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The editor expresses his gratitude to the following persons who have made financial contributions for support of the Bulletin: Tim Babcock, Ian D. Black, Edward and Jocelyn Booth, Jonathan D. Cole, Sin-Fong Han, Barbara Harrisson, John MacDougall, Alastair Morrison, Carsten and Inge Schneider, Virginia Tomasek, T. Watabe, and Inger Wulff.

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Together with this issue is included a list of Fellows of the Borneo Research Council. If the name of any Fellow has been omitted, please notify us and we shall publish an addendum to accompany the next issue.

It is with regret that we acknowledge the termination of Donald E. Brown's editorship of the Bulletin. On behalf of all readers I express our appreciation for the excellent job he did.

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THE BORNEO RESEARCH COUNCIL
approximately), and Long Dian (population 50 approximately). In the origin. bng time ago they crossed the border into Kalimantan, in the Pangah (population 60+), Long Wat (population 140 approximately), Long Lisum people of Kalimantan. They refer to Sungai Busang, a tributary Lawan (population 60 approximately), Long Jaik (population 50 of the Balui, close to the border with Kalimantan, as their place of origin.

The Penan Gang form the largest group, half the population of all the Penan in Belaga. They live in four different rivers: At Long Urun and in Kalimantan, in Sungai Kihan, a tributary of the Iwan, and are now known as Punan Busang Kihan. They used to be quite numerous, but many were decimated by epidemic.

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The Penan Lusong used to be called Penan Pejawe' as they were then living in the Pejawa River, a tributary of the Bungan. Later migration of two groups of Penan Lusong shows the change of the names they took. Anyway, the then Penan Pejawe' moved into the Linau Valley when the Kayan left the area to migrate to the Param about 100 years ago. Before moving into the Linau Valley, they used to have frequent contact with government officials at Lusong Laku, a strategic barter trade location in the Linau. Around 1940 a small temporary kubo (fort) was erected there where government business and barter trade between the nomads and their settled neighbours was done. Regular meetings in this way induced the Penan Pejawe' to settle at Lusong Laku; from then on they became known as Penan Lusong. During the Japanese Occupation a group of seven families moved to the Balui. They roamed about in the talun, which in Kayan means secondary forest, that they remained at Lusong Laku while another group moved up the Linau to settle at Long Kajang and would probably take the name of Penan Kajang; the group of Penan Apo that settled with the Penan Lusong since 1964 also moved to Long Tanyit, above Long Kajang.

The Penan Apo used to live in the Usun Apau plateau. In 1934 Mr. Saddam (then District Officer, Iban) met them and persuaded them to move downriver into the Linau or the Danum, but they told the District Officer that they would prefer to stay in the Apau where wild animals and wild sago were in abundance. However, some years later they moved into the Pejawa' River, a tributary of the Danum, and stayed there for a number of years. From there they moved into the Sungai Keluan, a downriver tributary of the Linau. After about two years in that area they split into two groups: one group moved to the Tegulang and another to the Linau and settled with the Penan Lusong for a number of years before moving again to their present settlement at Long Tanyit.

The Penan still spend a considerable amount of their time hunting wild animals for food - wildlife is still in abundance in their area. Although they are now cultivating padi, they still depend very much on wild sago which previously was their staple food.

All the Penan have settled in more or less permanent settlements and cultivate hill padi, though their farms are not of the same size as those found among their settled neighbours. They were induced to settle down mainly through barter trade activities and religious conversion to adat Bungan and more recently Christianity. Government encouragement then toward the settled life; in fact, government has started to help them resettle in proper longhouses and cultivate better and larger farms. But government assistance is limited to the fact that presently it is not known precisely what in actual fact ought to be done to improve them.

The process of adaptation to the settled life will probably undergo slow speed rate since such adaptation entails changes of attitudes, thoughts, values and behaviours.

The Penan produce for sale rattan mats and baskets; they are also skilled blacksmiths and make good pecang (popular multi-purpose working knife). All of these articles are of high quality and are in popular demand by their settled neighbours and the Chinese. These articles fetch good prices.

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The Kelabit live in the high mountains of Borneo where they represent one of the smallest (3200 to 3500 habitants in 1974) among the hundreds of tribes of the island. Their territory, which is protected since they agreed not to be headhunters anymore (one has to ask for special permit to visit them), is located on the chain of high summits forming a natural border between the Malaysian and the Indonesian part of the island, about 300 to 350 kilometers from the North Coast bordered by the China Sea the way a bird flies. Their land is between the Big Murud (2700 meters around) to the east and the Small Murud (around 2000 meters) to the west, grossly about 30 kilometers long for 55 kilometers large.

The Kelabit have a community life. Each village is formed with only one house built very long (often over 100 meters) resting on high stilts (over 20 meters) where there is an average of 10 to 15 families. Their long houses are situated in beautiful clearings found in the deep jungle. Often they are several walking days distance from each other. For example, the long house of Long Lellang is four walking days from Bareo, although the distance is only 35 kilometers the way a bird flies.

The capital, called Bareo, is represented by an exceptional group of five long houses, less than 10 minutes walk from each other, in the so-called "plain of Bareo." The old Kelabit people call it Lam Ba'a, which means "in the water." It is a small valley that was made into wet rice fields by the natives.

Every 20 years the Kelabit abandon their long house to make another in another clearing. At present there are 27 long houses in their domain, of which ten have been abandoned during the last ten years. Of the 17 left, a dozen have been rebuilt during the last ten years, especially around Bareo where the Kelabit are growing more and more wet rice. Yet the Kelabit majority grows hill rice by burning the forest. They are excellent agriculturists and get the best from their soil.

They have rice (17 kinds in Long Lellang), maize (six kinds), tapioca and manioc, pineapple, pumpkin, cucumber, beans, ginger, red pepper, sugar cane, onions, garlic, different sorts of vegetables and also coffee. There is plenty of fruits like: several kinds of bananas, orange and lemon, pomelo, rambutan, papaya, durian, jack fruit, buah kiran, coconuts, and also delicious wild fruits. They also eat the untended jungle essences such as bamboo shoots, palm hearts, and mushrooms.

There is plenty of game in the forest like wild boars, pelanduk and kijang (varieties of deer), payo (kind of reindeer), payu (kind of black panther), bruang (honey bear), not to speak of pheasants and other birds.

Fishing is unlimited, including the small pakong and the biggern carnivorous kalaban tortoises and the delicious todayo and kabuk iguanas.

The Kelabit also grow tobacco.
Their abundant and varied food, with the help of a healthful climate, not in daytime, cold at night (the optimum temperature is 60° at midday in the sun and 20° at midnight after several days without rain - the average is 57° to 58° at midday and 25° at midnight), have made the Kelabit a powerful race, famed for their strength as well as for their skillfulness, their brains and their wealth.

Their land also provides a good clay for their pottery at Pamada, and they get their salt, the most appreciated product for the jungle people, out of salted sources situated on their territory. That salt called Todho' is very prized and since the old age has always been their exchange money to get the iron ore detained by their neighbours in Indonesia.

To my knowledge, the Kelabit are the only tribe of Sarawak to be self-sufficient. If one adds to that the difficult way to get to their place, one understands that the Kelabit have always had an advantageous situation, especially during the time of head-hunting.

There are quite a number of Kelabit customs which differ from their neighbours. There is one especially fascinating. It is the custom about the traditional namings.

Of the majority of the Borneo tribes, the name of an adult shows his family situation by progressive addition of certain words explaining that he is, for example: father, widow, having lost his first son, or his first daughter, grandfather, etc.

Because of the Kelabit custom, the adult's name is completely changed, and every time a man or a woman changes their family situation, they receive a new name whose originality is that that name is always chosen according to one of their characteristics. For example:

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- pun nephro = great talkative
- silukh bala = the one who carries on novelties
- bala raja = strong man
- petun lumulun = the one whose company is in great demand
- bala lat pu'un = known from the very beginning

During his first year, the child receives a name without signification, chosen among about fifty or sixty of them. (Note: There are two types of names, for noble and for common people. As soon as they become a father or a mother, a new name is given to them. One does not change his name for a wedding. All the village gathers together for a big irau (feast) offered by the honored family who gives buffaloes, pigs, chickens, rice and rice alcohol. During that party they all together choose a name for the child, then a new name for the parents, great-grandparents, grandparents, and also, if they wish it, for the collateral relatives. But then these relatives have to share the cost of the irau with the honored family.

Everyone receives a name expressing one of his good or bad qualities, except the mother who is called sinah (mother), followed by the name given to her husband. Only when she becomes a grandmother will she receive a name on her own.

There is a general law: all the names chosen for the great-grandparents are preceded by pun, the names chosen for the grandparents start by tepu, and the names for the parents by tama for the father and sinah for the mother. One can take these titles as generation-markers.

The chosen names, always two of them, have a significance depending on how they follow each other. For example: bala raja means strong man and raja bala means big chief.

These generation-markers are altered by whether one is speaking directly to the person or talking about him, and according to whether the person is a relative or a stranger.

For example, a child will call his own grandparents as well as all the other people of the same generation tepu. If he is talking about his own grandparents he will still say tepu, only followed by the first part of his grandparents' names if he wishes to make a difference between his grandfather and his grandmother. If he speaks with a friend about his friend's grandparents, he will say tapum, only followed by the first part of their name if he needs to differentiate them. If he speaks about an old person who is related to none of them, he will say tepu followed by both their names.

Among themselves grandparents call each other pabu (if their first grandchild is a boy) and pamu (if it is a girl). Their own children will call them the same way and all the people of their generation. Talking about each other the grandparents will follow pabu and pamu by the first part of their name, but their own children will follow pabu and pamu by both the parts of their name.

There is an important exception to the last rule concerning a very well-known man or woman. One will follow pabu or pamu by the first part of his name as a sign of distinction.

Fathers and mothers are called tama and sinah by all the children of the same generation as their own children. If their own children speak about them they will say tama or sinah only, but speaking about their interlocutor's parents they will say tama or sinah depending on the sentence, or catama, catamin. If they are speaking about the parents of another child, they will add both their names; for example, tama raja maran or sinah raja maran.

Between themselves the parents call each other tamabu and sinabu (if the first child is a boy) or tany and sinanu (if it is a girl). That is also the way their own fathers and mothers will call them, and their brothers and sisters too, like also the people of the same generation. It is also the way the father will call the mother (his wife). Talking about each other, they will add the first part of their name only.
There is an old custom but very seldom used now concerning the parents who have lost their first child. If it was a boy, the father will be called tanira, the mother sanira. If it was a girl, the parents will be called sanuddhung and sinaddhunq. The children are always called by their original name.

There is a special form of manners and tenderness used when talking directly to someone. For example: speaking about their grandchildren the old people will say wapun, but speaking directly to them, they will say po'.

Speaking about the children, the parents will say ama, but talking directly to them, they will say abu' (son) or mu' (daughter).

A common expression used during the iray is ama', bu' (children, grandchildren), or also abu', mu' (for a couple).

A very subtle and polite way of speaking, which not too many people can use, would make one say:

- tetana tamam (the father of your father)
- tetana samam (the father of your mother)
- tasinah tamam (the mother of your father)
- tasinah samam (the mother of your mother)

rather than adding one or both the names of the implicated people.

The Kelabit rules make it very impolite to pronounce the name of anyone if it can be avoided. But as many people do not know how to speak in a very fine way, they will rather say:

"That old man sitting there," or
"That woman making a basket there."

Speaking about their own parents, the children will say:

"That man there is busy," or
"That woman there asked me to go collect firewood," rather than using tama or sinah.

Following the same habit, the Kelabit never give their own name when meeting a stranger. They will rather give another name; but nowadays they have mostly abandoned that custom.

The Kelabit call brother and sister kananak. The oldest brother or the oldest sister is kananak suk raya.

The cousins are called dangakanid. The first degree cousins are dangakanid suk ka addha.

The step parents are dangaja'.
THE DISTRIBUTION OF SECONDARY TREATMENT OF THE DEAD IN CENTRAL NORTH BORNEO

Peter Metcalf
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In the course of recent field work among the Berawan of Baram District, Sarawak, a search for their closest linguistic connections brought into focus a string of related groups distributed in an arc across northern Sarawak. It so happens that these same peoples are the ones who traditionally practiced secondary treatment of the dead. It seems that they represent a cultural substratum which predates the arrival of the Kayan and Kenyah in the area.

This note outlines the present distribution of these peoples. It is an abbreviated version of an article that will appear elsewhere, and which will include an account of the historical events that caused the culture complex to become submerged. This summary is intended to make the material available more rapidly than is possible in other journals.

The Berawan

The Berawan number about 1600 souls, in four main longhouse communities, two in the Tinjar and two in the Tutoh (see map). In the census and in local popular wisdom, they are classified as a subgroup of the Kenyah. At first sight this seems sensible, given the known heterogeneity of the latter. But a closer inspection reveals differences of language and culture that make it impossible to stretch the cover term Kenyah to accommodate the Berawan. The search for their real cultural affiliations began with an examination of the linguistic situation. Luckily, systematic linguistic fieldwork has recently been carried out in the Baram District by Robert Blust (1972), and a recent survey by Al Hudson (1974) enables us to carry the search south into Third Division and north into Fifth Division.

The lower Baram language family

As one might expect, the most immediate linguistic relatives of the Berawan are found nearby. Blust distinguishes a distinct family of mwer Baram languages that comprise the four Berawan isolots (Long Jegan, Long Teru, Belait, and Long Terawan) plus: Long Tutoh, Narom (spoken in kampong Narom near Marudi), Bukong (spoken at a village near Beluru in the Bakong River), Dali’ (spoken at a village near Siboi), Mit’ (spoken in several small kampong close to Miri town), Belait (kampong close to Kuala Belait), Tutong (kampong near Tutong), and finally Lelak. Lelak is the language of the original settlers of Long Teru, but it has almost disappeared now because of heavy Berawan migration into the community. Another language, Lemiting, was spoken by a small group of the same name early in the century, but has now become extinct or assimilated to some other group.

For historical reasons having to do with events in the Baram in the latter half of the last century, most of these communities have now adopted Islam.

Consequently, following the usual practice in Sarawak, they are classified as Malays, and they have in general adopted Malay ways. Only the Berawan, the Long Tutuh folk, and the remnant of the Lelak still adhere to an orang ulu (“upriver people”) lifestyle. As we have seen, they have been subsumed under the category Kenyah, simply as a matter of convenience. Thus, a pre-existing culture complex in the lower Baram has become submerged. It is interesting to note that when Charles Hose was living in and writing about the Baram, it was much easier to discern a separate group of downriver tribes, as he clearly does in several of his writings (e.g. 1892) and this was due, on the fact that the conversions to Islam had only recently occurred. The complex has no name that is in current use, but an old name, constructed in the Kenyah style, is still heard occasionally: Lepo Pu’un. Lepo means roughly a nation, Pu’un is derived from the verb to own (Berawan Long Teru: puwong), so that the name implies something like “the original owners of the land.”
Many cultural features demarcate the Berawan from their Kenyah neighbors: to any other groups. Kenyah groups, residence within the longhouse is structured by a firm rule. In fact, it is a feature of each of the ethnic groups of the nulang arc. Berawan do not have the elaborate naming ceremonies (pusau) common to all other groups. Without further research, we cannot tell whether names one hesitates to make up new ones. It is convenient simply to call them the people of the nulang arc.

One other linguistic relative to the south deserves special mention, the Melanau. Berawan cultural links to the Melanau are less obvious, probably because of their physical remoteness. What contacts can be traced are evidently via the Kajang, who have sometimes been called the "inland Melanau."

**Links to the south**

Hudson's classification also notes the linguistic unity of the Lower Baran isolescents. At the next taxonomic level he groups them with languages spoken to the south in Third division. Of these the closest geographically to the Berawan is Punan Bah. Until shortly before the Second World War, the Long Jegan Berawan community had its longhouse at Long Tisan, further up the Tinjar. From there an easy route led to the Tekan stream in the headwaters of the Kemena River, where Punan Bah farmhouses were located. Another branch of the Kemenca, the Jelalong, also contained Punan Bah folk, and a track from there gave easy access into the Belaga. Thus, the Punan Bah formed an intermediary group between the Berawan and the Kajang of the Belaga, and evidence of the link is easy to find in Berawan genealogies, stories and rituals. Nor are we surprised to find that the important Kajang communities of the Belaga, the Kejaman, Sekapan, and Lahahan, are also linguistically related to the Berawan, at the same taxonomic level as the Punan Bah.

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**Links to the north**

Berawan linguistic affiliations to the north are less easy to discern. Berawan at Long Terawan in the Tutuh River claim that their language is close to Tring, a language spoken by a tribe that once occupied much of the Tutuh and Limbang rivers. But this similarity may be the result of a mixing of the two languages over the past hundred years. The Tring were annihilated in warfare in the second half of the last century, and a remnant allied itself with the Berawan. Since then they have been largely assimilated into the Long Terawan community.

Hudson's classification does not indicate a close link between Tring and the Lower Baran isolates. He contrasts the two at the same taxonomic level as Kenyah and Berawan. Without further research, we cannot tell whether Berawan is more closely related to Tring or Kenyah, but I hypothesize the former for reasons that will be clear in a moment. What is definite is that Tring is closely related to the Lun Bawang and Lun Dayeh languages spoken in the Trusan River, and to Kelabit spoken in the plateau at the head of the Baram River.

The Nulang arc

It is thus possible to discern a chain of linguistic connections extending in an arc across northern Sarawak. But is there any cultural distinctiveness that parallels this set of linguistic links? There is: the practice of secondary treatment of the dead.

Many cultural features demarcate the Berawan from their Kenyah neighbors. Berawan do not have the elaborate naming ceremonies (pusau) common to all Kenyah groups, residence within the longhouse is structured by a firm rule of uxorilocality unlike the Kenyah, Berawan chiefs are less powerful than Kenyah ones, and their religions are different on many points. But one item stands out above all others. Rites of secondary treatment of the dead are the most important ceremonies of the Berawan people; Kenyah do not have such rites, claim they never have had, and express disgust when they are described to them.

A word on terminology is necessary here. Secondary burial is the most familiar term for the mortuary practices that I refer to, but the term seems inappropriate here, since Berawan do not typically bury corpses at all. The phrase secondary disposal of the dead and secondary treatment of the dead, while accurate, are clumsy. I have preferred therefore to employ the Berawan word nulang, which in closely cognate form is found in several other languages in the area. It is also a cognate of tulang, a bone or bones.

Unfortunately, the material in print on nulang rituals in north Borneo is woefully inadequate, and the opportunity to do even salvage research is rapidly slipping away. Nevertheless, there are enough references in print to make it clear that all the groups that we previously noted were linguistically related to the Berawan also traditionally practiced nulang.

For compactness of presentation, I will simply list some of these references here. For the Kelabit: Harrison 1962: 10, for the Lun Bawang and Lun Dayeh: Ricketts 1894, for the Tring: Moultton 1912, for the lower Baran people: Hose 1893: 172, for the Punan Baha: Clayre 1972, for the Kajang: Thomas 1971, and for the Melanau: Jamun 1949. The only community still practicing these rites is the Berawan house at Long Tisam, and they are described in Metcalfe 1975.

The distribution of peoples in northern Sarawak who traditionally practiced nulang is shown in the accompanying map. Excluding the Melanau, it has the form of an arc, beginning in the Belaga, curving north through the lower Baran and into the Limbang and Trusan, and ending in the Kelabit highlands. I refer to this distribution as the nulang arc. No cover term is available for the tribes dotted along it, and amid such a welter of names one hesitates to make up new ones. It is convenient simply to call them the people of the nulang arc.

The Kajang, Sekapan, and Punan Baha, of the upper Rajang area, are classified in the census as Melanau, which does no violence to the facts, but does disguise the ethological connections to the north. The lower Baran peoples are now, as we have seen, parcelled up into "Kenyah" and "Malay." The Lun Bawang and Lun are called "Murut," both in the census and in popular usage, and this is completely inaccurate. The Murut proper speak an exo-Bornean language unrelated to Lun Bawang or Lun Dayeh. Only the Kelabit seem well served by their name. It is a true autonym, and they are classified independently in the census. The only fault with this independence of classification is that it makes the Kelabit seem too singular: marooned in the middle of Borneo, apparently without affiliations to any other groups.

In fact, it is a feature of each of the ethnic groups of the nulang arc that they appear miniscule and freakish when viewed in a parochial context.
It is only when north Sarawak is viewed as a whole that their occurrence makes sense. They are the elements of a submerged complex which taxonomically can be contrasted with the Kayan and Kenyah. It is not my purpose to suggest revisions in the classification of the national census. Such changes would be pedantic, since the categories of the census, by and large, reflect modern political and social realities. The significance is ethnographic.

The people of the nulang arc represent an ancient cultural substratum in north Borneo. All the other ethnic groups and cultural influences that now dominate them are extraneous. Their antiquity is perhaps comparable to that of the Ngaju of southern Borneo, who are well known through the writing of Schrader and others. The Ngaju also practice rites of secondary treatment of the dead, so that this culture trait emerges clearly as characteristic of the most ancient cultural traditions of Borneo. The archaeological record, incomplete as it is, supports this conclusion.

Perhaps there is also something to be learned from the shape of the nulang arc. There is no obvious ecological reason for this strip-like distribution of related groups. We would prima facie expect a more circular shape, and that is what is produced if we reconstruct a previous distribution based upon the migration stories of the Berawan and others.

The Berawan and Long Tutoh folk have traditions of origin from the Usan Apau. The Lelak and other lower Saraw peoples do not. The Kejaman and Sekapan tell of a folk hero named Tagau who led all of the Kejaman folk out of the Linau River, which lies just to the south of the Usan Apau (Clayre 1971). Utilizing these clues, we may hypothesize that at some time before the arrival of the Kayan and Kenyah the indigenous inhabitants of the area were distributed more evenly across northern Sarawak. The hypothesis ought to be testable by archaeological excavation. The presence of secondary burial practices should be deducible from excavations and such a find in the Usan Apau would validate a pre-Kenyah occupation, presumably by ancestors of the Berawan and their cousins.

The present distribution is the result of migration down the major rivers that flow north, south, and west out of the Usan Apau. Since they radiate like spokes from a central hub, the result is a curvilinear distribution of peoples. We are left with the question of why those in the Usan Apau left it. The Berawan deny that they were displaced by the Kenyah. Population pressure may conceivably have started the move, though the Usan Apau is fertile and very large, but why would the area have been left deserted? There is no obvious explanation. The next wave of settlers in the Usan Apau, the Kenyah, likewise abandoned it and moved down the rivers toward the coast. Their motives are equally inscrutable.

Bibliography:
SOCIO-ECOLOGICAL SKETCH OF TWO SARAWAK LONGHOUSES

Dietrich Kühne

1. RUMAH KEJAMAN LASAH, Kapit District, Sarawak: Longhouse in extreme isolation.

(Position: 2° 46' N., 110° 34' E., along the Balui River, approximately 212 miles above Belaga, Kapit District, Third Division, Sarawak. Twenty-nine doors, three of them unoccupied. Population: 180. Time of investigation: October, 1970.)

Rumah Kejaman Lasah is a longhouse settlement having few contacts with the outer world and with a traditional life almost intact. It consists of two longhouses, one of which has eleven "doors" - identical with eleven households, the other 16 doors, including a small dependence. In between these are two bungalows stilted up like all autochthonous dwellings, one of which demonstrates by style, size and distance that it has some rank being the headman's house. About 200 yards further eastward there is, for some years, a small school and a teacher's house.

With the exception of the teacher, who is Iban (Sea Dayak), all inhabitants of the village are Kejaman, belonging to a very small, aristocratically organized sub-group of the Melanau. Nowadays the latter are settled along the coastal region between Oya and Mukah, with their connections anymore, yet people still remember. Tradition, told by the headman, also knows of old relations with Indonesian Kalimantan and of a kingdom stretching halfway down the Rajang before it was smashed by the Brooke Administration.

Symbolic of past glory is the grand ornamentation of two enormous tomb poles overgrown by virgin jungle. Meanwhile, for some generations the Rumah Kejaman Lasah still operates its self-sufficient economy as most of the longhouses at the Upper Rajang do. The basic crop is hill padi "all work" to be done by 187 fictitious persons was actually performed by people still remember. Tradition, told by the headman, also knows of old relations with Indonesian Kalimantan and of a kingdom stretching halfway down the Rajang before it was smashed by the Brooke Administration.

Symbolic of past glory is the grand ornamentation of two enormous tomb poles overgrown by virgin jungle. Meanwhile, for some generations the Rumah Kejaman Lasah still operates its self-sufficient economy as most of the longhouses at the Upper Rajang do. The basic crop is hill padi "all work" to be done by 187 fictitious persons was actually performed by people still remember. Tradition, told by the headman, also knows of old relations with Indonesian Kalimantan and of a kingdom stretching halfway down the Rajang before it was smashed by the Brooke Administration.

The main link to the outer world is Belaga, the last bazaar post at the Upper Rajang. Apart from a few Chinese shops, there are the Subdistrict Office, the Post Office, and the upper grades of the Primary School.

Beyond the Chinese and the indigenous population live a small colony of Brunei Malays, who formerly carried on inland trade before the Chinese took over. The latter now maintain a fairly regular freight-boat-service to Kapit, the district town, located two days' journey downstream behind some series of rapids. Furthermore, Kapit can be reached twice weekly by a 40 minute flight. There are no road connections, and the Kejaman hardly ever undertake a canoe trip to Belaga unless combining official matters with some shopping. In such cases the stay at the bazaar may take a few days, a welcome occasion for heavy drinking.

Rumah Kejaman Lasah still operates its self-sufficient economy as most of the longhouses at the Upper Rajang do. The basic crop is hill padi grown in shifting cultivation (ladang), completed by a broad variety of other crops, i.e., maize, cucumbers, pumpkins, beans, tapioca, etc., but also bananas, rambutan, betel and lillipe nuts, coffee, tobacco and sugar cane almost entirely for own consumption. Pigs and poultry provide the required protein. So do hunting and fishing, for which every household has at least one boat and more than half of all the households have fire-weapons. Also gathering of jungle produce, especially rattan, is part of the repertoire of the Kejaman economy.

Quite typically none of the households, except one, has any income from marketing its products though almost all of them are growing rubber. Yet rubber patches are so aged and prious so bad that no one cared for tapping the trees in recent years.

"Specialists" other than the teacher do not yet exist here. However, more than half of all the households have occasional incomes from wage labor, particularly from wood-cutting and boat-building, although the actual amounts are often not known. According to direct interviews information, the whole village had a monetary income of approximately M$3,300 in 1969, of which M$2,040 alone were the teacher's salary.

Unstated incomes hardly went beyond M$500 in all.

By all means, considering the alcoholic orgies at the bazaar, the general shortage of cash is not regrettable. And in order to cover the requirements for salt, kerosene, fire-arm ammunition and cigarettes, the credits are sufficient at any rate. Besides, the Kejaman are not just anxious for industrial goods. If at all, then owning a sewing machine is of some meaning, combining usefulness with prestige. Bicycles are not in demand as there is no use for them. Four outboard engines are considered luxury items. Even two transistor radios rouse little ambition to copy the happy owners because all neighbors are partakers of the program, willingly or not.

The local work force pattern was as follows:

<table>
<thead>
<tr>
<th>Persons</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persons at working age (12 years and above)</td>
<td>115</td>
</tr>
<tr>
<td>of these</td>
<td>76</td>
</tr>
<tr>
<td>of which</td>
<td>44</td>
</tr>
<tr>
<td>of these</td>
<td>39</td>
</tr>
<tr>
<td>of whom</td>
<td>159</td>
</tr>
<tr>
<td>of whom</td>
<td>35</td>
</tr>
<tr>
<td>of whom</td>
<td>1</td>
</tr>
<tr>
<td>of whom</td>
<td>27</td>
</tr>
<tr>
<td>further teacher</td>
<td>1</td>
</tr>
<tr>
<td>further wage laborers</td>
<td>27</td>
</tr>
<tr>
<td>ALL WORK</td>
<td>187</td>
</tr>
</tbody>
</table>

The number of 115 persons at working age of 12 years and above was practically reduced by a few pupils and a few old people. Yet all work in the traditional self-sufficient economy was carried out by a larger group, viz. 159 persons. Furthermore, there were 28 wage earners. Since foreign labor does not exist, "all work" to be done by 187 fictitious persons was actually performed by only those 115 individuals who were available for it at best. Which means that a lot of people of both sexes had two or more economic functions. In
other words, unemployment or underemployment is a problem still unknown on this level of economy.

The effect, however, which the "revolution of rising expectations" initiated through school attendance - will have on the future traditional way of life remains to be seen. After all, more than two-thirds of a total of 31 youths between the ages of 7 and 18 are attending school, the lower age groups complete. Of course, the pupils have no need yet for complaining about an overwhelming flood of information, even if holidays apart from Sundays and feasts are unknown. The teacher is "untrained," qualified only by Secondary Form III. However, his pupils can shift to the Upper Primary grades at Belaga, and later have the chance to advance to the Secondary level at Kapit, provided they achieve adequate results on their examinations. At any rate there is no doubt that the number of illiterates will quickly diminish. (At the time of enquiry 103 out of 108 adults were illiterate.)

For the time being, the impact of education and of the outside world as a whole have relatively little effect on population dynamics. Both natural factors - fertility and mortality - are still very high, especially infant mortality, as the following figures indicate:

**RUMAH KEJAMAN LASAH - POPULATION, BIRTHS, AND DEATHS 1960-1970**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population %</th>
<th>Births 60-70</th>
<th>Infant Mortality</th>
<th>Other Mortality</th>
<th>NATURAL INCREASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>154</td>
<td>95</td>
<td>30</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>1970</td>
<td>160</td>
<td>95</td>
<td>30</td>
<td>30</td>
<td>22.7</td>
</tr>
</tbody>
</table>

Fertility was exceptionally high according to the population of 1960 - it would have meant an increase of almost two-thirds if there were no counter-balance by high mortality. Indeed, every third child born between 1960 and 1970 was already dead at the time of enquiry and so was every other third person at that time. Nonetheless, a remarkable excess of births and deaths remains.

Migratory movements were quite considerable, too, as the following figures show:

**RUMAH KEJAMAN LASAH - POPULATION, IN- AND OUT-MIGRATION, 1960-1970**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>In-Migration</th>
<th>Out-Migration</th>
<th>Migration Loss %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>154</td>
<td>21</td>
<td>30</td>
<td>5.6</td>
</tr>
<tr>
<td>1970</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It seems that marriages into and out of the village community are the principal causes for this rather balanced result. Also the sex ratio is practically even: in 1970 there were 91 females of all age-groups against 89 males; in other words employment migrations did not visibly affect the population. The migration loss of 5.6 per cent seems, therefore, "accidental" rather than "subject to structure." At any rate, it had a compensatory effect:

**RUMAH KEJAMAN LASAH - POPULATION DYNAMICS 1960-1970**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Migration Loss %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>154</td>
<td>22.7</td>
</tr>
<tr>
<td>1970</td>
<td>160</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Obviously, local population growth is almost only half in comparison with that of the indigenous groups in general, which was 28.7 per cent for Sarawak at the same period. Theoretically, the village population would double in 59 instead of 36 years. So the demographic component can be considered as relatively stable as the whole traditional life pattern of the village is. And something similar can be said about the entire hinterland as long as there are no closer contacts with the outside world.

Characteristic for the relatively untouched traditional life pattern is also the attitude of women toward contraception. Out of 38 mothers consulted, there was not a single one using any kind of contraceptive (nor anyone expressing an opinion against it) -- 37 had no opinion at all, and only one, the headman's wife, said that contraceptives would be desirable.

Migration dynamics, too, fit fully into this scene. Primarily they reflect the old ambilocal marriage habits. Among settlements: women and men enter into the longhouse community as spouses, women and men leave it for the same reason.

Problems of soil exhaustion and low productivity stemming from over-population are less pressing than in other parts of Sarawak. Seventy-one per cent of the households considered rotation of their fields as normal. Twelve per cent cultivated their land in some parts for more than two years "because the soil is good." Only seventeen per cent operated a shortened rotation cycle.

II. RUMAH NYALA, Sibu Rural District, Sarawak: Longhouse in urban-marginal location.

(Position: 2° 21' N, 111° 51' E, near the Igan River, the eastern main arm of the Rejang delta; approximately 4.5 miles downstream from Sibit...
Due to this fact the whole employment pattern has changed. Hired labor and even some specialization in secondary and tertiary activities have to compensate the loss of self-sufficiency now. But the most remarkable phenomenon is that with the loss of self-sufficiency there occurs a drastic shrinking of employment volume.

**RUMAH NYALA - WORK FORCE PATTERN 1970**

<table>
<thead>
<tr>
<th>Persons at working age (12 years and above)</th>
<th>131</th>
<th>100.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>of these padi planters</td>
<td>80</td>
<td>61.1</td>
</tr>
<tr>
<td>of these hunters and fishermen</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>of these gatherers</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>ALL TRADITIONAL WORK</td>
<td>80</td>
<td>61.1</td>
</tr>
<tr>
<td>further lumbermen</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>further brick-workers</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td>further unskilled workers (coollies)</td>
<td>6</td>
<td>4.6</td>
</tr>
<tr>
<td>further carpenters</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>further shopkeepers</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>further cooks</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td>further midwives</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>further motorists (PMD)</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>further soldiers</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>further firemen (airport)</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>further teachers</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>further party officials</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>ALL WORK</td>
<td>105</td>
<td>80.2</td>
</tr>
</tbody>
</table>

In every respect a radical change, marked not only by reduction of the former broadly-based traditional economy to one-sidedness, but also by disentanglement and separation of the personal functions. There is no longer, with rare exception, a combination of two or more different activities per head. Consequently, the local work force volume falls below the 100 per cent limit! And this even with only one quarter of all functions receiving payment.

Of course, a situation like this not only holds the risks of increasing anarchy, but also has the pleasant side of a purchasing power unknown previously. On the other hand, there is already some consumption-pressure: 21 men are working outside the village, and it is not by sheer chance that the 14 bicycles, one motor-cycle, one motor-car and five outboard engines; totalling 21 means of transportation at Rumah Nyala, have become more or less indispensable. Here in the village, every second household has a radio, and two out of every three households possess the popular sewing machine, or the latest model. All this indicates growing dependence on industrial products, useful on one hand, on the other hand having the magic quality to strengthen the owners' self-confidence. Ope having got the taste for modern industrial consumption goods, demand extends to items like gas-cookers, steel furniture, and so on.

**Rumah Nyala** represents the other end of a broad scale of longhouse settlements with increasing outward contacts and growing interdependence from the standpoint of the former example. The location is only about 1.5 miles north of the Sibu urban area border. It can easily be reached by car within ten minutes from the city centre over good roads and by an additional quarter hour's walk through aging rubber plantations. Not far away is the airport which offers various jobs.

The place itself consists of two longhouses, also. One is Christianized, with 21 doors; the other "pagan," with seven doors. The latter is in perceptibly better condition in spite of the fact that missionaries obviously failed to make the occupants remove their head trophies of the olden days from their verandah. Both longhouses have their own tuai rumah (headman), yet - due to the egalitarian concept of the Tan (Sea Dayak), to which group the villagers belong without exception - they avoid any visible distance to which the Kejaman upper ranks gave so much importance, as it seemed. Here the headman is nothing but prime inter pares, living with the others under one roof. Nevertheless, there are already a number of households - 20 altogether - which have detached themselves from the close "apartment house" - shoulder-to-shoulder - touch and moved into single bungalows nearby. This may be a sign of over-population rather than of the opening of a new social gap, because it is much easier to erect a new single stilt-house from time to time than to extend that compact longhouse structure again and again. Perhaps the fact that a number of houses for other functions than dwelling sprang up around the longhouses may also have influenced the decision of some households to separate from the others.

The special-function units - a small common meeting hall, two shops, two diesel rice-mills run by cooperatives and replacing the traditional pounding, further a public water tank, some proper stables for pigs and fowl, and a few tool sheds - are phenomena unseen in the previous example. The Methodist church and elementary school with several grades, a little further away, are here almost taken for granted.

Hill-padi shifting cultivation is no part of the economy of the 44 households here. Due to its lowland riverine location, Rumah Nyala plants only wetland padi in a total area of 97.5 acres of sawah-land. All sawah patches are family owned, and so are the over-aged and presently unused rubber gardens. The place itself consists of two longhouses, also. One is Christianized, of these padi planters taking up another 265 acres further inland behind the longhouses. The whole variety of other crops, so characteristic for the self-subsistence economy in the former case, is completely absent here. Fruits and vegetables as well as various kinds of cheap canned food are available in the shops, also coffee, tobacco and sugar. Hunting and even fishing have been given up, not to mention gathering activities. Only every third longhouse has a boat (with the Kejaman every household had an average of two), and in the whole village there are no longer any fire-arms. In other words, the elementary basis of existence is almost entirely coming from one source only.

Hired labor and even some specialization in secondary and tertiary activities have to compensate the loss of self-sufficiency now. But the most remarkable phenomenon is that with the loss of self-sufficiency there occurs a drastic shrinking of employment volume.
Compared with the Kejaman village, this community has a quite considerable monetary income. Whilst the sale of agricultural products (i.e. surplus of rice) amounts to only M$ 180 annually, employment outside the village yields no less than M$ 40,650, which leads to a per-capita income nearly thirteen times higher than in the former case. But, of course, in reality the income distribution is extremely uneven. Naturally the main participants of new prosperity are only the households with one or two laborers commuting daily. Some wives receive monthly remittances from husbands permanently working away from home. Additional cash is coming in by some prostitution in Sibu, or in two cases, in the village immediately. The remaining 16 households have had to postpone their “rising expectations” for the present.

School attendance of the lower grades is practically complete. Out of 36 children, 37 between the ages of 7 and 12 attend the local school. Four of the 16 youths between 13 and 18 years continue education. Illiteracy among adults is considerably less than in the Kejaman village, where there were ninety-five per cent who could neither read nor write. Here we have only fifty-five per cent, to be exact 67 out of 115 persons. As in most cases where there are schools, knowledge of English is remarkably good also with adults. School-going children speak it fluently and fairly accentless. As with the whole life pattern, an enormous change has come about also with the population dynamics.

**RUMAH NYALA - POPULATION, BIRTHS AND DEATHS 1960-1970**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Births</th>
<th>Infant mortality, accidents</th>
<th>Other deaths</th>
<th>Natural increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>171</td>
<td>59</td>
<td>0.0 (1)</td>
<td>8</td>
<td>52</td>
</tr>
<tr>
<td>1960-1970</td>
<td>100.0</td>
<td>34.6</td>
<td>0.0 (1)</td>
<td>4.7 (1)</td>
<td>29.8</td>
</tr>
</tbody>
</table>

A sharp decline of mortality to less than five persons per thousand annually is a lower rate than in fully developed industrial societies. This, of course, is only possible in a “youthful” population: indeed, infant and toddler mortality during the whole decade was nil, with the result that 48.7 per cent of the total population were under 18 years (against forty per cent in Rumah Kejaman Lasah where the birth rate was nearly twice as high). Here natural increase in the dimension of roughly three per cent annually can already be called “explosive.”

In contrast to this, migration movements are surprisingly weak.

**RUMAH NYALA - POPULATION, IN- AND OUT-MIGRATION 1960-1970**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>In-Migration</th>
<th>Out-Migration</th>
<th>MIGRATION GAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>171</td>
<td>8</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>1960-1970</td>
<td>100.0</td>
<td>4.7</td>
<td>3.5</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Marriages lead to a small migratory gain which, however, does not change the situation in any significant way. Moreover, the small figures neither reveal an attempted relief from local “over-population,” nor show the proximity of Sibu to cause a special attraction. But the slight disparity of sexes (117 females of all ages against 107 males, which corresponds to a proportion of 109:100) may indicate slow transformation from a rural settlement to an itinerant workers’ village. The biggest attraction is in the oil fields of Miri-Kutong, and there is hardly an airplane from Sibu to Miri not carrying some Iban laborers from the nearby communities.

In view of the local population growth - as it has resulted in a natural increase plus migratory gain of thirty-one per cent within ten years - contraceptive measures are, of course, of special interest. Sixteen out of 28 mothers consulted were already practicing contraception, three considered it desirable, and only the remaining nine had no opinion. If this can be generalized - i.e., if knowledge and practice of contraceptive methods within and around larger centers already have a noticeable effect - there is some hope that public family-planning campaigns can close the gap between birth- and death-rates again, to which extent, however, the future will tell. It seems, at least, that there is no “ethno-cultural barrier” opposed to an “urban rationalization” of the size of families.

**III. SYNTHESIS**

The different characteristics of both settlements - Rumah Kejaman Lasah and Rumah Nyala - lead to the following conclusions. Economically the former, being self-sufficient mainly by rotating ladang systems, keeps reaching into multiple tasks within the primary production sphere, whilst the latter withdrew to sawah-monoculture, strongly supported by secondary and tertiary activities. Systematic market-cropping exists neither in any of the two local economies since the rubber gardens became unprofitable. Yet, through secondary and tertiary employment, monetary income is now an essential part of the economy of many households.

From the standpoint of organization this means a separation of household and working-place. The result is that while rumah Kejaman Lasah still guarantees “over-employment” by combining several productive functions per head, Rumah Nyala undergoes a drastic shrinking of the employment
As far as social development is concerned, there may be linked with the tendency toward a marginal urban "wender's village" -- tendencies toward proletarianization insofar as there is a withdrawal from self-subsistence. This does not necessarily mean economic or social descent and a shift-off into the slums. On the contrary, with higher incomes of households, depending on the number of people employed outside and on their specialization, there is a raise not only in consumptive demand but also in social prestige breaking the formerly equal levels of life. This means emancipation, at any rate for the moment, and the households following change slowest are participating least. Of course the present situation cannot prevent from future problems, but the problem of rising slums seems to come from another direction.

Doubtlessly the actual changes in population dynamics have far-reaching consequences. The old, intact longhouse community held a very perfect balance of fertility and mortality. Therefore, productivity below standard never was a problem of shifting cultivation. Today this can hardly be said about any place in Sarawak, at least for the long run. With regard to Rumah Kejaman Lasah neither fertility nor mortality are strikingly influenced by modern medicine, but pacification (and especially the abolition of headhunting) drove up natural increase near to the mark of two per cent annually. Regarding this, one might speak of "single mortality reduction" -- "combined (or double) mortality reduction" -- which we saw in the other case, Rumah Nyala, effected by additional public health measures and medical care. The double effect would probably have caused an even higher growth rate were not contraception leading to a reduction of births. Housing conditions, however, will deteriorate fast from population pressure. Longhouses were always arranged to suit large families. It is more likely that economic circumstances will decide the issue. On the other hand, economic and population problems are not easy to tell from each other. Until now any serious situation caused by early pacification, that later upset the population balance, and eventually paralyzed shifting cultivation to a greater extent -- the Iban met with emigration from their customary environment upriver. Only utmost economic tension could make them descend to the lowland and accept life in the Rejang delta. The next step will bring them into the urban scene.

One may regret such developments -- the destruction of the demographic and economic balance by administrators, missionaries, doctors -- as a fatal blow, dct to turn the old indigenous world upside down. But this should not be the place for evaluating; we have to take notice of facts. By European standards interference was factually and ethically necessary.

It was not so for the people concerned. These were resisting first, then relieved and grateful. Now finally problems arose. Kipling called the responsibility for it "the white man's burden."

This burden cannot become any easier through present-day development concepts which exchange the standards and ideas of former colonial powers for the standards and ideas of industrial society in general. Theories sprouting from the latter often lead to the firm belief that "population explosion" in the Third World is caused by poverty. The contrary is true. Poverty has no absolute standards, at least it cannot be measured by the availability of industrial products or by industrial output. We come nearer to its essentials if we understand it as a limitation of life in the face of possible alternatives. Nobody will deny that in many parts of the world there are conditions really shortening life. If, however, expectancy of life was extended by reducing mortality in Sarawak or elsewhere, it would no limitation of life, primarily, but extension in the true sense of the word. Yet at the same time -- and only then -- we perceive the beginning of a peculiar decay of those cultures fixed on high fertility and high mortality. It is the extension of individual life which sooner or later breaks the traditional life pattern as a whole. And instead of running its traditional cycles, "development" starts to follow a linear course, finally passing over to a "proletarian trend" that results in reduced human beings. Wherever in the Third World such chain-reactions set in, the statement can be reversed to:

Poverty is a consequence of population explosion.

Simple life patterns have the advantage of depicting the essentials in a simple way. Thus longhouses being relatively uncomplicated systems are exceptionally informative. And here we could readily observe not Rumah Kejaman Lasah, our first example, with its comparatively modest population growth had structural problems, but the second, Rumah Nyala, with its full regenerative surplus.

Generalizations, in turn, have their disadvantages. But if we try to generalize at all, we must come to the conclusion that Third World "development" -- unless it means willy-nilly "acclimatization" -- has to be handled as a demographic problem. More structural measures or even charitable efforts will be set at nought as long as this basic fact remains unheeded.

Notes

1. The two wooden tomb poles erected about half a mile downstream, cut out of one trunk each, and more than 20 meters high, are unique in Sarawak as far as their ornamental workmanship is concerned. The layout is undoubtedly that for a big paramount chief. Even Hose and McDougall, who describe a series of remarkable tombs, present no parallel cases. See: Hose, C. and W. McDougall, The Pagan Tribes of Borneo, 2 vols., London 1912 (Reprint 1966). esp. vol. II, plates 152-55.

3. To attempt an exact classification of age-groups would be of little use since the persons in question are in most cases unable to date their age or a past event precisely. Fortunately at the time of enquiry the 1960 Sarawak Census was almost exactly 10 years previous - a remarkable event for the longhouse inhabitants. Therefore, any questions regarding births, deaths, and migrations before and after the census could be answered promptly as a rule. Under the said circumstances all data prior to 1970 are computed from a complete survey held two months after the 1970 census campaign.

BRIEF COMMUNICATIONS

The Rhinoceros - and Mammal Extinction in General

From Tom Harrison

Extinction of mammal species by man is not new in Borneo. Homo sapiens is almost certainly responsible for the tapir and the tiger which are found among the stone-age food remains at Niah Caves but not in historic times, though both survive on other islands and the mainland (under threat - the Bali Tiger may right now be extinct). A giant pangolin (Manis palaeojavanica), otherwise known from the Pleistocene fossil beds of Java, in association with early Homo erectus (Pithecanthropus), occurs as unfossilized food bone around the 30,000 B.C. mark at Niah too, but no later. Orangutans and rhino are also quite common there, and rhino horn was used as ritual pillow for at least one Niah neolithic cave burial; neither species now occur within 200 miles and both are on the grave danger list for the whole island.

The only rhino known in Borneo is the Sumatran or Two-horned, smallest of the species and uniquely a rain forest animal. The Borneo form is named by a German zoologist, Dicerorhinus sumatrensis harrissoni, after yours sincerely, like whom it is in imminent danger of becoming extinct in the seventies. Borneo Research Bulletin has published previous references to this remarkable, harmless very shy creature. I saw one fleeting on the overland crossing between the Bahau headwaters and the Apo Kayan, interior Kalimantan, in October 1945, and am perhaps the last non-native to have done so. Nearly all recent records have been sightings of footsteps only, and all of them in the largely uninhabited Sagama-Kinabatangan upriver areas of eastern Sabah. The horns and skin have retained their fantastic value with the Chinese as aphrodisiac, so that rhinos have been illegally hunted to death, mostly by far-ranging Iban and Kelabit-Muruts. There are probably not more than twenty (perhaps ten) left on the island; none in Sarawak and Brunei, just possibly one or two in Kalimantan; the rest in Sabah where, however, they are split up in very difficult terrain so that breeding contact is unnaturally difficult.

Other Sumatran rhinos are on Sumatra (perhaps thirty?) and on the mainland in Malay (1974 enquiries in detail suggest less than twelve, mainly in the north), southern Thailand (a few accidently protected by Communist guerrillas), Burma (some, but the situation is unsure), and possibly in Indo-China (no recent information). There is still no effective conservation for them outside two national parks in Sumatra and Malay - from which, however, they tend to roam, vulnerably.

The Survival Service Commission of the International Union for the Conservation of Nature (I.U.C.N.) is deeply concerned with the Sumatran Rhino and is planning to redevelop conservation efforts for it. Latest information and signs of interest inside the relevant areas would be most helpful. Also any local stories, actual or folklore, on the Rhinoceros in the past anywhere in Borneo would be of great interest for past background. Anthropologists please note.
Fortunately, a Dutch biology student, Koos Rooftmaker, at Amsterdam Free University has developed a passionate interest in the general literature of the Sumatran and Javan Rhinocerus. He is now making an effort to bring together all that is known on the species, as an aid to a conservation program. For hitherto efforts at conservation, notably in Sumatra and in Malaya, have been both costly and (for the Sumatran Rhino) conspicuously unsuccessful. The situation now becomes critical, and this must be regarded as among the most immediately threatened large animals on earth.

On Sumatra the problem for rhino and all life is the exceedingly high rate of jungle felling for timber during the seventies. This is also re-opening the threat to the orangutan, which in the sixties looked for a while to be safe again. Confined entirely to Sumatra and Borneo, the orang is again under increased pressure in Kalimantan, and best served through the efforts of the Game Warden’s department and Mr. Stanley de Silva in Sabah. This work is far ahead of any other. Likewise, his major effort in saving the Turtle Islands off Sandakan is of world importance; the more so since to keep out (in public) of local politics, at that time in a rather tense state. The elegant memorial card sent out from the University of Hull bears a nice sketch drawing of “a traditional Rejang house.” Clearly this is the Sumatran idiom, zoologists (jolly but irritating), geologists (solid and sensible), and historians (sometimes just like normal ordinary human beings). We had all in and through the Sarawak Museum, and no doubt Lucas Chin still does. In my twenty plus years, Mervyn Jaspan was outstandingly one of the most intelligent, stimulating and incisive. His early death is a loss both to the region and to the discipline. (From: Tom Harrison, 45 Avenue Lancaster, 1180 Brussels.)
employ the few masters of these crafts who maintain traditional knowledge as teachers, are scheduled for August. Interest among young Bruneis for circulation of mouse deers can contribute to the extension of knowledge.

These are very high.

metal work, both in silver and brass, are mainly relevant. Classes which since red blood cell size and shape may influence heart function and the expansion his responsibilities to include a concern for the development of traditional arts and crafts. Weaving of ceremonial sarong cloth and distinction of possessing the smallest known red blood cells of any animal.

PENGIRAN P.M. SHARIFFUDDIN, Director of the Brunei Museum, recently WESLEY BRUNEL NEWS ecology of relationships between spiders and the ants they mimic; courtship with HUMPHREY SPENDER, an album, Britain in the 30s, based on the Mass- groups and peoples have shown a change in the patterns of prevalence of

The editor has included a questionnaire in the Winter issue and is most anxious to receive readers' reactions and suggestions for developing the periodical along lines particularly appropriate to their needs. Further information may be obtained from the editor, Frank Joseph Shulman, at the Center for Japanese Studies, The University of Michigan, 108 Lane Hall, Ann Arbor, Michigan 48104 U.S.A.

The R/V ALPHA HELIX, a national facility of the University-National Oceanographic Laboratory System in the U.S., cruised in north Bornean waters during June and July 1975. After a brief stop in Yawna, this splendidly equipped biological research vessel with twelve scientists on board, visited Brunei Bay. Asked to supply brief summaries of the various interests involved, the scientists responded to Barbara Harrissorn as below:

JOHN F. ANDERSON (University of Florida, Gainesville): study of the rates of oxygen consumption in a unique group of spiders belonging to the genus Sphintus. Comparisons will be made between cave and non-cave-dwelling forms.

BRIAN K. McBA (University of Florida, Gainesville): study of the temperature regulation and energy expenditure of certain Bornean mammals, especially flying lemurs, moon-rats, pangolin and bats. These species will be compared with related species in other (tropical and temperate) regions and with unrelated species having similar habits.

NICHOLAS MRGOW (University of Toronto, Canada): A study of the physiology and behavior of sea turtles.

WALTER GAREY (Scripps Institution of Oceanography, University of California, La Jolla); study of the oxygen transport systems of air-adapted fishes and mammals of Borneo. Particular attention will be paid to the characteristics of the oxygen loading and unloading of the red blood cells.

VAUGHAN SHOEMAKER (University of California, Riverside), and ION McCORMAN (California State University, Fullerton): studies of water balance and nitrogen metabolism in frogs. Of particular interest are arboreal and fossorial species which can be compared with forms from arid climates.

STEWARD WOLF (University of Texas, Galveston), and THOMAS WOLF (Boston University): study of rural health patterns as they relate to rapid social change consequent upon the modern medical services that have become available, as well as evolving technological developments. Studies of other social groups and peoples have shown a change in the patterns of prevalence of certain diseases in association with cultural change.

FRANK C. MORDUE (University of Florida, Gainesville): studies of ionic and osmotic regulatory patterns, and the metabolic costs of this regulation, in brackish water fishes.

JOHN REISKIND (University of Florida, Gainesville): studies of the behavioral and ecological adaptations of ants mimicking spiders and the ecology of relationships between spiders and the ants they mimic; courtship behavior of jumping spiders and the ecology of spider-plant associations.

WESTER W. WEATHERS (Rutgers University, New Brunswick), and GREGORY K. SNYDER (University of California, Riverside): the mouse deer has the distinction of possessing the smallest known red blood cells of any animal. Since red blood cell size and shape may influence heart function and the transport of oxygen by the blood to the bodies' cells, studies of the circulation of mouse deers can contribute to the extension of knowledge.

BARBARA HARRISSON continues her field studies, supported by the J.D. Rockefeller 3rd Foundation of New York and the Brunei Museum. Her in situ thesis will describe and classify stoneware jars imported over ten centuries from the Asian mainland in Borneo. It will base many of the archaeological and ethnographic collections of sherds and jars in the Brunei Museum.
These and other biologists who participate in ALPHA HELIX expeditions are relatively independent because major parts of studies take place right on board where an array of sophisticated instruments serve. The main requirements for outside assistance are related to permission by host countries to remain in territorial waters and collect specimens, and to guidance in identifying and working over collecting areas.

The ship’s funding, operation and logistical services are carried by the National Science Foundation and the Scripps Institution of Oceanography in the U.S. Applications to participate in expeditions are solicited and become processed through the ALPHA HELIX Review Committee. Considerable advance planning is necessary. The geographical areas of operations over the next two years will be tropical American coastal regimes, including the Galapagos Islands and the Amazon River. Enquiries through: Dr. Walter Carey, Alpha Helix Program Manager, A-0041 Scripps Institution of Oceanography, Box 1529, La Jolla, California 92037 U.S.A.

Kalimantan News

PHILIP GOLMAN of Gallery 43, at 28, Davies Street, London W1 (just off Berkeley Square) has on long-term exhibition a remarkable collection of wood carvings, especially small talismens, from Ngaju and other Kalimantan inland peoples. Many are of finest quality, unequalled in museum collections (which outside Holland are poor on Indonesian Borneo artifacts). A beautifully illustrated and arranged catalogue, by Dr. Goldman, entitled Divine Gifts, is scholarly, well referenced and with new ideas on Borneo art-form and meaning. Tom Harrison has done a critical review for the next issue of RAIN, the Royal Anthropological Institute’s newsletter.

At the end of May 1975 BARITA DIOAN MAHULAN and YATNA SUFIATIN, biology students from the Universitas Nasional in Jakarta, joined the Orangutan Project (Tanjung Puting Reserve, Kalimantan Tengah) in the capacity of research assistants to MS. Birute Galdikas-Birindam. They will conduct research on the red leaf-eating monkeys of the study area for the next six months.

SUGARDJITO and ENDANG SOEKARA, also of the Universitas Nasional, returned to Jakarta in June after carrying out an in-depth survey of the gibbons and red leaf-eating monkeys in the study area.

Sarawak News

OR. GALE DIXON, Department of Geography, Monash University, Australia, is planning to spend the spring semester 1976 at the University of British Columbia.

BOOK REVIEWS, ABSTRACTS AND BIBLIOGRAPHY

BOOK REVIEWS


The second monograph of the Brunei Museum Journal entitled, "Prehistoric Wood from Brunei, Borneo," by Tom Harrison, is a first in Southeast Asian archaeology. It deals with vegetable materials which normally perish in prehistoric sites. But remarkable preservation occurred at Kota Batu, owing to a combination of acid, peaty soils which "pickled" the wood and a high water-table which produced fair percolation.

Kota Batu, known as a center of Islamic authority during the fifteenth and sixteenth centuries, saw trial excavations during 1952-53. These established a considerable archaeological potential which has not been further tapped. The present monograph resulted from specialized studies of all vegetable materials recovered in these early days. Harrison divided them into four major classes: Tree Wood, Coconut, Other Nut and Charcoal.

Twenty-three C-14 dates relative of horizons below 24 and above 90 inches provided a frame of time ranging from 12,500 B.C. to 1850 A.D. Clearly, there was much mobility of artifacts underground: six samples from the 24-30 inch strata dated between 1300 A.D. and 1850 A.D. Two taken from 36-42 inches by comparison, quoted 950 A.D. and 12,500 B.C. But of seventeen samples taken below 30 inches, only three dated later than 1100 A.D. and two earlier than 595 A.D. This fair emphasis of human involvement relative of absolute excavation depth have only limited merit, under the circumstances.

The artifacts are described in seven categories according to function. Of special interest is apparatus for spinning and weaving, as well as trays, bowls and covers, mainly because these can be recognized and substantiated in Brunei as traditional technology and craft. This point is usefully strengthened in an Appendix discussion of the Museum’s collections of wooden artifacts.

Harrison was able to enlist much local expertise, specially from forestry, in identifying fourteen families of trees from which Tree Wood originated and in informing on the specific properties which made them useful above other woods. Native knowhow in also reflected in the discussion of Coconuts which refer to local varieties and distribution patterns of this important palm prior to the 1830s, as well as the universal purposes its hard nut acquired on Bornean coasts, including in games. Four other nuts had much less impact.
The discussion of Dammar’s complexities, of the trees it may refer to and of local practice which grades by color, is valuable owing to the importance of this material until recently, and timely, because knowledge about it is rapidly lost. But quantification of it and charcoal subsequently, by numbers of fragments is less redeeming.

The main text is accompanied by clear and skillful line-drawings by Museum artist Awang Wahib bin Hussain. Four Appendices are handy references. They have checklists of the trees involved, of geological test-bore holes which established water-tables and of radio-carbon dates; finally a discussion of wooden Museum artifacts, as already mentioned. As most Harrisonsonia, the monograph makes stimulating reading, particularly if one fishes for ideas regarding the fundamental properties of a vanishing natural resource, and the simple challenges it presented to the human mind from prehistory right into the recent past. (Barbara Harrison, Brunel Museum)


Michael Fogden did the research for his Oxford doctoral thesis at the Semengok forest reserve near Kuching, attached to the Sarawak Museum in the sixties. Mrs. Fogden, also a Doctor (in biology), then Patricia Aldridge, worked on the Niah Cave Batstone remains. Both published some of their work in the Sarawak Museum Journal. They have now produced a handsome book, largely illustrated with their own beautiful color photos (especially good on insects, nearly all taken in Sarawak).

The main themes of Animals and their Colours are camouflage, mimicry, disguise and self-protection of species, from man and tiger to ant and caterpillar. One notices a minor mistake with ants, however: on page 111, Camponotus is said to be mimicked by spiders, because it is not a popular bird food. But at Niah Caves, this forest ant is commonly found in the stomachs of the millions of birds-nest swiftlets (Collocalia) there.

This is, overall, a readable introduction to a fascinating subject. Drs. Fogden are to be congratulated on deploying their tropical and other knowledge with good effect. The result is both a serious, informative and the simple challenges it presented to the human mind from prehistory right into the recent past. (Barbara Harrison, Brunel Museum)

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Quite different in scope but related in origins is the impressive, massive compilation on bird migration in the Far East generally and Southeast Asia especially. Colonel Dr. McClure initiated, organized, and supervised MABS, an Asian-wide system of marking birds with numbered rings. Michael Fogden, Ambrose Aching, Lucas Chin, Guan anak Sarang and your reviewer were responsible for Sarawak, as part of a network of ringers reaching from Korea and Japan to Bogor and Bombay, and also covering Sabah, the Philippines, Malaya and much more.

The results of this effort, coordinated through SEATO at Bangkok, gives a mass of new and interesting information for the area. McClure and MABS have done a tremendous job in compiling and presenting the returns from 1,165,288 birds of 1,218 species marked. Six thousand nine hundred eighty-five birds were ringed in Sarawak (1964-68) and about the same in Sabah. Results, from the recovered rings, were reported from all over the continent except, alas, the People's Republic of China, which Dr. McClure calls "the Great Void of this study" (p. 19). Thailand shows a poor recovery ratio, despite the project H.Q. there. Superstition, of a special sort, proved to be largely responsible (p. 22). The average Thai considered the discovery of a bird bearing a numbered ring to be a gift of foresight. He at once went and bought a lottery ticket with that number: and must not show it to anyone thereafter. Professional bird-trappers were encountered with "lists in a little notebook of the last three numbers (only) from birds they caught." So, from 175,000 Thai ringing, came only 50 recoveries.

Despite these and many other difficulties, over 6,000 rings from 255 species were correctly reported. In addition, 26,306 individual birds were recaptured as repeats in the mistnets used by the ringers or other trappers. Every one of these is listed, systematically, in this book. The movement patterns are shown on figures and maps - 249 of them. And poor Thailand produced one of the most remarkable recoveries, a Yellow-breasted Bunting ringed at Oulu, Finland in 1966 and taken some three years later from a wintering flock near Phitsanloke. (The ring was not discovered until 1972, saved by a farmer, superstitious.) Migration and Survival is a treasure-store for the naturalist. The data therein gives the first clear picture of Asian bird mobility. It is a striking picture, filled in by the effort primarily of Asian museum and university naturalists. MABS has wound down, the peak is past. That is a pity. But at least we have a working plan for present understanding as well as hopefully - a blueprint on which to base future further study, when times permit. (Tom Harrisson, University of Sussex)

ABSTRACTS

MALAYSIA: Search for National Unity and Economic Growth

Sevinc Carlson, Sage Publications, forthcoming summer 1975, $2.00

Because of the basic stability and resilience of its political system and the favorable resource position of its economy, Malaysia is emerging as an important country in Southeast Asia. Thus declares this paper, an assessment of Malay status in light of such problems as communal antagonism, political authoritarianism, and unemployment.
The Cession of Sarawak to the British Crown in 1946


The thesis examines increasing British interest in controlling the internal affairs of Sarawak in the period immediately prior to World War II, culminating in the cession negotiations between the Rajah and the Colonial office in 1945-46. The dynastic side of the story (i.e., the dispute over the succession to the Raj) is also dealt with and the latter part of the thesis is concerned with the impact of cession in Sarawak and the origins of the indigenous anti-cession struggle up to the end of 1946.

Kenyah Dance, Sarawak, Malaysia: A Description and Analysis


Dance of the Kenyah people, formerly ritual and non-ritual, now primarily a form of hospitality, is an integral part of Kenyah life. The Kenyah are introduced: geography, immigration, social structure, and religion described.

Description of dance includes: 1) a typical evening of dance on a longhouse veranda; 2) performance and history of major dance genres (Badek Pias, Datum, Sanye, pantomimes, Makoi, Ketchok, and Lupa); 3) clothing and props and their iconography; 4) music (instruments - sge, enklur, guitar, and harmonica - genres, notation of extracts); followed by a discussion of the changing setting. Dances are spontaneously choreographed from an inventory of Kenyah dance movement. An analysis of dance categorizes movement components of gross body parts (legs, arms, torso, and head); Representative movement sequences by genre are labanotated. A glossary is included.

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The Fellows of the Council serve as a pool of knowledge and expertise on Borneo matters which may be drawn upon to deal with specific problems both in the field of research and in the practical application of scientific knowledge.

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Research Notes: These should be concerned with a summary of research on a particular subject or geographical area; the results of recent research, a review of the literature; analyses of state of research; and so forth.

Brief Communications: These differ from the foregoing in that no original conclusions are drawn nor any data included based on original research. They also differ in consisting primarily of a statement of research intentions or a summary of news, either derived from private sources or summarized from items appearing in other places that may not be readily accessible to the readers of the Bulletin but which have an interest and relevance for them. They will be included with the contributor's name in parentheses following the item to indicate the source. Summaries of news longer than one or two paragraphs will appear with the contributor's name under the title prefixed by "From."

Bibliographic Section: A bibliography of recent publications will appear in each issue of the Bulletin, and, consequently, reprints or other notices of recent publications would be gratefully received by the Editor.
Other Items: Personal news, brief summaries of research activities, recent publications, and other brief items will appear without the source specifically indicated. The Editor urges those contributing such news items to send them in the form and style in which the contributor wishes them to appear rather than leaving this to the discretion of the editor.

All contributions should be sent to the Editor, Borneo Research Bulletin, c/o Department of Anthropology, College of William and Mary, Williamsburg, Virginia 23185, U.S.A.

STYLE FOR CONTRIBUTIONS

Please submit all contributions double-spaced. Research Notes and Brief Communications should be limited to approximately eight double-spaced pages. Footnotes are to be avoided wherever possible. Bibliographies should be listed alphabetically by author at the end of contributions. Author should appear on a separate line, then date, title of article, journal, volume, number, and pages. For books include place of publication and finally publisher. References in the body of contributions should be cited by author's last name, date, and page numbers as follows: (Smith 1950: 36-41). For punctuation and capitalization refer to Bibliographic Section.

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