NOTICE OF GENERAL MEETING

The 6th General Meeting of the Society for 1986, will be held in

THE CONSERVATION CENTRE, 120 WAKEFIELD STREET ADELAIDE

on

MONDAY 25th August 1986 AT 8.00 PM.

AGENDA

1. Apologies:

2. Minutes of the previous General Meeting:
   Minutes of the previous General Meeting, held in the
   Conservation Centre on Monday 28th July 1986, to be
   confirmed. A copy of these minutes is attached.

3. Papers and Journals:
   Papers and journals from other societies and organisations,
   since the last general meeting will be tabled at this
   meeting.

4. Business:

5. Speaker:
   Dr. Robert Crotty M.A.,PhD. - Lecturer, Salisbury
   Campus S.A.C.A.E. will address the Society, the
   subject of his address will be:
   "Jericho - Oldest known City in the World."

6. Supper will be served at the close of the meeting.
CRADLE OF EARLY MAN

DOES IT LIE ON AUSTRALIA'S DOORSTEP?

SPECIAL REPORT
By PETER QUIDDINGTON

THE last unknown, Papua New Guinea, is now proving not only to be a rich living museum, but a detailed archeological monument to the rise of agriculture — the precursor to human civilisation.

Over the last 10,000 years, and some scientists say for even longer, the New Guineans have been farming. They have evolved some of the most complex and stable systems of agriculture anywhere.

Ancient drainage systems excavated by Australian archeologists in the PNG highlands have been dated around 9000 years old.

Traditionally the search for the evidence of early developments in agriculture has focused on Europe and the Near East, but the oldest discovered sites in Mesopotamia only date between 7000 and 8000 years and large areas of time remain archeologically unknown.

The interesting aspect of the archeology of PNG is that it dates well back and also provides a continuous record up to the present. The agricultural society existing there today reflects developments through the millennia and can provide a vital human
component to what would otherwise merely be a study of past events, as depicted in clay deposits.

Apart from fire, the domestication of plants and animals was the most crucial step in the advance of human control over the environment. To carry out farming also required the emergence of social organisation which ultimately marks civilised society.

The first sign that New Guinea could provide insights into the growth of early agriculture came in 1966 when the first relic drainage canals were accidentally uncovered when swampland in the Wangi Valley in the Western Highlands was being cleared for a tea estate.

Subsequent excavations over the years, mainly carried out by Professor Jack Golson, from the Australian National University, have revealed layer upon layer of ancient water-control systems, amidst much finer layers of volcanic ash which have helped in dating the sites precisely.

The oldest canals run for up to five kilometres over gentle slopes and their level of engineering points to a long period of prior development in skills and basic technology.

The canals fan out over wide expanses of swampland which needed to be drained for the cultivation of root crops, such as taro. Often embedded in the clay are found stone axe heads, presumably used for clearing, and wooden digging sticks, similar to those still in use today.

To obtain a full understanding of developments through time researchers have drawn on the study of social and agricultural systems which existed when Europeans first discovered the hidden world of the highlands a mere 50 years ago.

The highland communities were very populous with more than a million people living in the mountainous corridor which stretches down the centre of the island, and which was obscured to colonists for many years by the steep mountain slopes on each flank.

The environment had been cultivated on a wide scale, with houses surrounded by flowery gardens, and orderly plantations set out along the valley floors and stretching up the steep hillsides.

The villagers possessed large pig herds which are a source and expression of wealth, and the people manipulated complex systems of exchange in which scarce and expensive items were prime movers.

The social organisation, however, remained essentially small scale, in contrast to other agriculturally-based societies of the world. The highlanders had neither
developed hereditary chiefships or large political units. With so many years of agriculture behind it PNG society is an oddity in this respect.

The PNG "big man" system, based on egalitarian principles in which leaders rise up through their own oratory skills and ability to provide welfare from their wealth accumulated through a process of competitive gift exchange, is of enormous interest to students of social evolution.

They are keen to know whether this system constitutes a stage in the development of more complex forms of social-political organisation, or is a unique and stable end in itself.

In trying to trace the interaction between human communities and the environment in PNG researchers have outlined a history in which land clearance gradually transformed much of the landscape from closed equatorial forest to areas of managed regrowth and intensive farming.

As the forest disappeared so did its resources of plants and animals, and this led to a growing reliance on the produce of gardens and on pig husbandry. Larger pig herds had to be fed more and more from the gardens which in turn meant further intensification.

The current staple in highland agriculture is sweet potato, of tropical American ancestry, but probably introduced into New Guinea through Asia in the last few hundred years. Its use may have marked the decline of swampland agriculture.

By adapting soil management and water-control techniques the resilient sweet potato could be grown just about anywhere, even on the steepest slopes. It is commonly grown in perfectly geometric grids, and in the harsher areas a system of convex mounds is used. The mounds are set out in neatly-ordered arrays to provide even drainage, and the soil is carefully shaped over a layer of composting leaves which warm the ground to prevent frost damage.

The extremely diverse conditions throughout New Guinea have led to an equally diverse range of adaptations and innovations. However, there are common principles, such as leaving gardens in fallow for sometimes up to 50 years, and mixed cropping is a rule rather than an exception.

Because of the care taken in maintaining healthy gardens few problems exist with erosion, disease and pests, which blight mono-cultural farming systems.

The social and religious lives of villagers are closely integrated with farming practices and this has also helped to maintain the delicate balance between the people and their habitat — a so-called homeostasis.

A major question still remaining in New Guinea is just how far back are the beginnings of agriculture.

The recent discovery of a large number of axe heads in deposits on the uplifted terraces on the Huon Peninsula, on the north-east side of the island, dating between 45,000 and 50,000 years, has spurred some prehistorians to speculate that the first attempts at agriculture must have occurred well before the ice age.

The sites are now being investigated by a team from the University of Papua New Guinea under the direction of Associate Professor Les Groube. The size of the axe heads so far uncovered indicates that they may well have been used for forest clearance, but it is uncertain whether this was for hunting purposes or signifies the start of agriculture.

The excavations of the drainage canals in the highlands, showing a much greater antiquity to New Guinea agriculture than previously imagined has at last helped to resolve one of the great historic debates among anthropologists and prehistorians.

Although New Guinea was attached to Australia during its ancient past, it was still extremely isolated, and there is little doubt that the agricultural developments there were not connected to the beginnings of agriculture in Europe and other areas around the world.

This has helped to dispel the notion that agriculture — and other technological developments in the past — was somehow "invented" in one spot and then spread around the globe.

The favoured counter-argument now is put by "environmental determinists" who say that it was most probably the effect of changing climates and other pressures that forced developments towards plant and animal domestication, in different areas and at roughly the same time.

As the last ice age receded around 15,000 years ago new ecological niches, including open grasslands, were gradually opened up and these were most suitable for human exploitation. By then humans had a fairly sophisticated stone technology and fire, which gave them a distinct advantage. Populations spread out, multiplied, and were eventually forced to develop a more sedentary lifestyle to support their greater numbers, in areas where space became limited.

The mounting evidence now coming from PNG helps to support this view of what probably took place in the incipient stages of human civilisation.
Clockwise from left: Pigs are a major element in PNG society, commonly used in ritual feasts and even to compensate for a death in battle; relic drains dating back thousands of years; these ancient garden beds are from Mount Hagen; early drainage systems have been discovered in the Wahgi Valley; Mount Hagen's mounded gardens typify a stable, well-ordered society.