AXE MAKERS OF THE WAHGI

Pre-colonial industrialists of the Papua New Guinea highlands

John Burton

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Except where the contributions of others are acknowledged, this thesis is the result of my own original research.

John Burton
for Catriona
ABSTRACT

Before the first Australian patrol to Mt Hagen in 1933, stone axes were in daily use in the Papua New Guinea highlands and were widely traded, often in the context of ceremonial exchange. Many occurrences of hard rocks suitable for axe making were exploited, but only at a few centres was the manufacture of axes carried out on a large scale. In recent times, a group of axe factories located in the Wahgi and Jimi Valleys accounted for the bulk of production.

In this thesis I look at how the communities of axe makers organised quarrying expeditions, how they extracted the stone and made it into axes, and at the kinds of economic relations which existed between themselves and their neighbours. I focus on the Tuman quarries, in the central Wahgi Valley, Western Highlands Province, and the organisation of Tuman society with special reference to quarrying and axe making. I introduce the quarries of the Jimi Valley, also in Western Highlands Province, and the Dom language area, in Simbu Province, for comparative purposes. I also report on the use of geochemical methods and visual inspection to identify axes in ethnographic and archaeological collections from the highlands.

My findings are twofold. Firstly, that the type of production at each quarry was shaped by the balance of three factors: the geological disposition and mechanical properties of the axe stone, the ideology of the axe makers, and the ceremonial competitiveness of the economy in which they exchanged the axes. I argue that the scarcity or abundance of rocks suitable for quarrying was less important than the ability of a given community to respond to socio-economic forces, develop an effective system of quarrying and sustain production at a high level. The second finding is that axe stone from the modern quarries can be identified in rockshelters in levels dated to 2500-1500 years before the present. Bearing in mind the close relationships that I describe between social organisation, the wealth economy and quarrying methods, I conclude that this is one of the markers of the emergence in the highlands of a society of essentially modern aspect.
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Library of Australia, Canberra.
NOTES ON ORTHOGRAPHY

I did not achieve any measure of competence in the Tuman language Ek Nii until the closing weeks of fieldwork in 1981; my interviews were therefore held almost entirely in New Guinea Pidgin, relying on younger people to interpret for men and women over the age of about 60 years. However, Bruce Blowers, Ruth Blowers and Lee Eby, Nazarene missionaries who lived at Temek in the 1960s, kindly gave me access to their Ek Nii language materials. Mrs Blowers also permitted me to record her card file on 35 mm film, from which I was able to produce a sizable Ek Nii dictionary in time for the 1981 period of fieldwork.

The orthography of Ek Nii used in this thesis is that given by Bruce Blowers (1975) for the neighbouring language, Middle Wahgi (Ramsey 1975), and adopted by Ruth Blowers for Ek Nii. Note that in this thesis vernacular words - but not names - are represented in boldface. The following is a simplification of the Blowers-Ramsey scheme:

<table>
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<tr>
<th>Vowel sound</th>
<th>English example</th>
<th>Nii examples</th>
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<tbody>
<tr>
<td>Short a</td>
<td>&quot;cat&quot;</td>
<td>nam, amb</td>
</tr>
<tr>
<td>Long a</td>
<td>&quot;Ma&quot;</td>
<td>ka, mane</td>
</tr>
<tr>
<td>Short e</td>
<td>&quot;bet&quot;</td>
<td>ep</td>
</tr>
<tr>
<td>Long ei</td>
<td>&quot;eight&quot;</td>
<td>kei, pei</td>
</tr>
<tr>
<td>Closed, short i</td>
<td>&quot;bit&quot;</td>
<td>sik, ninem</td>
</tr>
<tr>
<td>Closed, long i</td>
<td>&quot;feet&quot;</td>
<td>Wiimbe</td>
</tr>
<tr>
<td>Open, long i</td>
<td>&quot;feet&quot;</td>
<td>eki, kundi, ngi</td>
</tr>
<tr>
<td>Short o</td>
<td>&quot;pot&quot;</td>
<td>mon, ond, to!</td>
</tr>
<tr>
<td>Long ou</td>
<td>&quot;owe&quot;</td>
<td>toue, Pou</td>
</tr>
<tr>
<td>Short u</td>
<td>&quot;put&quot;</td>
<td>dup, mum, wu</td>
</tr>
<tr>
<td>Long u</td>
<td>&quot;boot&quot;</td>
<td>ku, Tun</td>
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In some words, the sound represented by /ei/ varies, possibly due to the influence of Middle Wahgi. Thus the tribe name 'Tungei' may be said 'Tungei' or 'Tungai', or halfway between the two.
<table>
<thead>
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<th>Consonant</th>
<th>English example</th>
<th>Nii examples</th>
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<tr>
<td>t/r (allophones)</td>
<td>&quot;rub&quot;, &quot;rub&quot;</td>
<td>tui, Tuman</td>
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<td>Initial/medial j/nj</td>
<td>&quot;jump&quot;, &quot;enjoy&quot;</td>
<td>jiki, Kunjin</td>
</tr>
<tr>
<td>Final nj</td>
<td>&quot;cents&quot;</td>
<td>enj, pinj</td>
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<tr>
<td>l\text{t}</td>
<td>&quot;well done&quot;</td>
<td>goltem, Kiltai</td>
</tr>
<tr>
<td>Medial \text{t}</td>
<td>&quot;juggler&quot;</td>
<td>ku\text{tem}, kap\text{te}</td>
</tr>
<tr>
<td>Final \text{t}</td>
<td>&quot;tackle&quot;</td>
<td>not, at</td>
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Note that /t/ can be sounded either as 'r' or 't'. This is hard for an English-based orthography to cope with, as it has led in the past to the confusion of 'Rungei' and 'Tungei' in official documents and, worse still, 'Dongai'. Other Nii consonants approximate to English ones.

In the Dom area of Simbu Province and the Jimi Valley, I noted down technical terms as best I could; Colin Lamb, of New Tribes Mission, supplied some written answers to my queries about Dom terms, but local terms outside the Nii language area are generally included for the sake of documentation, and at the risk of inaccuracy.
CONVENTIONS

1. I made tape recordings at many of the formal interviews I held with Tungei and Goroku informants. One set of cassettes is archived with the Department of Prehistory, Research School of Pacific Studies, Australian National University, and another with the National Museum and Art Gallery of Papua New Guinea. In the interests of documentation, textual footnotes indicate which interviews have a bearing on the current discussion. My records of each interview (also archived with the above institutions) indicate which tapes relate to which interviews. These may be of interest to future students from the Tuman and Dom areas.

2. Map references of the form XY 001001 are Universal Grid References taken from the Papua New Guinea 1:100,000 series topographic survey maps.

3. I use the term 'highlands' as a geographical term, while reserving 'Highlands' for use in the names of administrative provinces.

4. I mention informants and some of their ancestors by name. These are their real names; only in one case did an informant ask me not to reveal the names of his forebears. In the case of the Tungei quarrymen, whom I knew better than any others, I have reasoned that their names should not slip into obscurity; on the contrary, they should be remembered.

5. Note that, as in the point above, much of my discussion assumes that axe makers and quarry workers were men. This was always the case. As a consequence, I received most information from old men. However, the term 'informants' is often used loosely; it can be assumed that this does not exclude informants who were also women.

6. The abbreviation PR in bibliographic citations means 'patrol report'.

AXE MAKING AT THE TUMAN QUARRIES

Frontispiece