

## **THEORISING ABOUT NORTHEAST QUEENSLAND PREHISTORY**

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### **INTRODUCTION**

Rainforests are distributed unevenly throughout eastern Australia, but only in one portion of the tropics between Cairns and Cardwell (Figure 1) has a distinct Aboriginal "culture area" been recognised (Peterson 1976). The Aborigines of this area have attracted a fair amount of attention from various researchers in physical anthropology, linguistics and material culture. However, little archaeological research has been undertaken in the region. Some sites have been excavated in and near the rainforest district (Wright 1971, Brayshaw 1977, Campbell 1979, 1982a, 1982b) but so far archaeological deposits older than 2,000 years have not been recorded, and little progress has been made towards a regional prehistory. In this paper I outline various theories about the prehistory of the rainforests and provide a framework for future archaeological research.

### **AN EARLY THEORY OF RAINFOREST PREHISTORY**

The earliest theory about Aboriginal occupation of the North Queensland rainforests was put forward by Tindale and Birdsell (1941). In 1938-39 they studied the tribes of this region, describing them as:

characterized by a high incidence of relatively and absolutely small stature, crisp curly hair, and a tendency toward yellowish-brown skin colour (Tindale and Birdsell 1941:1).

These tribes variously referred to as "negritos", "Tasmanoids", "pygmies" or "Barrineans", were believed by Tindale and Birdsell to be closely related to the Tasmanian Aborigines and other small-statured groups in the extreme southeast and southwest of the mainland. Their cultural affinities were also seen as being with the people of southern Australia rather than with their nearer neighbors.

This led to the hypothesis that all these small statured groups were descendants of the first human populations to colonise Australia. They were later displaced to marginal areas by the arrival of at least one other group with different racial affiliations. According to Birdsell, little racial mixing occurred in the Cairns rainforest region,

and thus many characteristics of the original colonists were preserved to the present day (Birdsell 1949). This theory was based largely on the physical appearance of the rainforest dwellers, and also on the linguistic and cultural characteristics, as they were perceived at the time. It may also have owed much to a low opinion on the part of the researchers as to the suitability of rainforests for human habitation:

Dense wet forests become refuge areas only to be sought by those less fortunate tribes whose physical and mental inferiorities condemn them to the least desirable parts of primitive man's environment (Tindale 1940:149).

Subsequent research has not confirmed this first theory of North Queensland prehistory. There may well have been more than one race of Homo sapiens reaching Australia (Jones 1979). However, the Cairns rainforest people cannot be identified as descendants of any particular group. They do not stand out from other Queensland Aboriginal populations on the basis of cranial studies (Lanarch and Macintosh 1970), nor on the basis of blood group or other gene frequencies (Kirk 1973). Neither do the languages of the region differ in any significant way from other Australian languages (Dixon 1966, 1972, 1980). There do appear to have been cultural differences from neighbouring groups, though the early ethnographic evidence is scanty (mainly Roth 1901-1910). However, many aspects of the culture, especially the distinctive material culture items noted by Roth and others, can be seen to be at least partly the result of the tropical rainforest environment, which supplies a somewhat different resource base from that of most other Australian environments.

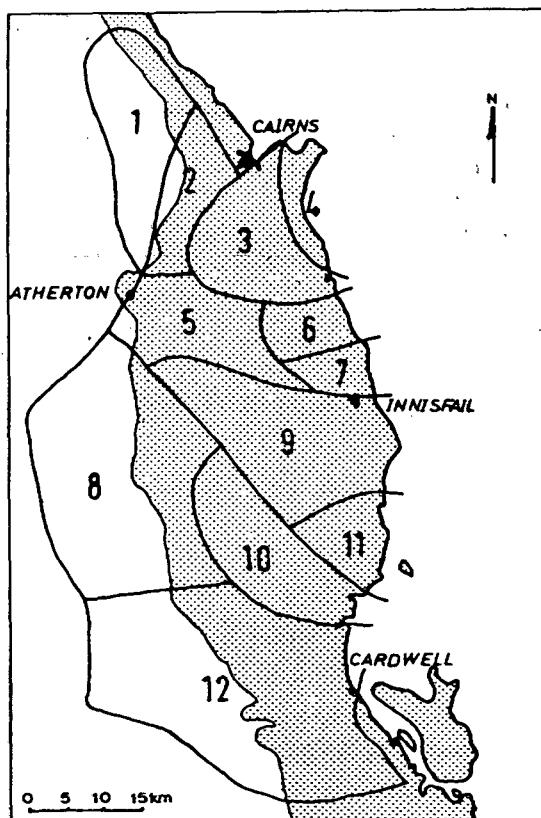


Figure 1. The rainforest "culture area" showing tribal territories and names (from Tindale 1974) and Pre-European distribution of rainforest (shaded)(from Birtles 1967).

1. Tjapukai
2. Buluwai
3. Idindji
4. Kongkandji
5. Ngatjan
6. Madjandji
7. Wanjuru
8. Djirubal
9. Mamu
10. Gulngai
11. Djiru
12. Keramai

Nor is it possible to agree with Tindale's low opinion of rainforests and their inhabitants. A reconstruction (Harris 1978) of rainforest society as it was just prior to contact points to a population demographically well adapted to its environment, with a high population density (estimated at  $2\text{km}^2/\text{person}$ ), large and frequent gatherings, and a pattern of intensive resource use. This last included heavy dependence on leaching technology for removing the toxic and/or bitter principles present in so many rainforest plants. The notion of a viable and vigorous rainforest population is reinforced by Dixon (1972:350), who suggests on linguistic grounds that the Djirbal-speaking people expanded their population and spread from the coastal rainforests toward the Atherton Tableland, displacing the Mbabaram-speaking people in the process.

In summary, the Tindale-Birdsell theory of rainforest prehistory has been shown by various researchers to be inadequate. It should therefore be discarded. In the absence of adequate archaeological data, can a better one be proposed? The last part of this paper presents a speculative framework which might have some predictive value for future archaeological research in the area. However, it is first necessary to discuss the temporal and spatial variations of the rainforests as far as they are understood.

#### VEGETATION HISTORY

The notion of human adaptation to the rainforest environment (Birdsell 1949, Harris 1978) is basic to this discussion. It would seem logical to assume that for a well adapted "rainforest culture" to develop and maintain itself, rainforests must constitute a major part of its environment and must have done so for a considerable period of time. (Such a situation can be contrasted to those drier or monsoonal regions in which patches of rainforest occur; rainforest species in these patches are often utilised, but in the overall pattern of exploitation, other species contribute the major portion of the diet). Since human adaptation to the rainforest clearly depends on having a rainforest to adapt to, a knowledge of the prehistoric environment of the area would be most useful in reconstructing the prehistory of peoples living there.

Analysis of pollen in sediments from the Atherton Tableland has enabled Kershaw (1975, 1978, and in Coventry et al. 1980:398-402) to reconstruct the following sequence. Araucarian rainforests were dominant from the beginning of the record about 120,000 years ago until 38,000 BP. From 38,000 to 27,000 BP, rainforest species decreased and were largely replaced by sclerophyll species such as eucalypts and acacias. The sclerophyll forest remained dominant until 9,500 BP. Between that time and 6,000 BP, rainforest species again increased, though the composition of the resultant rainforest community was different from the previous one. Finally, during the last 3,000 years, the rainforests have again been partly replaced by sclerophyll vegetation.

These vegetation changes are considered to be related to changes in precipitation, and Kershaw (1978, also Coventry et al. 1980:400-401) has produced a mean annual rainfall curve for the sequence (Figure 2). It should be noted that the data derives solely from sources on the Atherton Tableland. No information is available for the lowland region or the coastal ranges. Rainforests may have continued to flourish in these areas and/or on those portions of the continental shelf exposed by lower sea levels even during periods of reduced precipitation.

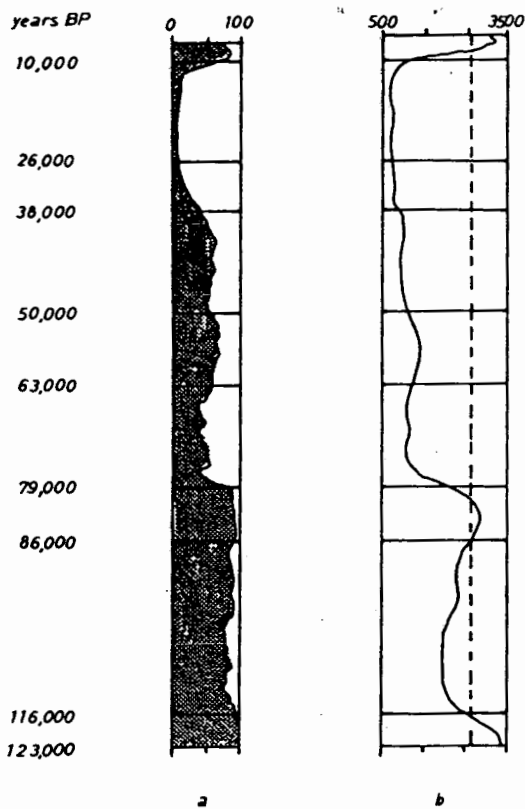


Figure 2. (a), Pollen diagram from Lynch's Crater, Showing percentage of rainforest (shaded) to sclerophyll taxa. (b), Suggested mean annual rain-fall (mm). Dashed line represents present rainfall (from Kershaw 1978).

N.B. Dates beyond 38,000 B.P. are extrapolated from sedimentation rates

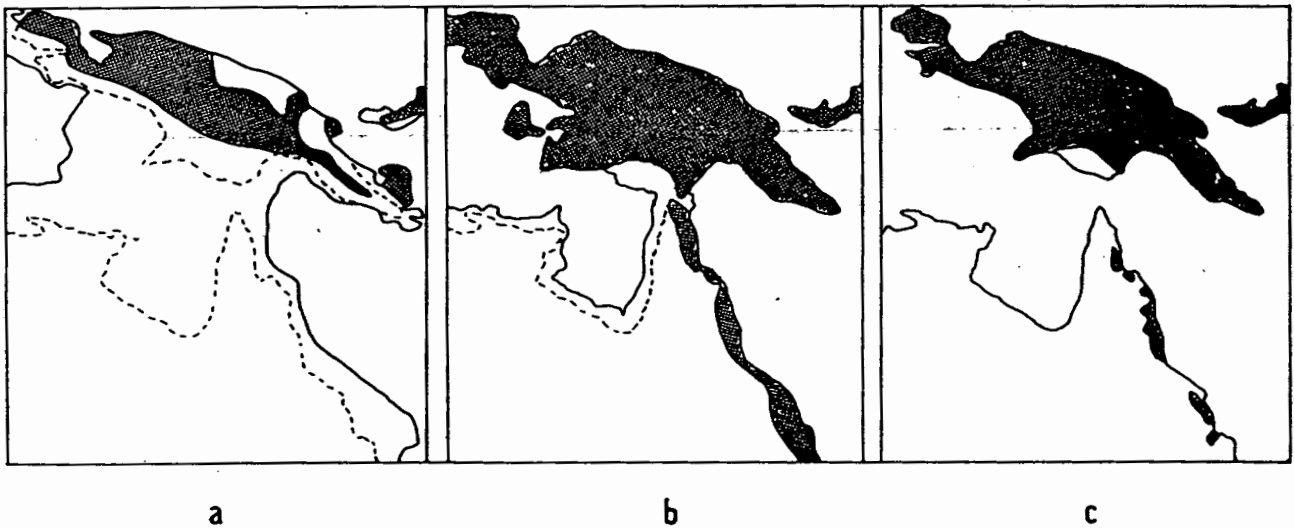


Figure 3. Postulated extent of prehistoric rainforests. (a) 17,000-14,000 BP (b) 8,000 BP, (c) Present (from Kershaw 1975).

An admittedly speculative reconstruction of the vegetation distribution in northern Australia and New Guinea by Nix and Kalma (1972) also demonstrates dramatic fluctuations in the extent of North Queensland rainforests during the last 20,000 years (Figure 3). However, its parameters are too broad to permit detailed inferences to be drawn. For instance, no closed forests are shown in eastern Australia at 17,000-14,000 BP, yet major pockets must have remained to allow the recolonisation of the Atherton Tableland as demonstrated in the pollen record.

Thus, an adequate reconstruction of the prehistoric vegetation of the entire Cairns/Cardwell district is not possible at present. It is to be hoped that future research will widen the data base.

#### MORE RECENT THEORIES OF RAINFOREST PREHISTORY

Both Brayshaw (1977) and Harris (1978) made use of Kershaw's pollen analyses when discussing prehistoric occupation of the North Queensland rainforests. Brayshaw suggested that, with a higher rainfall prior to 3,000 BP, the rainforests may have been much more extensive than they are today (see Figure 3b). If such were the case, the four sites she excavated would then have been within the rainforest. None of the sites was older than 2,000 years, which led her to conclude that perhaps human occupation of the tropical rainforests is quite recent.

Harris (1978) implied a rather different sequence of events. He thought it possible that human populations were already occupying the Atherton Tableland before 9,500 BP at a time when the vegetation was predominantly sclerophyll. As the rainforests regenerated, the inhabitants adapted to the new environment. Interestingly, a legend recorded by Dixon (1972:29) indicates that people were indeed living on or near the Atherton Tableland when it was "not jungle - just open scrub".

Neither of these two theories was designed as a predictive model for archaeological research. In order to make a detailed hypothesis with some predictive value, I find it necessary to make explicit two major assumptions. First, it was noted above that the rainforest dwellers of just prior to European contact appear to have been well adjusted to their environment. It would be fair to assume that an intensive exploitation pattern of the kind suggested by Harris, supporting a fairly large population, would have been preceded by a pattern of less intensive exploitation by a smaller population, making infrequent use of the leaching technology or perhaps lacking it all together.

A brief discussion of the antiquity of the leaching process is in order here. It is not certain how long such a technique has been part of the Australian tool kit. The only archaeological evidence to date relates to cycads, an extremely toxic group of plants requiring leaching or fermentation to remove or destroy the toxins (Beaton 1977). The oldest evidence for Aboriginal exploitation of these plants comes from southern West Australia at 13,200 BP (Smith 1982). At this site cycads appear to have been a minor dietary component. A date of 4,300 BP for the use of cycads in central Queensland (Beaton 1977, 1982) appears to be associated with more intensive exploitation, to feed participants at large ceremonial gatherings. In North Queensland, other toxic species besides cycads were used as staples. The use of leaching as an everyday technique as recorded for the rainforests may postdate its use in a ceremonial context further south, though casual use of toxic plants may extend back into the Pleistocene. Lack of data from the rainforests does not allow us to do more than speculate.

A second reasonable assumption that I wish to make explicit is that the intensive use of toxic plant products by means of the leaching process is essential if a given area of rainforest is to support a large population. Rainforests are typically low in animal biomass, though the inevitable creeks and rivers are a source of fish, shellfish, etc. The leaching technique enables otherwise toxic nuts and roots (many of which are high in protein and fat) to be added to the diet. In short, I would assume that high population density and dependence on the leaching technology went hand in hand in the North Queensland rainforests.

Given these assumptions, I shall hypothesise that early occupation of the rainforests was at a low population level, with little or no use of toxic plant products. Such occupation might (or might not) date from the earliest colonisation of Australia. I shall further hypothesise that the patterns of life in the rainforests altered at some later time, perhaps in response to some external stimulus, perhaps as part of the continuing interaction between people and their environment. Population density increased, resource exploitation intensified and the leaching technique was either invented, introduced, or its already known application increased. No order of events is necessarily implied in this list.

At this stage one can speculate that environmental changes may have influenced the course of events. For instance, sea level rise at the end of the Pleistocene resulted in a decrease in the land area of Australia. By 5-6,000 BP the present coastline was reached, and any rainforest that existed on the continental shelf would have vanished. The remaining areas of rainforest might now have been required to support a larger population than previously, and methods of intensive resource exploitation such as the leaching technique would certainly have enabled this. The rainforests may have further decreased in area from 3,000 BP following the lowered precipitation suggested by Kershaw (1978) (Figure 2).

Alternatively, it is possible that the shrinking of the rainforests had very little to do with a more intensive pattern of resource exploitation. The change from one pattern to another may have occurred at quite a different time, perhaps with the increase in extent of rainforests from 9,500 BP, or perhaps only within the last millennium or so.

## CONCLUSION

This hypothesis is both less and more detailed than those of Brayshaw and Harris. It refrains from specificity about dating, but includes various assumptions whose validity may be checked by archaeological research, if the requisite data can be unearthed. The testing of archaeological hypotheses is not as straightforward as in some other disciplines where experiments can be carried out under artificial conditions. Archaeological data is subject to decay and destruction, and once gone it is not renewable. In the tropical rainforest region, local conditions of high humidity and temperature contribute to a rapid rate of decay of organic remains. Also, regular flooding and intensive European utilisation of the land have contributed to site destruction.

Ideally to test the first phase of this hypothesis, archaeological evidence of early, low intensity occupation will need to be found, together with firm palaeo-ecological evidence of a rainforest environment. The discovery of a suitable site will necessarily be serendipitous, especially if this phase of occupation really is early.

Finding data on the later phase of occupation should be less difficult, since it was still extant about a hundred years ago. The leaching technique utilised stone tools such as nut-cracking stones and morahs for crushing kernels to a coarse flour. Many of these tools have been ploughed up in areas now cleared of rainforest, though unfortunately none have yet been found in a datable context. If relevant stratified sites can be found, it should be possible to date the first appearance of such tools, and/or demonstrate a change in patterns of site utilisation in the past.

I am aware that the foregoing is a very flimsy framework on which to construct a prehistory. My aim was to explore the various possibilities from an archaeological viewpoint. My current research in the region should begin to fill in the gaps in this outline and expose its deficiencies.

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