NOTICE OF GENERAL MEETING

The 3rd General Meeting of the Society for 1984 will be held in the S.A. Museum Education Building, North Terrace Adelaide on :-

MONDAY 28TH MAY 1984 AT 8.00 PM.

AGENDA

1. Apologies.

2. Minutes of the previous General Meeting:
   Minutes of the previous General Meeting, held Monday 30th April 1984, to be confirmed. A copy of these minutes is attached.

3. Papers and journals:
   Papers and journals received since the last general meeting, from other societies and organizations will be tabled at the meeting.

4. Business:
   The Council of this Society has decided to offer Vernon Tolcher Honorary Life Membership, in recognition of his many valued services to the Society.

5. Speaker:
   Margaret Nobbs, Site Recorder, will address the meeting. The title of her address will be:-
   'A preliminary report on the Panaramitee Style of Rock Art in Olary Province'

6. Supper will be served and a Trading Table held.

M.F.Nobbs
Hon.Secretary
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ANCIENT INDIAN CULTURES OF NORTHERN ARIZONA

by Neville Pledge

I should say at the outset that I am by no means an expert in this field. I
have, however, had a long-time passing interest, engendered many years ago
by some of the novels of Zane Grey and later sustained by the magazine "Arizona
Highways". But despite spending two years in the U.S. as a student, and making
another visit several years later, it was not until last year that I partly
filled a dream and saw something of that beautiful and varied state.

The first part of this paper is partly travelogue, the second part is a modified
transcript of a cassette tape/slide lecture, produced by
that I purchased at the end of the trip.

After flying into the State capital, Phoenix, I took a Greyhound bus 140 miles
north to Flagstaff, a small city with its own university and the small independ-
ent Museum of Northern Arizona. The Museum of Northern Arizona specializes in
some aspects of palaeontology, and in the local archaeology and ethnoLOGY, a
gallery being given over to each of these disciplines. Here I gained an insight
into the cultural succession of Northern Arizona.

| Paleo-Indian            | 15000-8000 BC |
| Desert Culture          | 8000-100 BC   |
| Basketmaker II          | 100 BC - 500 AD |
| Basketmaker III         | 500-700 AD    |
| Sinagua                 | 500-1400 AD   |
| Pueblo I                | 700-900 AD    |
| Pueblo II               | 900-1150 AD   |
| Pueblo III              | 1150-1300 AD  |
| Pueblo IV               | 1300-1600 AD  |

...brush shelters and cave sites
...circular pit houses
...rectangular pit houses
...pithouses initially, then villages
...pithouses, then surface houses, first kivas
...standardized circular kivas. Many small villages.
...defensive architecture; fewer, larger, multi-storied villages
...few large villages/towns, on exposed ridges and mesas. Many areas aban-
donned.

After 1600, the Spanish influence and the arrival of the culturally, unrelated
iberal Navajo people had profound influence. The present Hopi and Pai nations
are derived from the Pueblo cultures. Of even greater influence was the Great
Bouquet, from 1275 - 1299 AD, which caused many centres to be abandoned.

In Flagstaff, I rented a car and drove north 80 miles to the Grand Canyon
National Park. Although there is a modern Indian community on the floor of the
Canyon, there is only a little evidence of prehistoric occupation. Artifacts,
such as split twig figurines representing deer or big-horn sheep, and dating
back 3000-4000 years, have been found in caves within the canyon, and on the rim
near the Eastern entrance can be seen the Tusayan ruins, a small, hollow rectangular
pueblo occupied 800 years ago.

From the Grand Canyon, I drove east across the Painted Desert to Kayenta and
Monument Valley. This is the Navajo Reservation - virtually a state within a state.
I had hoped to continue on to Canyon de Chelly and thence south to Petrified
Forest, but time was against me, so I backtracked, stopping on the way at Betatakin,
a major cliff-dwelling site in Tsegi Canyon. Betatakin, a Navajo name meaning
"Lodge House" was built by the Anasazi ("the ancient ones") about 1250 AD and
occupied for only 50 years before being abandoned in 1300 AD. It had 135 rooms
including living and storage rooms and one kiva, and sits in a 500 ft high alcove in
the 700 ft canyon walls. The inhabitants farmed their corn, beans and squash on
the canyon floor, and hunted and gathered on the plateau top. The site is quite
fragile, and visitors are limited to groups of 20, led by rangers on the strenuous
3 hour round trip/hikes. A small on-site (cliff top) museum is invaluable,
especially for people who cannot make the hike to the bottom and back.

A good half-day's drive later, I reached Petrified Forest National Park, near Holbrook, Arizona. In the southern part of the Painted Desert, its obvious attractions are the numerous petrified logs often showing beautiful red and yellow colouring of the preserving silica. Halfway through the park, one comes on evidence of ancient Indians at two sites overlooking the small, often dry Puero River. These sites are

(1) Newspaper Rock - a large darkly stained rock engraved with abundant petroglyphs. Some of the designs are similar to those that can be seen at South Australian sites, but others are more obviously naturalistic and representational. (I did not see any modern or historical graffiti).

(2) A few miles away on a ridge crest are the ruins of a rectangular, 125 room pueblo, built in two or three tiers around a central plaza. Access to the rooms was through rooftop entrances, as there are no doors. The Anasazi, who built the pueblo, farmed the valley floor and hunted the abundant game that inhabited the marshy floodplain. For reasons not entirely understood, the pueblo was abandoned by 1350 AD.

Returning to Flagstaff, I stopped lastly at Walnut Canyon, just off the highway. Considerable time, which I did not have, should be allowed to visit this site, as it involves a long hike down into the canyon if you wish to see the cliff houses. (These are described in the following section). However, a shorter rim trail overlooks the canyon and its cave dwellings, and also takes in several excavated surface sites including a pit house. Again, the on-site museum is very helpful.

The following is a transcript of a cassette tape I purchased at Walnut Canyon.

"Among the prehistoric Indians of the arid south west, water was the major factor in determining where they settled and how they lived. About 600 A.D. an early people, now called the Sinagua (pronounced Sinawa) found the area around present day Flagstaff, Arizona, to their liking and settled there. They built pit houses, structures of logs, sticks and mud, partly underground, and raised their crops. At least half their diet came from hunting game and gathering seeds and nuts.

The area was a high plateau that over a period of 2 million years had repeatedly been the site of volcanic activity. The snow-topped San Francisco peaks dominate the scene of cinder cones and jagged black lava flows. The Sinagua often farmed in and near what are called parks, areas where the dry soil was mostly free of cinders. Here they grew their corn, squash and beans.

But the environment began to change. Seismic activity increased, and in the fall of A.D. 1064, a volcano burst into eruption spewing out lava and throwing clouds of ash and cinders into the sky. The nearby Sinagua were forced to leave. In some cases they were foresighted enough to take with them not only their belongings but also some of the timbers of their pit houses to use in building new homes.

The eruption created a cinder cone 1000 ft high, which is now called Sunset Crater. Flows of lava surrounded it base and the rim of the steaming volcano was streaked with the red of a sunset sky. Volcanic activity continued intermittently in the area over the next two hundred years.

In addition to the radical alteration in the landscape and of greater importance, the Sinagua, the climate also began to change. Precipitation increased and there was a warming trend. Where the layer of new fallen ash was thin on top of the soil, it acted as a mulch, retaining moisture, and thereby providing good farming conditions. The Sinagua built new homes particularly along washes and resumed farming.
Throughout the south-west a general cultural expansion began around this time. For the Sinagua, the shifting of population, and the improved environmental conditions helped to bring about a period of unprecedented growth. They had used masonry earlier for some buildings but now they developed and refined their skills and built increasingly more elaborate stone structures.

There was a concentration of Sinagua, Kayenta Anasazi, and other peoples here in the Wupatki basin. Slabs and blocks of sandstone were readily available in convenient sizes, and with the mortar of adobe mud, large structures were built. The artisans neatly squared the corners and buildings of two and, in several cases, even three storeys were erected.

The ruins of over 1,000 separate structures, both large and small, have been found in the basin. Of them all, Wupatki Pueblo is the largest with over 100 rooms. Most of these chambers were living quarters although some were ceremonial and certain smaller ones were clearly used for food and storage.

Corn was dried and ground into a coarse meal. Grinding was done by the women of the family using a mano, a small round stone held in the hand, to grind the hard kernals on a metate, a larger flat stone. Over years of grinding a deep trough was worn in the metate and a certain amount of pulverised stone found its way into the Sinagua diet.

One of the many mysteries of Wupatki is the Sinagua built arena or amphitheatre. It resembles the round partly-subterranean ceremonial chambers called kivas of the Anasazi, but this structure was not roofed over and many customary features of the kivas are omitted, the uses of the arena are unknown.

There were trade contacts with the Hohokam people to the south. This group played a strenuous ball game probably learned from other people still farther south in Mexico. The game was played in large oval courts, and most likely had some ritualistic significance. Although its purpose of the system of play are not known, the Sinagua adopted it and built a ball court of masonry at Wupatki.

The roofs of the pueblos were constructed on log beams set into holes or notches in the stone walls. Because the annual growth rings of trees vary with the year's precipitation, scientists have been able to piece together a tree-ring calendar that covers a period of more than two thousand years. By comparing cross sections of construction logs at Wupatki with that calendar, very precise building dates can be determined.

All the names used for the peoples and places throughout this area are modern, do not know what they call themselves or how they identify their pueblos. Sinagua for example, is a Spanish word meaning 'without water'. The name was given to the people by an archaeologist because they seldom used irrigation and were generally dry land farmers.

Although several springs in the area are still flowing vegetation is thought to have become drier and sparser since Wupatki was occupied. The animals that were native to the area then are almost the same now except for big horn sheep. The Sinagua are known to have hunted them, but the animal is no longer found here. Their game animals also included rabbits, foxes, squirrels and certain birds.

Many necessities or even luxuries that the Sinagua were not able to make or grow, they managed to acquire by trade, from peoples to the south, they got trinkets, such as bells made of copper, the only metal they knew, and shells for jewelry. Although they made both plain and decorated earthenware pottery of their own, they imported other types.
The Citadel was a large, roughly circular pueblo built on top of a volcanic butte. Black basalt as well as the usual red sandstone was used in the building. Construction here and also at Nilakahu nearby, began in the late 1100s and more rooms were probably added over a long period, until the pueblos reached their final size. Both are thought to have been two storeys high, at least in part.

Within a period of about 500 years, the Sinagua of the Sunset Wupatki area, originally several farmers living in scattered pithouses, had become a communal society inhabiting huge stone apartment buildings, such as at Lomaki, another sizable pueblo located about a mile north of the Citadel.

For a period of around a century and a half, the Wupatki basin was an important population centre in the south-west. At its peak, several thousand people lived here. The Sinagua had no known enemies; but they had adapted well to their environment and their trade flourished, but climate is a fickle and powerful tyrant and all too soon, living conditions here would change once more.

The population increase in the Wupatki basin that followed the eruption of Sunset Crater displaced some of the original Sinagua people. By the early 1100's many had moved south into Walnut Canyon. Here they found a dependable water supply in the stream that flowed then through the floor of the canyon and fertile soil was available along both rims.

They built new homes under the over hanging limestone ledges in the canyon, and raised corn, beans, and squash in their mesa-top farms. Trees and other plants, vital sources of food, fuel, medicines and implements, grew plentifully in the canyon and on the surrounding mesa. Game was abundant.

The canyon was particularly convenient for house construction, because at several levels the softer layers of limestone had eroded away faster than the harder strata, forming long cave-like recesses. The roofs, floors and back walls were ready-made, and the settlers needed only to build stone and mud front walls and partitions between the rooms and houses.

Walnut Canyon is about 400 feet deep at this point. Among the plants that were most useful to the early people throughout this area, was the yucca, which provided a surprising variety of products. The fruit, buds, flowers and stalks were used for food. Yucca fibres were woven into cloth, mats, baskets, sandals and rope. Soap was made from the roots.

The Sinagua built over 300 homes in Walnut Canyon, some were cliff dwellings, others were pueblos and pit houses. To modern eyes this is a highly scenic setting; the Sinagua made practical use of this unusual and remarkably diverse environment and for a little more than a century, they led secure lives here in their canyon haven.

The Sinagua people had also settled still farther south below the Mogollon Rim, in the broad and beautiful valley of the Verde river. They built the first cluster of masonry rooms on the long high limestone ridge that dominates this part of the valley. The new village containing 15 to 20 rooms, and housing about 50 people is called Tuzigoot.

Another of the south-west recurrent droughts began in 1216. Farming was possible only near streams and irrigation ditches were dug to enlarge the fields. In the well-situated villages along the life-giving Verde River water continued to be relatively plentiful. More and more settlers were attracted to the area and Tuzigoot expanded into a pueblo-type community of 92 rooms.

At its peak Tuzigoot covered an area about 500 feet long by 100 feet wide spread along the crest and upper terraces of the ridge. The pueblo was two storeys high in places and included an open plaza and an outlying cluster of rooms. People entered the pueblo by climbing ladders up to the rooftops and then passing through hatchways into the rooms.
The peoples of the Verde valley developed great skill in the manufacturing of useful objects for daily living; they made pottery and also created bowls and other containers out of stone and gourds; they wove excellent cotton cloth and made wicker baskets and mats. Most of their craft works is not only elegantly simple and practical in design, it also often shows genuine artistry in decoration.

At first most of the pueblos built in the Verde by the Sinegua were somewhat similar to Tuzigoot. About 1125 however, they began construction of true cliff dwellings. The most spectacular example here of this new type of home is Montezuma Castle which despite its name, is not a castle and has no connection what-ever with the Aztecs of Mexico.

The castle, as well as other cliff dwellings nearby now destroyed, were built over a period of time in a naturally secure site, a niche high up in the steep limestone cliff. Beaver Creek, a tributary of the Verde River, flowed near the base of the cliff, providing water and rich soil for the cotton and vegetables that were raised by the Sinagua.

The castle is a prehistoric apartment building that once housed 45 to 50 people. Although it is said to be five storeys in height its more accurately described as a 4 storey structure of 17 rooms plus two additional store rooms that form a kind of cellar. A trail along the face of the cliff led to the ladders necessary to enter the cliff dwelling. Additional ladders provided access from one level to another.

Its walls are built of limestone chunks and a mortar of mud, and average about a foot in thickness. Across the front, the walls are built nearly flush with the sheer face of the cliff and are curved to match its curve. Earth fill was dumped behind the walls to provide level floors and the stonework was covered inside and out with plaster. All of these construction materials were hauled up from the base of the cliff.

Roofs were built by laying logs across the tops of the walls. Some of these logs are about a foot in diameter and about 10 feet long. They were cut to size with stone tools, because the Sinagua had no tools of metal. Poles were laid on the logs, grass or willow boughs were next spread on top, and the whole was then covered with 3 or 4 inches of mud.

Interior doorways in the castle are keyhole or T-shape, a distinctive design found in many ancient pueblos of the south-west. Their small size might suggest that the Sinagua were tiny people, but skeletal remains show the average man stood 5 feet 4 inches tall. The doorways are designed so that part or all of them could be blocked off with mats and skins to control draughts.

Over the 200 years that the castle was occupied its people continued to develop their manufacturing skills and conducted a busy trade with other settlements. Today, the average visitor to these prehistoric sites is surprised to discover that these early peoples were sufficiently interested in aesthetics to build such handsome dwellings, to make intricate jewellery, and to design attractive decorations for their handicrafts.

In a single room in the castle the early inhabitants scraped and chipped an interesting petroglyph in the hard plaster of the walls, the design was very neatly executed and is often symmetrical. Scientists generally don't know what the ancient artists may have tried to represent, except to say that the drawings could have had ritual or religious significance.

The inhabitants had no furniture and simply sat as well as slept on the earthen floor of their houses; the cooking was done indoors or, weather permitting, outside. Indoor fires were built on the floors. There are hardly any openings for light or ventilation and smoke filled the living quarters most of the time. Interior walls and ceilings are blackened by soot.
Montezuma Well, located about 6 miles north-east of the castle, is a natural limestone sink, roughly cup shape, and containing a placid lake about 400 feet across. Its maximum depth is 55 feet. The water comes from several springs that flow 1-1½ million gallons a day. The farming people who settled here diverted water from the natural outlet of the well to irrigate as much as 60 acres of farmlands.

The Sinagua, who coexisted with the earlier Hohokam inhabitants here, built many homes around the rim of the well and on ledges and caves in its walls. From about 1125 to 1400 A.D. this was a prosperous community of 150-200 people and there is the impression that life here, at least for a time, was very good.

The drought was at its severest from 1276-1299. In the Wupatki basin and Walnut Canyon farming became difficult. The peoples here at Tuzigoot, Montezuma Castle and Well and in the other villages in the Verde valley pursued their irrigation farming and prospered for another century.

But by the early 1400's, apparently for a combination of climatic, cultural, sociological, and economic reasons, the settlements along the Verde river were abandoned. It is believed that the Sinagua and other peoples merged to become ancestors of the modern Hopi; perhaps someday we will learn what happened, and why, at the peak of their golden age, about a century before the Spanish first appeared in Arizona, all these prehistoric peoples disappeared as cultural entities.

ANTHROPOLOGICAL SOCIETY OF SOUTH AUSTRALIA INCORPORATED

MINUTES OF GENERAL MEETING 30TH APRIL 1984

held in the S.A. Museum Education Building, North Terrace, Adelaide, at 8.00 pm.

The President, Mr. Ross, chaired the meeting.


2. The Minutes of the Previous General Meeting held 26th March 1984, having been circulated prior to the meeting were taken as read, and confirmed.

3. New Member:
   The following new member was elected to the Society
   CATHARINE LYN CMACAHON

4. Papers and journals:
   Papers and journals from other societies and organizations were tabled at the meeting.

5. Speakers:
   Mr. Brian Kirk and Ms Mona Tur from the Centre for Aboriginal Studies
   and Teaching at Underdale Campus of the S.A.C.A.E. addressed the meeting.
   Brian Kirk spoke on "Aboriginal Language Teaching"
   Mona Tur spoke on "Memories of the Oodnadatta Area"

6. Supper was served and a trading table held.

The meeting closed at 9.45 pm.

Date: __________________  Chairperson: __________________

M.F. Nobbs
Hon. Secretary.