last year. This association is appropriately named I.D.E.A.S., the Invention & Design Association of Sarawak. Membership is open to everyone, who is interested in inventions, including young children. This makes Sarawak the only state in Malaysia to have its own invention association.

Through the young, IDEAS has carried out a number of activities including talks, seminars and exhibitions. It is also instrumental in the setting up of invention clubs in schools and colleges in Sarawak. IDEAS, too, has established links with the World Intellectual Property Organization (WIPO), a UNITED NATION Agency and the International Federation of Inventors Association or IFIA. The ultimate objective of IDEAS, is, however, to help create new industries in Sarawak based on indigenous inventions.

Those who are interested about inventions and wish to find out more about IDEAS are advised to write to : IDEAS, c/o SIRIM, P.O. Box 3292, 93764 KUCHING.

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The Motivating Forces behind Recent Changes in the Wet Rice Agricultural System in the Kelabit Highlands

by

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This paper is derived from some of the data collected during the course of fieldwork carried out in Pa' Dalih in the Kelabit Highlands in the 4th Division of Sarawak between September 1986 and March 1988. This fieldwork formed part of research towards a PhD being carried out at the London School of Economics, University of London, under the supervision of Professor Maurice Bloch. Thanks are due especially to the State Government of Sarawak for giving permission for the fieldwork to be undertaken; to Jayl Langub at the State Planning Unit; to staff at the Sarawak Museum, particularly Lucas Chin, Peter Kedit and Ipoi Datan; to the Land and Survey Department, Kuching for the loan of maps and equipment to measure fields; to the RMAF for airlifting us out of Pa' Dalih at the end of the fieldwork period; and, of course, to the Penghulu of the Kelabits, Ngimat Aio', and to all the Kelabits, especially those of Pa' Dalih itself.

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The tale related by Tom Harrisson in 'World Within' (p. 182) regarding the origin of the term Kelabit is quite well known — that around 1900 the first man from the uplands to visit the Government station near the mouth of the Baram, on meeting Charles Hose, conveyed through an interpreter that he was from the Pa' Labid (the Labid river) and Hose understood this as 'Kelabit'. Harrisson states that at the time he wrote 'World Within' the term 'Kelabit' was not used by Kelabits as a self referrent and that the group of people it referred to was not a discrete one, when it was used by Kelabits. Now, however, the term *is* used as a self referrent; with the greater exposure to outside influences since the Second World War the Kelabit seem to have developed a definite sense of identity. It is absolutely clear to all Kelabits who is Kelabit and who is not, and all Kelabits are acquainted, if only vaguely, with all other Kelabits. This gives the Kelabits a special cohesiveness and force of action.

The Kelabit group, as now perceived by members of it, includes the inhabitants of all villages in the highland area falling within the Fourth Division of Sarawak and delimited by mountains on the north, east and west, and inhabitants of villages who are descendants of migrants who fairly recently (within about the last 100 years) left the Kelabit highland area. Within the highland area, Kelabit villages are: Bario Asal, Ulung Palang Deta', Ulung Palang Benah, Arur Layun, Arur Dalan, Pa' Ramapoh Deta', Pa' Ramapoh Benah, Pa' Darong, Padang Pasir and Kampong Baru within the immediate Bario area, Pa' Umor, Pa' Ukat and Pa' Lungan within a return day trip distance from the immediate Bario area and Pa' Dalih, Remudu, Long Dano and Batu Patong within a day's walk one way from the immediate Bario area. This configuration of villages within the highland area is not the same as that found by Harrisson in the 1940s; a number of villages near the Indonesian border are no more because their inhabitants left at the time of the Confrontation with Indonesia, mostly to resettle in the immediate Bario area, creating all the longhouses mentioned above in that area except Bario Asal, the original longhouse there.

Because of the resettlement the Bario area now contains the bulk of the Kelabit non-town dwelling population and has changed in many ways, some of which I will be discussing shortly. Outside the highland area, present-day Kelabit villages are Long Napir in the Limbang river system and Long Lellang, Long Peluan and Long Seridan in the Baram. There were other Kelabit villages in the Baram but outside the highland area, but these too are no more, because of natural extinction or because their inhabitants moved to Bario too during the Confrontation.

Although the term Kelabit is a recent one as a self referrent and there does not seem to have been a previous self referrent for the group, there are grounds for making a distinction between this group and the larger ethnic group of which they undoubtedly form a part linguistically, a group which I shall refer to as the Lun Bawang, following Deegan and Langub. This group used to be called Murut, but it is not now usual to employ this confusing term, which has also been used to refer to a totally separate ethnic group mainly resident in Sabah. The Lun Bawang, defined linguistically, inhabit a large area including an extensive highland area in Kalimantan (and possibly extending downriver over there; little is known of the extent of the group on the Indonesian side) the Kelabit highland area in the Fourth Division of Sarawak, the Ba Kelalan and Long Semadoh highland area in the Fifth Division, extensive downriver areas in the Fifth Division including the Lawas area, where Deegan did his research, and some downriver areas in Sabah. including the area where Crain did his research. Sipitang. There are some Lun Bawang in Brunei too.

I said that there seem to be grounds for distinguishing between the Kelabit and other Lun Bawang. Such a distinction is on the basis of two major points; firstly, the absence of *purut* (bridewealth) among the Kelabit, while it is present among all other Lun Bawang and is indeed apparently a vital element in social exchange, as Crain shows, and secondly the presence of an elaborate and fascinating naming system among the Kelabit, absent among other Lun Bawang, who mainly practise simple teknonymy. While both the Kelabit system and teknonymy (which is in fact one element of the Kelabit system) base themselves upon becoming

Pa' Dalih Kelabits extending new-style baa, 1987.

a parent and becoming a grandparent as the salient transitions in an individual's life, the Kelabit naming system accomplishes much more socially.

The Kelabits, in common with other highland Lun Bawang, have no tales of major migrations except *out* of the highlands. They have no stories of how they came to the highlands. They consider themselves to have always been resident more or less where they are now resident, with only short journeys within longhouse territory having been undertaken to utilize land for cultivation of rice on a rotational basis. In fact their stories tell that all humanity originated from their area, with the dispersal of people being accomplished by the great Flood, which washed everyone except the present residents of the area downstream. The highland Lun Bawang belief that they originate where they now live distinguishes them from most other Borneo peoples, who tell us migrations into their present areas, even if many hundreds of years ago.

The Kelabit were traditionally a stratified society, although the system of stratification differed in some ways from that of other stratified

Old-style *baa* at Bario, 1947.

societies in Sarawak. While Melanau, Kayan and Kenyah aristocrats appear to have done, in the past, no manual work, having slaves and corvee labour to provide them with rice by working their fields, it was the hallmark of a Kelabit aristocrat to be hard-working. Although they do appear to have had some slaves who undoubtedly helped aristocrats to produce bountiful harvests, these slaves were considered to be working *with* rather than *for* their master. It was to the credit of the aristocratic master that the rice harvest was a good one, put down to his hard work, good organization and good judgement. As among all agricultural peoples in Borneo, in the context of the emphasis on rice in this part of the world, the size of the rice harvest was of vital interest, and lack of a good harvest was a matter of great embarrassment. Since the Kelabits were generally able to produce reliably good harvests, there was normally (always, in the case of an aristocrat, else he would lose his prestige) plenty of rice for the year for eating, for making rice wine, for feeding chickens, and to spare. The Kelabits placed enormous emphasis on hospitality and generosity and to be an aristocrat meant being able and willing to provide boundless quantities of food (i.e. rice) and drink (i.e. rice wine) at any time for visitors as well as setting up occasions, known as *irau,* where particularly large quantities of rice and rice wine would be consumed (the size of the *irau* was measured by the number of jars of rice wine, *borak,* consumed). Domestic animals (pigs and buffaloes) were also slaughtered at *irau.* The provision of meat from domestic animals rather than from wild animals was essential here: the provision of meat from wild animals is based on luck, whereas that from domestic animals depends on work and foresight and represents the expenditure of wealth. Such *irau* took place at naming ceremonies and at secondary death rituals, and, while not confined to aristocrats, were more frequently and more lavishly held by the aristocratic class.

Nowadays, while *irau* no longer take place in association with death rituals, following the conversion of the Kelabit to Christianity, they do take place at naming ceremonies. They are still prestige-creating, but there is now a difference in the scale of *irau,* and in the amount of prestige generated, consequently, as between the immediate Bario area and the parts of the highlands more distant from Bario, especially the Southern Kelabit area of Pa' Dalih, Remudu, Long Dano and Batu Patong. Bario *irau* are on a much grander scale than those held in the Southern area. This is associated with what appears to be a

change in the distribution of the different classes in the stratification system geographically over the area, which I will look at in a moment.

The system of organization of agricultural labour was and is also a setting for prestige-creating displays of generosity and wealth. While the everyday labour exchange group system, *baya',* involves only the cooking of a simple accompaniment to rice (which is brought along to the fields by each participant individual) and the provision, in the past, of rice wine at the midday meal as displays of hospitality by the host family for the day, there is scope for more or less generosity in the quality of this side dish, with the most appreciated dishes being meat (hunted or domestic chicken) or fish. It is also possible to provide more than one accompanying dish for the rice. Better class families still tend to pride themselves on providing a good side dish or dishes for rice at lunch during days of *baya'* in their fields. In the past, until about 15-20 years ago, there was a form of agricultural *irau* called *ngerupan* (equivalent to the *ngerufan* Crain found still being implemented in Sipitang in the early 70's) to which the inhabitants of longhouses other than that of the host as well as people living in his own longhouse would be invited, to participate in a day of agricultural labour. *Ngerupan* were given by one host family and because of the quantity and quality of the food provided, they were seen as involving the participants in debt to the hosts despite the work in the fields. At such *ngerupan,* as at other *irau,* domestic animals were slaughtered and plenty of rice wine was provided. All *irau* can be seen as putting guests into debt, great or small depending on the scale of the celebration, to the host family; this is arguably why such events were prestige-creating. Not all families would be able to have a *ngerupan* in their fields in a year, and those that did would have only one or, occasionally, two. The amount of prestige generated would have depended on how much rice wine was provided and how many animals were slaughtered. Nowadays *ngerupan* have been replaced by a system called *kerja sama,* introduced by the SIB church. These are on a considerably smaller scale than *ngerupan,* although they involve, as a rule, a rather more lavish midday provision of accompaniments to rice than *baya',* exchange labour groups. *Borak,* rice wine, is no longer made by the Kelabit now that they are Christian, and this was a major element in *ngerupan* in the past. Domestic animals other than chickens are not slaughtered at *kerja sama.* The only expenditure the host makes is the donation of $10 to his parish. As with *ngerupan,* no repayment of the labour contributed by participants is given under the *kerja sama* system. To some extent, it functions as a kind of exchange labour system since a fair proportion of the families of a village have *kerja sama* in a given year, many more than would have had *ngerupan* in the past because *kerja sama* is not expensive. It can also be a cheap way of getting agricultural work done, since the normal agricultural daily wage is $5 or $6 and at a *kerja sama* there will be a minimum of 12 or 15 people, often as many as 30, all for $10 donated to the church. Thus *kerja sama* is only marginally endowed with pretige-creating potential. An extremely good midday provision of accompaniments to rice is necessary to create any prestige for the host family at a *kerja sama.* People are well aware of this, although it is not verbalized as such, and some families make sure of generating prestige at *kerja sama* by providing lavish snack food in the field and/or at the midday meal, and by providing the rice for the participants at the midday meal, wrapped in the large *isip* leaf packets traditional at *irau.* Better-class families pride themselves on doing this, but other families also try to raise their standing in this way.

In other Borneo stratified societies there were traditionally four basic classes, which were named. The leadership class, often termed 'aristocrats' in the literature, usually consisting of one family per longhouse; a class which was semi-aristocratic and consisted of people closely related to members of the leadership class; a class consisting of ordinary people which generally comprised the majority of the population of a given longhouse; and a class of slaves. But among the Kelabit there do not appear to have been such definitely named classes. Families were rather termed more or less 'good' (*doo*). An individual's position in the stratification system was theoretically determined solely by birth and in theory like class should marry like class. But, in practice, mobility was possible through display of 'good' characteristics. As among other Borneo stratified societies,

hallmarks of better class families were traditionally leadership, the ability to speak well and personal charisma. Wealth was also essential and this meant wealth in terms of both heirloom articles, acquired through the accumulation of rice, the basic currency in this non-monetary economy, and in terms of rice itself. However, while among other stratified societies the aristocratic class did little or no work, among the Kelabit being hard working, especially in the rice fields, was an essential quality of a better class person. Social mobility was slow traditionally among the Kelabit and tended to take place over a couple of generations, because of the difficulty of both being lavishly hospitable to visitors, generous at *irau* and also putting aside enough rice to buy heirloom articles. To be 'really good' (*doo to'o*) meant being generous and hospitable and also being wealthy in terms of heirlooms and stored rice.

As noted above, class affiliation in the past depended on birth, on who an individual's ancestors were. This is still, theoretically, adhered to. But because the Kelabit trace ancestry both matrilineally and patrilineally, it is possible to assign a given individual to almost any position on the stratification ladder depending on which ancestral links are emphasised. This means that potentially mobility can be swift — by simple re-evaluation of an individual's ancestral links. This does not mean that a person low on the ladder can come to be considered as 'really good' (*doo to'o*) — i.e. at the very top of the ladder. Mobility could only be a step at a time. But whereas traditionally mobility had to occur over one or two generations, I suggest the *potential* existed for mobility within an individual's lifetime. The fact that this did not occur may, I suggest, have derived from the difficulty of building up resources to validate claims to a higher position.

Since the Second World War a number of new status-creating factors have, I suggest, been fed into the system. One of these is success in education and hence in town of family members. This has been a very important factor in building up status. Two other major factors are associated with rice-growing. One is the sale of *pade adan,* 'Bario rice', in town generating income. The other is the introduction of a new type of wet rice field, *baa,* which I will discuss shortly. All of these factors have operated more strongly in the Bario area than in the Southern Kelabit longhouses of Pa' Dalih, Long Dano, Remudu and Batu Patong.

The feeding in of these new factors has, I suggest, led to a complex situation as regards the evaluation of the position on the stratification ladder of an individual. Swift mobility may, I suggest, be attempted by some individuals who have succeeded in terms of the new factors and who emphasise certain ancestors at the expense of others to validate their attempt. However not all other individuals may accept such claims. Thus there is now difficulty in faining a non-controversial evaluation of the position of many individuals. Also, individuals whose high status through birth cannot be disputed may not succeed in terms of the new factors and thus one may say that in a sense their position is adversely affected, although no-one would question their status by birth. Because the new factors are not operating so strongly in the Southern longhouses, as stated above, it seems that this may be the case there. In this area, the people themselves tend to de-emphasise the stratification system. But there is an awareness that they are at a disadvantage in these terms vis-a-vis the Bario area.

At this point I want to go on to give a picture of traditional Kelabit agriculture and how it has changed in the years since the Second World War.

All Kelabit and highland Lun Bawang agriculture, including wet rice cultivation, traditionally took place in the context of a close relationship with the surrounding natural environment, the forest. This forest is mainly oak, and, at an elevation of 3000-3500 feet in the Kelabit Highlands, is very different from lowland rain forest, but is no less rich in resources. While it is usual for dry rice cultivators to have a close relationship with a surrounding environment relatively untouched by man except in the use of it in long rotation to make swidden fields, wet rice farmers are usually part of a much tamer environment and rely on a money economy in which they play a part by selling some of their produce. In the highlands, however, things have, until now, been different. The Kelabit, like the other highland Lun Bawang, traditionally practised both dry and wet cultivation of rice, but in *both* instances there was heavy dependence on the products of the forest, vegetables, fruit, meat,

fish, honey, other protein food like grubs, products used for building houses and making tools, and so on. There was traditionally no money economy, although there was bartering, mostly short range, (except for iron and value items like beads and jars, which were traded up from the coast and beyond.) The similarities between the dry rice system and the traditional wet rice system were in many ways more apparent than the differences. Both took place against a background of heavy dependence on the environment, and both involved regular short-distance migrations — in other words, rotation of fields, non-permanent cultivation.

Traditionally, a given Kelabit or Lun Bawang highland longhouse tended to rely, usually completely or almost completely, on either wet cultivation of rice (*late baa*) or on dry cultivation of rice (*late luun*), to the exclusion of the other type. *Late baa* were concentrated in certain parts of the highland area inhabited by the Lun Bawang, although there appear to have been some in downriver areas, notably around Lawas, where Deegan found in the early 70's *late baa* and also *tabur,* which are a simpler form of wet rice field made without irrigation in swampy areas. The *late baa* made by the Lun Bawang, including the Kelabit, were traditionally made on land that was level or almost so. However, not all land that was level was used for wet fields. In some areas, where the patches of flat land are mostly small, they were used for dry fields in the past.

The highland area inhabited by the Lun Bawang is interesting geologically and topographically. Schneeberger describes it as a 'remnant of a previously widespread mature landscape in the interior of Borneo' (1979, p.49). The fact that the rivers are slow and small since they form the head waters of a number of major rivers, including the Baram, which originates in the Kelabit area of the highland, means that their valleys are not deeply incised and that the rivers tend to be flanked by wide flat areas. Many of the broad, basin-like valleys Schneeberger considers to have been lakes in the past, and even now there is frequent flooding. There is much flat land in the highland area and much of this can be expected to be fertile due to the deposition of silt by flooding of rivers, and by lake water too, if Schneeberger is right. Some flat areas are, however, peaty. This applies to much of the immediate Bario area and to the area over the border from the Northern Kelabit area, the Lun Bawang area known as the Brian. The Ba Kelalan area in the Fifth Division of Sarawak is also peaty. The Southern part of the Kelabit highlands and the Lun Bawang area over the border from it are neither so consistently level nor are they peaty, except in small patches.

It appears that in general it was traditionally the Brian area, the immediate Bario area and the Ba Kelalan area that were the main centres of wet rice cultivation in the past. It is quite possible that this was because in these areas the preponderance of peaty soil made it difficult to find enough land for *late luun,* dry fields, which, because of the long rotation ideally involved in this type of shifting cultivation, require a lot of suitable land. Dry rice fields cannot be made on really poor soil, like peaty soil, whereas all research on wet fields indicates that rice can do very well in wet fields on pretty much any soil. This may be because in wet rice cultivation nutrients for the growing rice come partly or wholly from the irrigation water. There are also indications that a self-sustaining ecosystem develops in well-established wet rice fields like those in Java and Bali.

At any rate, it was in Bario, of the Kelabit area of the Lun Bawang highland area, that wet fields were made in the period before the Second World War. Dry rice fields were not normally made there. Separate gardens, *ira,* were made for crops other than rice which would, in areas where dry rice cultivation was practised, have been planted with the rice. Harrisson mentions other valleys in the Kelabit area in which there is evidence of *baa* cultivation in the far past, now abandoned because of strife within the longhouses concerned. Some wet fields were also made, apparently around the 1920's initially, at a spot near Batu Patong, the southernmost of the Kelabit highland longhouses, and were farmed until the early 70's when most of the population of Batu Patong left (one family still lives there). These fields are now being brought into wet cultivation again by inhabitants of Pa' Dalih, one of the other Southern Kelabit longhouses as part of the present thrust to make wet fields, which I will discuss shortly.

The techniques used in making dry fields, traditionally and now, did not and do not vary significantly from techniques used by other Sarawak peoples in making dry rice fields, except for the fact that in the Kelabit highlands dry fields have often been made on flat land which is usually very fertile, certainly areas of silt deposition. Outside the highland area, of course, flat fertile land is rare except near the coast in delta areas, and dry fields are normally made on steep slopes. In the Lun Bawang highland area, dry fields were concentrated on the most fertile land, as is clear when comparing a soil map with the distribution of settlements in the highlands. Perhaps because of this, the present-day Kelabits do not leave dry rice land to fallow for as long as is recommended by experts and by other Borneo shifting cultivators as ideal. While this recommended ideal is around 15–20 years, the Kelabit commonly leave their land fallow for only 5 years.

The traditional Bario techniques for making wet fields differed radically from standard sawah techniques and from techniques used by the Kelabit now, which are closer to sawah methods. There were techniques which were suited to a situation where few if any metal tools were available to move earth, since they could be used on land that was not totally level. *Late baa* (wet fields) in the old Bario system did not require much of an investment of labour in the first place. They were not permanent fields but were used for about seven years and were then fallowed for a number of years. Subsequently the land might not necessarily be used by the family that originally brought the land under cultivation, although that family was considered to hold the use rights to the land and another family wishing to use had to ask permission. Thus wet rice land was involved in a rotational system of land use, like dry land, and the land reverted to grassland or shrubs in between periods of use.

There is a very strong distinction between this situation and that in existence nowadays in the Kelabit Highlands, where, as in standard sawah wet rice agriculture, land is permanently cultivated and represents a great investment of labour in the initial making of the field. In the Kelabit Highlands, this investment is the basis for the fact that wet rice fields are now sold at very high prices, thousands of dollars per acre. It also justifies share-cropping arrangements with Brian people in Bario (now common) which at first sight appear extortionate, since such arrangements are on a 50% sharecropping basis, with only half the crop going to the cultivator, the rest to the owner of the land. It is quite explicitly the labour put into making *late baa,* wet fields, that is being paid for in the 'sale' of such land, and the so-called 'owner' of the land is not really laying claim to 'owning' the land but to use rights which derive from his investment of labour in it. Under customary law land is not considered saleable and the Kelabit do not consider that such customary law has altered. Only use rights over pieces of land belong to an individual, through his own or his ancestors' investment of labour in it. It is, of course, in the case of both dry rice land and pre-war Kelabit wet fields, the labour that was put into the clearing of land and the felling of trees that was, and still is in the case of dry land, where the system has not changed, the basis for individuals maintaining use rights over the land which means that a borrower should ask for permission to use it, although the amount of labour invested in the case of dry land and pre-war wet rice land did not warrant any rent being paid. When the land reverts to *polong raya* ('big jungle') with tall trees, the hold the family of the original clearer and feller have on the land diminishes almost to zero because the effects of that person's work in reducing the amount of work necessary by other people to make the land usable vanishes.

Because little labour was needed to be invested initially in making a pre-war Bario wet rice field, the routine followed in cultivating a wet rice field did not vary radically as between a year when new land was being used, i.e. as between a year when the community was shifting to another area of a valley, and one in which they were cultivating land they had used the year before. Such shifts were made by the whole community and different families' farms were contiguous to make irrigation arrangements easier. The grass and shrubs would be higher if a new area (i.e. one used in the past but left to fallow for some years) was being used, and outer bunds (*patun*) for each household's field would need to be made, but no major earth shifting was undertaken. Wooden tools were used for what small amounts of earth moving were necessary. *Tongol* (parang) were used to cut down vegetation that was high, whether new

cultivation was being undertaken or not. If the vegetation was not very high, the *belu'ing,* a weeding tool, was used. If the fields were ones cultivated the previous year, a month was allowed to pass after harvest before this clearing was carried out. The field would be dry at this point because the Kelabit, in their pre-war system, normally let out the water from the fields before harvest. The cut grass and padi stalks were, after cutting, trampled into the earth, which was turned into mud by letting the water in at this point. This whole procedure was later repeated again. Thus the Kelabit were in fact practising a system of green manuring which they have partially abandoned with the new system, under which grass and padi stalks are usually piled on the bunds rather than trampled in. After these two bouts of green manuring, the tiny bunds between sections (*pang*) of each family's field were made. Each *pang* was, on average, 10 feet square, some much smaller. These inner bunds were largely made of rotting grass from the green manuring and, I am told, appeared to be almost floating. Water was directed around the field from *pang* to *pang* following the slope of the land, so that all *pang* received water. Each *pang* was in fact a tiny terrace. The making of these tiny sections within fields, *pang,* is a distinguishing mark of the pre-war Bario wet rice system. They made it possible to do without levelling the field completely and allowed fairly flat land to be used as it was.

Nursery beds (*samai*) were made in a few of the *pang* belonging to each family and seed was broadcast into these (*ngotad*). The young padi shoots were planted out in due course, probably when smaller than is usual now, since the water in the wet fields under the old Bario system was kept at only a few inches in depth.

It appears that the system of growing wet rice over the border in the Brian area of Indonesia, the heartland of highland Lun Bawang wet rice cultivation, may, even before the Second World War, have been closer to classic sawah methods. I have not yet visited the area and am relying on what I have been told by Kelabits. It seems that the sections of their fields (*pang*) were and are a fair bit bigger than *pang* in the pre-war Bario system and Schneeberger mentions some definite terracing (1979 p. 51). Irrigation was also managed differently, with water being left in the fields all year round rather than being let out after harvest, as was Kelabit practice before the war and as is, in fact, recommended by experts. The fact that the massive extension in wet rice cultivation in the Kelabit highlands since the war has been not only largely made possible by Brian labour in moving earth to create level fields but seems to have involved some instruction from them suggests that even in the past the Brian system may have been more developed, more permanent. There is a fairly high density of population, it seems, in the Brian, which makes permanent cultivation more likely. Also, the willingness of Brian people to accept 50% sharecropping arrangements in Bario suggests that there is little spare land in the Brian.

It has been suggested, originally by Douglas in 1912 (p.20) that the Kelabit, in the early part of this century and thus under the old Bario system, produced two crops of rice a year. This, I am told by present-day Kelabits, is inaccurate. An experiment *was* carried out about 10 years ago in Bario in double-cropping but it failed due to rat and bird (*pirit*) attack. No double-cropping was ever apparently attempted under the old system.

The role of buffaloes in the uplands has generally been assumed to have included a role in trampling the fields after the harvest, probably following Harrisson's statement that this was done in 'World Within'. It seems likely that he was describing a changing situation, since he wrote 'World Within' in 1959 and had himself seen both the old wet rice system and the beginning of the new one, probably without realizing that a transition was taking place. The old system apparently never involved putting buffalo into the wet rice fields after the harvest because they would destroy the bunds between fields, which were, under the old system, delicate. In the new system buffalo *are* put in after the harvest, at least by people who have fields accessible to buffalo and who have tame buffalo (buffalo may be tame or wild). In the *baa,* the wet field, the buffalo contribute their dung. They also trample and soften the earth and do a good part of the clearing by trampling and eating the padi stalks. Buffalo in the old system were therefore totally prestige possessions and repositories of value with no function in the agricultural economy, while in the new wet rice system they are also used in the

fields. Nowadays they are also used to haul wood and other goods.

Before the Second World War there were very many varieties of rice cultivated in both wet and dry fields in the highlands. Harrisson says that it was considered unlucky to plant one variety alone, unmixed with other varieties (1949, p. 107). In practising a system relying on many varieties the Kelabits were following an age old rule adhered to by all pre-industrial grain growers. Reliance on one variety only could mean a failed crop since a particular disease or pest is often more likely to attack one variety than others. In the Southern part of the Kelabit highlands, in Pa' Dalih, Remudu, Long Dano and Batu Patong, a large number of varieties is still grown. I counted and collected samples of 32 varieties in Pa' Dalih. Most of these, interestingly enough, can be grown in wet *and* dry fields. In Bario, however, only a small number of varieties is now planted; due to the access the Kelabit of Bario now have to town markets by air they are concentrating on two varieties: *pade adan* and *pade tuan*. Both of these can be grown in wet fields only. *Pade adan*, which has two major sub-varieties, *pade adan buda'* and *pade adan sia'*, is the 'Bario rice' sold in town. *Pade tuan* is a high producing variety which is suitable for making *nuba laya*, 'soft rice' wrapped in *isip* leaves, which is the Kelabit preferred form of preparing rice. *Pade tuan* is not a tasty variety but because it is so productive it enables less land to be devoted to growing rice to eat and more to growing *pade adan* to send for sale in town. In Pa' Dalih, where it is almost impossible at present to think of selling rice in town because of transport problems, much more emphasis is placed on growing tasty varieties.

After the Second World War, then, people in Bario began to make *baa*, wet rice fields, quite different to those they had made before the war. The new type of *baa*, which may have been modelled on the Brian system as I have said above, is closer to classic sawah although there are some important differences, notably in the fact that the water in the field is not let out after harvest. The impetus for the transition was initially the availability of earth moving tools, cangkul, made of metal and must have been experimental at first. The new *baa* were level and the sections within it, *pang*, were made as large as possible — sometimes one or two acres. The bunds surrounding a family's holding as well as between sections of it were made high and strong. The water level was made much deeper, up to 3 feet. These fields involved large investments of labour to level the land and make bunds. Such investments of labour would have made people think of the fields concerned as fields they had a closer, more permanent relationship with, not to be lightly abandoned in favour of another area. The increasing sense of permanency about wet fields grew when, in 1963, the Bario population began to be inflated by the resettling of a large number of Kelabit from other villages, both near the Indonesian border and outside the highland area, in the immediate Bario area at the invitation of the then Penghulu, Lawai Bisara, who was from Bario longhouse. These people were given land, 2 acres per family, and the Bario people agreed to continue cultivating the land they were using at that time on a permanent basis. At a public meeting they declared which land this was. From this point it was inevitable that all wet rice in the immediate Bario area would come to be regarded as permanently cultivated land since all available flat land was soon divided up with none to spare for rotation. Since 1963 a lot of labour has been therefore invested in levelling and improving wet rice land, gradually transforming it into permanent wet rice fields following the new system. This has been done with the help of a great deal of paid Brian labour, especially of late as many Bario people have accumulated money through the sale of rice in town; as mentioned above, a number of families do not even cultivate their fields themselves but give them to Brian people to cultivate on a 50% share-cropping basis. This applies mainly to people with jobs, either in Bario or in town, or who have shops at the airstrip, or who have no young members resident in Bario.

Bario has been transformed from a wild windy valley with simple impermanent wet fields occupying one small area of it at a time into a checkerboard of wet fields filling almost the whole of the valley now, with not only the now numerous longhouses dotting it but innumerable field huts and storage huts. Around the airstrip there is a growing township of small shops.

Ownership of *baa* has now become a major factor creating both wealth and prestige. Now that

it is possible to export rice (*padе adan*) from Bario by air, some families have become very wealthy. This applies particularly to families from Bario Asal, the original Bario longhouse, who have a good part of the best land in Bario, to families of settlers arriving early on in the period of resettlement starting in 1963 and sparked off by the Confrontation with Indonesia, and to Kelabit traders acting as middlemen sending rice to town.

Even more interesting is the way the ownership of *baa* now gives the owner, or, technically the use-right holder, status. A *baa* represents investment of labour, and labour is not only worth money now to the Kelabit, it is in itself prestigious. It is, also, I think, arguable that for the Kelabit, to whom changes in the natural landscape via movement of earth and stones at naming and death *irau* were important symbols of prestige, the making of *baa* has a significance associated with the disappearance of such feats of landscape changing following conversion to Christianity. It is not too far-fetched, I think, to suppose that the making of *baa* may be a replacement for these feats, since the making of these new *baa* also involves permanent alterations to the landscape. Finally, the ownership of *baa* represents, in the ideal situation (where the *baa* is well situated with relation to sources of water and gets enough water but is not liable to flooding) a guaranteed (almost) good harvest of rice. And rice is the most fundamental element of prestige for the Kelabits, as it is for most people in South East Asia.

A consideration of the growing of rice in this part of the world, and why it is so prestigious compared to the growing of other crops, is of course a separate and fascinating topic which needs more investigation than it has received. I will just make two points here. Firstly, it is clearly not, on a simple labour-input calorie-output basis, rational to be growing rice in the forest environment of Borneo. Roots, such as cassava, sweet potatoes and yams, and sago, require much less investment of labour for the calorie output achieved. Strickland documents this for sago in his recent paper on the Kajaman, while also showing how the Kajaman have made a transition to rice-growing. He attributes the transition to the prestigious position of rice but does not address the question of why rice is a prestigious crop and a prestigious food. My second point relates to this. Rice, unlike other possible staple crops such as roots and sago, can, like all grains, be stored for long periods, and its stored quantity and the size of the harvest can be accurately measured. This means that rice can be used as a repository of value, a way of accumulating and evaluating wealth, and as a currency for accumulating prestige items. This is precisley what has happened throughout Borneo. While this needs a much more exhaustive consideration, I suggest that the potential rice has to be used in these ways may be a major factor in the prestige that has become associated with it.

To the Kelabit, rice traditionally provided the major means of accumulating wealth by exchanging it for prestige goods. It also provided the means for displaying hospitality to guests and generosity through *irau,* which are basically an exercise in lavish giving which gives the host prestige. Having plenty of rice and being an aristocrat were synonymous in the past. Now, too, rice brings wealth through sale in town as well as in itself, in storage. It also provides the means to buy goods produced outside the Highlands, not any longer, gongs and jars and beads, but on the one hand items like motor bikes and chain saws, modern value objects, and on the other town-made goods to be given away at *irau,* biscuits, sweets and latterly shirts and sarongs as well. Ownership of the new permanent *baa* has introduced yet a new element which is part of the same complex. The prestige conferred by such ownership has been added to that accumulated through displays of generosity and hospitality made possible through rice. The new *baa* represent accumulation of labour, which in itself confers status, and tangible evidence of rice wealth. They may also possibly, as I said above, be seen as the modern equivalents of the earth moving feats previously performed at *irau.*

Pa' Dalih and the other Southern Kelabit highland longhouses have traditionally relied on cultivating dry rice rather than wet. Their land is fertile and it is not necessary to make *baa,* wet fields, to get a good crop of rice. The terrain is not suitable for making *baa,* in general, because although there is quite a bit of flat land, it is in small patches. While a dry field can include both flat and sloping land, a wet field must be on flat (or in the old Bario system, flattish) land. But a

staple crops such as grains, be stored for quantity and the size ately measured. This ed as a repository of ting and evaluating ty for accumulating precisley what has o. While this needs a sideration, I suggest be used in these ways the prestige that has

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er Southern Kelabit traditionally relied on han wet. Their land is ary to make *baa*, wet rice. The terrain is not in general, because it of flat land, it is in field can include both t field must be on flat n, flattish) land. But a major reason for preferring dry fields to wet in this area, where dry fields are a good proposition anyway, is the possibility of planting crops other than rice in dry fields. It is well known that farmers practising swidden agriculture do not practise monoculture, growing only one crop in the field in which they plant their staple starch crop, but plant starch crops other than their staple fruit, and many vegetables in the field. Although the Kelabit rely on the gathering of wild vegetables to quite a large extent, having vegetables planted in their dry fields means a much greater variety of vegetables available and a supply of them which can be to some extent predicted. As for other starch crops, the Kelabit traditionally planted, in dry fields, a variety of millet called *bua' lenamud,* maize and a number of varieties of cassava (*ubi kayu*). The millet was used largely for brewing a type of *borak,* and is no longer much planted because *borak* is no longer made. But maize and cassava are important sources of snack foods (as is the fruit planted in dry fields), although the Kelabits appear not in living memory to have had to rely on cassava (or on sago, from which they seem never to have extracted the starch, although they eat the heart as a vegetable) as their starch staple because of poor rice harvests.

In parts of the Lun Bawang highlands where people relied largely or wholly on wet fields for growing rice they either had to make separate gardens for these crops or do without. Doing without cultivated vegetables and snack foods derived from cassava maize and fruit from dry fields is regarded as a hardship. In areas where the quality of the land makes dry fields a good propostition, therefore, it appears that dry fields may well have been the preferred choice. It seems that wet rice cultivation is not regarded as the most obvious form of cultivation in such areas, such as the Southern Kelabit highlands, although the suitability of the terrain in the immediate Bario area and the unsuitability of the terrain in the Southern Kelabit area for making wet rice fields has undoubtedly been important too as a deciding factor.

Despite the above, the people of Pa' Dalih, Long Dano, Remudu and Batu Patong, the remaining Southern Kelabit villages, have since the early sixties followed the Bario example and invested huge amounts of labour in making wet fields. These are not the simple, temporary *baa* of the traditional Bario system but permanent fields like the new *baa* in Bario. Because the terrain in most of the Southern Kelabit area (excluding Remudu, which has a fairly large flat area) does not contain many flat areas big enough to make into a viable field, making these new wet fields has meant even greater investments of labour than in Bario. Small flattish areas have to be both levelled and extended by the removal of banks of earth on either side, often very high. These wet fields have not all been very successful. Many lack good sources of irrigation, relying on springs or even rainfall. Those that are fed by streams are often inadequately fed or subject to flooding. Thus the rice crop from these fields has been in many cases very poor, especially considering the large investments of labour involved.

The drive to create wet fields in the Southern Kelabit area seems to have been picking up momentum during the 70's and 80's and now every family in Pa' Dalih aims to own a *baa*. In the agricultural year 1987–88 so much energy was put into making new wet rice fields (the old *baa* at the spot beyond Batu Patong were, as I said above, opened up again, for example) and extending ones started in recent years that a number of families did not make dry fields at all, while those that did make them made very small ones. Since the 60's when the interest in wet field began the pattern in Pa' Dalih has been a reliance on both wet and dry fields. But the crop from wet fields in February 1988 was poor in Pa' Dalih due to adverse rainfall patterns and many rats and in March 1988 people were talking about making big dry fields in the year 1988-89. They had felt the shortage of cultivated vegetables and snack foods badly and were discouraged by the performance of the wet fields.

What is the explanation for this interest in wet fields in the Southern Kelabit area? Ecologically it seems inexplicable. From the data I have collected on the relationship between labour input and rice output for dry and wet fields, there appears to be no advantage in practising wet rice farming. The figures are equivalent, although the variability in productivity of labour is great for both wet and dry fields. And the figures do not allow for the fact that a number of crops other than rice are grown in dry fields and much of the

labour put towards the cultivation of rice in such fields contributes towards the growing of these crops — felling, clearing, weeding. There is no pressure of population in the area making it necessary to make land use more intensive via permanent cultivation such as the new wet rice fields. The most obvious explanation for the making of these new *baa* is that the people in the Southern Kelabit area hope to be able to grow and sell *pade adan* — as I pointed out above, *pade adan* is one of the few Kelabit varieties that will only grow in wet fields. There is some truth in this supposition. But at present very few people are succeeding in growing enough *pade adan* to do more than fulfil their family's needs for it, and in any case the difficulties of transport have made it almost impossible so far, as I have said, to sell any rice outside Pa' Dalih. Within Pa' Dalih, each family does sell a little rice to the school, but this is not *pade adan*. In 1987 one lady in Pa' Dalih sent some rice down by charter from Remudu, 3 hours walk away, but this is not easy to arrange because the arrival of a booked charter plane is always very unpredictable. The Pa' Dalih airstrip is at present unserviceable even for the small charter plane — it was built for the mission plane, which was even smaller — and the Pa' Dalih people, when not moving earth to make *baa* recently, have been moving earth to lengthen their airstrip. There is an element of keeping up with other villages in wanting a serviceable airstrip but there is also a definite desire to be able, in the future, to sell rice to town. The profits will not be as good as in Bario though because MAS, which flies to Bario, has special reduced rates for rice and a large proportion of rice for sale in town from Bario goes out on MAS.

So the possible future sale of rice is undoubtedly one factor behind the making of wet fields in the Southern Kelabit area, in the context of the fact that *pade adan*, 'Bario rice', can only be grown in wet fields. The success story of Bario in selling rice is envied and the Southern Kelabits hope to emulate it. Another factor behind the making of wet fields as permanent fields is the more permanent nature of residence now as compared to the past. In the past the Kelabit of one settlement had a territory around which they moved in rotation, utilizing all the good dry rice land. But since early this century efforts have been made by the government to get the Kelabits to move down from the small streams up which they were wont to reside to more permanent settlements on the more major rivers and streams. This process has not been resisted by the Kelabit, and now they can be seen as non-migratory people. In this context, practising only dry farming may mean going a long way to find enough suitable land and a long trek from the longhouse to the field. With some wet fields, everyone's needs for dry land as well can be satisfied without going far from the longhouse.

A third factor behind the Southern Kelabits' interest in making the new *baa* is less immediately obvious but I think the most fundamental. This is the point I made above concerning Bario when I said that the ownership of these new *baa* confers prestige. The new permanent *baa* are, I have suggested, prestige items. The old Bario *baa*, being temporary and involving little investment of labour in their creation were not, I suggest, seen as prestige possessions but rather as a means alternative to dry rice cultivation of exploiting the environment to grow rice. The present *baa* are completely different not only in physical form but in social significance from the old-style *baa*. In the Southern Kelabit Highlands, where a financial return from growing rice in wet fields is, at present at least, much less likely than it is in Bario, the factor of prestige comes to the fore — and, I suggest, clarifies what is happening in the whole of the Kelabit Highlands. Ownership (technically customary — not legal — ownership of use-rights at present) of these *baa* confers prestige. Such ownership, together with other factors — including the sale of *pade adan* in town and success in education as two other major factors — has, I suggest, been acting on the stratification system and altering people's perception of it because the effects of these factors has been unequal. This fact has, throughout the Highlands, spurred people on to work even harder to create new *baa*.

BIBLIOGRAPHY OF BOOKS AND ARTICLES REFERRED TO

Crain, J.B. 1970 *The Lun Dayeh of Sabah, East Malaysia: Aspects of Marriage and Social Exchange* PhD thesis, Cornell University. Published by University Microfilms.

Deegan, J.L. 1973 *Change among the Lun Dayeh, a Borneo People* PhD thesis, Washington University. Published by University Microfilms.

Douglas, R.S. 1912 An Expedition to the Bah Country of Central Borneo. *Sarawak Museum Journal,* Vol. 1, No. 2: 17-29.

Harrisson, T. 1949 Outside Influences on the Culture of the Kelabits of North Central Borneo. *Journal of the Polynesian Society,* Vol. 58, No. 3.

Harrisson, T. 1959 *World Within: A Borneo Story.* London, The Cresset Press. Republished 1984 by Oxford in Asia Paperbacks.

Langub, J. 1987 Ethnic Self-Labelling of the Murut. *Sojourn,* Vol. 2 No. 2.

Schneeberger, W.F. 1945 The Kerayan–Kelabit Highland of Central Northeast Borneo. *The Geographical Review* 35: 544-62.

Schneeberger, W.F. 1979 *Contributions to the Ethnology of Central Northeast Borneo.* Studia Ethnologica Bernensia 2. The University of Berne, Institute of Ethnology.

Strickland, S.S. 1986 Long Term Development of Kejaman Subsistence: An Ecological Study. *Sarawak Museum Journal* Dec. 1986, p. 117-172.

★ ★ ★

TO MULU

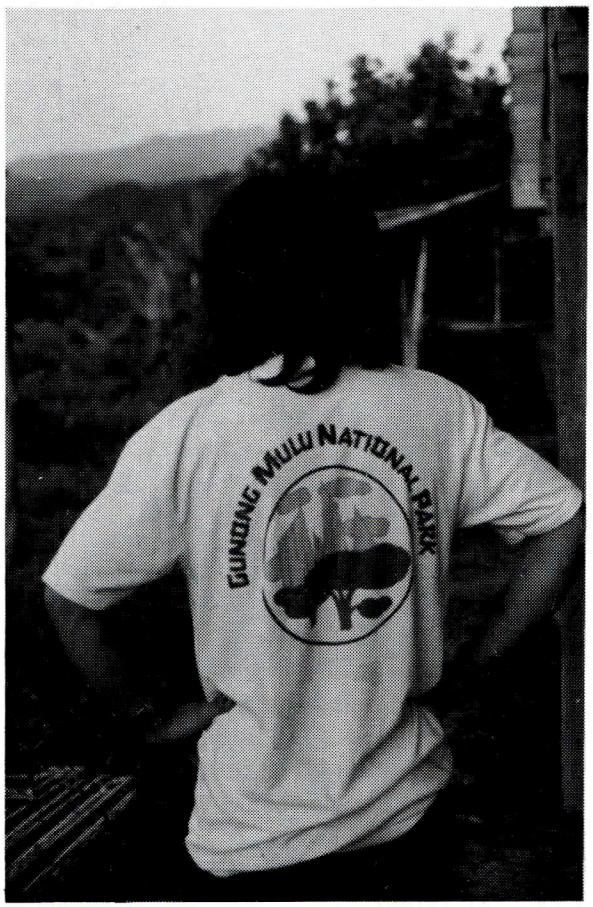
by

DR. ANDREW KIYU*

Oh Mulu,
how honoured I am to know a bit of you,
Formed over millenia, your majestic grandeur
awes me;
From your sharp pinnacles on Gunung Api,
down to your leaf-laden floors, and clear
streams
You embody one of the creator's best dreams.

I ponder your stalactites
and their partners through centuries — the
stalacmites.
I savor your cool clear water
and gaze at the bats in wonder
as out of your portals they fly in various
formations

*Divisional Medical Officer, Fourth Division.



A Penan at Batu Bungan with a Mulu National Park T-shirt.

in their search for food at far off destinations.

Hornbills take their rest in the trees,
while honey-laden hives, home for the bees,
are slung from their smooth strong branches.
As the butterflies perform their flitting dances,
orchids hang down their inflorescence,
and fungi, at night, turn on their illuminations.

Your summit beckons me
for from there, the panorama I long to see.
Perhaps some day, before I get too old
I shall climb your peak, to see that view
unfold.
Meanwhile bat guano's heady fragrance
invites me at the Deer Cave's entrance.

In the enormous recess of Sarawak Chamber,
I am told,
resides your being — your soul.
I hope to look for you there one day
and if I do find my way,