australia, Vol II*," John Ferres, Government Printer, London, 1878

xxxi **WILLIAMS, Elizabeth**, **Documentation and Archaeological Investigation of an Aboriginal Village Site in South Western Victoria***, Aboriginal History, Vol 8, pp. 173-188, ANU 1984

xxxii "*...From the number of huts along the river-bank, it was obvious that the inhabitants were numerous, and I was therefore the more surprised that our dépôt could have continued so long near them, without their discovering it.....We had this day noticed some of their huts, which were of a very different construction from those of the aborigines, in general, being large, circular, and made of straight rods meeting at an upright pole in the centre; the outside had been first covered with bark and grass, and then entirely coated over with clay. The fire appeared to have been made nearly in the centre; and a hole at the top had been left as a chimney. The place seemed to have been in use for years, as a casual habitation.*" June 11, 1836"

MITCHELL, Maj. Thomas, "*Three Expeditions Into the Interior of Eastern Australia,; With descriptions of the Recently Explored region of Australia Felix and of the Present Colony of new South Wales*". T and W Boone, new Bond Street London, 1836

^{xxxiii} **PARDOE, Colin**, “*Aboriginal heritage as an ecological proxy in south-eastern Australia: A Barapa wetland case study*”, 2017 EIANZ Annual Conference, conference paper.

^{xxxiv} **BEVERIDGE, Peter**. “*The Aborigines of Victoria and Riverina*”. Lowden Publishing Co./ M.L Hutchinson, Glasgow Book Warehouse, 330 Collins Street 1889.

^{xxxv} **BEVERIDGE, Peter**. “*The Aborigines of Victoria and Riverina*”. Lowden Publishing Co./ M.L Hutchinson, Glasgow Book Warehouse, 330 Collins Street 1889. Chapter IX.

^{xxxvi} **LOURANDOS, Harry**. “*Continent of Hunter Gatherers: New Perspectives in Australian Pre-History*”, Cambridge University Press, 1997.