

As published in:

Ting, J. 'The Egalitarian Architecture of the Iban Longhouse' in Leach, A. & Matthewson, G. 'Celebration – Proceedings of the 22nd. Annual Conference of the Society of Architectural Historians, Australia and New Zealand', Napier, New Zealand, SAHANZ 2005

THE EGALITARIAN ARCHITECTURE OF THE IBAN LONGHOUSE

INTRODUCTION

Borneo longhouses are geographically located within the Austronesian language region, and their architectures share much with the "Austronesian house"ⁱ. The "Austronesian house" has three main attributesⁱⁱ: being raised off the ground by piles, large often saddleback roofs and decorative finials. They also have similar spatial and functional hierarchies and attributes, construction and materials. Longhouses differ in that they house a whole village (up to 60 families) under the one roof.

There are many types of longhouses in Borneo, a typology not found in many other parts of the world. This paper compares two different longhouse types (the longhouses of the indigenous Iban and Kenyah peoples of Borneo) in an effort to test the possibility of the Iban longhouse as an egalitarian architecture. While the Iban longhouse spatially articulates a hierarchical cosmology like most Austronesian houses, in plan and section they do not seem to express a social class based hierarchy. In contrast Kenyah longhouses deliberately articulate their social strata in terms of form, space and decoration.

Although architectural considerations should be covered under ethnology and anthropology, many of the ethnographic and anthropological descriptions of longhouse architecture fall short architecturally, especially in terms of the detailed relationships between social structures & community practices and their specific spatial & structural articulations, and detailed technical (e.g. structural & thermal) relationship of the architecture to the specific climate and environment. Reimar Schefold in *The Encyclopedia of Vernacular architecture of the World* has discussed possible reasons for these shortfallsⁱⁱⁱ. This paper also seeks to address this shortfall by looking at the Iban & Kenyah longhouse from an architectural perspective to compliment the ethnological or anthropological perspectives that form the basis of knowledge on this subject. It is based on both contemporary and historical publications covering the fields of anthropology, ethnology, geography, architecture and travel. Some doctoral dissertations, as well as the author's own fieldwork, will also be referred to. Unless otherwise indicated, descriptions are drawn from the author's own fieldwork.

For the purposes of this paper, the term 'egalitarian' shall mean "having the characteristics of a classless system"^{iv}, and does not relate to the more specific modern political idea of 'egalitarianism', as described in *The Dictionary of Modern Thought*^v. 'Ethnology' is taken to mean "the science of human races and their relations to one another and their characteristics"^{vi}. 'Ethnography' (ethnological recordings) shall be taken as "The comprehensive description of a specific culture, which should, by definition, include its architecture", and 'anthropology' shall be taken as "the study of mankind" - both have been adopted from the Glossary of *The Encyclopedia of Vernacular Architecture of the World*.

BORNEO

The Southeast Asian island of Borneo is currently occupied by three separate geopolitical entities: the Malaysian states Sarawak and Sabah, the Indonesian region of Kalimantan, and the Islamic sultanate of Brunei. Many pre-colonial tribal peoples still exist in Borneo, each with distinct language, culture and religion. Sarawak alone has about 28 different officially recognised groups,

including the Kenyah and the Iban. In Kalimantan, the overall term Dayak is still used for all the non-Muslim indigenous peoples of the interior. For the purposes of this paper, the Sarawak terms Iban and Kenyah will be used, irrespective of whether those peoples live in what is now Indonesia or Malaysia. The Kenyah peoples of Borneo live mainly around the Kayan River in the mountainous plateaus of north central Kalimantan, close to the border with Sarawak. They also live just over the border at the headwaters of some Sarawak rivers. The Iban peoples are said to have originated from Kapuas basin in the mid-16th century^{vii}, but now live in the lowlands and foothills throughout Sarawak.

Borneo has a large area of 750 000 sq.km^{viii} and is bisected by the equator. Its climate is tropical, and it is dominated by rainforest in its many ecological guises. Large mountain ranges take up about a quarter of the land area and run from virtually the northeast corner of the island in a southwesterly direction, roughly forming the border between Sarawak and Kalimantan. Numerous large rivers radiate out to the coast from the highlands, and are still the primary means of transport to the interior. The rainfall is high and there are two distinct seasons – the rainy monsoon season from about October to February, and the less-rainy ‘dry’ season from March to September.

In the 200 years prior to the Japanese invasion in 1942, Borneo was increasingly under the control of Westerners. Kalimantan was a Dutch colony, what is now the Malaysian state of Sabah was under the control of the British North Borneo Company, and Sarawak was ruled by a dynasty of white rajahs who had been ceded land and sovereign control by Brunei. Even Brunei itself, by 1942 reduced to two slivers of land on the north coast of Borneo, was a British protectorate. Prior to western control, the coastal areas of the island were under the influence of coastal Malay sultanates such as Brunei and Sambas, and the interior was generally left to the indigenous peoples. The island was of little economic consequence to westerners but for the Dutch the southern part was strategically located *en route* to their commercial interests in the Spice Islands.

The Brooke ‘dynasty’ (1841-1942) in Sarawak was not there for economic reasons at all. They were ceded land by the Sultan of Brunei (in exchange payment and for dealing with insurgencies) in 5 stages, to the extent of what Sarawak is today. The three successive Rajahs Brooke (James, his nephew Charles and his son Vyner) were engaged in ‘freelance imperialism’ where they were nominally there to protect the interests of the indigenous peoples against outside influences – certainly, their resistance to large scale foreign owned colonial plantations were testament to this^{ix}. They also sought to stop inter and intra-tribal conflict and wars in an effort to bring peace and order, but generally they did not interfere with the cultural autonomy and non-martial activities of the natives^x. The last Brooke Rajah ceded Sarawak to the British, and the state joined the newly independent Malaya to form Malaysia in 1963.

THE LONGHOUSE IN BORNEO

While there are non-longhouse indigenous architectures in Borneo, the longhouse is the most well known type of indigenous architecture, especially in Sarawak. There are many longhouse variants in Borneo, but would generally follow similar lines in terms of siting, plan and section. Longhouses are generally sited parallel to rivers and streams. Generally speaking, longhouses are made up of a series of individual raised pile houses (or ‘apartments’) constructed together in a row. A covered gallery for the use of the whole longhouse runs parallel to the row of apartments, and is of the same total length. A gabled roof over the gallery and apartments runs along the whole building, and the attic space within is also used. In some cases (with Iban and Bidayuh longhouses) a wide, unroofed balcony runs beside the covered gallery. The ground level is not inhabited and left as storage and shelter for domestic animals, while the longhouse group inhabits the first floor level, as well as the attic in some cases.

There could be a number of reasons for this configuration. Firstly, many of the indigenous groups of Borneo were often at war with each other, and the longhouse was used as a defensive structure. Having minimal outside perimeter and being a singular building raised on piles provided a good defensive position^{xi}. In some cases stockades were also used for additional protection. With the technology of weapons at the time being swords and spears, it was also strategically advantageous to have one's militia grouped together in one space for fast activation. Secondly, the cosmology of many of the indigenous peoples of the Borneo interior^{xii} placed humans within a greater universe that also contained the spiritual and animal worlds, and the longhouse was a microcosm of that cosmos^{xiii}. Humans occupied the middle level, the animals occupying the separate ground level, and the spirit world occupying the attic spaces. In other words, they saw themselves as being separate to nature and the spirit world, and with nature being able to be heavily influenced by the spirit world. They saw themselves as being prone to attack by malevolent spirits and the longhouse was also a form of spiritual defense.

In terms of construction, longhouses were built by hand and used post and beam construction, lashed together using a mortice and tenon method^{xiv}. Generally, imported technologies and materials such as load bearing brick and fired clay roof tiles (as used by the ethnic Chinese in Borneo) were not used. The materials used were available close to the site of the longhouse in conjunction with what could be salvaged from a previous longhouse (if there was one). Unlike the imported materials mentioned above, the thermal performance of the materials used in longhouses suit the hot, humid and high rainfall climate of Borneo, with the use of air-permeable and low thermal-mass cladding materials such as thatch, split bamboo, timber shingles and timber cladding. The air-permeable materials promote natural cross ventilation, important for cooling in the hot and humid weather. Rising hot air would also be able to escape through the roof materials, drawing in cooler air from the sides and below (through decking, also used to drain internal washing areas of the Iban longhouse, especially for ritual washing purposes^{xv}). Materials of low thermal mass do not store heat like high thermal-mass materials (like brick and fired clay tiles) meaning that there is no stored heat to radiate back into the buildings, minimising heat buildup and maintaining relatively comfortable temperatures inside. Open fires for cooking and night time heating are made on earthen or sand hearths inside the longhouses, and the smoke from these fires help keep bugs out of the perishable roofing and wall cladding. The lightweight nature of the non-load bearing wall and roof cladding made it easily replaceable when the climate took its toll.

Longhouses were a primary form of housing in Borneo until independence in the mid 20th century. The populations of Borneo are relatively decentralised, and in Sarawak, the longhouse remains a major indigenous housing type. In Kalimantan, efforts have been made to assimilate all the disparate peoples of the newly independent Indonesia, with the controlling central government discouraged traditional longhouses^{xvi}, just as they discouraged traditional class stratifications for the newly democratic and independent country. This led to longhouses being dismantled and the occupants of the dismantled and more conventional villages structures replacing them. In Sarawak, the locally controlled state government has much more political autonomy from their federal government, and has generally tried to encourage the continuation of traditional Sarawak cultural values and traditions while trying to improve the health, education and economic outlook of the peoples. This has meant a schism in the respective longhouse developments of the two countries since Indonesia gained independence, so this paper will look at a pre-independence Kenyah longhouse, Long Nawang off the Kayan River (in Kalimantan), in its 1928 state as published in Tillema's book^{xvii}. On the Malaysian side, the Iban longhouses of *Rumah Samu* (on the Paku River) and Nanga Sumpa (near the headwaters of the Ai River) in Sarawak will be looked at^{xviii}. Both were originally built before World War Two, and neither of which have been totally rebuilt since.

ARCHITECTURE & THE SOCIAL SYSTEMS OF IBAN & KENYAH LONGHOUSES

Most of the information on the social structure of the Kenyah is sourced from Herbert Whittier's PhD thesis^{xxix} in the Sarawak Museum Library, which has been very helpful in many respects. The Kenyah have a stratified social organisation, divided into three classes^{xx}: the aristocrats (*paran*), the middle-class free men (*panyin*) and the slave class (*panyin lamin*). Each of these classes are further sub-divided, with the aristocratic class having four sub classes – the *paran bio* (the headman of the village and his family), the *paran uma* (longhouse headmen and his immediate family), the *paran* (ordinary aristocrats) and *paran iot* (lesser aristocrats who are the offspring of mixed marriages with lower classes and their decedents). The *panyin* are further subdivided into two classes, but there is only one class of slaves (*panyin lamin*). These were generally made up of prisoners of war and debt slaves, and generally only *paran* maintained slaves.

In his dissertation, Whittier discusses the labour aspect of the aristocracy clearly^{xxxi}. The *paran* used their slaves for labour and also had the rights to demand labour of the *panyin*, which means that the aristocracy did not necessarily involve themselves in much construction work. The aristocracy did however involve themselves in the production of the decorative parts of the building that were signs of their class. On the other hand they were socially obligated to provide food and lodging for all guests to the longhouse, as well as be the keeper of the *adat* (ritual law and protocols). The *paran* were also required to be strong warriors and lead their people into battle.

This stratified social system is articulated in their settlements in a number of ways: villages were made up of a number of longhouses. As the headman of the village, the *paran bio's* longhouse usually has the prime position on the site, with other longhouses being built adjacent to his. Individual longhouses further articulate the social strata, with the *paran uma* having the middle apartment that is taller and wider (when looking at the long elevation) than the others^{xxii}, and a gallery space deeper than usual. The roof pitch remains similar throughout the longhouse, as does the springing height, and this has the effect of the headman's roof being bigger and taller than the ones to either side of his. These are the apartments of other *paren* or *paren iot*, whose plan is narrower and shallower than the *paren's*, making them step down in elevation (see Figure Two). In turn, the apartments of the *panyin* are on either sides of *paren* apartments, and the apartments of the *panyin lamin*. Both of these apartments have the same sectional dimensions, but the *panyin* apartments are wider than those of the *panyin lamin*. The plan and elevation of the longhouse is therefore a very clear architectural articulation of Kenyah societal strata, with wealth and influence being represented by larger areas and heights in the middle, with these areas and heights stepping down as the class diminishes. The *paran* apartment also occupies the middle of the linear building, the privileged central position, which has the same part-whole relationship in the longhouse as in the village.

The Kenyah 'tree of life' motif articulates this part-whole relationship of their society at a universal level. It is a series of tendril-like arms emanating from a point (representing region, village, longhouse or *paran uma's* apartment). Those tendrils in turn spiral around other tendrils from other points, but they do not touch. This shows the independence of the village on a regional level, and the interdependence of all Kenyah universally^{xxiii}. The use of the 'tree of life' motif is not determined by class structure. Building elements such as columns, rafters and doors are often elaborately carved, and walls & skirting boards are also carved or painted with class specific motifs and symbols. These motifs and symbols are also used to decorate objects of material culture, such as the *ba'* or traditional backpack baby carriers, hats and so on. The *paran* have specific symbols and motifs whose use is limited to their class. Figures of the human form and the tiger can only be used by *paran*, as are images of the hornbill. The dragon-dog motif has formerly been the prerogative of the *paran*^{xxiv}.

In the photographs of Long Nawang from Tillema's book^{xxv}, the use of decorated construction elements is clear. There are deep relief carvings on the timber columns, doors and skirting boards,

and the use of the human figure as the subject of these carvings show that the photographs are of an aristocrat's apartment and gallery. Another photograph shows a painted wall with dragon and hornbill motifs, also symbols that could only be used by the aristocracy. The photos also show the longhouses to be built very solidly, with huge columns (possibly 700-900mm in diameter) and timber floorboards of a structural nature only slightly narrower than the columns. The floorboards are also very long, spanning two structural bays (estimated at 6m). From the photos they look level, with no sagging in the middle, suggesting that there is a firm and substantial sub-floor structure. The beams are made of smaller diameter round timbers, and notched into the tops of the columns. The notches are about one third the diameter of the posts. The rafters are of smaller diameter still. The roof cladding is made of large timber shingles, the author estimates that they are 4-8 times the size of the contemporary 400x200mm timber shingles available in Sarawak today. All this shows the availability of large timbers at the time of construction.

In contrast to the Kenyah, the Iban have an egalitarian social system. According to Peter Kedit, this social system is organised into 3 levels: the basic social unit apartment (*bilik*) family, the longhouse (*rumah*) made up of *bilik* families, and the territorial tribe, usually based around a river catchment^{xxvi}. Sather expands this organisation when he describes the farming domain (*menua*) of the *bilik*. This arrangement is similar to the Kenyahs regional organisation, but without the social stratification. The Iban also have a social hierarchy, but it is not a stratified class system like the Kenyah one. Longhouse headmen (*tuai rumah*), skilled craftsmen (such as the late 'master weaver' Nangku from *Rumah Samu*), wealthy individuals (*orang kaya*) are afforded higher social status, but it is generally an affirmation of skill and achievement earned rather than something that is inherited.

Becoming a leader works on the basis of achievement and support, where *tuai rumah* garner support for their candidacy by showing they have combined intelligence and effort to achieve their goals, which might also be applicable to the longhouse community. Wealthy persons (*orang kaya*) also have influence based on their achievements, and often become the *tuai rumah*. Although it can be seen to be an elitist^{xxvii} system, with incumbent *tuai rumah* having the knowledge and experience, and being able to carefully groom their sons to take over the head position, it is not a birthright as it is with stratified Kenyah society. The incumbent *tuai rumah* has a higher social standing than the other longhouse members, but his son will still have to prove himself able to lead the longhouse before he can assume the position. The position becomes vacant when an incumbent loses support, steps down or passes away. When a new longhouse is built, the position of the *tuai rumah* is articulated by his personal apartment being the first to be built, and in the middle of the length of the longhouse. However, the position of *tuai rumah* can and does change, and the headman of a longhouse does not have to occupy the middle of that particular longhouse. The same pattern of selection is evident when the picture is scaled up to the level of the territorial tribe, with the *tuai menua* being the headman for the region^{xxviii}.

Iban longhouses have an additional unroofed balcony (*tanju*) for communal use running beside the covered gallery (*ruai*). Their rice is not stored in remote granaries (like the Kenyah), but in the attics (*sadau*) of the longhouse. The egalitarian nature of the Iban is articulated through the form of the longhouse: the roof is the same width all along its length and does not step up as it does with Kenyah longhouses. The depth of the communal *ruai* as a consequence of this does not vary along its length. This opens the possibility of the *tuai rumah* coming from any of the sectionally similar apartments should the opportunity arise and their leadership qualities demonstrated. The use of the gallery is also different to the Kenyah. In the Kenyah longhouse, most of the formal meetings and ceremonies take place in the aristocratic headman's gallery (also being the largest and most practical space) but in the Iban longhouse this can happen anywhere along the communal *ruai*. During large celebrations such as the annual *gawai* ('feast' in Iban, held at the end of the harvest season in early June annually), *gawai antu* (the memorialising 'feast of the spirits', held roughly once every 50 years or so^{xxix}, or roughly once in a generation^{xxx}) or even funerals, the whole length

and width of the *ruai* is used to accommodate the guests and proceedings. It is during (but not limited to) these festivals that the finest of Iban decorative arts are brought out, displayed and used, with the gallery walls hung with *pua kumbu* textiles, the occupants donning traditional dress and jewelry, dancing with carved and painted shields, with guests sitting on the best *tikai* and *bemban* mats, and so on.

The egalitarian nature of the Iban extends to the building of longhouses. The longhouse is built as a collective endeavour^{xxx1} by the longhouse community, with help from neighbouring related longhouse communities. This cooperation is required from all longhouse members by their social structure, and labour is nominally divided equally amongst those who can work. Although a longhouse is built collectively, the *bilik* family owns and maintains their section of the longhouse (*bilik, ruai & tanju*) and is responsible for providing the materials required to build their *bilik*. The *bilik, ruai & tanju* of the *tuai rumah* is often wider (when looking at the long elevation) and therefore larger than others, usually related to the wealth of the *tuai rumah*, and not to class structure as it is with the apartments of aristocratic Kenyah headmen. The Iban *bilik* is the private domain of the family, but the *ruai* and *tanju* is available for communal use^{xxx2}.

The longhouses of the Iban do not have the same level of decoration on their buildings. *Rumah Samu* use large timbers for the posts in the gallery space, and are not decorated. These posts are part of the original construction, and have a nominal diameter of 650mm. These are made of Borneo ironwood (*belian*) and the lack of cracking shows that they come from very old trees. The posts (some from the original construction) in the Nanga Sumpa longhouse, although much smaller, (nominally 350mm in diameter) are also not decorated. However, the refined decorative arts of the Iban do have a high level of use of cosmologically significant symbols and motifs, such as the fern, the hornbill, crocodile, and so on. Like the Kenyah, their arts and crafts are highly considered and require skillful execution, especially their *pua kumbu* (from cotton thread) skirt and blanket weaving, *tikai* (split rattan mats) and *bemban* (reed mats), baskets and woodcarvings. The only part of the longhouse that used to be decorated permanently is the notched log ladder used for access at the ends of the longhouse, these often have the dragon-dog head protection symbol carved into the top of it which one has to step over when entering or exiting. These ladders traditionally were also removable and pulled up for defensive purposes at night, and might be considered part of the contents rather than part of the building.

The lack of a tradition of adornment of the longhouse and also the lack of a hierarchically specified or controlled decoration (such as the tiger motif reserved only for the Kenyah *paran*) also indicates the egalitarian nature of Iban society. In Iban longhouses, adornment is the result of wealth rather than class, and architectural decoration is not spiritually necessary. Indeed, when one does come across a highly decorated and finely crafted longhouse, it might well be in another style altogether, as a symbol of wealth (being able to afford the craftsmen) rather than as a symbol of class (as with the Kenyah) or employing cosmologically significant Iban symbols. Based on his slides and field research in Sarawak, Michael Heppell suggests that *Rumah Matop* on the Saribas River in Sarawak would be an example of this. In the 1930's, this longhouse community became quite wealthy from their rubber gardens and they commissioned Malay carpenters from the coast to rebuild the longhouse in their Malay domestic style, admired by the Iban from that longhouse. His slides show that the plan of the longhouse was retained, as was the original large timber structural posts, but also show the fine Malay carpentry and woodwork employed in the tongue and groove timber floorboards, skirting and belian shingle roof, quite a departure from other longhouses built during the same period.

PERMANENCE WITH IBAN AND KENYAH LONGHOUSES

As described above, the Iban have a fine tradition in the decorative arts, and are not adverse to decorating their longhouses, which raises the question of other factors which might explain the lack

of decoration of Iban longhouses. One factor might be the period between major rebuildings of the longhouse, and another might be the Iban tendency to migrate^{xxxiii}. Both of these relate to the permanence of longhouses.

Nearly all longhouses are rebuilt regularly, with the Kenyah rebuilding theirs at the longest intervals (estimated by the author at about 15 years) due to their permanence and the robust manner in which they used to be built. For both the Iban and the Kenyah, the climate and environment plays a major part in the degradation of the construction materials, especially the less durable materials used for the roof cladding and some internal walling. Both of them re-use the large salvageable structural timbers, with the case of the Kenyah, they may be elaborately carved. The Kenyah usually rebuild their longhouses (as opposed to their villages) in the same location, but the Iban will generally only maintain or extend existing longhouses, rebuilding only in a new location. The Iban spiritual belief system is partly responsible for this. Iban people will build a longhouse in a new location if the existing one is hit by disease, or destroyed by fire. Both of these afflictions are believed to be caused by then incursion of malevolent spirits^{xxxiv} into the longhouse at that specific location, and the only remedy is to leave the area and rebuild in a carefully chosen location (where there might be natural signs, bird calls, etc. that might indicate the presence of good spirits). In this case, the existing longhouse structure and cladding is completely abandoned, with none of the structural materials taken to the new location (as they are believed to then embody the malevolent spirits). Only the contents and personal effects will be taken. Due to the flammable nature of the construction materials used, little can be salvaged after a longhouse fire. They are devastating and usually result in the entire building being burnt down to the ground.

The other reason for moving an Iban longhouse is agricultural. Both the Kenyah and the Iban practice slash and burn agriculture, primarily for the growing of hill or dry rice, the staple diet of Borneo peoples. Where the Iban and the Kenyah differ in this respect is that the Iban tend to overfarm their plots (planting rice on the same plots three seasons in a row), which have to be put to fallow for 15 years before it has regenerated adequately to be cultivated again. The Kenyah generally only farm their plots for two seasons in a row, with the second season being a crop of legumes, which don't leach the soil of nutrients like rice does. The Kenyah can re-use the same plot after seven years^{xxxv}, but they need many more plots to farm and rotate, meaning that their villages can remain in the same location for much longer than an Iban one might. For the Iban it means that at a certain stage they will need to migrate and move the whole longhouse (including the primary structure) to a new location where suitable farming land can be found within easy reach of the longhouse. For subsistence agriculturalists, this is a pattern of existence that leaves no imperative for building more permanent longhouses and expending energy and materials and time on decorating them.

For the Iban, parts of longhouses might also migrate. New longhouses are also built when the population of one longhouse fragments. When a competitor to the incumbent headman cannot find enough support to displace him, the challenger and his supporters might then decide to leave that longhouse and begin their own, whereas the Kenyah would be bound by their class structure to stay.

CONCLUSION

Both the Iban and Kenyah longhouses are products of their historical, social and environmental conditions. The construction methods and materials are generally similar, and their architectures respond to defense and climate in similar ways. Where they differ is in the articulation of their respective class structures through their architecture. The Iban longhouse is an egalitarian architecture as it represents the egalitarian nature of Iban society. Although there are many factors (such as spiritual, migration or agricultural factors) that might affect the architecture of Iban longhouses, the spatial and volumetric characteristics of the Iban longhouse clearly represent the lack of class strata in their society. This does not mean that they have no hierarchy in their society,

just that that hierarchy is not based on a birthright. All this is clear when the architectures of the Iban and Kenyah longhouses are compared, based on the kind of social hierarchy that exists in their respective societies.

NOTES

- ⁱ James Fox, 'Comparative Perspectives on Austronesian Houses' in James Fox (ed.) *Inside Austronesian Houses: Perspectives on Domestic Designs for Living*, Canberra: ANU Dept. of Anthropology, 1993, p. 1
- ⁱⁱ Roxana Waterson, *The living House – An Anthropology of Architecture in South-east Asia*, Singapore: Oxford University Press, 1993, pp. 1-7
- ⁱⁱⁱ Reimar Schefold, 'Anthropological' in Paul Oliver (ed.) *Encyclopedia of Vernacular Architecture of the World*, New York: Cambridge University Press, 1997, pp. 7-8
- ^{iv} Peter M Kedit, 'Iban Cultural Heritage', *Sarawak Museum Journal*, Vol. XL No.61 (New Series) (Dec. 1989): p. 10
- ^v Alan Bullock, Oliver Stallybrass & Stephen Trombley (eds.), *The Fontana Dictionary of Modern Thought*, London: Fontana Press, 1977, p. 256
- ^{vi} J B Sykes (ed.) *The Australian Concise Oxford Dictionary*, Melbourne: Oxford University Press, 1987, p.331
- ^{vii} Empiang Jabu, 'Historical Perspective of the Iban', *Sarawak Museum Journal*, Vol. XL No.61 (New Series) (Dec. 1989): p. 22
- ^{viii} Oliver (ed.) *Encyclopedia of Vernacular Architecture of the World* p1128
- ^{ix} Bob Reece, 'The Long life of Charles Brooke', *Borneo Research Bulletin*, Vol. 34 (2003): p. 82
- ^x The term 'native' was used in Brooke-era publications to describe the indigenous peoples and is still used currently by the indigenous peoples of Sarawak to describe themselves. The term is not derogatory, as a different kind of distinction was kept by the Brookes when compared to a conventional colonial project such as the British in India.
- ^{xi} Waterson, *The living House*, p. 83 & Henry Ling Roth, *The Natives of Sarawak & British North Borneo* (reprinted) Kuala Lumpur: University of Malaya Press, 1980, p.20
- ^{xii} That is, not the indigenous coastal Muslim Malays; nor the Taoist/Confucian immigrant Chinese groups who lived in coastal and riverine towns
- ^{xiii} Schefold, *Anthropological*, p. 6
- ^{xiv} Robert L Winzeller, *The architecture of Life and Death in Borneo*, Honolulu: University of Hawaii Press, 2004, p.27
- ^{xv} Clifford Sather, 'Posts, Hearths & Thresholds: The Iban Longhouse as a Ritual Structure' in James Fox (ed.) *Inside Austronesian Houses: Perspectives on Domestic Designs for Living*, Canberra: ANU Dept. of Anthropology, 1993, p. 88
- ^{xvi} Winzeller, *Architecture of Life and Death in Borneo*, p. 15
- ^{xvii} H F Tillema, *A Journey among the People of Central Borneo in Word and Picture* (English version, Victor T King, Ed.), Singapore: Oxford University Press, 1989
- ^{xviii} which the author visited in 1997 and 2002 respectively
- ^{xix} Herbert Lincoln Whittier, *Social Organisation and Symbols of Social Differentiation: an ethnographic Study of the Kenyah Dayak of East Kalimantan (Borneo)*, unpublished PhD thesis, Department of anthropology, Michigan State University, 1973
- ^{xx} Whittier, *Social Organisation and Symbols of Social Differentiation*, p.69
- ^{xxi} Whittier, *Social Organisation and Symbols of Social Differentiation*, p.70
- ^{xxii} Whittier, *Social Organisation and Symbols of Social Differentiation*, p.167
- ^{xxiii} As described to the author by Dr. Michael Heppell, anthropologist.
- ^{xxiv} Whittier, *Social Organisation and Symbols of Social Differentiation*, p.169
- ^{xxv} Tillema, *A Journey among the People of Central Borneo*, p. 94-95
- ^{xxvi} Kedit, *Iban Cultural Heritage*, p. 7
- ^{xxvii} Bullock, et al, (eds.), *The Fontana Dictionary of Modern Thought*, p. 263-264
- ^{xxviii} Sather, *Posts, Hearths & Thresholds*, p. 68
- ^{xxix} As advised by Jennifer Jabu of *Rumah Samu*
- ^{xxx} Sather, *Posts, Hearths & Thresholds*, p. 94
- ^{xxxi} Kedit, *Iban Cultural Heritage*, p. 9
- ^{xxxii} Mentioned by most of the texts and confirmed by *tuai rumah* Ngumbang at Nanga Sumpa
- ^{xxxiii} Jabu, *Historical Perspective of the Iban*, p. 21
- ^{xxxiv} As described to the author by Malcolm Jitam, an Iban convert to Christianity
- ^{xxxv} Whittier, *Social Organisation and Symbols of Social Differentiation*, p.90