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The maps in this issue were drawn by R.D. Mitton of Newman Mining Company.
NOTES ON CONTRIBUTORS

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Antoine Domingue:

Before joining UNESCO in 1968 where he was responsible for establishing a radio education service in the Upper Volta, Mr. Domingue had extensive experience in educational radio and television work in Mauritius, his home country, where he became Assistant Director in the Ministry of Education and Cultural Affairs. In his present work for UNESCO in West Irian he is particularly concerned with training teachers by using radio broadcasting.

Sebelum bekerja di UNESCO pada tahun 1968 dimana ia telah dapat mendirikan "Pendidikan Service Radio" bagi tingkat atas, Mr. Domingue telah berpengalaman luas dalam pendidikan pelajaran radio dan televisi di Mauri-
tius, tanah asal darahnya; dimana beliau menjadi Wakil Direktur pada Kemen-
trian Pendidikan dan Kebudayaan. Pada saat bekerja sekarang ini untuk
UNESCO di Irian Barat beliau terutama berhubungan dengan pendidikan guru de-
gan menggunakan radio broadcasting.

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Mbah G. Manja 

Mbah G. Manja, atau lebih dikenal sebagai Mbah G. Manja, adalah seorang peneliti yang memainkan peran penting dalam bidang bahasa dan budaya di Irian Barat. Ia juga dikenal sebagai tokoh lokal yang banyak berkontribusi dalam mempertahankan kearifan lokal serta mempromosikan budaya Melayu di wilayah tersebut.


Bagi Mbah G. Manja, penelitian adalah penting untuk mempertahankan budaya dan mempromosikan kearifan lokal. Ia terlibat aktif dalam berbagai kegiatan penelitian yang dilakukan di Irian Barat. Dia terlibat dalam berbagai kegiatan pengembangan bahasa Melayu dan mempromosikan kearifan lokal di wilayah Tidore.


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STONE AS A CULTURAL FACTOR IN THE CENTRAL
AND EASTERN HIGHLANDS

R.D. Mitton

POTENTIAL:

This is a purely descriptive paper on the uses of stone by the people
in the central and eastern mountain range of Irian Barat. It is also a request
that some thought be given to the prehistory of the area. When a region has
its whole mentality oriented to development the past is easily overlooked.
However, the more developed a people become, and the more they are projected
into an insecure, future-biased attitude, then the more they will want to
search out their past. Their past does not begin with the documented penetration
of Melanesia by the English, the Dutch or the Indonesians; it is to be found
in the mythology or hidden in the remains of the material culture. To discover
the prehistory one must look to the stone artifacts and any associated bones,
immediately placing restrictive parameters on the search. Unfortunately, this
is a facet of life that prehistorians have to face. Early documentation of pos-
sible prehistoric sites or of existing examples of stone age culture will be a
service well appreciated by future students of the past.

An approach to the Grand Baliem from the south takes a person through
some of the most spectacular gorge scenery in Irian Barat. South of the gorge
the people are very remote, the cultivated areas hold a balance with forested
fallow. Above the gorge the scene dramatically changes. The population is
dense, the forest recedes up the valley walls, and the agriculture is much
more intensive. Unlike most mountain areas of Melanesia where terracing is a rudimentary,
finely divided structure of logs running with the contour, the Baliem gorge is
terraced with stone walls. These walls would probably have two functions:

1. Convenience. The walls are a direct function of the stony environ-
   ment: they are the rejected stones from the garden stacked in a util-
   itarian fashion. In the more level areas where terracing is not
   required walls are still constructed around individual garden plots.
   Main walls may be more than three feet thick and serve as walkways.
   In the Grand Valley it is possible to see the phasing out of stone
   walls between Wellesi and Wamena as the finer sediment of the valley
   floor is approached.

2. Permanence. The pressure on the land would be such that gardens
   would not revert to forest in their fallow period. The garden form
   would not be lost and replanting the garden would be a substantially
   simpler task requiring only minor restoration of walls.
On a prominent bluff, overlooking the Baliau between Jatigara and Tangepa, there stands an old, deserted village site. At first glance it looks like some razed fortress, an ancient memory guarding the valley portal. It could possibly be a potentially interesting archaeological site. The low stone walls delineate the basic plan of the Baliau Hill. They are not the destroyed walls of the buildings, these were the traditional Dani vertical plank and grass roofed structure. The stone walls only substitute the fences. The plotting of the location of this particular structure and any other similar structures, and also the gathering of information from the local population on any deserted village sites would be of assistance to future prehistorians.

The stone terracing of the Baliau gorge is the most visually striking manifestation of the use of stone by the Neolithic people of Irian Barat. Other well known aspects of the stone technology are the tools and portable articles of the material culture. Whereas the stone for the walls was collected in situ and there was no effort at modification, the axe blades and exchange stones are traded over considerable distances from specific source sites and are often superbly forged and polished.

In the Baliau there were two types of stones in use for axe and adze blades.

1. A hard green-blue variety which was traded from a quarry site on the Jelima River approximately thirty kilometers north of Kulla (Barber, 1965; Heider, 1970). Some specimens have been identified by geologists as being transitional from peridotite to serpentinite; other specimens are predominantly epidote and chlorite. A minority of the blades are glaucophane schist.

2. A softer black stone originates from a site in the Tagi area (between Pyramid and Kolia). The stone is an indurated mudstone (argillite) from the Kembelangan formation. Normally the mudstone of this formation is fissile and readily breaks down into the loose shaly rock which is very prominent in the Karaba - Kolia area. However, there are pockets of the formation in which the fissile quality is lost where the rock is slightly calcareous (Wisser and Tomas 1962).
The Tagi stone had a restricted use—mainly as axe blades, although adze specimens have been observed and I have seen one small exchange stone of this material. The Jelime stone had a far wider acceptance. It is used mainly for adze blades, for small chisels, occasionally as are blades, and for most exchange stones.

The spread of the stones is extensive. I have seen specimens of both Jelime serpentine and Tagi argillite in the Casuarina Coast region of the Amat (Fijit River). This is probably close the southern limit of diffusion as the specimens appeared to be exceptional. Most of the Amat stones were of poorer quality: sandstones and granites presumably obtained from river beds on the southern flank of the range. The eastern extension currently established for the Jelime stones is Haltja where they are used as spirit stones. However, the adze form begins to phase out in the Anguruk valley. I have no knowledge of the northern or western limits of spread, although from photographs of axes from around Lake Tanisai (Le Roux, 1948) I would assume that they extend to the Olisi group.

Between Anguruk and the Papas, New Guinea border the adzes are of a different appearance. While the Jelime stones are generally of triangular plan, oval cross-section, and finely finished, the Anguruk-Olibil stones are long, triangular in cross-section and roughly finished. In most of the blades the flaking can be seen with only the apex edges and cutting edge being polished off. The stone is a microdiorite which occurs in a dyke form on the southern fall of the range between Korupun and the Ilamden Riv.r. The stones would probably be taken from the river beds rather than from a specific quarry.

The introduction of steel has meant that the stones are no longer being obtained from their source. Very soon the skill of flaking and polishing will be lost and the stones will be relegated to the historical environment of the museum.

It is comparatively rare in Irian Barat to see stones used as body ornamentation, but the mountain people from Haltja to the Star Mountains do use a stone nose decoration. In the Olibil region this is a worked slice of calcite between two and four inches long. The calcite originates from the Denam River which has its source on the southern fall of Antares in the Star Mountains. The Haltja nose stones are smaller and have a much higher polish. They also originate in the east and could be a form of the Denam calcite. However, as there is also found at Haltja a calcite doughnut shaped ornament which is carved and polished locally it is probable that there is a second source between Olibil and Haltja. This circular ornament (locally called Em Dobol) is quite rare, only being worn by a person of considerable importance.

To my knowledge the only other form of worked stone found in the eastern region are stone club heads which have probably been traded in from the southern Fly Digil region where they were once relatively common. A painted club disc was collected by the Star Mountains Expedition in 1959. The people from whom it was obtained apparently had no knowledge of its original purpose (Koolae, 1962). I know of the existence of one other stone disc in a village in the valley of Okep.

The significance of the stone club discs is considerable. That they are kept by a people who have no practical application for them indicates that it is quite possible that there are other stones in the highlands retained for their curiosity value, or, more likely, their assumed spiritual value. Very little is known of the Dani spirit stones. Many appear to be similar to the peridotite-serpentine exchange stones, although they may also be stones that have not been worked by the Dani. These may be fossils (ammonites are common to the north of the Baliem), concretions, or other unusual natural formations. Recently on display at the University of Cjendrawasih was an unusual stone that has been classified as coming from the Baliem. Unfortunately, the documentation stops there, but the stone which appears to be a concretion, is definitely phallic in form. Its natural characteristics have been accentuated by a rudimentary carving.

In Papua, New Guinea there have been a number of discoveries of prehistoric stone carvings. These are mostly of the simple morter and pestle, although some like the Ambun stones are skillfully and stylistically carved. There is no reason to believe that similar prehistoric stonework does not
exist in Irian Barat. If they do exist then this would indicate that the highlands had at one stage a quite different culture to the one that current-ly exist. Objects that were alien to the culture of the current highland societies would be likely to be incorporated into the ritual life of the community. Thus, in the case of the Dani, they would be kept hidden among some stone art collections. I have been told by a Dani of the Wolo valley (to the northeast of the Grand Valley) about a strange stone with a hole in it that was found in a garden and immediately placed in the spirit stone compartment of an important man's house. Unfortunately, with the breakdown of old culture values these objects may lose their significance and be lost. It is possible that some of the missionary fetish pyres of the early sixties may have already consumed significant objects.

Other sites of archeological value are relatively unmovable but not protected from damage and destruction. It is a well known fact that the central highlands are art poor. A few caves in the Baliem contain some crude drawings and Heider has recorded two art styles from the Dugum neighborhood (1970:181 ff.). The only other rock shelter paintings that I personally know of in the highlands were seen by Dr. Robert Wight and myself at about 3,500 meters on the slopes of Gunung Sandala (Mt. Juliana). These "paintings" were merely a number of ochre smears covering the walls of a rock overhang. Why they should exist at this high altitude, and in such a remote section of the country presents an interesting problem. The shelter is beside a dead-end hunting trail and quite removed from any population centres.

On the hill behind Bojo village at Lake Sentani there is an unusual arrangement of stones. The largest upright is about .6 metre high, so the stones cannot really qualify as being megalithic. However, the unfortunate aspect of the stone arrangement is that, according to the local villagers, it was broken down by American servicemen during the war. This senseless, intentional vandalism appears to be just as strong today. Near the stone arrangement are a number of large boulders bearing engravings, the ancient style of which appears to be contemporary with recent Sentani Art. These engravings are also in danger of vandalism as the rocks are a perfect medium for people who wish to embellish their names across the countryside.

How do the Sentani engravings relate to anything in the highlands? Only in their susceptibility to damage. In the village of Nabunage near Karubaga there is a large boulder that is covered in chip engraving. In comparison to the Sentani engravings the Nabunage ones are crude in both execution and form. Much of the boulder is covered by rows of pecked holes, but there is also a crude face and what appears to be a figure. The villagers have no knowledge of the origin of the engravings; they had always been there. Again, this boulder has recently suffered considerable damage. The village decided to extend its church and, when first noticed, the boulder was in the process of being broken up. Hopefully, some of the engraving can be preserved. The people were also quite definite that the example was not unique to the area.

The future of archeology and prehistory in Irian Barat depends to a large extent upon the current interest shown by all sectors of the community. Adequate protection of valuable artifacts and sites will ensure a potentially bright future. However, a barrier of ignorance may mean that many important objects are lost and some sites disturbed or damaged. The growing trend towards the preservation of artifacts is very encouraging, but only of use if there is adequate documentation. This also extends to cultural artifacts in situ.

REFERENCES
Tentang:

Telah dikenal bahwa keuntungan dan kekurangan yang terdapat pada radio dan TV sebagai media pendidikan. Mengingat fasilitas yang terdapat di Irian Barat maka pilihan kita adalah radio. Radio sebagai media baru dapat kita pahami mengingat massa-masyarakat penduduk yang dihadapi karena:

- di Irian Barat terdapat pemantul baru yang berbeda dari 2007 yang terdapat di Djajapura sedang ditambah kebun terdapat pemantul lokal.
- penyebutan radio suara dan banyak terdapat dimana saja
- Irian Barat.
- alat radio transmisisi menggunkan radio dapat diibawa dan diperpanjang dalam daerah terluas dengan daerah kebutuhan.

Siaran pendidikan yang sesuai untuk daerah masyarakat kekurangan guru. Cara ini akan memungkinkan peserta yang dapat mengikuti pelajaran masyarakat kekurangan guru. Cara ini akan memberikan keuntungan untuk kebutuhan yang sesuai untuk kebutuhan masyarakat kekurangan guru.

Dengan adanya radio, peserta dapat mengikuti pelajaran dengan mudah dan efisien. Radio dapat menjadi alat yang efektif dalam menyampaikan pengetahuan dan ilmu ke masyarakat daerah terluas.


It was in the years after the second world war that the term 'new media' was coined to cover all sorts of devices used in instruction—devices other than the formal, old-established one-blackboard method. It cannot be denied that in the thirties, and probably even before, educators were experimenting with teaching aids. However, when the war started in 1939, although many devices and methods were about to lead to new inventions, they had to go into cold storage, so to speak, or else they were directed to the war effort.

When a country goes to war it becomes faced with the problem of trainings—large number of recruits who come from different walks of life, and having widely differing levels of education. Instruction must be given in the handling of weapons and other sophisticated equipment, and such instruction must proceed as rapidly as possible, because war is an emergency, and time is vital. In the instruction of recruits during the war years successful use was made of pictures, diagrams and charts that would convey much information at a glance and of maps of different scales. Still and movie films were used to teach processes involving movement using close-ups, enlarged pictures, slow-motion or speeded-up filming as required. Role plays, scaled up or down were used allowing study of complex of open or of hidden mechanism. The aim of this all was to accelerate the process of learning. It should also be recalled in that we are mulai dalam format ketjil, yang disiarkan melalui studio R.A.I. Djajapura.

Usaha-usaha pendidikan Panjatragat serta usaha yang dilakukan keadaan rekat akan keberkahan, child and mothers care, masalah-masalah kesedahan-tertara pelanggar serta keluarga berita pelanggaran dapat disiarkan melalui siaran pendidikan ini.

Dengan penggunaan siaran pendidikan untuk mengajarkan masalah pendidikan yang diadapi, perlu dipikirkan pula kemungkinan penemuan program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program—program 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referring to a war situation that generals played with sand-trays, little flags, dinky toys and lead soldiers—all very seriously because it was the best way of making a situation as clear as possible while planning campaigns.

When the war was over the methods that had been tried and the aids which had been concocted could be turned to peaceful ends. As life gradually returned to normal, schools and educational systems reorganized and teachers retrained these aids to teaching (which should be more appropriately called aids to learning) began to enter the schools. It should be noted, however, that no country has ever financed further development of teaching aids to the extent that occurred during the war. Nevertheless, many things were to revolutionize education and these teaching aids were to play their part effective -ly within the school, and outside the school in the teaching of adults and specially, as far as radio and television are concerned, in mass education.

Within schools, colleges, universities and other training institutions where all sorts of skills are taught, teaching aids both visual and aural, some extremely simple and others highly sophisticated are now to be found. Teachers have often been reluctant to use aids of any kind either through apprehension or through insufficient knowledge of their use and value. The need for the teacher to be made familiar with the methods involved in their use has been recognized in most countries, and facilities are being provided sometimes sparingly, and sometimes extravagantly. The use of any resource other than chalk, talk and book is no longer regarded as a novelty. However, some teachers develop an interest in the use of aids more than others, and many remain indifferent. The reason is often because the teaching aid which is supposed to make teaching easier, is in reality a device which demands extra preparation. The conscientious teacher who has patiently experimented and assessed results is soon convinced of the value of aids. Generally he becomes an enthusiast who spreads the good word among other teachers.

It would not be out of place here to review a list of teaching and learning aids. This list is by no means exhaustive.

Reference is often made to non-projected aids, some of which have already been mentioned: the picture in its many forms, the diagram, the chart, the map and the flannelgraph. There are also samples, specimens and models; here we have multi-dimension and the possibility of involving more active student participation. Next we have projected pictures requiring some from of projection equipment. The material may be available on slides or on filmstrips often produced by the teacher himself. Photographs, pictures from books and documents can be projected using an epidiascope. Also transparent -cies prepared by the teacher or available from commercial sources may be shown using the overhead projector which also allows the teacher to add details to the projected picture, using a felt pen. All the above-mentioned pro- jected methods involve still pictures.

Motion pictures, although first used in education in 1910, still constitute a respected novelty in many otherwise advanced educational systems. The film, with or without sound is expensive, requires more preparation and manipulation of equipment by the teacher, but can bring the world into the classroom with considerable reality. It should be noted in passing that records and recorded tapes also have a part to play here. The most widely used educational film is 16mm. The smaller 8mm dimension gives greater scope for local production by teachers and pupils as the equipment involved is cheaper. It is also the dimension of film being widely used in making film-loops, which are usually short and have value in teaching a particular situation where movement has to be observed, as the loop film repeats the recorded picture as long as it is allowed to run.

The aids mentioned so far have one thing in common: they can be available for use as and when required under close control of the user. Radio and television fall into a different category as they come from outside the school and when used create a situation whereby the class teacher temporarily withdraws from the teaching scene. He is also required to submit himself to a schedule as to time, contents, method and means of transmission. All these factors are outside his control.

Radio broadcasting is the medium most relevant to situations with which we are familiar. Perhaps a rapid survey of developments and reference to some experiments carried out in developing countries may not be out of
Radio broadcasting is hardly fifty years old. During the years between the two world wars it went through various stages of experiment and development, with gradual improvement in power and quality brought about by research in new materials and equipment. The loud speaker and the tape recorder have only become the tools of the broadcaster, as well as becoming accessible to privileged sections of the general public, within the last twenty years or so. But by that time broadcasting had already emerged as a great force that knew no physical boundaries. The world still remembers the part played by the BBC's overseas broadcasts in the critical years of the Second World War. It was the voice that brought hopes, boosted morale, co-ordinated widespread underground resistance and helped prepare the way for liberation.

Since those days, new developments and new techniques have brought constant and immense improvement in the field of radio communication. Most nations now have their own internal broadcasting service and many have external services as well. In the decade 1950 to 1960 the number of radio transmitters in Africa increased from 140 to 870. In Europe it rose from 5,752 to 2,700. In the USSR alone the number quadrupled and it is therefore not surprising that the USSR should have the greatest volume of external broadcasting in the world—approximately 1,400 hours per week. China is second, the Voice of America third, and the BBC fourth, broadcasting in forty-one languages. A point of saturation has almost been reached in frequency allocation. Latest techniques involve the use of satellites.

And what was happening at the other end, at the receiving end? There that remarkable invention the transistor was causing a revolution in receiver production techniques taking 'portable' to a word that could truly be applied to radio receivers. It also made them more efficient, more reliable and cheaper. It thus contributed to make radio broadcasting a truly popular mass communication medium and its place in programmes of development projects anywhere in the world can no longer be considered a sophisticated tool. Another figure which speaks for itself is the increase in the number of receivers in tropical Africa over the last twenty years: from one and a half million to over fifteen million.

The average citizen expects his national broadcasting service to provide him at almost any time with what he considers to be entertainment, whatever his taste be and with information which must sound to his exact and impartial. He has also come to expect that programmes will contain a certain degree of education. He expects value for his money in all fields—art, sport, business and religion. Everything must sound perfect and when he has worries, he turns on his radio in the hope of forgetting them. The average national broadcasting service also sets out to provide these three basic needs for home consumption: entertainment, information and education. How many nations can claim success?

When the local radio programme is not satisfactory or is not on the air, our average citizen turns the tuning knob of his set in search of something that appeals to him. Does he always come across sounds that will quench his thirst for entertainment or news, or enrich his imagination in some way or other? Or does he not become caught in the spell of some sublimes presentation coming from outside his country intended to create doubts in his own mind as to his traditions, his loyalties, his culture, his faith? What a versatile tool indeed, radio can be, in different hands! But to look on the positive side we may consider some remarkable achievements that have taken place in Columbia.

Columbia, with a mostly rural population of seventeen million is an exceedingly poor country. Some 41% of the under sixteens are illiterate. Only 7% receive secondary school education and less than 1% a university education. Healthwise the situation is no better. There are about four doctors per 10,000 inhabitants and it is estimated that one hundred Columbian children die each day because of malnutrition. Parasitic and venereal diseases are primary concerns; only about 20% of the houses have toilets.

Confronted with such huge problems, a difficult terrain, and without adequate means, one would be reduced to despair. However, a group called Accion Cultural Popular (ACPO) with missionary backing did not despair but
set out to initiate various forms of rural development using mainly the radio. The objective of one of the first campaigns was to encourage the scatter
ed population of the rural zones to build latrines and to use them. By
repeatedly outlining the dangers associated with diseases carried by insects
and microbes and also by means of illustration carried around by trained
rural leaders, the possession of a latrine very soon became a sign of prestige
and progress. Another radio campaign brought about the creation of some
77,000 family gardens for the cultivation of vegetables for home consumption.
A further programme encouraged the preparation of 'compost trenches'. Listeners
were taught to combine manure together with roots and a mixture of
ashes and limestone in a properly ventilated pit. Hundreds of thousands of
such trenches were started, using organic matter to enrich soil status.
Perhaps more important than these specific campaigns the radio served to
create a sense of national community and by the knowledge imparted through
the radio helped bring about liberation from fear.

In another instance, the results of a rural radio campaign far surpassed all expectations and even raised politico-economic issues in which the
state had to take action on behalf of the villagers. The campaign had started
as a simple, straightforward attempt to teach villagers in a region of Senegal
to improve their methods of cultivating one particular crop - the ground-
nut. The reactions of the villagers to the broadcasts were collected and in-
cluded in programmes but the effect of this was to bring before the public all the difficulties which the peasant encountered from plant diseases and inefficient co-operative societies to the repercussions of world market price
fluctuations on the sale of their crop. The economic value of this radio
campaign was immense although the campaign had been launched with very limited funds.

Now let us consider the situation which confronts us here in Indonesia.
In the process of educational development several projects have been
started. A priority has been set for establishing a radio education service
for teachers of primary schools, to be followed in due course by broadcasts
for schools, then for the education of adults, and finally, in the widest
sense, educational programmes for the general population. There are 1128
primary schools in West Irian at the moment but only 3992 teachers, of whom a
high proportion is insufficiently trained.

In the implementation of this particular project a radio education
department has been set up at the Teachers' Training College (Pusat Pendidikan
Guru), Abeora. The training of a team of four teachers in basic radio
production started in January 1971, with a minimum of equipment. In view of
the lack of technical facilities and of personnel at the local Radio Republic
Indonesia station, it was decided to convert two adjoining storerooms in one
of the new buildings under construction at the Abeora site for use as a re-
cording studio. At the same time the necessary equipment, including radio sets
to be distributed to the primary schools, was ordered.

The aim of the broadcasts to teachers was twofold: to improve their
general background, and to help them improve their teaching skill. With this
in view a series of programmes was prepared with the co-operation of the
various departments of the Training College. The studio became operational in
July 1971, and by September experimental broadcasts were under way. These
broadcasts coincided with transmission tests carried out by RRI Djajaora
with a new twenty kilowatt transmitter. Since January the programmes for
teachers have been included in the normal RRI broadcasting schedules, now
that the new transmitter has been put into regular service.

Four hundred radio receivers have already been handed over to the Gov-
ernment for distribution to the primary schools, for use by teachers in the
first instance. The sets selected have sufficient tonal quality to enable
them to be used by a normal class. The total number to be so distributed will
be approximately one thousand. Other matters receiving attention at the pre-
ent time are evaluation and feedback. It is hoped that at least one member
of the team will be able to attend a course on these aspects, which it is
proposed to hold in Djakarta. Last year two staff members attended a two-
month course in educational radio production, the first in a series of
courses intended to promote educational development by radio.

The project started in West Irian in the first of its kind in Indo-
nesia, and is being given wide attention as an experimental pilot project. The progress of the project will be constantly assessed in terms of its contribution to educational development here in West Irian and its possible extension to all of Indonesia.

POSTSCRIPT:

The programmes for primary school teachers were broadcast by the Djajapura station of Radio Republik Indonesia during the period October, 1971 to June, 1972, using their new 20 Kilowatt transmitter, in the 49 metre band (6.78 Megahertz), on weekdays from 17.15 to 17.30 hours. Another series is being planned to begin in September. The co-operation of teachers, other government personnel and missionaries in submitting reports as to the quality and contents of the programmes, would be greatly appreciated. Feedback is of the utmost importance in the planning of future programmes.

Communications may be addressed c/o The IRIAN or direct to PLUG, Abepura, Djajapura, West Irian.

NOTES ON THE PHONOLOGICAL HISTORY OF THE AUSTRONESIAN LANGUAGES OF THE SARMI COAST

George W. Grace

1 In this paper I use the term "Proto-Oceanic" in a broad sense, including languages which might be called "Proto-Melanesian" or "Proto-Austronesian". The term "Proto-Oceanic" is used to indicate a common origin for the languages of the Sarmic area, including the languages of the Trobriand Islands, at least in part. This is consistent with the general view that the languages of the Sarmic area are related to other Austronesian languages in the Pacific. The term "Proto-Oceanic" is used here to indicate a common origin for the languages of the Sarmic area, including the languages of the Trobriand Islands, at least in part. This is consistent with the general view that the languages of the Sarmic area are related to other Austronesian languages in the Pacific.
Six vocabularies were used for this study. They are designated here by the following names (ordered on the basis of geographical location from west to east): Sobei, Wakde, Namiasi, Amus, Bongo, and Tarpia. More specifically, the respective locations are: (1) Sobei—the region of the settlement Sarmi on the north coast of New Guinea at approximately 136° 45' east longitude, (2) Wakde—the island Wakde, (3) Namiasi—the island Namiasi, (4) Amus—the island Amus along with a settlement on the facing coast, (5) Bongo—the region of the settlement Armope on the coast at approximately 139° 36' east, and (6) Tarpia—the coast around the mouth of the Sermo Wai River (approximately 140° east). Austronesian languages are spoken on some other islands in the area, but it is likely that all are at least dialectally close to languages represented in the sample.

There is very little material in print on these languages. I have a vocabulary list labeled "Arimoe" which I copied some years ago from Meyer 1874. I have not been able to identify the language with certainty, but it appears to represent a member of this group. Unfortunately, my notes do not include whatever information Meyer gave about the location of the language, and I have not been able so far to obtain access to his work again. More recently, some information on languages of this group has appeared in Cowen 1949-50, 1952-53, and 1953, as well as in Galis 1955-56.

The data which were ultimately selected for use in the present study appear in the cognate list at the end. It has been my intention to include all forms that show enough likelihood of being cognate with the Proto-Oceanic reconstructions cited in conjunction with them as to require consideration in an investigation of the sound correspondences. In the case of these languages, as is so often the case in Melanesia, the number of cognates is not at all large. This would be true even if all of the forms cited were valid cognates, and this, of course, is not being claimed.

The Reconstructions:

I have attempted to use Proto-Oceanic, rather than Proto Austronesian reconstructions. This procedure involves some difficulties as there is no body of Proto-Oceanic reconstructions comparable in scope to Deschow’s (1938)
Austronesisches Wörterverzeichnis. However, I find the difficulties and uncertainties involved in attempting to use Proto-Austronesian reconstructions even greater. I believe these difficulties will be apparent to anyone who carefully examines the Oceanic cognates proposed in Dempwolff 1930. Christen (1962) reported that there are 762 Proto-Austronesian reconstructions for which Oceanic cognates were proposed in that work. However, in the case of a very large number of these proposed cognates there are good grounds for questioning whether or not they are in fact cognate. Many show irregular phonological developments. Others require an analysis (often with no independent motivation) of the forms actually reported so as to permit certain phonetic sequences, abstracted from the whole, to be considered as representing the cognate portion. In other cases the semantic connection seems far-fetched. And numerous examples simultaneously involve more than one of these types of problem.

One factor that generally makes the identification of Proto-Austronesian retentions more difficult in Oceanic languages than in Indonesian is the greater loss of phonological information in the former. All of the modern Austronesian languages have lost some information through phonological mergers and the like—as compared with Proto-Austronesian. As a consequence a given form in a modern Austronesian language could often be derived by quite regular rules from any of several theoretically possible Proto-Austronesian forms. Often, in fact, more than one of these theoretically possible Proto-Austronesian forms have actually been reconstructed. But this kind of ambiguity is much greater in Oceanic than in Indonesian languages. The number of Proto-Austronesian reconstructions that must be counted—on purely phonological grounds—as possible ancestors of a particular Oceanic form, is, on the average, significantly greater than in the case of Indonesian forms.

I should make it clear that I have no doubt at all that the Oceanic languages belong to the Austronesian family and that many of the Oceanic cognates proposed by Dempwolff are unquestionably valid. The difficulty is that the relationship between Dempwolff's Proto-Austronesian and modern Oceanic languages is a quite remote one, and, as a result, the number of cognates that can be identified with any degree of confidence is often disappointingly small. I have, therefore, gradually become convinced that the strategy that is most likely to lead to some progress in working out the later history of the Oceanic languages will involve the comparison of the modern languages with a reconstructed Proto-Oceanic rather than directly with Proto-Austronesian.

With this objective in view I prepared a finder-list of Proto-Oceanic forms, or what I took to be reasonable candidates for that status (Grace 1969). I attempted to include in the list all suitable reconstructions that had been made and published elsewhere. Actually, only Milke has made formal reconstructions that were labeled as Proto-Oceanic. However, I included the forms reconstructed as Proto-Eastern Oceanic by Biggs (1965). I also included a number of additional Oceanic cognate sets which were not reflected in previous reconstructions, assigning to each the appropriate Proto-Oceanic shape.

The fact that some of these reconstructions are designated as Proto-Oceanic while others are explicitly intended just as Proto-Eastern Oceanic is no problem. The phonology of Proto-Eastern Oceanic as conceived of by Biggs and that of Proto-Oceanic in my conception (Milke's conception differed only in unessential details) are identical. According to the sound correspondences as they are now understood a Proto-Oceanic form that had been retained in the proposed Proto-Eastern Oceanic would show no change in shape whatever in the interval. Therefore, there is no obstacle whatever to comparing languages which would be presumed to be Oceanic, but not Eastern Oceanic, with a set of mixed (Proto-Oceanic and Proto-Eastern Oceanic) reconstructions. If we find that the language has a form cognate with a reconstructed form labeled Proto-Eastern Oceanic, it simply means that the label of the reconstruction but nothing else is to be changed. The new label should reflect the fact that the form has been traced back at least as far as the last proto-language (e.g., Proto-Oceanic) common to the Eastern Oceanic languages involved and to the language being studied. In short, for present purposes these differences in labels can be disregarded.

Most of the reconstructions used in this study were taken immediately from the finder-list (Grace 1969). However, I have modified the orthography in
always enclosing in parentheses, first, all nasal consonant symbols that immediately precede another consonant (I find there is a tendency to take these indications too seriously), and second, all final consonants. These final consonants are generally based on the Proto-Austronesian evidence, and do not necessarily indicate that the consonant has been observed in Oceanic languages.

However, the finder-list, although I find it convenient, is not generally accessible, and does not in any case give the evidence on which the reconstructions were based. Moreover, in the course of the present study I have added a few reconstructions that are not represented on the finder-list. Therefore, I will briefly indicate where the evidence for the reconstructions appearing in the list at the end has been published, and when there is no previous publication, give some indications of the supporting evidence here.


II. Consonants

Proto-Oceanic P:

\[ p \] becomes \( \varepsilon \) in all languages but Tarpia, where it appears as \( \kappa \). Tarpia \( \kappa \) is in fact frequently articulated as a bilabial continuant. The name of the language in other sources is usually written "Tarpia". Numerous examples of these correspondences can be found in the list. Sobei provides some evidence for a separate reflex for \( *mP \) (and \( *\betaP \)).

We find sobei \( \kappa \) in items (46, 71, 73, 76). Of these only (46) shows cognates in other languages. In this case, Songo agrees in showing \( \kappa \) instead of \( \varepsilon \). However, Tarpia \( \kappa \) in this form does not differ from the regular reflex of \( \kappa \). There does not appear to be any hypothesis of environmental conditioning that could account for Sobei, Songo \( \kappa \) as regular reflexes of non-preasalized \( \varepsilon \).

However, we also find Sobei, Wàkdâ \( \kappa \) in (56). Since the following vowel in (56) is \( \varepsilon \) in both languages, and since all examples of Sobei \( \kappa \) cited above have following \( \varepsilon \), it seems possible that the distinction between Sobei \( \kappa \) and \( \varepsilon \) results from environmental conditioning. Note that Nasmsi has \( \varepsilon \) in (56) but that the following vowel is \( \varepsilon \). There is not sufficient information to attempt any further comment on this Nasmsi form.

Proto-Oceanic \( \varepsilon \):

\( \varepsilon \) appears to have fallen together with \( *\kappa \) in Tarpia. The reflexes appear to be: \( \varepsilon \) before Tarpia non-high vowels (\( \kappa \), \( *\kappa \)), \( \varepsilon \) before high vowels, and \( \varepsilon \) before a consonant or word boundary. For \( \varepsilon \) from \( *\varepsilon \), cf. (5, 10, 16, 17, 23, 41, 49, 63). For \( \varepsilon \) from \( *\kappa \), cf. (7, 21, 24, 27). For \( \varepsilon \) from \( *\varepsilon \), cf. (4, 32). For \( *\kappa \) from \( *\varepsilon \), cf. (8, 33, 34, 60). For \( *\varepsilon \) from \( *\kappa \), cf. (12, 22, 23, 45, 87).

One example shows \( \varepsilon \) before \( *\varepsilon \) (26). As there is only one ex-
ample (7) of \( \alpha \) as the reflex of *\( \lambda \) in that environment, the present interpretation—at least the specification of environments—may seem somewhat doubt-
ful. However, in view of the substantial evidence that the reflexes of *\( \lambda \) and *\( \beta \) have fallen together and the evidence that *\( \lambda \) becomes \( \beta \) before \( o \) (16, 63), it seems best to retain the interpretation given, and leave (26) as the un-
explained exception.

*\( \lambda \) appears generally as \( \beta \) in all of the other languages. There are
numerous examples in the list. However, there are a few apparent exceptions.
Sobei has \( \beta \) in (17, 60) and *\( \lambda \) in (39). (68) is the only example of a reflex of
*\( \beta \) immediately following Sobei *\( \lambda \), and (17, 59) are the only instances im-
mediately preceding a Sobei consonant, the consonant being different in the
two cases. It seems at least possible that one or more of these forms are
genuinely cognate and that their reflexes may be explainable by some regular
rule.

Masinisa shows *\( \lambda \) in one example (17) (note that the proposed Sobei
cognate is also aberrant). I can propose no explanation, except the possibility
that *\( \lambda \) represents the word-final reflex of \( \lambda \). However, this would con-
stitute the only evidence that any of these languages reflect *\( \lambda \) and *\( \lambda \)
differently.

Proto-Oceanic *\( \lambda \):

*\( \lambda \) falls together with *\( \beta \) in Tarpis, as noted above. The reflexes of
*\( \lambda \) in that language have been discussed in the discussion of *\( \lambda \). Otherwise, *\( \lambda \)
appears as *\( \beta \) in Wadé and as *\( \lambda \) in the remaining languages. There are numerous
examples in the list, and exceptions are few. One unexplained exception is the loss of *\( \alpha \) in initial position in one Wadé form (33). In the case of (34)
the proposed Sobei cognate is presumably morphemically complex. It should be
explained that Sobei form is included on the assumption that the sequence —(not the sequence, de-)
—represents a morpheme cognate with the reconstructed root.

Proto-Oceanic *\( \beta \), *\( \delta \), *\( \varepsilon \), and *\( \varepsilon \)) appear to have fallen together in all Sarni languages,

although the conditioning is somewhat complex.

In Sobei, the reflex appears to be *\( \lambda \) before vowels other than *\( \lambda \). Examples
are: (1) from *\( \alpha \), (a) before *\( \lambda \) (5, 11, 30), (b) before *\( \lambda \) (7, 13); (2)
from *\( \beta \), (a) before *\( \lambda \) (72), (b) before *\( \lambda \) (20, 46); (3) from *\( \varepsilon \), before *u*(15).

The reflex appears to be *\( \beta \) before Sobei *\( \lambda \). Examples are: (1) from *\( \beta \)
(34); (2) from *\( \lambda \) (6, 13, 75). We also find *\( \beta \) before *\( \lambda \) in the one example (45)
of a reflex before a consonant. One exception to the above rule shows *\( \lambda \) before
*\( \lambda \) in (77). However, (77) is one of only two cases in which the reflex appears
as the second member of a consonant cluster—the other is (75). (77) differs
from (75) in that the cluster is medial rather than initial, and that the pre-
ceding consonant is voiced and nasal.

Two further apparent exceptions show the loss of *\( \lambda \) (16) and *\( \varepsilon \) (25)
before Sobei *\( \beta \) (where *\( \beta \) would have been predicted). However, (16, 25)
represent the only instances of the specific environment / o-\( \beta \). Thus the loss
may be conditioned by that specific environment (or a more generalised environ-
ment, say, between rounded vowels). Wadé and Nasinu show parallel developments
in (16, 25).

The final reflexes are not clear. We find *\( \beta \) from *\( \alpha \) (86), from *\( \varepsilon \) (59)
and from *\( \beta \) (74); but *\( \beta \) from *\( \lambda \) (58) and from *\( \alpha \) (61). Although *\( \beta \) is pre-
fixed by high vowels in both cases and *\( \beta \) by *\( \lambda \) in two cases, we find *\( \beta \) pre-
ceded by *\( \lambda \) in (86). In any event the examples do not suggest that the dif
terent reflexes are due to any preservation of original consonant distinctions.

One additional case of an apparent exception should be mentioned. (43)
shows apparent loss of the second instance of *\( \lambda \). However, in most examples,
CGCVV forms that were either inherited or developed through partial replication
lose the second vowel in Sobei. Normally a consonant cluster results.

However, the loss of the second vowel in (43) should result in a cluster
of two identical consonants. Since I have not noticed any geminate clusters
in Sobei, it seems possible that they are regularly reduced, and that the
*\( \beta \) in (43) actually reflects both instances of *\( \lambda \).

In Wadé and Masinisa the reflex seems uniformly to be *\( \beta \). Examples
are (5, 6, 7, 11, 13, 15, 18, 26, 38, 58). However, as mentioned above (16, 25) show loss in Wadé. However, we may again tentatively assume that loss occurs just between rounded vowels. No Masimasi cognate of (25) was recorded, but (16) shows an aberrant development. Although the $\bar{y}$ is retained in this form, it appears to metathesize with the following $\bar{y}$. It is possible that that is the regular Masimasi development in the specific environment.

Anus, Boggo, and Tarpia show $\bar{a}$ from $\bar{a}$ in (16, 13). The following vowels are Anus $\bar{a}$ in (13), and $\bar{a}$ is the remaining forms. There is no other example of a reflex before Anus $\bar{a}$ or $\bar{a}$. For Boggo and Tarpia there is one further example of a reflex (in this case, of $\bar{a}$) before $\bar{a}$. In the latter case (43), the reflex in both languages is $\bar{a}$. This might suggest different reflexes for $\bar{a}$ and $\bar{a}$. However, the first two cases (i.e., 6, 13) are in initial position, while (43) involves medial position. The medial reflexes of $\bar{a}$ appear to be $\bar{a}$ (cf. 15, 59, 61, 82, 86). However, there is only one other example of a reflex of any of these consonants in initial position, and that is Tarpia $\bar{a}$ (38) from *$\bar{a}$*. In this form the following vowel is $\bar{a}$. In other positions the reflex of all is generally $\bar{a}$ (cf. 5, 7, 11, 16, 18, 26, 38, 45, 46, 47, 50, 53, 81).

I tentatively propose that these consonants have indeed fallen together, and that the reflex is $\bar{a}$ initially before $\bar{a}$ (or Anus $\bar{a}$ from an earlier $\bar{a}$) at least, and at least not before $\bar{a}$ in Tarpia. Elsewhere it is $\bar{a}$.

However, a few problems remain. Anus, like Sobei and Wadé, shows a zero reflex in (16, 25). Again, we can explain this as conditioned by the environment between rounded vowels if we can assume that the initial $\bar{a}$ of (15), which is not part of the inherited root, was added at a time subsequent to that in which the environment in question had its effect.

Further, we find Boggo final $\bar{a}$ from *$\bar{a}$* in (43, 46), and in (63) my notes show $\bar{a}$ where there was a second person subject, but $\bar{a}$ elsewhere (this is from *$\bar{a}$*). Since no other verbs showed this pattern, I cannot comment further except to suggest that final $\bar{a}$ in Boggo sometimes shifts to $\bar{a}$ under some—probably not phonological—conditions.

One further problem involves Boggo $\bar{u}$ from *$\bar{u}$* in (39). It represents the second member of a consonant cluster, but we find $\bar{x}$ as the second member of clusters in (11, 18, 45, 86). (39) differs from the first three of these in that it is a medial cluster which is involved. However, (86) must also be considered as involving a medial cluster since the root would be preceded by a pronominal prefix. Moreover, the following vowel is $\bar{a}$ in both cases. The only difference which it is possible to seize upon as a potential conditioning factor is the first consonant of the cluster, viz., $\bar{a}$ in (39).

Proto-Oceanic $\bar{k}$:

$\bar{k}$ is consistently reflected as $\bar{k}$ in Anus, Boggo, and Tarpia. There are numerous examples in the list.

In Sobei, it appears that $\bar{k}$ is reflected as $\bar{k}$ before high vowels (22, 35, 37), otherwise as $\bar{a}$ medially (47, 85), but in all other environments it is apparently lost (11, 14, 28, 31, 45).

$\bar{k}$ disappears in all Wadé and Masimasi examples in the list (11, 14, 22, 28, 31, 42, 57). However, in both languages the first person singular possessive suffix appears as $\bar{k}$. The explanation is not clear. The suffix is most often reconstructed as *$\bar{k}$nu*. This suggests that Wadé, Masimasi $\bar{k}$ may reflect only the prenasalised consonant, while $\bar{k}$ without prenasalisation is lost. However, I have no further evidence of a separate reflex for *$\bar{k}$nu*.

A second hypothesis would be that $\bar{k}$ is retained in final position, but lost elsewhere. This hypothesis would require us to assume that the *$\bar{k}$* of (26, 42) was lost prior to the loss of the following vowel, but that the loss of the final vowel of *$\bar{k}$nu* occurred earlier (i.e., before intervocalic $\bar{k}$ was lost). The question cannot be resolved at present.

With respect to lost consonants it should be pointed out that in most of the languages $\bar{y}$ sometimes develops before initial $\bar{a}$—including $\bar{a}$ which has become initial through loss of a preceding consonant—and that initial $\bar{y}$ sometimes develops when an initial consonant that was followed by a Proto-Oceanic rounded vowel has been lost. Cf. (14, 19, 41) for $\bar{y}$, and (9, 11, 22) for $\bar{y}$. 


Proto-Oceanic n:

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Proto-Oceanic q:

*ŋ* appears to have fallen together with *ŋ* (as *ŋ*) in all (4, 5, 50, 71, 73, 82). However, *ŋ* appears not to be reflected in Sobei, Wadé, and Kasimasi (5). I can only speculate that, as was suggested for *ŋ* in Sobei (43) above, the second vowel of the tri-syllable was lost, and that a non- permissible internal cluster resulted. However, a similar cluster, although presumably across a morpheme boundary, does occur in Sobei (17).

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Inherited Forms of the Shape (CVV):

Of the forms that qualify for consideration here, no verbs except for Bogo (86) and the quite doubtful case of Bogo (95) retain the final vowel of the proto-form in any of the languages.

With three exceptions, proto-forms of this shape, other than verbs, never lose the final vowel in Sobei, Wadé, and Kasimasi. The exceptions might with more information, prove to be regular. Most of the non-verbs are nouns. However, two of the exceptions are not nouns. (14) and (36) are, respectively, a pronoun and a numeral. It seems possible that some reformulation of the distinction, stated here as holding between verbs and non-verbs, would accommodate these cases. The remaining exception is Kasimasi (42). This form involves an inherited medial consonant that is regularly lost in Kasimasi. It seems reasonable to suppose that the final vowel which was recorded for this form reflects a sequence of two vowels that resulted from the loss of the intervening consonant. If that is the case, the loss of the final vowel would involve the development of a CVV, rather than a CVVV shape.

In Anus, Bogo, and Tarpia these non-verbs fall into two classes of approximately equal size. One class loses the final vowel (2, 7, 9, 12, 13, 14 19, 22, 26a, 33, 36, 40, 44, 46, 65, 78, 79). The other (8, 10, 11, 17, 18, 24, 26b, 35b, 37, 42, 48, 49, 52, 57, 64) does not. Although it is impossible from the available data to give a precise characterization of the basis of the classification, it is striking that the first class does not contain any nouns that were recorded with possessive pronominal suffixes. In fact, almost none of these forms would, on the basis of their meanings, be expected to take such suffixes. On the other hand, a number of forms in the second class were recorded with such suffixes, and several others might reasonably be expected to be permitted to take them. It seems possible, in fact, that some or all of these
forms might actually be marked for possession by a third person singular possessor.

In the limited paradigmatic data that I collected, I tended to neglect the third person singular forms. The reason was, I think, that they appeared uninteresting. Those that I have (for all of the languages) seem to consist of nothing but the root—that is, they lack the suffixes that are present for all other persons and for the plural. However, they do retain the final vowel. Thus, I am unable to suggest any means for distinguishing the form of unpossessed nouns of this class and nouns marked for a third person singular possessor.

There is, in Amus, a particular subclass of the class of forms which lose their final vowel which should be mentioned. The subclass in question consists in those proto-forms which have a as the first vowel and a high (i, u) second vowel, that is, the shapes (C)aCι and (C)aCu. These appear as Amus(c) aίC (2, 4, 12, 13, 19, 35). The rule does not apply to (27, 53) which lost their second consonants. Two further exceptions are (79), which is perhaps a doubtful cognate anyway, and (14) where the expected development seems to have occurred except that the final vowel somehow remains. It may be of some significance that both of these problematic forms are pronouns.

Only four of the proto-forms under discussion here have vowels in initial position. In some cases the initial vowel is lost. Only one of these forms (19) belongs to the class which loses its final vowel in Amus, Bogo, and Tarpia. (19) is also the only one of the four forms which always retains its initial vowel. (8) loses the initial vowel in all six languages. In (24) the initial vowel is lost, at least in Bogo and Tarpia, and perhaps in Amus which has an unidentified prefix. The fourth case (37) is most unclear. The initial vowel is clearly lost in Tarpia. Amus and Bogo both show something in the position of the initial vowel, but in each case the particular development from a is difficult to explain. If we were to regard the first vowel in these two forms as belonging to separate morphemes, we would be obliged also to question the Sobei form. One is tempted to suggest that perhaps, in forms which regularly retain the second vowel a is lost in all of the languages while initial a is lost just in Amus, Bogo, and Tarpia.

Inherited Forms of the Shape CVV:

Included here also are forms whose Proto-Oceanic reconstruction has the shape CVV where, in one or more languages, the second consonant has been lost. The vowel sequence of the CVV forms is usually reduced when the form has been lengthened by reduplication or added morphemes. Otherwise, where the second vowel of the sequence is a phonetically higher vowel than the first, the sequences prove quite stable (3, 6, 16, 27, 31, 51, 53). However, sequences where the second vowel is not higher are unstable, except perhaps in Bogo. In these cases they appear reduced (Waké, Masumi (15)) or may break into two syllables with a semivowel inserted between the two vowels (Amus, Tarpia(1, 21) Sobei (76)).

Breaking:

In addition to the cases just mentioned there are a number of other cases of phenomena which may tentatively be grouped together under the heading of "breaking." All of them show the development of sequences involving a semi-vowel or a high vowel and at least one other vowel. One such phenomenon which has already been mentioned is the development of a before an initial vowel in (9, 11, 22). For completeness, at least, the development of initial a (14, 19, 41) should also be recalled.

We may include also the development of Bogo ma from a (8) and from a (52, 63). There are further cases where Bogo ma does not correspond to a Proto-Oceanic rounded vowel, but where cognates in Tarpia or Amus do have a rounded vowel, thus raising the possibility that a rounded vowel was present in these forms at some stage in Bogo history. The examples are (25, 44, 48), and perhaps (15) might be regarded as providing further evidence. We may also mention the apparent breaking of a to Bogo ma in (12, 24) and to Tarpia a in the cognate forms in that language.

The examples suggest that Bogo ma normally corresponds to a rounded
vowel in Tarpa, but that when that would result in a Tarpa monosyllable of the shape CVV, Tarpa shows breaking to VW. An analogous rule would account for the breaking to Tarpa ANA in (24), but (12) would require some sort of modification of the rule.

We should also cite a scattering of further forms which possibly are relevant to the question of breaking. These include Sobei (59, 60, 75), Wadide (9), Masimasi (16), and Boggo (34, 37, 61). Finally, we should probably recall in this connection a development in Anus that was mentioned above. That is the development of Anus in from Proto-Oceanic which stood before a consonant which was followed by a high vowel that was subsequently lost (i.e., /C - CA, M).

Inherited Forms of the Shape CVVV:

Included here also are forms whose Proto-Oceanic reconstruction has the shape CVVV where in one or more languages the form has been expanded into a trisyllable, apparently by partial reduplication or, in some cases possibly, prefixation. As in the case of the (C)CVV forms, there seem to be two classes in Anus, Boggo, and Tarpa. One class (23, 29, 43, 45, 63) loses the final vowel; the other (5, 39, 54, 55, 80) retains it. Boggo (5) is misleading in that the form cited cannot immediately precede the possessive suffix, but rather is followed by the plural marker -su which thus alters the canonical shape. When the final vowel is lost, the second vowel is retained. Conversely, when the final vowel is retained, the second vowel is lost—except in two Anus examples (39, 54). It seems at least possible that the second vowel of those forms is epenthetic.

Again as in the case of the (C)CVV forms, Sobei, Wadide, and Masimasi regularly retain the final vowel (there being no verbs among the examples for these languages). Generally, as in comparable cases in Anus, Boggo, and Tarpa the second vowel is lost (23, 45, 55, 60, 77, and Sobei 29, 39). However, it is retained in two cases in Wadide (29, 39) unless the A found there is epenthetic.

In two cases (5, 43) we find the shape CVVV. My hypothesis, which was mentioned above, is that the second vowel was lost as expected and that the resulting cluster was subsequently reduced.

One case (56) involves a Proto-Oceanic consonant which is regularly lost. The loss of this consonant, if it occurred prior to the loss of the second vowel, would leave the shape CVVV. That is what we actually find in Sobei. The Masimasi form is comparable except that for Masimasi I wrote the semi vowel u where in Sobei I recorded u. The Wadide form possibly represents the same development followed by reduction of the vowel sequence.

One final case (25) presents a variety of problems. The second consonant and very possibly the third (cf. discussion of 'A, 'A above) are regularly lost. The canonical shape has, furthermore, been altered, especially by reduplication, in most of the languages. It seems quite possible that the forms in at least some of the languages are genuine cognates with their current shapes resulting from quite regular rules.

I will not propose an explanation for the retention or insertion of a second vowel in some Wadide and Anus examples. In view of the limited evidence available it would be possible to suggest a rule specifying either retention or omission in environments defined in terms of the specific phonemes involved. However, I have found no rule that seems particularly attractive.

Lost of High Vowels in Boggo:

In our consideration of forms of the shape CVVV we saw two forms in which the initial was 'A. We observed that in one of these cases (8) and possibly the other (37), the initial 'A had been lost in Boggo. There was no example of initial 'A among the CVVV forms, but we find that both 'A and 'A are lost from the first syllable of a number of forms of other canonical shapes (11, 16, 45, 57, 63, 86).

However, we find that the Proto-Oceanic high vowels are retained in cases where the following vowel has been lost (5, 20, 22, 29, 33, 62). This appears to suggest that the loss of these Proto-Oceanic high vowels in Boggo occurred at some time subsequent to the vowel loss (i.e., of some final vowels and some second vowels of trisyllables) discussed previously. One counter
example appears in (66) where the proposed rules should have led to the loss of the second vowel and should, therefore, have blocked the loss of the first. I have no explanation of that form. The fact that it is the only verb showing that kind of vowel loss is probably not significant.

With regard to Boggo (66) it would be remiss not to mention Wang 1969. Superficially, at least, this form appears to represent precisely the kind of problem that would be expected as a residue of competing sound changes which intersected in time.

It should be added, moreover, that the loss apparently does not occur in the case of CVV forms (68). As we have seen, the development of forms of this shape seems to be governed by quite different conditions. Thus, it seems that the environment in which the vowel loss occurred must have required a following consonant as well as a vowel subsequent to that.

There are two remaining counter-examples (52, 52). Both of these forms show vowels apparently reflecting *i and in each case the vowel in question is followed by a consonant and a vowel as required. However, neither of the actual reflexes is a high vowel. I would tentatively suggest that these vowels had all—ready been lowered before the time in which the rule in question (which, as we have seen, is probably chronologically recent) operated.

IV. Vowels

Proto-Oceanic *a:

There are very few examples of *a. These suggest that the regular reflex is perhaps a in all languages. Examples are Sobei, Wakde, Masimasi (3), Sobei (29), and Wakde, Ams, Boggo, Tarpia (41). However, we find unexplained Sobei a in (70) and Wakde ı in (29).

Proto-Oceanic *o:

With the possible exception of Wakde and Masimasi, where the limited amount of evidence leaves some uncertainty, the most common reflex in all languages is o. However, we find o as a second regular reflex in certain environments in Sobei, and presumably Wakde and Masimasi.

In Sobei, Wakde, and Masimasi *a appears as a when followed by a consonant plus a vowel (7, 9, 46, 67, 70, 73). All of the examples just given involve the initial syllable, but Wakde (39)—if the vowel in question is not apenthetic—is evidence that that is not a necessary characteristic of the environment.

Sobei generally shows o in other environments (7, 21, 25, 28, 46, 74). All examples except (21, 25) involve final position, and neither of the latter involves both a following consonant and a vowel. Of these etyms, Masimasi has o in (7), and Wakde has o in (7, 28) but o in (21, 26) and perhaps (25). I can offer no explanation of the distribution of o and u reflexes in Wakde; (7) and (26) are a near minimal pair.

One Sobei exception is (77), which shows o. The fact that this is the only case where a consonant cluster precedes may be significant. An additional exception is (56), where the reflexes appear to be Sobei o, Masimasi ı. There is no basis for attempting an explanation.

Ams, Boggo, and Tarpia consistently show o in closed monosyllables (7, 28, 46, 50, 65, 67, 70) with the single exception of (9), where all have o. (9) exhibits a kind of breaking which has been mentioned above. Its explanation may lie in that fact.

Aside from the closed monosyllables the only other examples of reflexes of a first syllable *a are (21, 48). (21) involves an originally unstable vowel sequence and subsequent breaking (cf. Canonical Forms), (48), which has Ams o, Boggo o, and Tarpia a, is a generally aberrant form—a fact that raises doubts about the etymology.

(25) can only be mentioned for completeness. It presents unique conditions. There are, likewise, no comparable data for assessing the conditions involved in Ams a in (39), but there is the possibility that it is apenthetic.

In all other cases of *o which was not in the first syllable of the root, the Tarpia reflex is o (26, 52, 63, 65). However, although Boggo has o in (26), it shows (breaking to o) in the other two instances (52, 63). An Ams cognate was recorded only for (52), where the reflex is o. I cannot propose an
 Proto-Oceanic *u:

The most usual reflex in all languages is *u. However, there are a number of exceptions, particular in the western languages. The conditions determining the appearance of *i cannot be stated conclusively, but some suggestions are possible.

The reflexes of *u in Sobei, Wàkà, and Nàsimi present a number of uncertainties. *u as the first vowel of CVV forms generally appears as y: Sobei, Wàkà, Nàsimi (15), Sobei (76), Wàkà (1). However, we find Sobei, Nàsimi *g in (1).

In closed monosyllables we find Sobei, Wàkà *i in (20). However, there are two possible counterexamples in Sobei (47, 59). If the etymologies suggested for the forms are correct, elements have subsequently been attached so that the vowels in question are no longer in the first syllable of the word. This circumstance may have played a role in their subsequent development.

We may now consider the cases where the first syllable reflex of *u is followed by a consonant plus a vowel. Where the following vowel is rounded, the usual reflex is *i: Sobei, Wàkà (18), Sobei (33, 72, and the doubtful 88). Wàkà (33) shows i, but the Proto-Oceanic rounded vowel of the second syllable has now become unrounded. Whether or not this form constitutes a counterexample to the proposed rule depends on the chronological ordering of the changes. However, it is possible that the environment that conditions the reflex *i in Wàkà involves a high vowel rather than a rounded vowel in the following syllable.

One counter-example appears to be Sobei (60), which has g. However, the consonant cluster which follows that reflex may be the explanation for it.

Where the following vowel is not rounded, the conditioning factors are obscure. (11), with Sobei, Wàkà g and Nàsimi j, may show the effect of breaking. However, according to the rules proposed for *k in Sobei, the Proto-Oceanic *u in this form must already have made some shift in order to permit

the loss of initial *k in Sobei (thereby freeing the vowel for that type of breaking).

(22) shows Sobei y, but Wàkà j. This appears again to suggest that a following high vowel, rather than a rounded vowel as was proposed for Sobei, might be the factor that conditions Wàkà j. However, an alternative explanation might be based on the breaking in Wàkà.

Sobei (45) and Wàkà (57) are further problematic cases. There are environmental factors in each that cannot be properly evaluated with the data at hand.

The reflexes of *u which was not in the first syllable are again usually j or y.

Where preceded immediately by a vowel, the reflex appears to be y:Sobei, Wàkà, Nàsimi (6, 16), Sobei, Wàkà (53), Sobei (and perhaps Wàkà)(25) and perhaps Sobei (68) which involves either a suffix or breaking.

Otherwise, we find j in the following examples: Sobei, Wàkà, Nàsimi (2, 12), Sobei, Wàkà (39), Sobei (67) and (13), but with Wàkà, Nàsimi *y in (15). It may be significant that in all but one case (67) the preceding consonant is an apical. It may also be noted that the preceding vowel is a in all cases except (39) (and the Wàkà form shows preceding a in (39) as well). However, two possibly significant facts concerning Sobei (39) should be mentioned. (39) is the only instance where the reflex in question is preceded by a consonant cluster rather than a single consonant, and the preceding vowel—Sobei *g—derives ultimately from *a.

In most of the cases where the Sobei reflex is y, the preceding consonant is not apical. Examples are (37), (44), (58) (also Nàsimi), (33)(but with Wàkà j), and (8) (but with Nàsimi j, Wàkà u). However, two examples do show preceding apicals. In one (66), moreover, the preceding vowel is a. In the other case (56), Wàkà shows a which may represent the fusion of two vowels (*au), while Nàsimi shows y. The preceding vowel is Sobei, Wàkà a, Nàsimi a, from *a.

There are two aberrant reflexes, in both cases preceded by an apical consonant. In (22), Sobei shows a (but Wàkà j). In (18), Sobei shows a and
Wakdé $y$. It may be significant that the preceding vowel is a high vowel in both cases.

It is apparent that the available data do not make it possible to formulate rules to account for all of these reflexes. However, there does seem to be sufficient patterning to suggest that, if we could obtain more accurate knowledge of the order in which the changes have occurred, and therefore of the environments that existed at various stages in the history of the languages, many of the present reflexes might prove to be precisely predictable.

In Anus, Boggo, and Tarpia, $y$ generally appears as $y$. Examples are (1, 5, 8, 11, 15, 16, 18, 20, 22, 25, 33, 35, 45, 53, 59, 69, 88). In Anus we find exceptions. Anus $j$ appears in (18). Note that this reflex is followed by a consonant plus a rounded vowel—an environment that seems to condition the occurrence of $j$ in Sobei, and possibly other western languages. In (11) we find Anus $g$. It may be of significance that the reflexes of the cognates in the western languages were also unexplained. There are only two cases where the word-final reflex is not $y$. These turn out to be the only cases where the preceding segment is an apical consonant. This is reminiscent of the tendency, noted above, for $y$ to be reflected as $j$ in the western languages when preceded by a vowel followed by an apical consonant. In (39) the Anus reflex is $j$ as in Sobei and Wakdé. In (18) it is $g$ as again in Sobei. No explanation for the reflexes in (10) is apparent.

There are several Boggo exceptions. (8, 81) do not present any problem except for what appears to be breaking of different kinds. (39) shows final $j$ after an apical. (47, 66) represent more or less questionable etymologies, and each, if cognate, is complicated by combination with other morphemes.

There are two exceptions in Tarpia. (47) as in Boggo and Sobei must be regarded as representing a doubtful etymology. (57) shows the reflex $j$. With respect to the latter, it may be significant that proto-forms which had high vowels, like or unlike, in two successive syllables regularly show like high vowels (usually $y$-$y$) in Tarpia (cf. 11, 18, 45, 59).

Proto-Oceanic $i$:

The most usual reflex in all languages is $i$. However, there are sporadic instances of other reflexes. The possibility that the reflexes of $j$ and $y$ have fallen together in certain restricted environments is noted.

In Sobei, Wakdé and Masinai the reflex is generally not $i$ when followed by a consonant plus a vowel. The only counter-examples are Masinai (38) and Sobei (37). In the latter case there is some doubt that the vowel in question actually derives from the reconstructed morpheme (cf. the cognates in other languages).

There are not enough examples to be specific about regular reflexes in this environment. We find Sobei, Wakdé $g$ and Masinai $a$ in (56), and Sobei, Wakdé $g$ in (52), Wakdé has $a$ in (52), but there is the possibility that it is apotthetic.

In morpheme-final position we find $i$ immediately after a vowel (31) (and Wakdé 34?). Following a consonant we have $i$ in three cases (11, 32, 73) and $y$ in one (19). As it happens, all of the three cases where the reflex is $i$ show a preceding apical consonant, while (19) does not. This parallels the rule suggested for $j$ and $y$ reflexes of $y$ in these languages, and suggests that in the western languages, as perhaps also in Tarpia, the reflexes of $j$ and $y$ fall together in certain restricted environments.

Sobei (88) provides one further possible counter-example in final position. However, the etymology is quite doubtful.

All environments not so far covered consistently show $j$. The only examples are from Sobei: in closed monosyllables (38, 61, 84) followed by a vowel (68).

In Anus the reflex is consistently $j$. The only counter-example is the doubtful initial syllable of (37).

In Boggo and Tarpia the reflex is generally not $i$ when followed by a consonant plus a vowel. Boggo (52, 52) have $g$ (37) has $y$, but, as has been suggested before, this may reflect a separate element. Tarpia (52) has $g$, while (63) has $g$, and (32) has $j$. (32) has $i$ in the following syllable; this
may be the factor responsible for raising the first vowel (or for preventing its being lowered).

In final position ə is the usual reflex (32, 35b, 57, 64, 86, 3, 27, 31, 51). However, (11) shows ə in both languages. This may be connected with the tendency, noted for Tarpia, for high vowels of adjacent syllables of the same morpheme to become alike.

The same phenomenon may be involved in (45) in both languages. Generally the reflex in closed syllables is ə (29, 38, 61, 62). Boggo (5), with ə, represents an exception, but this reflex may be due to the following consonant cluster produced by the addition of the plural suffix-ə-

The only example of ə immediately before a vowel is Boggo (68), where the reflex is ə.

Proto-Oceanic ə:

The most common reflex in all languages is ə. However, there are frequent instances of other reflexes. A number of hypotheses regarding environmental conditioning are proposed. In addition to several environments which appear to condition ə in all languages, suggestions are made as to environments producing the following reflexes: Sobei ə, Masasi ə, ə, Anus ə, ə, and ə or ə and Boggo ə and ə or ə.

Sobei, Wakde, and Masasi generally show ə in CVC forms. The one exception, Sobei (35) has no apparent explanation.

As the first member of a vowel sequence we find Sobei, Wakde ə (6, 30 31, 53), but in Masasi there is partial assimilation to the following vowel. In Masasi, we find ə before ə (31) and ə before ə (6).

Before a consonant followed by a vowel we generally find ə (2, 12, 13 17, 19, 24, 26, 40, 44, 44, 54, 56, 66, 69, 71, 74), and Wakde, Masasi(10), Wakde (25, 29, 39). However, Sobei has ə in (10, 25, 43). Sobei ə is the regular reflex before a consonant cluster (see below). Thus, the reflex in (45) provides additional support for the hypothesis that the medial consonant in that form represents a reduced cluster.

Sobei, Wakde, and Masasi show ə in (5), which also involves a possible reduced cluster. Other unexplained exceptions are Sobei (85) and Wakde (23).

Before a consonant cluster, Wakde has ə in the single example (23). There are no Masasi examples. In the same environment, Sobei has ə (23, 29, 39, 55, 77), but ə in (45). There are two environmental factors in the case of (45) that might be significant. It is the only word-initial example (that is, without a preceding consonant), and it is the only case where the following consonant is an apical (vis., ə).

In final position a variety of reflexes offer no discernable pattern. The most frequent are ə and ə. With ə we find Sobei, Wakde, Masasi (10), Sobei, Wakde (24), Wakde, Masasi (17), Sobei (43, 55, 71), Masasi (5, 38). With ə we find Sobei, Wakde (54), Sobei, Masasi (40), and Sobei (29, 60, 69, 72, 85). In addition, there is ə (Sobei, Wakde (5)), ə (Sobei 45, 76), and ə (Wakde (40)).

In the case of Anna, we have already mentioned the rule whereby an original CV.C form whose first vowel was ə and whose second vowel was a high vowel, and which belonged to a class which normally lost the final vowel, assumed the shape ə. Examples are (2, 4, 12, 13, 35a, 39). The lone exception is (79), a pronoun. This form seems a bit suspect because of the fact that the comparable pronouns in the other languages cannot be derived from this proto-form, and yet seem suspiciously similar to the Anus form (e.g., Tar-pia əm, Boggo əum, Massasi əm, Wakde əum).

In CV.C forms where the second vowel was not high and where the second vowel was lost, the rules are not clear. The only verb (36) shows ə (26, 40) have ə. The ə in (26) may be due to what seems to be a rule changing ə to ə after an initial ə. The different reflexes in (36) and (40) are not easily explained. There are some reasons to speculate that the loss of final vowels in verbs and some nouns may have occurred independently. If that were the case, it would constitute no more than a possible clue as to the direction in which the explanation might be sought. On other hand, the parallel environments of (40) and (23), which shows the reflex ə in a non-initial closed syllable is suggestive. (25) is also unexplained, and it may be mentioned.
that both (40) and (23) present problems in other languages.

Before a consonant plus a vowel, when the latter was \(a\), the reflex is generally \(a\) or \(a\). I find no way to account for the distinction between what I have written \(a\) and what I have written \(a\) in either Amus or Bongo. I wonder if they do not represent the same phonemes. Examples of \(a\) as a reflex of \(\theta\) in this environment are (49, 58). Examples of \(a\) are (10, 24, 54, 55). We also find \(a\) in (5, 17, 29). In each of these cases the following vowel is \(a\). However, in (5, 17) this \(a\) presumably comes from original \(\theta\) (I will suggest below that it may be a recent development). Note, however, that \(a\) seems to be reflected as \(a\) before a consonant cluster (5, 55). Note further that the same reflex appears in two cases where we would have expected a cluster, but where that cluster is interrupted by a vowel (59, 54). The possibility has been mentioned that these vowels which interrupt the expected cluster are recently introduced epenthetic vowels.

Before a consonant followed by a vowel other than \(a\), the reflex is generally \(a\) (41, 54, 58, 64). However, (23, 29) are unexplained exceptions.

In final position, the normal reflex is \(a\) (10, 24, 49, 55). However, we find \(\theta\) in (42, 48, 54). I would suggest that the first are due to a recent rule that changed \(\theta\) to \(a\) where the preceding vowel was \(a\). (54) remains a problem, and in view of the obscurity in which the history of its preceding vowel reposes, is likely to continue to do so for the time. We also find \(a\) in two cases (5, 17). I suggest that, as in the case of the final \(a\), these represent a recent assimilation to the preceding vowel under some unspecified conditions.

In Bongo, \(a\) when immediately followed by a vowel generally appears as \(a\) (6, 27, 30, 51). In final closed syllables we find \(a\) (2, 13, 14, 19, 26a, 36, 43, 69) except where (unexplained) breaking occurs (12, 23, 44).

Before a consonant cluster the reflex is \(a\) (59, 55, 80). Before a single consonant plus a vowel, we generally find \(a\) or \(\theta\) (which possibly represent the same phonemes) where the following vowel is \(a\) (10, 17, 35a, 43, 49). An exception is (42) where we find \(\theta\) (possibly significantly) between \(a\) and \(\theta\).

Where the following vowel is not \(a\), the reflex is usually \(a\) (26b, 41, 64, 66). However, there are exceptions. (23, 29) are unusual in that the following vowel is in a closed syllable (if the sequence \(\theta\) can be regarded as falling in -to a single syllable). (4, 5) both involve considerations (including added morphemes) that are difficult to assess.

Where final \(a\) has been preserved it generally appears as \(a\) (10, 17, 24b, 42, 49, 21, 55, 80), except in cases of breaking (42a, 48).

In Tarpia \(\theta\) generally is reflected as \(a\). I have not discovered any conspicuous gaps in the set of environments in which this reflex occurs. Never-theless there are a number of exceptions. In (12, 44) we find the breaking to \(\theta\) which has been mentioned previously. In addition there are several cases where \(\theta\) appears as \(a\) or \(\theta\). Examples of the \(\theta\) reflex (4, 5, and perhaps 34, 25) The first three of these involve \(\theta\) in the environment in such a way that one wonders if some kind of metathesis may have played a role. The same question arises with regard to some classes of \(\theta\) (e.g., 44, 60, and possibly 48). No such explanation is available for the remaining cases of \(\theta\) (23, 29). It must be significant that the items that are problematic in Tarpia are usually problematic in suggestively similar ways in Bongo and Amus.

Items showing at least one example of Tarpia \(a\) for \(\theta\) are (1, 2, 3, 5, 6, 10, 13, 14, 19, 21, 23, 26, 27, 30, 31, 35, 36, 41, 42, 43, 49, 51, 63). V. Conclusions

Nothing in the result presented here appears to give any occasion to doubt that these languages do belong to the Oceanic subgroup of Austronesian. Although, there were, not surprisingly, a number of cases where it was impossible to account for the particular reflex of a particular Proto-Oceanic phoneme in a particular form, I am not aware of any cases where the explanation would benefit from recourse to Proto-Austronesian reconstructions rather than Proto-Oceanic. On the other hand, all of the array of phonological developments that characterize Proto-Oceanic as distinct from Proto-Austronesian appear to be reflected.
I once suggested (Grace 1955:338) that the Oceanic subgroup (there called "Eastern Malayo-Polynesian") extends no farther west than approximately the western border of Australian New Guinea. The present study, therefore, gives notice that that earlier statement requires amendment.

One feature of this analysis that might be of significance is the paucity of evidence for a distinction between prenasalized and non-prenasalized consonants. Of course, such paucity of evidence can hardly be regarded as conclusive in view of the small number of cognates available at all. Moreover, a separate reflex in some languages for one prenasalized consonant, *mg, seemed fairly likely. However, it does seem possible that the development of prenasalization in these languages has been different from that in some other parts of Oceania—particularly parts of eastern Melanesia—and presumably from Indonesia as well. Whether further information on these languages or other languages of the area might throw some light on this so far most mysterious phenomenon it is impossible to guess.

The number of individual segments that could not be fully explained is, of course, fairly large. However, I do not think that is at all surprising. The number of available cognates was small. Moreover, there seem to have been considerably more conditioned changes than has been the case (or than have been identified and reported) in many Oceanic languages. The vowels in particular do not show the remarkable stability that we find in some languages of eastern Oceania. Various indications in the course of the study suggest to me that many of the doubtful phenomena would become clear if we had more information that would permit us to reconstruct the sequential order of the various changes.

Finally, the only fitting conclusion must be the expression of the hope that these languages will some day receive the more serious field study that they deserve.
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ABSTRACT:

This article is a preliminary ethnographic survey of the Arso people who live approximately forty kilometers to the southeast of Djajapura. There are some 2000 people in the district living in twenty-seven villages. The survey was carried out in the village of Arso which is the headquarters of the Catholic Mission. Arso is one of ten villages speaking the Talaka (or Abrah) language; elsewhere Nanem or Melawi is spoken.

Sago is the principal food but gardens for growing taro, sweet potatoes etc., are made; fish and shrimp are also important in the diet. Sago areas belong to the clan (kayal) but in recent years trees have been planted; these belong to the nuclear family which is the principal unit in all economic activity.

Clans are exogamous patrilineal units and traditionally there were restrictions on intermarriage between members of certain clans; nowadays these restrictions are breaking down. Each clan has a head (bukovenor) who also functions as the war leader. The clan has its own totem which is represented by a symbol painted inside the house. Land ownership is vested in the clan. The mother's brother is a person of great importance in Arso social organization. He has the main responsibility for providing his sisters son's bride price; in return he is rendered various kinds of support by his nephew.

During pregnancy both husband and wife must observe various taboos. In earlier years delivery took place in a special house built apart from other houses in the village but such houses no longer exist.

Soon after birth the child is given a Christian name; the traditional name is chosen by the mother's brother and is given on to two months later. On this occasion there is a small feast; the parents provide the food and the maternal uncle brings arm bands and stone axes for the future bride price.

At the age of twelve or thirteen young boys enter the mus-la, the house for initiates located away from the village. There they are kept awake all night and frightened by old men who strike them with banana leaves and sing and play sacred flutes. Each boy is given a new name by his jarwo, an old man who acts as guardian, and presented with a net bag and a wuah (penis covering). Boys stay in the mus-la for two to three months during which time they receive instruction in the myths, learn to hunt and to play the sacred flutes. After this period they move to the bachelors' house (batik) where they live until the time of marriage.

During the period of bachelordom the young man will try to hunt as many pigs as possible; the pigs killed are given to his jarwo and maternal uncle. When the young man has killed more than thirty pigs a feast (joroa) is held and the young man is deemed ready for marriage.

In early years bride exchange was customary and the family still, in theory, chooses the husband. In actual fact nowadays the girls themselves
initiate many of the marriages; the girl makes a gift of tobacco and betel-nut to the boy of her choice. Elpement is not uncommon. Marriage is not an occasion for a large feast. The family of the bridegroom comes to the house of the bride where they are fed; the bride price is then handed over. There are still, it is noted, a few cases of polygamy.

The influence of the mission and government is very strong in the area and although some aspects of the traditional culture yet continue to endure, it seems that the Arso have moved into a new era.

Orang Arso tinggal dikampung bawah dan di-kampung bawah terletak diarah tenggara dari kota Sukarnapura. Djaraknya dengan kota Sukarnapura kira2 40km, dan bisa menggunakan pesawat terbang Porter Pilatus kira2 menakan waktu 20 menit.


Walaupun keseluruhan kampung ini menggunakan bahasa yang sama dan d Jaguar dapat djalanan2 hubungan2 kekerabatan diantara anggota2 masjarakatnya, tetap setiap kampung ini adalah berdiri sendiri dan tidak berada dibawah supre -mais kampung yang lain, atsaupun merupakan sesua federasi, dan bahkan pada djanan dulu sering terjadi perang antara satu kampung dengan kampung yang lain.


Walaupun pada saman dulu sering terjadi "peperangan" antara kampung Arso dengan kampung2 yang lain, lebih2 dengan kampung Jetti dan Krico jang
terletak disebelah timur dari kampung Argo, tetapi hubungan damai antara satu kampung dengan kampung yang lain itu tetap ada pada waktu2 tertentu, jauh pada waktu ada pasti2 bebi, jang mempunyai nilai ritu2, disamping merupakan tempat pertemuan berbagai kampung tetapi mereka mengadakan tuak menggubur ben- da benda berharga seperti, manik2, kapak2 betu, gelang2 Trila, dst. Pasti bebi seperti ini dinamai pasti "jongwai".


Kehidupan se-hari2

Seperti pada umumnya masjaraka2 di-kampung2 jang ada di Irian Barat, mereka hidup dari hasil2 sagu dan berladang (berkebun), disamping berburu babi hutan dan binatang2 liar lainnya, dan sekali2 menthari udang danikan.

Pada umumnya hampir seluruh kegiatan perokonomian se-hari2 dilakukan oleh sebuah keluarga batin (nuclear family) sebagai basis. Djuga pada waktu berburu babi hutan dilakukan lebih sering setjara perseorangan dan setjara bersama-sama dalam kelompok2.

Pada umumnya pembagian kerja jang ada didasarkan atas pembagian jang didasarkan atas perbedaan kelamin atau sex dan usia. Pada waktu mengambil(se- mukul) sagu, jang dilakukan tiga hari sekali atau seminggu sekali, tergantung dari pada banjarkanja sagu jang diambil dan dibawa kerumah sampai habis untuk dimakan selama beberapa hari, si-suwi memotong betang pohon sagu supai ro-

bob ditambah, semerhatikanja, membelahnya, memukul hati pohon sagu itu, dan kemudian si isteri jang memerlikati hati pohon sagu jang sudah hantur itu, menen- danan jang diberikan air samapi wendi jadi sagu, mengisikankan bedalam tusang (wadah dari djalinan2 daun sagu) dan kemudian membalakan kerumah.


Sari2 biasa, biasanja mereka pergi kekebun untuk memetik hasil2 kekun dan mengambil bayu bakar. Dikebun biasanja laki2 nasekima tangan2, mengambil hasilinja, dan stiteri dan anak2nya menthari kaju bakar, mengumpulkan hasil kekun, dan membalakan pangan kerumah. Djelana pergi dan pangan dari kekun si suwi tidak lepas dari parang, bunun dan anak panahan. Ini untuk mendjadi adana kemungkinan orang dari musuh, dan kemungkinan adana babi hutan atau binatang hutan jang lain jang bisa segera dibunuh, untuk nanti dagingnya bisa dimakan.

Rumah2 mereka pada masa sekarang didirikan diatas tanah2 dan berdo- nah lagi sapat, jang terdiri atas serambi muku, satu atau dua kamar tidur a- tau lebih, dan dapur. Dapur ini pada umumnya terletak diatas tanah. Soban rah -maya biasanja didiami oleh lebih dari sebuah keluarga batin. Tetapi ada djuga rumah2 jang didiami hanja oleh sebuah keluarga batin. Disekeliling dinding di-
dalam rumah dibuat tempat2 tidur dari kaju untuk tidur kaum pria, dan dite - nagh-tengah dibuatkan tempat2 tidur untuk kaum wanita dan anak2 (Verslag van de Militaire Exploratie van Nederlandsch Nieuw Guinea, 1907-1915 1920, hal.290 skets no.10). Sesungguhnya taraf hitup mereka masih berada dalam taraf subsis - tence, artinya memproduksir hasil2 kebun dan bend2 lainnya hamba untuk dima - kan dan dipakai sendiri. Tetapi dengan masuknya siastim wangi, yang diintroduksir oleh Pemerintah dan Misi Katholik dideraah ini, maka taraf subsistence ini mulai tergojau. Orang2 mulai memproduksir hasil kebun dan hasil2 hutan suga tidak untuk dimakan sendiri tetapi mulai diubahkan supaya ada surplus. Surplus surplus ini mereka djual kepada Koperasi Pemerintah dan kepada Koperasi Misi, yang belum laam beraang didirikan diderah ini, dan wang hasil pendjualannya dipakai untuk membeli barang2 import, untuk keperluan rumah tangga dan konsum - si. Tidak ada usaha2 untuk menisabulkan kakajaan untuk mempertinggi status ses - orang didalam masyarakat.

Siastim kesasjarakan


1Beli ini dikemukakan juga oleh Hoogland sbb.: De nedersetting bestaat daar - uit: le een familygroep (clun) met een hoofd; 2e, een grondgebied (seten) en 3e, een kampong (dorp), en een vaak een munnens met daarbij behorende fluiten (1955:69).
Diantara angguta2 satu keret ada perasaan in-group, terutama dalam hal hubungan antara dengan kawinnya seorang angguta keret yang bersangkutan. Dengan kawinnya seorang angguta sesuatu keret akan melihat saluruh angguta2 keret yang lain dari keret yang bersangkutan dalam hal pengumpulan mas kawin yang harus dibayarkan (kalau laki2), dan dalam pembagian mas kawin yang diterima (kalau wanita). Dijuga dalam "peperangan" dan pembalasan dendam, solidaritas diantara orang22 yang berasal dari keret yang sama tjukup kuat. Bahkan isteri dari keret yang bersangkutan yang tinggal bersama suami-istri dikenal jang lain, bisa turut membantu keretnya untuk membunuh suami dan angguta2 keret suami.

Perasaan in-group dalam kelompok jang lebih besar, adalah diantara angguta2 majarakat satu kampung jang merupakan suatu gabungan dari beberapa keret.

Walapun demikian, tetapi keluarga batin djuga merupakan suatu kesatuan jang amat penting dalam kehidupan se-hari2 seperti telah diuraikan diatas. Dijuga hutan22 seperti merupakan milik suatu keluarga batin jang djuga merupakan sekutu kesatuan rumah tangga (household) jang dibagi-bagi setara patrimonial hanja dalam hal tertentu, jadi kalau tidak ada jang savorisina, karena tidak punya anak laki2, maka hutan22 itu diserahkan kepada keretnya dan berada dibawah pengawasan jukwontor.

Walapun perasaan solidaritas terutama terdapat diantara orang22 jang berasal dari suatu keret jang sama, tetapi dalam kehidupan sosial orang Arso peranan dari paman dari pihak ibu masihlah besar terhadap ego2. Seorang paman dari pihak ibu dari ego turut berkontribusi untuk membantu dengan memberikan sedumah kenda2 untuk mas kawinnya, pada waktu ia lahir dan pada waktu ia akan kawin. Begitu djuga seorang paman memang peranan jang penting dalam proses sosialisasi kemenakannya ini.

Sebaliknya seorang ego mempunyai kontribusi22 tertentu terhadap paman dari pihak ibunya. Membanjir pada waktu si paman dari pihak ibunya ini membuka lading22 yang baru. Memberikan bagian22 jang terbaik dari hasil buruanjia dihutan, seperti babi hutan, kuning, dll, sedangkan ia sendiri tidak memakan apa2 dari hasil buruanjia itu.


a. Term of address:

| aiJuwa | = ajah |
| mana  | = anak, dan jang seangkatan |
| sen   | = ibu, dan jang seangkatan |
| jambru | = ipar laki2 |
| kaise | = ipar perempuan |
| nataba | = kakak angkatan ke I dari seorang ego |
| saya  | = nenek angkatan ke I dari seorang ego |
| nataba | = kakak angkatan ke II dari seorang ego |
| tutua | = nenek angkatan ke II dari seorang ego |
| abaj   | = adik laki2 ajah dari seorang ego |
| naba   | = adik laki2 ibu dari seorang ego |
| inbetoiKe | = kakak laki2 ibu dari seorang ego |
| inbetanggi | = adik laki2 ibu dari seorang ego |

b. Term of reference:

| aiJuwa | = ajah |
| mana  | = ibu |
| sen   | = anak |
| sendire | = anak laki2 |
| semdirum | = anak perempuan |
| enatar | = kakak laki2 |
| jiruM | = kakak perempuan |
| jendir | = adik laki2 |
| janbru | = ipar laki2 |
| kaise | = ipar perempuan |
| nataba | = kakak angkatan ke I dari seorang ego |
| saya  | = nenek angkatan ke I dari seorang ego |
| nataba | = kakak angkatan ke II dari seorang ego |

1 Periksalah hal ini didalam tulisan dari G.F. Murdock (1960, hal97-98).
tijeba = mertua laki2
tuoba = mertua perempuan
ntuba = kakak laki2 sajah dari ego

Untuk istilah2 saudara sepupu (ecowis) rupa2nya kurang dimengerti, da-
ri interview ming kani laku2an tidak dimengerti, tapi kani masih berusaha un-
tuk mendapatkan kepastiannya.

Pada umumnya saudara sepupu dipanggil atau disebut dengan menggunakan
nama2 orang adja. Negitu pula untuk sebutan atau panggilan anak, adik, kakak, le-
bih disukai untuk mengambil atau menjubun dengan menggunakan namanya. Sedang
kan memanggil atau menjubun dengan menggunakan nama dari seorang paman dari
pihak ibu dari ego adalah tahu. Negitu pula terhadap ipar (saudara laki2 dari
isteri).

Sesungguhnya bahan2 ini djahh daripada lengkap.

lingkaran hidup individu
Masa basail dan kelahiran :

Bila seorang wanita basail, maka suami isteri yang akan mendjadi sajah
itu ibu berada dalam keadaan krisis dan tegung. Tjalon ibu dan ajah harus me-
gindahkan bahwa pantangan dapat karen2 itung, dan sahapi kelahiran2nya
sibaja, sitjalon ajah dilarang untuk memotong pohon2 kajo yang besar, karena
adana keperti2an bahwa kalau poho2 kajo besar yang dipotong itu rohok, maka
tjaban2nya akan terbeng tina dan tukar ditjabat. Ini dianaskan
dengan nanti akan sukarjna sianak lahir didunya.

Satu atau dua minggu sebelum sianak lahir, tjalon ibu disingkin da-
 lam sebuah rumah ketji1 ditont kampung dan tak boleh didiangled oleh sesbarang
orang. Biasannya didampingi oleh ibu2 atau oleh kerabat2 wanita yang lain. Pa-
da masa sekarang tjalon ibu melahirkan anaknya dirumahna sendiri dengan dito-
long oleh djururan yang ada di Arac dengan pertolongan ibu dan kerabat2 wa-
nita yang lain.

Setelah kira2 satu minggu atau lebih si anak lahir, ia mendapat nama
Kristen (Kotlik). Hal ini tidak terjadi sebelum agama Katholik ada di Arac.
Setelah dua atau tiga bulan umurnja, ia mendapat "Nama tahah", jejut nama yang
sali jang diberikan oleh paman2nya dari pihak ibu2nya. Untuk upatja pemberian

nama ini diadakan pada masa2 ketji1. Orang3 tni sianak menjadi anakan2
dan saudara2 laki2 ibu2nya membawa manik2, kapak2 betu, gelang2 Tarfla, dan
benda2 import jang lain, sebagai hadiah kepada sianak, sebagai tanda mata dan
sebagai bekal masa kawin2nya nanti, dan djuga sebagai tanda akan adana kwaiji-
ban kwaijiban terti2 dari sianak terhadap paman2nya dari pihak ibu2nya ini.

Makanan2 yang disediakan oleh orang2 tua2nya untuk paman2nya ini dimaksudkan su-
paja kalau sudah besar nanti sianak tidak .lupa kepada paman2nya, untuk menje-
raikan bagian terbesar dari hasil2 baru2nya terutama babi hutan dan burung
kasuari, dan djuga djangan lupa supaja selalu membantu paman2nya pada waktu
tenangan dibutuhkan.

Itu kalau jang lahir adalah anak laki2. Terhadap anak perempuan djuga
djalan2nya upatja pemberian nama tidak berbeda dengan jang terjadi pada anak
laki2, ha2nto arti dari pada pemberian? paman dari pihak ibu di artikan lain,
jaitu bahwa si anak tidak akan lupa kepada paman2nya, dan bila ia kawin nanti
paman2nya ini akan mendapat bagian dari masa kawin jang diterima oleh anak si-
anak ini. Setelah sianak lahir sampai berumur tiga tahun, ajahja dan ibu2nya
dikenakan pantangan2 untuk mesan akan ular, burung ambruk, burung kasuari,
buaja dan burung elang. Dengan dasan bahwa kalau mesan akan ular, maka kalau anak2nya
sakit akan akan melilit lilit soperti ular, dan kalau makan burung kasuari
maka sianak akan mudah djalakit pann dan geniter, kalau makan burung am-
bruk sianak akan lambat bisa berjalan karena burung ambruk itu berat badan-
nya dan tak sulah terbung. Kalau makan buaja, sianak akan mudah mendapat sakit
ntjabat. Dan tak boleh makan burung elang karena burung elang itu dinaang
panglima perang, dan kalau makan, maka sianak akan tjaletaja. Pada masa sekarang
ini, pantangan2 tersebut ini hanya berjalan sampai lebih kurang sianak beru-
mur tiga atau empat bulan.

Didalas kehidupan se-hari2 sianak lebih lazim dipanggil dengan menggaji
nakan nama Kristenja, dan tidak menggunakan "Nama tahah".

Masa kanak2 :

Tidak ada sesuatu pada masa2 ini disadakan pada waktu sianak mendu-
duki status sebagai anak2. Dalam masa pertumbuhan anak2 ini sampai mengindaikan
umur 12-13 tahun saudara laki2 ibu menang peranan penting dalam kehidupan

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Masa Remaja:


Orang2 tua2 kemudian menipu seruling dan anak2 sekaligus makan sekejangan jang berusia masuk ke mas2. Waktu anak2 akan masuk mas2 masa2 mereka dibiar walaupun atau penis koker, dan nokken2 (tas jang dibuat dari djalilraman kulit2 jang sudah dicalkan), oleh seorang2 tertentu, Orang itu dju ga jang membeberkan nama jang baru kepada sianak. Orang ini dinaami jarwo atau sinama dari sianak. Mendjelang masuk waktu anak2 akan masuk kedalam mas2, mereka di-takuti2 oleh para orang2 tua2. Waktu mereka baru berada dalam mas2, mereka dipukuli dengan menggunakan pelengah pisang hutan oleh orang2 tua2 sampai ada jang pinggan, tergantung dari sikap mereka pada waktu2 sebelum masuk mas2 jang jaitu apakah hormat pada orang2 tua dan terutama kepada orang tuanya dan panas dari pihak ibunya. Setelah dipukuli anak2 disuruh duduk dilantai,
gai kelas yang tertinggi sekarang dimana sudah sampai kolam lins. Walaupun teh-
lah keluar dari mus-mus tetapi mekanik2 jang dulu dipantangkan waktu mereka ber-
asa di mus-mus masih tetap dipantangkan, sampai orang2 tuh dari anakz jang ber-
sangkutan memberikan idjin untuk memakai mekanik jang dipantangkan itu. Selasa
nanya mereka tinggali di jatia, mereka masih tetap memakai dirumah orang tuanja.
Dan selama itu mereka tetap bersuhana untuk bisa sembunyi bali hutan se-banjak2
nya. Daging bali hutan yang daap i bunuh itu ia serahkan kepada orang tuanja
panan dari pinak ibunja, jadwal, dan kerabatza jang lain, selengkan ia sen
diri tidak menamakan sekalai. Hana tengkorak dari bali hutan itu ia simpan di
langit2 atas jatia. Kalau seorang anak sudah bisa mengumpulkan tengkorak2 bali
sebanyak tinggalah ekor atau lebih, dan ber-basan2 dengan lina orang kawanja
jang lain jang telah mengumpukan tengkorak2 bali hutan dalam jumlah lebih
sedikit, lalu diaikan pesta "jogongai"

Pesta ini merupakan pesta dana yang dilakukan terus menerus sampai
kira2 4-5 bulan, dan dihadiari oleh orang2 dari kampung2 disekling kampung Ar-
so. Bagi seorang yang dijdi "jogongai" peristinya ini merupakan suatu puntuangka
peristiwa dalam kehidupannya. Dan untuk mengadakan pesta itu orang tuanja
dan kerabatnya sedal ber-bulan2 telah menabun sebanyakja. Dalam pesta jogongai
itu orang jang bisa sembunyi bali hutan se-banjak2nya itu mendjadi orang jang
dimakui roh jogongai dan mendjadi "leading star" dalam pesta itu. Kalau se-
orang ada: perempuan mengindikat dewasa, had untuk pertama kali ia mulai di-
pisahkan dari teman2nya dan dikurang didalam rumah selama lebih kurang satu se-
tengah tahun. Masa isolasi ini pada masa sekarang hadia berjadikan kira2 3 bu-
lan. Selama disisakan didalam kamar ia disijari oleh ibunja tentang perekrean
ruasang pada umumnya dan tentang kerajinan tangan. Dan selama itu ajah-
nja dan saudara laki2nya serta kerabatnya jang lain meninun se-banjak2nya
untuk pesta kawinnya nanti.

Selasa selasa masa isolasi ini, anak perempuan itu laju dikenakan
dengan orang laki2 tertentu, kepada sianak perempuan itu ia telah dipertunang-
kan pada waktu ia masih ketij. Penkawinan :

Penkawinan pada umumnya adalah monogami. Penilihan jadwal seringkali

sudah diatur oleh orang2 tuh mereka, lama sebelum mereka jang bersangkutan sa-
dar akan artirna perkawinan, tetapi tidak djerang pula pemuda pemudi kawin de-
ngan pilihan mereka sendiri. Biasanya jenius perkawinan jang terahir tersebut di-
atas adalah atas inisiatif pihak wanita. Artirna pihak wanita yang menjatokan
keinginan mereka kepadla laki2 dengan tjaara2 menjerum pitir pinang, tembakau, a-
tau nakan dapat di laki2.

Dari beberapa informan didapat keterangan bahwa pada djanan dula se-
kali, unus mas kawin itu tidak ada dalam perkawinan orang Arso dan disekitar
nya, tetapi jang ada isalh kawin tuh angkat wanita (bride exchange). Dan
pesta2 besar pada waktu kawinpun tidak ada. Dari kerabat2 jang bersangkutan se-
kedah berkumpul dan kalian dirumah orang tuanja dari pengantin wanita, dan dengan
diserahkan oleh kepal2 keret masing2. Dengan dosikian perkawinan dianggap su-
dah sah. Penambangan selandjutnya iain bahwa wak tpupun tjaara perkawinan jang
dilakukan adalah perkawinan tuh menurut pengantin wanita, tetapi pihak lelaki
memberikan sedjawah benda2 sebagai sambaan seperti nisanja kapak2 batu, gel-
Gang Tarfia dan berang2 import. Pengantin wanita jang ditukarkan isalh itu ti-
dak selamnya adalah saudara kandung dari pengantin laki2. Bisa juga kerabat2
jang terdekat atau orang yang berasal dari keret jang sama. Tetapi ada dju-
aga terjadi perkawinan tanpa pertukuran pengantin wanita oleh salah satu pihak.
Dalam hal semajin ini mas kawin jang diainti adalah tinggi citianja.

Kawin lari atau melarikan wanita terdapat dalam kehidupan orang Arso
atau di kampung disekilingnya. Bahk terhadap wanita jang sudah dipertunang-
kan sedaj ketjil dengan seorang, maupun iater orang. Aktib dari ini ada-
lah pesanman bagi orang jang bersangkutan dan aktib2 jang lebih luas adalah
"perang" antara keret2 jang bersangkutan. Aktib jang paling luma: dari ini a-
dalah keharuan membajak dana bagi jang berasal kepada jang mempunai anak
perempuan atau isteri.

Walaupun pada umumnya bentuk perkawinan adalah monogami, tetapi ada
djuga orang2 jang mempunai isteri lebih dari satu. Ini pertama karena adanja
alasan bahwa iater jang pertama telah terlalu tu, sehingga sebaga bagian
dari suatu kesatuan ekonomi tidak bisa mendjalakan fungsiaga lagi dengan se-
baik2nya dan djuga karena adanja perkawinan levirate.
Dari mereka yang kawin lebih dengan seorang isteri pada umumnya orang2 yang sudah agak lama di usianya.

Setelah kawin suami isteri hidup ber-sama2 dan merupakan suatu kesetuan rumah tangga. Rumah tangga ini merupakan dasar kehidupan ekonomi sehari-hari.

Pertama antara suami isteri diarangi2 terjadi. Dan bila terjadi maka sebab yang utama adalah karena siisteri mengedakan hubungan kelamin dengan laki2 yang lain. Tetapi yang terjadi di sebab akibat dari pada berdjinahnya siisteri dengan laki2 lain adalah suami membunuh isterinya, dan karena tak bisa diterima oleh berat2 isterinya bisa timbul "perang" antara keret2 yang bersangkutan.

Keterangan:
Dakit dan kematian menurut kepentingan orang Arso dan di-kampung2 sekitarnya, adalah disebabkan oleh gangguan hantu2 dan karena dibunuh, karena saoi pelanggaran tanah ulujat, atau karena berdimah dengan isteri orang lain.


Pada masa belum lama berselang ini, kalau seorang mati karena digi-pit oleh bali hutun, maka majatnya ditutup diatas perapih darinnya sampai mendjadi kering seperti kran asap. Lalu majat itu dibungcu dengan kilit kaju dan disimpan di:ohon beringin.

DAPIRT BATJAA
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Verslag van de Killery Koporatie van Nederlandsch Nieu Guine, 1907-1915:
1930, hal. 290.
The potato, *Solanum tuberosum*, is the most widely grown root-crop of north temperate countries. With a total annual production of 300 million tons, it is, in fact, the most abundantly produced food crop of all exceeding even the cereals.

Potatoes originate from the mountains in central South America. So, we have the paradox of a tropical tuber which, apart from a small area in the mountains of South America, forms only an insignificant part of the diet of the people of tropical countries, but is a staple food in temperate latitudes.

The potatoes grown in the high Andes of Peru and Bolivia came from wild ancestors found in those countries. They were first introduced to Europe in the late 16th century by the Spanish and, within two centuries, had spread throughout the temperate zone where they adapted to a temperate climate. During the 19th century, potatoes became very popular and were grown everywhere as a major food crop. By the end of that century, modern varieties had been bred, and some of them are still important today. With breeding for genetic changes, the potato had been adapted to a totally different environment.

The most significant genetic change is probably response to day-length. The tropical Andean potato is adapted to low temperatures and short day-lengths of 12 to 15 hours, and it crops in seven to eight months. In temperate latitudes, potatoes grow and flower profusely during the long summer days but do not produce large tubers until days shorten in the autumn, and growth is checked by winter frosts. They crop in from three to seven months of planting. When grown under short day-lengths from the start, tubering is accelerated, foliage growth is reduced, and flowering is inhibited; and a smaller crop in a shorter time results. Late varieties grown in photoperiod conditions of 12 to 13 hours crop in about four months.

Temperate latitude potatoes are known as the *Tuberosum* group, and they have been evolved by a genetic alteration of photoperiod response. Day length is not the only physiological factor in potato evolution, although it is probably the most important. Temperature, reacting with photoperiodicity, is also significant although, so far, little understood. Lower temperatures tend to favour rapid tubering.

The Andigena potatoes in the Andes do well at high altitudes but poorly between altitudes of 300 m to 3,000 m. It is again a paradox that the main-crop or late main-crop potatoes grown in the cool, long-day climate of Holland, and introduced to the highlands of West Irian some twenty years ago, are still producing well in the valleys at these lower altitudes.

We have recently imported 35 new clones into this country of seed potato from Mexico. The purpose is to attempt to improve our highland stocks, which have not been stimulated by the introduction of any new varieties for many years, and to see if they will grow economically in our tropical lowlands. So, these potatoes have come from their native tropics to temperate zones and back again to the tropics after a long period of breeding and selection.

It may be asked: "Why bother with potatoes when we already have sweet potatoes which the people like?" The answer is that tropical root-crops have a higher food potential than the grains, and protein comparisons can be better. The potato has, at least, a similar potential to the established root-crops, and it is reasonable to argue that tropical potatoes can make a useful contribution to agricultural and dietary diversity. The potatoes seen more and more in the coastal town markets come from the West Irian highlands, Celebes or Java, which indicates that there is a growing demand.

The total protein in potatoes is higher than is usually thought, and it is also of reasonably good composition with respect to essential amino acids. An average of 1 kg of potatoes per day would supply all the amino acids required by an average adult male except for methionine and cystine. Two kgs a day, which is within the culinary capabilities of the Irianes, would supply even these limiting amino acids.

The potato has been accepted into many tropical diets. It is already popular in many tropical countries, and the demand is often satisfied by importation from very distant producing countries. But all of West Irian potato requirements could be supplied locally.

It is well known that the Irianes require more vegetable protein in their diet, particularly nursing mothers and children, than they consume at
present. It is argued that the best way to achieve this is to induce the people to grow high-protein foods such as beans and groundnuts rather than to attempt to breed or introduce higher crude protein content varieties of sweet potatoes, potatoes, and other root-crops than those currently grown. We should continue to promote both these methods of improvement as it often takes a very long time to change a people's diet and may prove to be almost impossible. The potato here is not simply a food; its consumption plays an important part in ritual and social customs.

There is no doubt that potato breeding can provide clones adapted to the tropics at middle elevations (300 m to 2,000 m), and it seems certain that the products of local breeding will always, in the long-run, do better than imported clones, however valuable they may be to start with. Should we carry out a potato breeding programme at our Agricultural Research Institute in West Irian? We think not. Over forty years of work at the Scottish Plant Breeding Station, about one seedling in 20,000 was thought worthy of naming, and one in 100,000 was actually a successful variety. Our means are very limited, and we could not contemplate a programme of anything like that magnitude. We must rely on the results of the work of other institutions. And there is the interesting and gratifying thought that we may already have here, almost by accident, clones that have adapted and are as good or better than anything that can be imported. This thought is worthy of a serious investigation.

The potato is unique among major crop plants in the fact that very bulky planting material is produced under highly-specialized conditions in places usually very distant from the areas of production. The reason for this is phytosanitary. Potatoes are subject to about six significant virus diseases, three of which are serious, a formidable array of fungus diseases, and eelworm. Some twenty diseases can be carried on the tubers, and the potato seed-producing trade has developed in response to the need for the continuous supply of healthy seed. It was known in Britain that seed from cool, windy places was

1 Reports of the Scottish Plant Breeding Station, Edinburgh. Journals of the Faculty of Agriculture, University of the West Indies.
tas burung itu. Kedua adik kakak itu sementara waktu tidur dan waktu itu dia menanya dia kemudian telah menanyanya tiba di rumah mereka. Lalu Mbuawut menanggapi, Djunoh dan Taunoh. Keduaan menanggapi suara matjam ber- 
langsi. Lalu mereka terbincang dengan terperanjat dan keduaan keluar dan men-
tjiau Mbuawut. Mbuawut lalu minta tanjak2 terima kasih kepada burung ir dan 
di mereka memberi makanan kepada dia. Sesudahnya itu, burung besar itu terbang na-
ik kembari diatas pohon beringin. Dan pada sore hari ini, adik Taunoh mengawini 
kan Mbuawut kepada kakaknya Djunoh. Demikianlah tjeritera mengemai terdjadinja 
burung ir atau tahun2. Jang mana setiap perahu patung, daung jang berukiran 
perisa, dan matjam ukiran jang terlapat burung tahun2 atau paruh burung ter-
sebut ini.

In the beginning there were two men living in a village. Their names were Djunoh and Taunoh. Neither of these young men was married because there were no other people and hence no females in the village. One day these two young men went into the forest to cut a dugut canoe. On the front of the canoe they made a carving of a bird (the hornbill) which at that time had no name. They requested of the carving help in obtaining women. In the night the carved bird became a live bird and flew up to the branches of a nearby tree.

When morning came the two young men looked out and saw only the canoe. The head, or carving was missing. They looked everywhere and then heard the voice of the bird from up above. The bird descended and informed them, "My name is ir (hornbill)". Djunoh and Taunoh reiterated that there were no women in the village. They had heard, however, that there was a woman in the village of Sereuw 1 by the name of Mbuawut (big or High water). They asked the bird to help by bringing her to them.

The bird flew to the river Kimia 2 and there prepared to seize the girl as he promised. In the morning girls of Sereuw went out to net fish.

---

1 Sereuw is a village from the spirit world. This is expressed in the term SeFen Ju men or land to the south, and also Mbu aman aman or the village under water. The Mbu aman aman is just like its village counterpart in reality. It has death when the real village has birth and birth when the real village has death. 2 The river Kimia is from the same spirit world.

When they had caught a good many fish, they made ready to return to the village. Half way home, Mbuawut became sick in the stomach. She went ashore right to the spot where the big bird was waiting. After the girl had rested and was about to arise and resume her journey, she saw the bird and cried, "Who is that?" The bird replied, "I am your boyfriend Mhwi-pitaj". After they had talked for a time Mhwi-pitaj suggested a little diversion. Subsequently, when Mbuawut complied with that suggestion, the bird told her, "I am not really your boyfriend, but I want you to come with me." When Mbuawut heard this she scratched her head and asked, "Why should I come with you?" The bird answered, "I have already told the man that I would bring you back".

Mbuawut agreed to go with ir the bird, but she pointed out that while he was a bird and perfectly able to fly, she was only a human being and could not fly at all. ir said, "That's all right. Just sit on my neck and I will carry you." They flew for a time and returned to the other girls who were still making their way back to the village. When the rest of the girls saw the big bird and Mbuawut arrive, they were afraid, and fell in the bottom of the canoe. "Because we caught plenty of fish", Mbuawut told them, "I want one of the big ones and also a branch of the nipa palm". These things they promptly gave her. The bird and the girl again flew off and the girls from Mbuawut's village cried. They always cry when people die or go away.

Meanwhile, Djunoh and Taunoh waited in the village. The two wanted to be sure that they were home when the bird returned with the girl. The bird, the girl on his back, landed in front of the house occupied by the two young men. Mbuawut called to them, and the men heard her voice as if in a dream. Of course they ran out to meet her and embraced her. The girl then turned and thanked the bird who flew up and sat on one of the high branches. Later Taunoh, the younger of the two males married Mbuawut to the older Djunoh. And there ends the tale of hornbill which is often seen on the carvings from Amat.
THE EKAGI-WODANI-MONI LANGUAGE FAMILY OF WEST IRIAN

Gordon P. Larson and Mildred O. Larson

INTRODUCTION

For some time it has been known that Ekagi (or Kapauku), Wodani (or Wodaa) and Moni (or Migeni) of the Paniai region of the central highlands of West Irian are related languages (compare Boelaars 1950; see map by J.V. de Brujin in Rhys 1947:71). Only more recently has it been realized that these constitute a family of languages which, together with the Greater Dani, Ubunduni and Den families, form a single micro-phylum. Although evidence for the classification of the Greater Dani dialects has been presented elsewhere (see Broady 1961, 1967), little has been written on the historical relationships between Ekagi, Wodani and Moni, other than what is mentioned in broader linguistic classifications of the area (see Galis 1960 and Wurm 1961), and what is found in unpublished papers written by us some years ago (Larson and Larson 1955, G. Larson 1958a, 1958b). The purpose of this paper is to present the phonological and lexico-statistical evidence given in these papers con-

firming these relationships between Ekagi, Wodani and Moni.

Speakers of Ekagi number about 60,000 (see Dobel 1960 and Stolten- pool 1969); Moni about 12,000 and Wodani about 3,000. The Ekagi occupy valleys surrounding and to the north and west of the Paniai-Tigi lakes; the Moni are found mainly in the Kemandogo and Dugindog valley to the east of the lakes; while the Wodani are wedged between these, residing mainly in the Rhijandoga and lower Kemandogo valleys (see map, Appendix B). To the east, particularly in the lower Dugindog and upper Kemandogo, there is much bilingualism, intermarriage and trade between Moni groups and those speaking Western Dani, Nage or Ubunduni. Accordingly, speakers in these border valleys form a link between the Ekagi-Wodani-Moni (hereafter: Ek-Wo-Mo languages) to the west, and the Greater Dani and Ubunduni families to the east.

PHONOLOGICAL STUDY

The dialects compared in this study are given in Table I (two from Ekagi, three from Wodani and three from Moni):

<table>
<thead>
<tr>
<th>Code</th>
<th>Language</th>
<th>Location</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ek(t)</td>
<td>Tigi Lake area</td>
<td>Dobel's dictionary (1960)</td>
</tr>
<tr>
<td>2.</td>
<td>Ek(p)</td>
<td>Paniai Lake area</td>
<td>Dobel's dictionary (1960)</td>
</tr>
<tr>
<td>3.</td>
<td>Wo(lab)</td>
<td>Lower Rhijandoga</td>
<td>writers' check in area</td>
</tr>
<tr>
<td>4.</td>
<td>Wo(umb)</td>
<td>Wodani</td>
<td>writers' check in area</td>
</tr>
<tr>
<td>5.</td>
<td>Wo(ak)</td>
<td>Mid-Kemandogo</td>
<td>writers' 3-month study</td>
</tr>
<tr>
<td>6.</td>
<td>Mo(k)</td>
<td>Kemandogo</td>
<td>writers' extended study</td>
</tr>
<tr>
<td>7.</td>
<td>Mo(n)</td>
<td>Hegenagai</td>
<td>writers' check out of area</td>
</tr>
<tr>
<td>8.</td>
<td>Mo(d)</td>
<td>Dugindog</td>
<td>writers' check in area</td>
</tr>
</tbody>
</table>

Whenever a language is referred to with no specific dialect designation, the central dialect of that language is intended, i.e., the Paniai dialect of Ekagi (Ek-p), the Kemandogo dialect of Moni (Mo-k), and the Upper Rhijandoga
dialect of Wodani (WO-umb).

**Phoneme inventories of Ek-Wo-Kg.**

The sound systems of Ekaghi, Wodani and Moni exhibit the following segmental and (lexically contrastive) supra-segmental phonemes:

<table>
<thead>
<tr>
<th>Ekaghi (see Doble 1962a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
</tr>
<tr>
<td>b</td>
</tr>
<tr>
<td>m</td>
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<tr>
<td>n</td>
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<tr>
<td>w</td>
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<tr>
<td>y</td>
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<tr>
<td>i</td>
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<tr>
<td>e (i)</td>
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<tr>
<td>a</td>
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<tr>
<td>k</td>
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<tr>
<td>g (s)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Wodani (mb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
</tr>
<tr>
<td>b</td>
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<tr>
<td>m</td>
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<tr>
<td>w</td>
</tr>
<tr>
<td>y</td>
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<tr>
<td>i</td>
</tr>
<tr>
<td>e (i)</td>
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<tr>
<td>a</td>
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<tr>
<td>k</td>
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<tr>
<td>g (s)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Moni (see Larson and Larson 1958)</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
</tr>
<tr>
<td>b</td>
</tr>
<tr>
<td>m</td>
</tr>
<tr>
<td>w</td>
</tr>
<tr>
<td>y</td>
</tr>
<tr>
<td>i</td>
</tr>
<tr>
<td>e (i)</td>
</tr>
<tr>
<td>a</td>
</tr>
<tr>
<td>k</td>
</tr>
<tr>
<td>g (s)</td>
</tr>
</tbody>
</table>

**TABLE II**

<table>
<thead>
<tr>
<th>Phoneme Inventories of Ekaghi, Wodani and Moni</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ekaghi (see Doble 1962a)</td>
</tr>
<tr>
<td>p</td>
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<td>b</td>
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<tr>
<td>m</td>
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<td>e (i)</td>
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<td>k</td>
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<td>g (s)</td>
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<table>
<thead>
<tr>
<th>Wodani (mb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
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<tr>
<td>b</td>
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<tr>
<td>m</td>
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<tr>
<td>w</td>
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<tr>
<td>y</td>
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<tr>
<td>i</td>
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<tr>
<td>e (i)</td>
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<tr>
<td>a</td>
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<tr>
<td>k</td>
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<tr>
<td>g (s)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Moni (see Larson and Larson 1958)</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
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<tr>
<td>b</td>
</tr>
<tr>
<td>m</td>
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<tr>
<td>w</td>
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<tr>
<td>y</td>
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<tr>
<td>i</td>
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<tr>
<td>e (i)</td>
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<tr>
<td>a</td>
</tr>
<tr>
<td>k</td>
</tr>
<tr>
<td>g (s)</td>
</tr>
</tbody>
</table>

Each of these languages has a voiceless stop series including phonemes /p/, /t/, /k/; bilabial voiced stops /b/ and /d/; nasal /m/ and /n/; bilabial and alveolar continuants (with fricative allophones) /h/ and /j/; and a five vowel system composed of /i/, /e/, /a/, /o/ and /u/. Ekaghi and Wodani also have laterally released velar /g/ / (g) to complete the voiced stop series, which is not found in Moni, whereas Wodani and Moni each occur with /h/ and a prenasalised stop series of /m/, /d/, and /g/ which are lacking in Ekaghi. Only Moni and Mid-Kenandoga dialects of Wodani have the sibilant /s/.

Besides these segmental phonemes there are three lexically contrastive supra-segmental phonemes in these languages: vowel tone—or vowel stress —/' in each language; vowel length /i/ written as the second vowel of geminate sequences: /ıı/, /ıı/, /ıı/, /ıı/ and /ıı/ in Ekaghi and Wodani, but not in Moni; vowel nasalisation /^- in Wodani and Moni, but not in Ekaghi. Examples of the occurrence of most of these phonemes—both segmental and supra-segmental in open (C) V and (C) V syllables only—can be found in the word list in A, except for vowel nasalisation which is as follows:

WO: /ıı^-/ 'tense' (/ıı^-/ 'nose') 'to be in an uproar'; /ıı^-/ 'two'

WO: /ıı^-/ 'call to a pig as when leading it'; /ıı^-/ 'life, raw'

**Phonemic similarity between Wodani and Moni**

From the above it can be seen that, in so far as their phoneme inventories are concerned, Wodani and Moni are more closely related to each other than are Wodani and Ekaghi, or Moni and Ekaghi. Further evidence for this phonological similarity is the fact that there is more sub-phonemic variability in Wodani and Moni than in Ekaghi. While this phenomenon characterises many of these two languages (see Table II), it is particularly noticeable in the production of the alveolar stop /d/. Thus while in all three languages /d/ may be manifested by an implosive /d/ in utterance-initial stressed syllable, only in Wodani and Moni does it occur as either of the following in
inter-vocalic position: as a voiced stop (d), a flap (ɾ), a lateral (l) or a laterally-released stop (dl). In Moni, (ɾ) occurs between identical high vowels /i/ or /u/, freely fluctuating with (d), while (l) occurs in other word-medial environments freely fluctuating with (dl); in Wodani (ɾ), (d) and (l) freely fluctuate in most word-medial positions.

Wd: /diŋgi/ ('d'igi, 'dl'igi) 'dark'; /bido/ ('bido, 'bidio, 'bird'
M: /dode/ ('d'ole, 'dole) 'words, message'; /lidi/ ('l'ili, 'ili, 'ili) 'five'; /bode dija/ ('bole 'diya, 'boleliya) 'to right, make war'

The sound systems of Wodani and Moni show great similarity also in the fact that both /w/ and /j/ in these languages occur with more friction than they do in Ekagi. In fact, there is a gradual increase in the degree of friction characterizing these sounds in Ek-Wo-Ko as one moves west to east from dialect to dialect beginning at: the Lakes area and ending in the Dugindoga. Thus, while the continuant /w/ occurs without friction in all environments in Ekagi, in both Wodani and Moni this sound is realized with rather intensive bilabialisation immediately preceding high and mid vowels /i/ and /u/. Further, /j/ is characteristically realised in Ekagi as continuant (y), in Wodani as alveopalatal (ɾ), but in Moni as fricative (s). The only exceptions to these allophonic occurrences of /j/ are the following: in Ekagi, /j/ occurs as alveo-palatal (ɾ) immediately preceding /i/; in both Wodani and Moni, /j/ is always realised as continuant (y) immediately preceding /a/ in word-medial position, with the exception that in the most eastern Dugindoga dialects of Moni this sound is always produced with palatalisation as (ɾ) immediately preceding /a/ and following /l/.

/w/ Ek: /wido/ ('vido) 'three'
Wd: /wido/ ('vido, 'vido) 'two'
M: /w/ (hol 'word'
/l/ Ek: /jape/ ('japeg) 'enemy, war'; /jima/ ('jima) 'animal
Wd: /jape/ ('japeg) 'enemy, war'; /jima/ ('jima) 'animal
M: /jima/ ('jima) 'animal

No: /jaβaija/ (saβaija) 'to never, cut off'; /hiya/
('hiya) 'two'; /ju/ (jed) 'boy'
Mo(2): /hija/ (hi'ja) 'two'

But if phonological evidence would lead us to classify Wodani and Moni as more closely related to each other than either is to Ekagi, lexical evidence leads us to the opposite conclusion: Ekagi and Wodani share closer ties than do either Wodani and Moni or Moni and Ekagi.

Lexico-Statistical Study

In this section lexico-statistical procedures developed by Swadesh (1952, 1955) have been employed to determine the relative time depth of separation between the eight dialects of Ek-Wo-Ko under study in this paper. Swadesh, following Sapir (1916), presupposes that the core or 'intimate' vocabulary of language---as contrasted with its less stable 'cultural' vocabulary---changes at a slow and relatively constant rate, and therefore lends itself best to measuring rates of language change. He has, therefore, developed a 100-word list of core vocabulary items, intended to be universally applicable for time-depth comparative purposes. Though the list has been criticised elsewhere (see Bergland and Vogt, 1962), it will be used here in comparing the basic vocabulary of Ek-Wo-Ko dialects (see Appendix A).

Basic vocabulary list

Swadesh's 100-word list was not entirely satisfactory as a core vocabulary check list, since nine items were of necessity eliminated for the following reasons: (1) because they were unknown to the interlocutor (numbers 29 FISH and 41 EGG), (2) because they were too difficult to match (numbers 11 GREEN and 100 YELLOW), and (3) because the term which matched was the same root already matched by another term in the list (term number 23 BAT was already matched with item 19 DRINK; term for number 36 HAT, with item 27 FEATHER; term for number 54 PERSON, with item 51 MAN; and the term for number 75 SKIN, with item 3 BARE). There were, therefore, only a total of 91 items
in the Swadesh list which were compared. Some items required a narrower definition than that given in the list. For example, number 2 ASHES was translated into each dialect by a term expressing 'coarse hard ash' rather than one indicating 'fine white ash'; number 4 BILLY was matched with local words for 'stomach' instead of those given for 'intestines'; forms indicating 'coldness of air', in contrast to those meaning 'coldness of an object', were chosen as equivalent to item 15 COLD; those indicating 'fullness of a container', rather than 'fullness of one's stomach', were given for item 52 FULL; and number 66 RED was rendered 'rusty red' instead of 'bright red'.

**Basis for cognition**

Items between the dialects were regarded as cognate and thus received a plus (+) reading rather than a negative (-) one, first, if each form was identical (i.e., phonetically analogous);


Items were also considered cognate if the only difference between them was one or more series of correspondent sounds:


The only difference between a number of cognate forms was the presence of compounding or suffxation in one dialect but not in the other:

Number 88 TONGUE: WO: /delegada/, MO: /dabla/ where /-gada/ is the second half of the compound; number 57 NAME: EK: /eksa/, WO: /ekada/, where the nominal suffix /-da/ occurs with the Wodani form.

Still other items received a plus reading because their stem forms were known to be identical:

Number 16 COME: EK: /mei/, WO: /meqa/, MO: /miya/, where the verb stem in each dialect is /me-/ and the respective suffixes: /-el/, /-na/ (or /-ima/), and /-ija/.

**Rates of Retention**

In Table III the dialects within each language of Ek-Wo-Mo are compared. The high percentage of cognation between each grouping (94.6-100%) reveals that each language of this family is highly homogeneous. In Table IV, on the other hand, the lexical retention rates between the languages of this family are seen to be relatively low, especially between Ekagi and Moni: 51.1-52.6% between Ekagi and Wodani (see the inner block of Table IV), 39.6-41.8% between Wodani and Moni (see the bottom row), but only 27.9-28.6% between Ekagi and Moni (see the right column). These relationships can be generalized.

**Table III**

<table>
<thead>
<tr>
<th>Language</th>
<th>Dialoect Pairs</th>
<th>Total Items</th>
<th>Cognate Items</th>
<th>Percentage of Cognation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ekagi</td>
<td>EK(T)-EK(F)</td>
<td>91</td>
<td>86</td>
<td>94.6</td>
</tr>
<tr>
<td></td>
<td>WO(WMB)-WO(MW)</td>
<td>91</td>
<td>88</td>
<td>96.7</td>
</tr>
<tr>
<td></td>
<td>WO(WMB)-WO(LMB)</td>
<td>88</td>
<td>84</td>
<td>95.4</td>
</tr>
<tr>
<td></td>
<td>WO(MK)-WO(MB)</td>
<td>69</td>
<td>68</td>
<td>95.4</td>
</tr>
<tr>
<td>Moni</td>
<td>MO(X)-MO(D)</td>
<td>91</td>
<td>91</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>MO(Z/D)-MO(X)</td>
<td>91</td>
<td>90</td>
<td>99.9</td>
</tr>
</tbody>
</table>

**Table IV**

<table>
<thead>
<tr>
<th>Language</th>
<th>Wodani (LMC)</th>
<th>Wodani (UMB)</th>
<th>Wodani (MK)</th>
<th>Moni (X/B/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ekagi(T)</td>
<td>51.7 (45.5:86)</td>
<td>51.1 (46.5:91)</td>
<td>50.5 (46:91)</td>
<td>28.6 (26:91)</td>
</tr>
<tr>
<td>Ekagi(F)</td>
<td>52.8 (46.5:91)</td>
<td>51.1 (46.5:91)</td>
<td>51.6 (47:91)</td>
<td>27.5 (25:91)</td>
</tr>
<tr>
<td>Moni(X/B/D)</td>
<td>30.6 (34:88)</td>
<td>41.8 (38:91)</td>
<td>40.1 (36:91)</td>
<td></td>
</tr>
</tbody>
</table>
by averaging the percentages of cognation between each language pair and representing them as follows:

**FIGURE I**

<table>
<thead>
<tr>
<th>Wodani</th>
<th>Ekagi</th>
<th>Moni</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.3%</td>
<td>40.2%</td>
<td></td>
</tr>
<tr>
<td>28.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion**

From these comparisons we can infer that in the diversification of proto Ek-Wo-Mo, the first separation was between dialects of proto Ek-Wo and proto Moni; the second between those of proto Ekagi and proto Wodani. By glottochronological time depth measurements (Swadesh 1955), the former would have taken place about 3000 years ago; the latter about 2000 years ago. These separations, however, could hardly have been clear-cut, since Moni shares 15.9% of its basic vocabulary with Wodani which it does not share with Ekagi, and another 1.6% with Ekagi which it does not share with Wodani (see sections 3 and 4 of word list, Appendix A). This suggests that during the periods of intensive diversification, proto Moni and the Wodani branch of proto Ek-Wo continued to influence each other more than did proto Moni and the Ekagi branch. It also shows that there has likely occurred more borrowing between Wodani and Moni than between Ekagi and Moni. Phonological similarity between Wodani and Moni also supports this conclusion.

The historical relationships between dialects of Ek-Wo-Mo are represented as follows:

**FIGURE II**

Proto Ek-Wo-Mo

<table>
<thead>
<tr>
<th>Ekagi</th>
<th>Wodani</th>
<th>Moni</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Notes**

1. These terms: family and micro-phylum are based on Swadesh's classification of languages according to their percentage of shared basic vocabularies (Swadesh 1955) where dialects which share at least 31% of their vocabularies are regarded as members of the same language, those which share from 28-31% of their vocabularies, as members of the same family, from 12-28% as members of the same stock, and from 4-12% as members of the same micro-phylum.

2. Some Moni speakers are also bilingual with Dem in this area.

3. Our own field work in West Iran has been done mostly among speakers of two of these linking languages: among the Moni of the Komandoga valley during the years 1953-55 with occasional extended visits to Wodani groups in the lower Komandoga and upper Mohajadaga valleys, and among the Western Dani in the Ilaga from 1956 to the present. Besides extensive field notes in these languages, material on which this paper is based include the following: a 2000 word dictionary which we prepared in 1955, and two papers on Moni phonology and morphology (Cutts 1956, Larson and Larson 1958); two Ekagi dictionaries (Doble 1960, Steltenpool 1969) and three essays on Ekagi (Doble 1962a, 1962b, 1962c).

4. Doble interprets vowel length in Ekagi as the second vowel of a geminate sequence (1962a).

5. Segmental phonemes occur only in open (C)V and (C)V syllables in each language of Ek-Wo-Mo. In these environments their distributions are unlimited, except for the following: in Ekagi and Wodani, only sequences of geminate vowels mentioned above and the following non-identical vowel sequences are permitted: /ai/, /au/, /oi/, /eu/, /ox/ and /ou/; in Moni geminate vowel sequences do not occur, and only the following non-identical...
sequences are possible: /aɪ/, /aʊ/, /oʊ/, /eɪ/, /eɪ/, /oʊ/ and /əʊ/.
For more detailed descriptions of these distributions in Ekgai and Moni, see

Patterns of vowel reduction and vowel assimilation account for
these vowel losses: e + e → Ekgai (mae - m-e-); e + i → i in
Wodani (mena - m-e- + -ina); e + i → i in Moni (mija - m-e- + -ija).

APPENDIX A

Plausible Cognate Items between Representative Dialects of Ek-Wo-Mo

This list is based on Swadesh's 100 word basic vocabulary list of
1955. Here only cognate items between dialects of Ek-Wo-Mo are listed in the
following four sections: (1) between Ekgai, Wodani and Moni, (2) between
Ekgai and Wodani, but not Moni, (3) between Wodani and Moni, but not Ekgai,
and (4) between Ekgai and Moni, but not Wodani.

(1) Cognate Items between Ekgai, Wodani and Moni

<table>
<thead>
<tr>
<th>ENGLISH</th>
<th>EKGA(P)</th>
<th>WODANI(UNS)</th>
<th>MONI(K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ALL</td>
<td>utom</td>
<td>utum</td>
<td>ondum</td>
</tr>
<tr>
<td>3. BAKE/STEW</td>
<td>kado</td>
<td>ebada</td>
<td>ada</td>
</tr>
<tr>
<td>11. BREAT</td>
<td>men</td>
<td>mena</td>
<td>miya</td>
</tr>
<tr>
<td>19. DRINK/SAT</td>
<td>nei</td>
<td>nona</td>
<td>mei</td>
</tr>
<tr>
<td>26. HIRTH</td>
<td>naki</td>
<td>makai</td>
<td>nija</td>
</tr>
<tr>
<td>31. FOOT</td>
<td>bado</td>
<td>bado</td>
<td>nija</td>
</tr>
<tr>
<td>33. GIVE ME</td>
<td>nenii</td>
<td>nenina</td>
<td>nija</td>
</tr>
<tr>
<td>39. SHRAR</td>
<td>jüwit</td>
<td>juna</td>
<td>jujita</td>
</tr>
<tr>
<td>42. I</td>
<td>ani</td>
<td>nii, nime</td>
<td>a, ani</td>
</tr>
<tr>
<td>43. KILL ME</td>
<td>nagti</td>
<td>nagina</td>
<td>mutija</td>
</tr>
<tr>
<td>44. KISS</td>
<td>kaguna</td>
<td>kagu</td>
<td>eka</td>
</tr>
<tr>
<td>64. MAN</td>
<td>jame</td>
<td>mo</td>
<td>me</td>
</tr>
<tr>
<td>71. SAY</td>
<td>etti</td>
<td>hesena</td>
<td>ndija, hindija</td>
</tr>
<tr>
<td>73. SEED</td>
<td>ijo</td>
<td>ijo</td>
<td>ia</td>
</tr>
<tr>
<td>74. SIT</td>
<td>animakai</td>
<td>animaka</td>
<td>anhiija</td>
</tr>
<tr>
<td>76. SLEEP</td>
<td>uko unii</td>
<td>uma una</td>
<td>uma unija</td>
</tr>
<tr>
<td>86. TEIS</td>
<td>kii, kou</td>
<td>kousa</td>
<td>ka, kogi</td>
</tr>
<tr>
<td>87. THOU</td>
<td>aki</td>
<td>akai</td>
<td>aki</td>
</tr>
<tr>
<td>91. TWO</td>
<td>wijá</td>
<td>wijá</td>
<td>hija</td>
</tr>
</tbody>
</table>

APPENDIX A (cont'd)

<table>
<thead>
<tr>
<th>ENGLISH</th>
<th>EKGA(P)</th>
<th>WODANI(UNS)</th>
<th>MONI(K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>93. HOT</td>
<td>tani</td>
<td>ndani</td>
<td>ndani</td>
</tr>
<tr>
<td>95. W3</td>
<td>ini, inai</td>
<td>ini, inine</td>
<td>i, indi</td>
</tr>
<tr>
<td>96. WHAT</td>
<td>më</td>
<td>më</td>
<td>më</td>
</tr>
<tr>
<td>98. WHO</td>
<td>meime</td>
<td>më</td>
<td>më</td>
</tr>
</tbody>
</table>

(2) Cognate Items between Ekgai and Wodani, but not Moni

<table>
<thead>
<tr>
<th>ENGLISH</th>
<th>EKGA(P)</th>
<th>WODANI(UNS)</th>
<th>MONI(K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. BIG</td>
<td>ebo, lbo</td>
<td>ibu, ebo</td>
<td>tope</td>
</tr>
<tr>
<td>6. BIRD</td>
<td>bado</td>
<td>bido</td>
<td>beka</td>
</tr>
<tr>
<td>9. BLOOD</td>
<td>eso</td>
<td>eso</td>
<td>eka</td>
</tr>
<tr>
<td>10. BONE</td>
<td>mitoo</td>
<td>mitoo</td>
<td>iwa</td>
</tr>
<tr>
<td>17. DAD</td>
<td>bokai</td>
<td>bokona</td>
<td>hitija</td>
</tr>
<tr>
<td>27. FEATHER</td>
<td>ijo</td>
<td>hijo</td>
<td>to</td>
</tr>
<tr>
<td>29. FIRE</td>
<td>bodija</td>
<td>bida</td>
<td>usa</td>
</tr>
<tr>
<td>45. KNOW</td>
<td>epi</td>
<td>iji</td>
<td>juki</td>
</tr>
<tr>
<td>46. LEAF</td>
<td>ije</td>
<td>ije</td>
<td>hoka</td>
</tr>
<tr>
<td>50. LOUSE</td>
<td>uka</td>
<td>uka</td>
<td>amu</td>
</tr>
<tr>
<td>55. MOON</td>
<td>agoo</td>
<td>agoo</td>
<td>tinawi</td>
</tr>
<tr>
<td>57. RAVE</td>
<td>eka</td>
<td>eka</td>
<td>eja</td>
</tr>
<tr>
<td>58. NECK</td>
<td>ogo</td>
<td>oongooto, minawed</td>
<td>kobo</td>
</tr>
<tr>
<td>61. NOSE</td>
<td>juma</td>
<td>juma</td>
<td>jange</td>
</tr>
<tr>
<td>63. OMS</td>
<td>ena, kate</td>
<td>naa</td>
<td>hako</td>
</tr>
<tr>
<td>65. RAIN</td>
<td>e-li</td>
<td>hidi</td>
<td>jangle</td>
</tr>
<tr>
<td>67. ROAD</td>
<td>ita</td>
<td>hindu</td>
<td>kejako</td>
</tr>
<tr>
<td>68. ROOT</td>
<td>mani, ope</td>
<td>mani</td>
<td>taki</td>
</tr>
<tr>
<td>69. ROUND</td>
<td>punuga</td>
<td>mbutugu</td>
<td>obo</td>
</tr>
<tr>
<td>72. SEES</td>
<td>dou</td>
<td>duna</td>
<td>ini</td>
</tr>
<tr>
<td>79. STAND</td>
<td>joonji</td>
<td>jinina</td>
<td>akijka</td>
</tr>
<tr>
<td>89. TOOTE</td>
<td>egc</td>
<td>hago</td>
<td>bama</td>
</tr>
<tr>
<td>90. TREE</td>
<td>piya</td>
<td>piya</td>
<td>bo</td>
</tr>
<tr>
<td>94. WASHK</td>
<td>uwo</td>
<td>uwo</td>
<td>du</td>
</tr>
<tr>
<td>97. WHITE</td>
<td>pokado</td>
<td>pokode</td>
<td>peja</td>
</tr>
</tbody>
</table>

(3) Cognate Items between Wodani and Moni, but not Ekgai

<table>
<thead>
<tr>
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<th>EKGA(P)</th>
<th>WODANI(UNS)</th>
<th>MONI(K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. SELL</td>
<td>mado</td>
<td>tina</td>
<td>senga</td>
</tr>
<tr>
<td>7. BITE</td>
<td>takumi</td>
<td>waja tana, ngaena wajaja</td>
<td></td>
</tr>
<tr>
<td>8. BLACK</td>
<td>buna</td>
<td>dingi</td>
<td>dingi</td>
</tr>
<tr>
<td>14. CLOUD</td>
<td>jabai</td>
<td>tinu</td>
<td>kunu</td>
</tr>
<tr>
<td>26. PAT</td>
<td>daka</td>
<td>bamsa</td>
<td>bamsa</td>
</tr>
<tr>
<td>32. FULL</td>
<td>ebetuma, edidaa</td>
<td>patuka tina</td>
<td>parukija</td>
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</table>
### APPENDIX A (cont'd)

<table>
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<th>ENGLISH</th>
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<td>40. HEART</td>
</tr>
<tr>
<td>52. HURT</td>
</tr>
<tr>
<td>62. NOT, NO</td>
</tr>
<tr>
<td>70. SAND</td>
</tr>
<tr>
<td>78. SMOKE</td>
</tr>
<tr>
<td>81. SPOKE</td>
</tr>
<tr>
<td>86. TONGUE</td>
</tr>
<tr>
<td>92. WALK, GO</td>
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<table>
<thead>
<tr>
<th>MUNDAU (UNB)</th>
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<tbody>
<tr>
<td>diginba</td>
</tr>
<tr>
<td>lba</td>
</tr>
<tr>
<td>tdu</td>
</tr>
<tr>
<td>tadda</td>
</tr>
<tr>
<td>undu, ugi</td>
</tr>
<tr>
<td>huma</td>
</tr>
<tr>
<td>debagada</td>
</tr>
<tr>
<td>pigina</td>
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<table>
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<th>NOTE (K)</th>
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<tbody>
<tr>
<td>dukunulu</td>
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<tr>
<td>epokome</td>
</tr>
<tr>
<td>taws</td>
</tr>
<tr>
<td>tadi</td>
</tr>
<tr>
<td>ugi</td>
</tr>
<tr>
<td>homa</td>
</tr>
<tr>
<td>dabe</td>
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<td>puija</td>
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</table>

(4) Common Items between Ehxap and Muni, but not Munda

<table>
<thead>
<tr>
<th>ENGLISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>37. HAND</td>
</tr>
<tr>
<td>82. SUN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ZEMUNDI</th>
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</thead>
<tbody>
<tr>
<td>jakada</td>
</tr>
<tr>
<td>dome</td>
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</table>

<table>
<thead>
<tr>
<th>UMUNDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>hane</td>
</tr>
<tr>
<td>esondani</td>
</tr>
</tbody>
</table>
REFERENCES


Cutts, William A. 1956. (ms) Moni Verba


GARDENS OF WAR: Life and Death in the New Guinea Stone Age.
Robert Gardner and Karl G. Heider with an Introduction by Margaret Mead (1968)

IHTISAR:


Walaupun tata hidup orang Balien mengalami perubahan dengan tajamnya akan tetapi foto2 yang indah dalam buku tersebut (kebanyakan berwarna) membukakan suatu tata hidup yang jenjang pada waktu itu. Pengarang2 dari buku ini telah mengadakan pertemuan kepada Gunung Arjung di Djakarta dan Djajapura "Mengapa buku tersebut sangat sulit diperoleh di Indonesia tetapi mudah diperoleh di negara-negara lain?" Mereka pertaja bahwa buku ini seharusnya tersedia oleh karena menunjukkan suatu tjetatan/dokumentasi tata hidup dari suatu suku di-Irian Barat yang sangat menarik.

Penindjau buku tersebut telah mengadakan kritik terhadap buku ini. Buku ini memuat beberapa kritik2 mengenai pekerjaan para misionaris di Lebah Balien, lagi pula dalam buku itu dikatakan bahwa orang2 Dani telah ditakdirkan menjadi "para it2 sebagai akibat dari para desakan untuk merubah tata hidup mereka, chusumja oleh karena pergerakan dilarang."

Penindjau buku itu berpendapat bahwa Gardner dan Heider tidak memberikan penghargaan yang tjuuk terhadap pekerjaan para misionaris dan pen- djabat2 pemerintah dalam hubungan mereka dengan orang2 Balien. Walaupun ne- mgadukkan kritik2, tetapi para penindjau buku itu mengaku bahwa buku ini ada- lah sebuah buku yang bagus. Matu foto2nya sangat tinggi.

Many picture books have appeared concerning Irian Barat (West New Guinea). In words and pictures, these volumes have sought to portray the life and culture of its people. In some cases the accompanying descriptive texts have been considerably long, while in other cases, the texts have been quite short. Gardens of War, is one of these picture books with text.

Gardens of War, appeared as a result of the Peabody Expedition undertaken by Harvard University in 1961. The expedition focused its attention on the highlands of Irian Barat, in the Balien Valley. Although the expedition was undertaken in 1961, the book under discussion did not appear until 1968. The reason for the delay in publication is given by Gardner in the foreword. He tells us that the original responsibility for this publication was given to Michael Rockefeller. Due to the sudden and tragic death of Michael Rockefeller this was never to be. Hence, in 1968, Gardner with the collaboration of Karl G. Heider, produced the present volume.

The authors have chosen to divide the book into six sections or chapters. In each of these they describe in words and through the use of still photographs aspects of Dani culture. The first chapter, "Appearance", deals with what one sees as he looks at the Dani culture. Chapter two, "Skills", deals with how a stone age people build their houses, construct their fences, fashion their tools and weapons. The next section concerns itself with the nourishment of the Dani: their gardens, food, and the care of their pigs. Chapter four deals with the play of Dani children; thereby providing in effect, a mirror of the realities of adult life: war and survival. "The Ghosts" is the topic of chapter five. Here the authors present the magical practices and beliefs of the people. The last chapter from which the authors have drawn the theme for the book as a whole is on warfare or "Violence." This, in the authors' view, is the central theme of Dani culture.

To accomplish these purposes the authors made appropriate choices from a total of 26,000 photographs originally taken by the expedition. Of these, 8,500 were colour exposures. Three hundred and thirty-seven photographs taken by various members of the Peabody expedition are used in the present volume. The result of their choices is obvious. The pictures contained in the book are, on a one to one basis, good. They are instructive and of such quality that they will be recalled over and over again by anyone who sees them. That so many unique pictures should appear in a single volume is not surprising. The people photographed by the expedition were completely unaware of what a photograph was. In addition, the members of the expedition were very careful never to show their results to the people themselves. (Personal communication from Karl G. Heider to Father Jules Carpe.) Thus, the people were unaware of the purposes of the strangers or the significance of their complex...
apparatus. They were unconcerned at their presence.

The introductory remarks to each chapter do not pretend to be anthropological essays, as such. These remarks are pertinent, however, being both reliable and readable. In point of fact from these remarks one can imagine that he is present at the first meeting with the Dani. While reading this material one is drawn more and more into the reality of Balam culture. As with Gardner and the other members of the expedition, one can see what they saw and feel what they have felt. The culture comes alive under the scrutiny of these two capable anthropologists who studied and revealed it.

The last chapter entitled "Violence" is apparently for the authors the climax of the Dani culture. Hence, they gave this book the title Gardens of War. Indeed, Gardner says this explicitly in the foreword: "The overall aim of the expedition was to make a comprehensive study of a single community of neo-lithic "warrior" farmers". (XV) Typical of the author's views is the conclusion with which they finish this chapter, as well as the book. "Without it (meaning war), the culture would be entirely different; indeed, perhaps it could not find sufficient meaning to survive except parasitically as the novelty of missionaries or policemen". (p.144).

While we have chosen not to discuss the merits of such a trite statement, this reminds us of what we can read in Karl G. Keiser's book, The Dugum Dani, published in 1970 by Aldine Publishing Company, Chicago. Here he also employs the word "parasite" when he presents his conclusions as to the future prospects of the Balam Dani. His pessimistic conclusion is in accord with the sentiment expressed here in Gardens of War. We consider this vision unjustified. It stems from first, an incomplete understanding of the character of the Dani (to us the Dani appear to be sober and realistic); second, their idealization of the "noble savage"; and, third, a negative view of the work of missionaries and government agents in their contacts with the people.

The negative view of the missionaries is also demonstrated by Gardner in his foreword. He writes: "In other Dani areas, their success in making 'converts to Christ' seemed to be due more to a lavish use of trade goods and medicine than to propagation of a belief". (XIV) In our opinion a great injustice is done to the missionary, particularly the Christian and Missionary Alliance (of whom he speaks), as well as other Protestant denominations. Although the author tries to modify his point, the unfortunate fact remains that he has committed himself in black and white. A pity!

These few mistakes, which might show a certain predisposition, are not detrimental to the value of the book, however. The pictures remain attractive and by and large, excellent. They will undoubtedly become more precious in time as a documentation of a passing culture. Already the culture depicted is changing and adapting to the greater society of Irian Barat and Indonesia. The remarks that introduce each chapter remain, in our opinion, well formulated and not over-burdening.

Should another printing of this volume be forthcoming, which seems highly probable, we would make some necessary corrections of errors that detract from the present edition. Upon close examination we see that some of the small texts are not in accord with their designated pictures. In particular, we refer to the texts found on p.30. These do not correspond with the photographs on p.35. When comparing these pages, the photograph numbered 74 and that numbered 75 do not correspond with the material presented. Number 74, is not the 'slashing of the wood'; and number 75 is not of 'slipping the boards'; the reverse is true. On pps.44 and 51, we find a similar situation. Photographs 104 and 105 should be grouped together as they refer and depict the same activity. Number 106 is 'coal wrapping'; 107 and 108 are of the 'slope burning'; and 109 is, or should be, by itself. These inaccuracies should be corrected in a reprint of the volume. In addition, the full-page photographs on pps.56-57, 58-59, 60-61, are totally out of place. The photographs on pps. 56-57, and 60-61 do not belong in the chapter on nourishment, but in the chapter on violence. The photographs on pps.56-59, depicting funerals, belongs with the chapter on ghosts or perhaps violence. Although the placement of these may have been due to printing errors, the result is nevertheless confusing and perniciously misleading. One omission that we noted in the chapter on nourishment was the lack of pictures on dancing. As dances are a vital part of this particular activity among the Dani, we wonder at this. The photograph on p.60-61 is
described as being for the death of an enemy only.

Finally, we would make this remark, addressed particularly to the Djajapura and Djakarta "Gunung Agung". Why is this book so easy to obtain outside Irian Barat and Indonesia but so difficult to obtain within the country? Any visitor to the Baliem Valley upon seeing this volume is eager to obtain it. This book should be made locally available for it gives each visitor a lasting memory of an unforgettable land and its people.

Jiles A. E. Camps of and Larry L. Naylor.

NOTICE CONCERNING BOOK REVIEWS

The editors welcome reviews of books that directly or indirectly have relevance to West Irian. Readers interested in reviewing particular books should submit to the editors the title of the work, the author, publisher and date of publication. A letter will be written to the publisher requesting a complimentary copy of the book for the reviewer. Suggestions as to books readers would like to have reviewed in the IRIAN are also welcome.

ON-GOING AND PROPOSED RESEARCH

CULTURAL CHANGE AND DEVELOPMENT IN THE BALIEM VALLEY

LICTISAR:


Lembah ini setiap keluarga mempunyai suatu karakteristik kebudayaan tersendiri yang sangat kuat. Biarpun demikian, perubahan kebudayaan telah terjadi dan perubahan tersebut 12 warung, meskipun demikian berlangsung. Penelitian2 akan penikmatan penukaran kebudayaan dan kebudayaan12 didasarkan pada sedang digunakan, dan demikian demikian baik setiap praktis mempunyai setiap teoritis.


Introduction:

Since the opening of the Baliem Valley, this valley located in the Central highlands of West Irian has drawn a great deal of attention. Although opened in 1954, extensive contact with the outside world really only began in the sixties when missionaries, government agents, and anthropologists began to spread throughout the valley. Interest in this area has been high owing to the natural richness of the valley in agricultural terms, and owing to the people found there living close to a stone age level, in a milieu where warfare was central to the way of life. The people occupying the Baliem have come to be
known as the Dani, their numbers approximating 60,000, although a complete census has never been taken. Traditionally, two linguistic groups have made up the population; the Grand Valley Dani and the Western Dani, both of which fall into the Greater Dani Language Family. The Grand Valley Dani are the more widely-spread and numerous, the Western Dani being found in scattered pockets. The exception to this pattern is in the northern extremity of the valley, an area forming the boundary or transition into the Greater Western Dani areas to the northwest.

Despite a short period of culture contact with the outside world, barely two decades, the people of the Baliem Valley have been the object of intense efforts aimed at their development and Christianization. Economic development has been attempted by the government, the United Nations Project for the Development of West Irian, and certain of the mission groups involved in the valley. These efforts have resulted in varying degrees of success, although they have been intensified in recent years and rapid. A general cultural resistance has characterised the Baliem Valley. Despite this, a great many plans are in the planning stages for future implementation.

Clear enough, culture change has occurred in the Baliem Valley. Warfare, once so characteristic of this valley and its people has all but vanished. Significant changes have also occurred in other areas of the culture, despite the heavy resistance from traditional sectors. The depth of the culture change and the progress of development, as well as future prospects, pose interesting research problems. Such research is now possible and desirable, having both practical significance and theoretical value.

The Research:

The research presently being undertaken, from November 1971 through February 1973, focuses on the issues and aspects of culture change and development in the Baliem Valley. It is being undertaken to provide useful information to the various agencies involved in the development of the valley and those interested in the study of the Baliem Valley and its people. While based in Wamena, the government centre of the valley, the study will extend into a number of distinctive sections where contrast and extremes have been the result of contact. The presence of a number of very distinct cultural groups introduces a comparative element into the total study. Although in general terms the research focuses on the present state of Dani culture resulting from contact, the study also directs its attention to various aspects of culture change such as: the kinds of culture change taking place, the agents, the forces operative, the role of the native Dani, and the role of education in the development of this area.

Three distinct areas have been selected for intense study, having been selected on the basis of representativeness to the remainder of the valley. Each of these areas exemplifies one of the reactions of culture change found in the valley. The ultimate is of course to determine the aspects of culture change for the valley as a whole, in as far as possible using representative areas.

It is envisioned that the proposed research, as roughly sketched above will provide information of immediate practical value as well as to provide material of theoretical value for those interested in the study of the valley and its cultures. It is possible that the scope of this research will narrow as data is accumulated. Research of this type, on culture change or its processes, is conspicuously absent for West Irian. Therefore, it is felt that the study outlined should add to, or supplement our present knowledge of the Baliem Valley.


H. Benwarin

ABSTRACT:

This study, changes in the social structure of the people of Nimika from 1950 to 1960, is for a thesis in the History Department, Institute for Teacher Training, Djokjakarta. It is intended to examine the particular roles played by various groups during this period, namely, the Dutch, Missionaries, government personnel, as well as Kali islanders and other non-Nimika groups living in the area.
To date, the Misika people have achieved little progress. The researcher attributes this to their semi-nomadic way of life, the fact that outside groups, particularly the Kei islanders have a different culture and tend to form almost a superior caste, and the presence of the Dutch as colonials during that period and the discriminatory education system they imposed.

Jang mendjadi dasar daripada study 1ang sedang saja lakukan ini ialah menyiapkan diri demi pemunahan tugas.

Hal jang ingin ditetahui ialah status dan peranan dalam struktur masjarakat Minika 1ang terdiri dari sekelompok ketjil orang2 Belanda sebagai pegawa (baik penjebat2 agama maupun pegawa2 pemerintahan), golongan "perantara" (pegawa2 rendahan dari daerah Indonesia lainnya—terbanyak adalah orang orang Kei sebagai guru2 Sekolah Dasar dan orang2 Irian Barat acli yang bukan Minika) dan orang2 Minika acli yang ber "perintah"- mentalitas2 (istilah Dr. J. Power). Notilitas vertical sosial penduduk acli berlangsung sangat lambat. Hal ini disebabkan oleh:

1. kesaan penduduk Minika acli yang semi-nomadin disertai perasaan etnosentrisme yang kuat.
2. plah pendatang-tertutama orang2 Kei berlatar belakang kubahaja berkasta,
3. orang2 Belanda sebagai kolonialis dan
4. sistim pendidikan kolonialis acli semang otkratis.

Adapun tujuan jang ingin ditetahui ialah untuk mengenal djawa sebagian besar penduduk daerah ini (orang2 Kei dan orang2 Misika acli) dalam masa tersebut diatas. Pengenalan sebagaimana jang dimaksudkan semangkinkan dapat dilakukan aja pengarahan pada satu aktivitas pembangunan. Sifat daripada study ini merupakan saran bagi plah2 jang menerimakannya.

Dengan mengenal kesaan masjarakat pada masa itu kita dapat menarik "satu garis" melalui masa sekarang terus kemasa jang akan datang, terutama dalam hubungan with dengan projek pertanahan daerah K.P.J. Misika.
development efforts especially since the initiation of the Five Year Plan, in 1969. Finally, bearing in mind present and potential economic integration we will attempt to evaluate the viability of present and past plans, and to look at possible alternatives for the future.

It is hoped that the survey will be published in the Bulletin of Indonesian Studies in November, 1972.

**CONTROL OVER EXPORT OF ARTIFACTS**

In recent months the depletion of the few remaining artifacts of historical worth has become so great that the authorities now appear to have been galvanized into taking drastic action. It is anticipated that stringent regulations will be laid down concerning the removal of artifacts. It is to be hoped that such regulations while arresting the removal of items that belong to the cultural heritage of the people will not impede the sale and export of newly made ethnographic items. The sale of bows, arrows, stone axes and the like represents a source of income (in some cases, virtually the only source) to people in the more remote areas.

What has precipitated the current concern has been the presence of professional collectors purporting to be anthropologists engaged in short "surveys"; these individuals have succeeded in buying up and removing many items of historical value. In more than one case scientists from reputable universities have either deceived the authorities as to the nature of their real intentions in West Irian or, while carrying out bona fide research, have collected valuable artifacts and removed them from the country under the label of "specimens". If the Indonesian authorities now display suspicion towards scientists from abroad wishing to 'look into research possibilities' or to undertake short "surveys", it is understandable.

What is called for before it is too late is joint collecting expeditions undertaken by foreign museums in cooperation with our own university. The Rector and the Director of the Institute for Anthropology are anxious to hear from museums or universities interested in such joint undertakings.

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**UNIVERSITY OF IRIAN JAYA NEWS**

**Symposium on Educational Change in West Irian**

H. Raisan

Sixteen papers were read at this symposium held at the University June 26 - 29th, 1972. One broad topics covered were policy and planning, teacher education, new media in education, education and development and the role of the university in development. Papers were read by participants from Djarajapra, Djakarta, Port Moresby and Goroka.

The symposium revealed many weaknesses in the present educational system in the Province but in a positive way provided much data upon which revisions in the system could be made. In drawing many people together who are concerned with education the symposium served to stimulate much discussion and bring about an awareness of the part individuals can play in working for improvements.


Demikianlah sebagai realisasi harapan yang terdapat dalam Diskusi Pendahuluan, maka bertempat di ikampus Universitas Tjenderawasih pada tanggal 26, 27, 28 dan 29 Juni 1972 telah berlangsung Symposium Pendidikan dengan tema Pembaharuan pendidikan di Irian Barat. Para pemasaran yang terdiri dari tokoh dan ahli12 pendidikan yang berada di Irian Barat, Djakarta dan 70% berjumlah 16 orang, masiing mengemukakan sebuah paper yang semasa berkaisos sekitar pokok pembahasan tentang:

1. Kebijakan Pendidikan dan perentjamaan
2. Pendidikan Guru
3. Media Baru dalam pendidikan

4. Pendidikan dan pembangunan

5. Pemanfaatan pengumum dalam pembangunan Irian Barat.

Terlepas dari bagaimana hasil Symposium itu dan bagaimana follow-up-nya, jang rasanya masih terlalu pagi untuk menilaiannya sekarang, maka beberapa hal yang menarik perhatian tentang Symposium itu sendiri perlu digulir ditjatet:

(1) Enam belas papers telah masuk dan dibajakakan oleh:
- 1 orang ahli dari BPK Djakarta;
- 6 orang ahli dari instansi pemerintah dan universitas di Djajapura;
- 7 orang ahli dari Unesco Djajapura;
- 2 orang ahli dari Jajaen? di Irian Barat;
- 2 orang ahli dari Unesco TPMG;
- 1 orang ahli dari Department of Education TPMG;
- 1 orang ahli dari University of TPMG.

(2) Kesanbelas papers itu seperoleh sembanan jang hangat dari para pe-
serta, sehingga dirasa kekurangan waktu untuk pertamaihan. Hanja 1 paper yang terpaksa tidak dapat dibahas, tetapi tetap dibajakakan o-
leh orang lain karena penunjukan berhalangan malir.

(3) Semua sidang Symposium sedjaj sidang pertama samapi sidang ke-
7 mendapat perhatian jang besar dari masyarakat, baik jang chuma di-
ungsi maupun para peminat lain, terjata dari jualah jang hadir
jang masing-masing tidak kurang dari 100 orang.

(4) Kesip en para peserta terdiri dari orang2 jang tidak semanja mahir
berbahasa Indonesia, namun sidang2 tetap berjalan lancar. Para pe-
serta jang mahir berbahasa Indonesia menggunakan bahasa Indonesia,
jang tidak mahir, berbahasa Inggir. Kesipun interpreter tersedia
rumpah terjemahan hanja diperlukan dari bahasa Indonesia
kebahasa Inggir dan tidak seballinja.

(5) Ikut sertanja partisipan dari bujar Djajapura banjuk memberikan ba-
han bahan baru untuk masalah pendidikan di Irian Barat disampaing
masalah baru jang djuga dikemukakan oleh ahli2 dari Djajapura sem-
diri, baik jang datang dari pedesalan Irian Barat maupun dari Dja-
karta dan TPMG. Djakarta membawakan djuga udara negar dalam pengu-
kuhan pengetahuan masarakat daerah ini tentang kebidakasannahana.

TPMG menambah rasa saling mengetj bukan adja antar masalah
pendidikan di Irian Barat dan TPMG melainkan djuga antara kita de-
ngan negarajang kita jang setara geografis salah jang terde-
kat.

Adakah manifest jang dapat dipetik dari Symposium ini? Untuk mendjawab partenjaan dekikin tentu sedja pendapat orang sam bernas-berada2, tergantung dari
manifest itu antara jang dalam pembangunan maupun dalam inisja, rasana
manifest itu pasti ada:

1. Dengan data jang dikemukakan oleh para partisipan diskusi atau se-
tidaknya diketahui kebarakan2, kelemahan2 dan temuan2 dalam pe-
laksanaan pendidikan diadah ini selama ini.

2. Menang hasil Symposium b器upakan resolusi apalagi keputusan
jang mengikat jang mesti didjalakan, namun dengan ikut-sertaan
pikak2 penjelangara pendidikan diadah ini, baik penerintah maupun
pajasan swasta, maka hal2 jang dikemukakan dalam Symposium itu sedi-
kit banjuk daat didjalakan bahan oleh pikak2 bersangkutan dalam
usaha perbaikan. Tentu adja mat diharapkan adja pengambilan lang
kah langkah positif oleh pikak2 bersangkutan itu.

3. Betapapun ketjilina, sudah ada usaha kezra pembaharuan pendidik
manifest diadah ini. Selama langkah itu tidak berjangan negar, maka ia
akan merupakan sambungan positif, sebab tanpa adja langkah2 pasti

4. Symposium ini melibatkan demikian banjuk orang dari
Djajapura dan se-
kitarama. Semangat Symposium terasen besar disikat dari2 penjel-
egaran2makan. Ini dapat dipandang sebagai salahsatu puntak gelombang
jang mungkin dapat menimbulkan risiko lain dalam rangkaian kegiatan
jang sejatijen, baik itu merupakan seminar2, pelatihan2 ataupun usah-
a2 lain jang menjangkut segi2 akademiasi. Getar demikian mesang di-
rasa perlu untuk mengupah dan menimbulkan gairah pelitian diakal-
pana para sarjana dan ahli2 diadah ini, baik pada lingkungan ins-
ansi-instansi penerintah, jasaen2 swasta maupun dan terutama dida-
la lingkungan universitas.

Seminar di Agata

Melalui kedjasaena dengan lembaga Anthropologi, suatu seminar mengenai
persoalan pembangunan di Asmat telah digelar pada bulan Februari jang lalu bertem-
pat dikebudakan miziz Katalik Calvin Dutji di Agata. Tulisan2 telah dibajakakan
oleh pikak Hisi Katalik dan petugas penerintah [KPS]. Djuga sebuh tulisan
jang dibawakan oleh Jacques Hoogerbrugg terkait dengan usulan Asmat saat ini
dan beberapa tulisan jang dibawakan oleh Dr. Gottfried Lang, Professor Anthropo-
logy dari Universitas Colorado, USA jang mengosmmukan mengenai pembangunan setja-
ra teoritis. Isi yang mengandung penelitian mengenai keprosesi kajian jang telah
diausahakan oleh Hisi Katalik di Asmat.

Jema tulisan pada seminar dan djuga keputusan hasil diskusi akan disu-
mat dalam penerbitan KAB ilang jang akan datang.
Under the auspices of the Institute for Anthropology, a seminar dealing with problems of development in Anmat was held last May at the Catholic Crosier Mission, Agats. Papers were read by both mission and government personnel of Anmat woodcarving and a theoretical paper on development by Dr. Gottfried Lang, Professor of Anthropology from the University of Colorado, U.S.A. who has Mission in Anmat.

The papers read at the seminars as well as summary statements of the discussion will comprise the next issue of the IRIAN.

Children's Art Competition

An art competition for primary school children was organised by the University with the cooperation of the Education Department and UNESCO. Over 800 entries were received from virtually all parts of the Province. Out of the drawings were placed on display at the University during the symposium, prizes, the cost of which was met by UNESCO, were awarded. It is hoped that this competition will become an annual event.

University Symposium Papers

It is hoped that a grant from UNESCO will make it possible to publish the papers read at the symposium on Educational Change in West Irian. These should write to Mrs. M. Hasan, University of Tjondrawasih.

Appeal for Archaeological Data

Anyone obtaining information on potential archaeological sites anywhere in West Irian is asked to write to Dr. Bob Mitton, c/o the Institute for Anthropology. Dr. Mitton has consented to organize a central file of such data on behalf of the Institute. In writing the exact location of the site and general characteristics should be noted.

Barangkali yang mendapatkan penerangan pegara seorang ahli ilmu purba-raka-le bertempat disana sadja di Irian Barat dijinta menulis pada Dr. Bob Mitton mustа putang pengumpulan data untuk Institute. Dalam menulis harap ditunjunkan bidang yang tepat dan tjiirit umum.

The printing of the IRIAN by the Suram Institute for Linguistics represents a decided step forward for this issue. Lack of finances and poor typing facilities still pose immense problems, but with the printing of this and future issues a major hurdle has been overcome and there is reason to hope that the IRIAN will endure.

It is disappointing to report that although the number of subscribers to the bulletin has steadily built up, few American or Dutch scholars who have carried out field work in West Irian during earlier times have responded to appeals soliciting articles. The orientation of the bulletin is practical rather than theoretical. However, a number of articles from scholars with research experience in West Irian would not only lead much needed status to the publication at this early point in its history, but also would be a besoin onstration of the part of former researchers of an enduring concern for the welfare of the indigenous peoples of the Province.

Research in virtually all fields is sorely needed in West Irian. But there is a clear need also to make existing data available to the authorities—particularly that which may have a bearing on policy decisions. It is to be expected that in their desire to achieve rapid social and economic development among the peoples of West Irian those charged with the responsibility for obtaining results will display impatience at what may appear to be obstinacy or an unwillingness to cooperate, but which, in fact, may stem from deep-rooted and quite reasonable cultural impediments to change. There is, after all, every reason why the Dani may be reluctant to abandon their traditional dwelling—a unique adaptation to local social and physical factors—in favour of another type of dwelling and compound arrangements, just as there are many reasons why numbers of the Shagl or any other inland or coastal people, for that matter, may display an understandable reluctance to relocate their villages along a road-side—a step while making for easier contact and administration may well, through confusion over land rights and the kindling of old emmht, create more problems than it solves.

Perhaps it is as well at this point to clarify publication policy. On the one hand, we wish to make known what is taking place in terms of research, development and change or where, in the opinion of contributors, the most pressing developmental needs lie. In this latter connection articles advocating certain policies and programmes are equally welcome as those describing on-going programmes or appraising programmes that have already terminated. On the other hand, we wish to disseminate ethnographic data of all kinds on the cultures of West Irian. If we are to succeed in this regard we must have the cooperation of those scholars who have carried out research in West Irian as well as that of missionaries and government personnel now in the Province who are in possession of valuable data.

A serious shortcoming in the issues of the IRIAN thus far produced is the lack of articles by Indonesian contributors. There have been assurances from several quarters that the bulletin has been well received but clearly it is undesirable if the principal support in terms of published material must
berdak sedak Kepala SPS/FPK Blak selana 14 bulan dan Kepala SPS Negeri Dja-
japura dari thn.1964 s/d Febr.1969. Kemenian bekerjas pada Inspeksi Pendidi-
kan Guru. Sedak Oktober 1971 diangkat Kepala Pusdok Pembinaan Pendidikan Gu-

Jermias M'Bait :

An Asmattar, Jermias M'Bait has been a teacher of religion and also
associated with the FUNDI handicraft project. He is a previous contributor
to the IRIAN.

Beliau adalah seorang Asmattar, Jermias M'Bait mendjadi sebagai guru
agama dan djuga berhubungan dengan project kerjadian tangan FUNDI. Beliau
adalah pembantu utama dari IRIAN.

B.D. Milton :

R.D. Milton, an Australian, completed his studies in Geography at Mo-
naw University, Victoria, Australia in 1970 after spending a year in Papua
New Guinea where he hellassed in Hellass in the past. He his first to
West Irian with Kenneecott Mining Company which was exploring a large lease
in the eastern highlands. He has now returned to West Irian with Newmont
Mining Company which will be working in the Bilein and Zmaratola regions.

R.D. Milton menjelesaksan studiin dalam ilmu Bumi pada Monaw Univer-
sity, Victoria, Australia pada thn.1970. selana tinggal di Papua New Guinea
selana setahun dimana minatnya terhadap Hellass in per-tama diokobakan.Beliau
datang mula2 di Irian Barat dengan Kenneecott Mining Company (Pusaran Per-
tambangan) yang sedak menjeliksai suatu daerah yang luas dan menguntun.
Sekaran ia telah kembali diderah Bilein dan Emerati.

Larry L. Naylor :

Larry Naylor is a graduate student in Anthropology from Southern
Illinois University, USA. He holds an MA in History and before commencing
graduate study in Anthropology was, for a number of years, a high school
teacher of History. He has had field work experience in Ecuador. It is antic-
peted that his present field work in the Bilein Valley will lead to a doctor-
ate in Anthropology.

Larry Naylor seorang mahasiswa Anthropology pada Universitas Southern
Illinois. Beliau mengaji gelar garajanda (MA) dalam bidan sodjarah dan
selahan beliau memilai studin dalam bidan Anthropologi selana beberapa ta-
nun ia telah mendjadi guru sodjarah selana beberapa tahan dalam sekelah Landjutan
Asa. Beliau telah banjak pengalaman bekerjas di Ecuador.Ini adalah suatu peng
hargaa bahwa dalam bidan pederjasanja sekarang di Leuk Bilein akan
mensegup peranan utama dalam gelar doctoranja dalam bidang Antropologi.

Paraud Suparlan:

Drs. Suparlan, an anthropologist and former staff member of the Institute gained his MA from the University of Indonesia. He is currently studying for a Ph.D. in Anthropology at Northern Illinois University, USA.

Drs. Suparlan adalah seorang Antropolog yang memperoleh gelar sarjana pada Universitas Indonesia. Kini beliau sedang melanjutkan pendidikan-nya untuk memperoleh gelar doctor (Ph.D.) dalam Antropologi pada Northern Illinois University, USA.

Manuscripts:

The editors of the IRIAN welcome manuscripts of a theoretical or practical nature that directly or indirectly bear on West Irian. Manuscripts should be typed, double space and may be submitted in either Indonesian or English. If articles are submitted in Dutch the editors will endeavour to have the material translated into one of the above languages. Two copies of articles are required. Each article must be accompanied by an abstract of 200-400 words which, if possible, should be in the language other than that in which the manuscript is written. Articles should be accompanied by a brief biographical note on the author.

Note:

Pandangan2 yang dinjatakan dalam artikel apa adanya dalam IRIAN ini adalah pendapat pengarang2 dan tidak perlu mewakili pendangan dari Pemerintah Indonesia atau Pembeas2 Pemerintah setempat. Para penerbit dari Bulletin ini dan Universitas Tjenderawa2h tidak menerima tanggung jawab atas pertanjan2 yang mungkin muncul dalam suatu artikel.

The views expressed in any material produced in the IRIAN are the authors' and do not necessarily represent those of the Government of Indonesia or local government authorities. The editors of the IRIAN and the University of Tjenderawa2h accept no responsibility for statements that may appear in any article.

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