

HEIRLOOM BEADS AMONG THE DAYAK OF BORNEO

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Research on Borneo's heirloom beads has so far largely focused on the Dayak tribes of Sarawak in Borneo's north. To expand the study area, the author has undertaken fieldwork in both Sarawak and Kalimantan and focused on Borneo's links with regional and international trade routes along which its heirloom beads traveled. A further area of research has been British and Dutch colonial literature and collections of heirloom beads outside Borneo.

INTRODUCTION

Borneo straddles the equator and is the largest island in Asia (Figure 1). Most of the island is covered by dense equatorial forest, its remote mountainous interior cut by fast-flowing rivers which radiate from a central upland spine. Travel by land is slow and difficult and despite dangerous rapids and waterfalls upstream, Borneo's rivers are its main axes of trade and communication (King 1993:20; Rousseau 1990:103).

Because of its geography, Borneo is sparsely populated in relation to its size and has a great ethnic and cultural diversity. Malay groups have traditionally occupied Borneo's ports and the lower reaches of the major rivers (Rousseau 1990:11). In the rivers' upper reaches are scattered populations of Dayak or Orang Ulu, the peoples of the highland interior of central Borneo. Trade and tributary relations existed between Borneo's Malay river-mouth port states and the mosaic of Dayak tribes. In exchange for jars, gongs, and beads, the Dayak traded downriver forest products much sought after in the regional and international trade. Control of Borneo's river-mouth trade provided Malay rulers on the coast with substantial wealth, but they were never able to establish political control over the Dayaks in the interior (King 1993:24-28, 103). The Dayak were self-sufficient in the necessities of life and the imported goods obtained by trade were not essential for survival, although they were regarded as highly valued luxuries which reinforced a Dayak chief's dominant position (Rousseau 1990:282).



Figure 1. Political map of Borneo (Borneo2 map english names. svg).

The Dayak live in stratified societies and practice shifting agriculture. They dwell in longhouses raised off the ground on stilts which accommodate many families. Populations are small and dispersed. Over time, migration caused by disputes over land, slaving, head hunting, and inter-village feuds created an ethnic mosaic of tribal groups and sub-groups randomly distributed across Borneo's interior between which tribal boundaries became inevitably blurred (King 1993:26; Rousseau 1990:1, 119). Larger Dayak groups include the Kayan, Kenyah, Iban, Bidayuh, Maloh, Kelabit, and Lun Bawang, and smaller groups often known by different names in different regions such as the Kajang, Melanau, Kanowit, and Tanjong. Many of the smaller tribes were subject to pressures from the dominant

Kayan and Kenyah. Lastly, the nomadic Punan live at the headwaters of all the rivers in central Borneo. They collected forest products for other Dayak tribes by whom they were often exploited (King 1993:29, 36, 44, 46).

BORNEO HEIRLOOM BEADS AND TRADE

Borneo was on the margins of the early trade routes between India, China, and the Spice Islands of eastern Indonesia. Because of environmental constraints, Borneo did not produce agricultural surpluses but it did provide important luxury goods for the Asian-wide and international trade such as gold, diamonds, and camphor, one of the costliest items of earlier sea trade (King 1993:105; Meilink-Roelofs 1962:101; Schoff 1912:355). As a result, from at least the middle of the first millennium AD, port states in Borneo slowly became more involved in the region's international maritime trade with India, China, and countries beyond (King 1993:6), although this was probably via entrepôts on Sumatra, Java, or the east coast of the Malay Peninsula (Wolters 1967:344). Over the centuries this trade brought a variety of glass and stone beads to the Dayak, some highly valued as heirlooms. This high value inspired beadmakers elsewhere to produce copies, some of which are now valued as highly as the originals.

Beads were valued by all the Dayak tribes, particularly the Kayan. There were few Dayak families of the upper class that did not own a certain number of old beads which formed an important part of a family's prestige and wealth, and were one of the principal forms of currency (Hose 1926:85; Hose and McDougall 1912, 1:226; Rousseau 1990:3). A Dayak longhouse chief had the right of first choice when a trader arrived with new goods or beads, a custom which ensured his family's dominant position (Rousseau 1990:282). The Dayak's earliest heirloom beads date back to the second half of the 1st millennium.

The Kayan were aggressive traders and beads were particularly highly valued. Many Kayan women were expert in identifying genuine old beads and distinguishing them from more recent imitations (Rousseau 1990:157, 284; St. John 1862, 1:111). The Iban, formerly known as the Sea Dayak, showed less interest in beads than other Dayak tribes (Hose and McDougall 1912, 1:226).

The Kayan and Kenyah place more value on ornate and decorative beads, particularly those known to them as *lukut* beads (Chin 1980:4). The coastal Melanau also value blue glass barrel beads as bride wealth and grave goods (Chin 1980:2, 49; Munan 2005:20).

Aristocratic status among the Kelabit depends above all on inherited wealth (jars, beads, gongs, porcelain, and stoneware) (LeBar 1972:162, quoted in Rousseau 1990:186). Unlike the Kayan and Kenyah, they place more value on beads of monochrome blue glass and carnelian (Chin 1980:49).

The coastal Melanau also value blue glass barrel beads as bride wealth and grave goods (Chin 1980:2, 49; Munan 2005:20). They are also valued by Bidayuh who string them on rattan into necklaces known as *taya babut* with the teeth and claws of honey bears and wild boar. These are worn along with other charms by healers and priests during ceremonies (Chin 1988:61). The same beads were also made into belts.

The more significant Borneo heirloom beads are discussed below.

Rayed-Eyed Beads

Lukut sak badak, kelam song (Kayan) (Hose and McDougall 1912, 1:Plate 130; Munan 2005:134).

Rayed-eyed beads (*lukut sak badak* and *kelam song*) are Borneo's earliest heirloom beads. *Lukut sak badak* are mosaic beads with eyes with projecting rays known by collectors in Kuching, Sarawak's capital, as "palm leaf beads" or "spider bum beads" (Munan 2005:30, 132). The rayed-eye design appears in several Borneo heirloom beads. Firstly the oblate *lukut sak badak* with large multiple eyes in the Southwell Collection which may be of Islamic origin (Figure 2 upper center). The rayed-eye design also appears in glass beads known as *Jatim* – mosaic beads with a thin layer of preformed cane slices over a monochrome drawn glass core. Rare but valued in Borneo, *Jatim* beads are thought to have been made in eastern Java between the late 5th/early



Figure 2. Rayed-eye bead in the Southwell collection (upper center) (detail of Mohtar 2011:Plate XLIX).

6th and 7th centuries (Lankton, Dussubieux, and Rehren 2008:336-338). Visually very similar beads, also known as *lukut sak badak* and highly valued by the Dayak, are found in the Indonesian archipelago (Figure 3) (Adhyatman and Arifin 1993:50, 69). These are Early Islamic mosaic glass beads without a core, said to post-date Jatim beads by several hundred years (Lankton, Dussubieux, and Rehren 2008:353).



Figure 3. *Lukut sak badak* Jatim bead without a core (right) and later Islamic *lukut sak badak* (left) (Adhyatman and Arifin 1993:50, Plate 55).

A third *lukut sak badak* has large red/white/black eyes with green and yellow rays (Munan 2005:30). It is also an Early Islamic mosaic bead dating from the 4th-9th centuries. In the Islamic West, rayed-eye beads were made in various colors, shapes, and sizes (Lankton, Diamanti, and Kenoyer 2003:77, Figure 8.3) and were widely distributed in Mali and Mauritania (Panini 2007:54, 57, 58, 78), Middle Egypt (Then-Obłuska and Pleša 2019:68), and elsewhere.

The *kelam song* is another early Dayak heirloom rayed-eye bead (Figure 4H). In the late 19th century, this bead was valued at £4-£6, the cost of an adult female slave. The *lukut sekala* (see below and Figure 4A) was the Kayan Dayaks' most highly valued heirloom bead. It was valued at £10-£15, or one healthy adult male slave (Hose and McDougall 1912, 1:Plate 130). This makes the *kelam song* the Kayan Dayak's second-most valuable bead, suggesting ownership was very rare.

Many early Islamic beads have been found on the Malay Thai peninsula at ancient sites thought to have been major entrepôts on the main international maritime trade routes between the Middle East, Island Southeast Asia, and China (Francis 1999a:2, 28; Pongpanich 2009:87, 120, 131). Some of these beads traveled further east on regional trade networks. A few may have arrived in Borneo as it became more involved in regional and international trade, but it was only later that beads began to reach the scattered Dayak tribes in Borneo's interior in sufficient quantities to become heirlooms which would define tribal identity (Francis 1991b:110).



Figure 4. Old beads worn by Kayans (Hose and McDougall 1912, 1: Plate 130): (A) *lukut sekala*, (E) *kelem buang* ("bear bead"), (F) *kelam buang butit telawa* ("bear bead with spider belly"), (H) *kelam song*, (I) *kelam*, (J, K) false chevron.

Due to their high value, several copies of early rayed-eye beads were made in the late 19th or early 20th century, presumably in Venice. One example appears on a high-status baby carrier from the Upper Mahakam region (Figure 5 left). Another *lukut sak badak* copy appears in a women's waist string in the Charles Hose collection acquired by the British Museum in 1900 (As1900-756). This bead has an additional red dot in the center of the eye. Yet another copy is displayed in the Tun Jugah Foundation Museum, Kuching, Sarawak. No copies of the *lukut sak badak* are in the Picard collection of beads used in the Africa trade (Picard and Picard 1987-1991) or in the Murano Glass Museum's extensive collection of bead sample cards (Panini 2017). This would appear to suggest that the *lukut sak badak* copies were made specifically for the Borneo market. Today, excellent copies of the Jatim *lukut sak badak* are made from recycled glass in small village workshops near Jember in East Java (Figure 5 right) (pers. obs.).



Figure 5. Rayed-eye bead copies: left, an early 20th-century copy of a lukut sak badak rayed-eye bead on a high-value baby carrier, Upper Mahakam, Kalimantan; right, modern copy of a lukut sak badak Jatim bead made near Jember, East Java, from recycled glass (photos: author).

Carnelian Beads

Tong b'ao buror ma'un (Kelabit), *aki* (Lun Bawang), *lameang* (Dunsun), *marik pelaga*, *pelage batu*, *pelaga labang* (Iban) (Munan 2005:134).

Carnelian beads have a long history in Borneo. Hexagonal faceted bicones formed part of the Sambas treasure, an 8th-9th centuries hoard of ancient gold and silver Buddhist sculptures found near Sambas in northwestern Borneo (West Kalimantan). The Sambas beads include bicone and spherical carnelian examples with a distinctive mottled appearance (McKinnon 1994:19).

Ancient carnelian beads have also been found in Kalimantan near Pontianak at Sungai Serok, along with a boat frame, *lingga*, and *yoni* (Musium Negari Kalimantan Barat, Pontianak, West Kalimantan), as well as in Sarawak at Bongkissam (11th-12th centuries) and Gedong (9th-13th centuries) (Francis 1989a:24-25) in the Sarawak River delta. The oblate, barrel, and faceted carnelians found at Bukit Maras (7th-13th centuries) and Santubong, also in the Sarawak River delta, were described as made “of a local conglomerate... of carnelian type, probably locally obtained” (Everett and Hewitt 1909:7). According to Peter Francis (1989a:24-25), close inspection and a silicon impression of the perforation confirmed that the beads were ground, polished, chip dimpled, and then bored with a diamond drill. The excavations at Santubong suggest that traders with an Indian influence were settled or trading at and about the Sarawak River delta, side by side with Chinese activity, which continued up to the Sung period (960-1279) and possibly to the 14th century (Francis 1989a:24-25; Harrisson 1955:514-515). Some of these beads have a similar mottled appearance to the Sambas Hoard beads.

Where did the “local conglomerate” used to make the Santubong carnelian beads come from? Sources of mottled orange carnelian are found in Java (Adhyatman and Arifin

1993:19, 22-23; Francis 1991a:222-223), but a far closer source with a history of the manufacture of carnelian beads was in the “kingdom of Succadana” in the Kapuas Delta region of West Kalimantan where “they mine... oblong red agate stones and rings” (Dovey 1979:71). In the 19th century, British colonial officials Hose and McDougall (1912, 1:226) commented that “most of these valuable beads [in Borneo] are of foreign manufacture, though a few made from shell and agate are of the country.”

The author’s fieldwork has shown that sources of carnelian in the Borneo Kapuas River region have been confirmed by local geologists. The best carnelian comes from Ketapang and is still used today by Malays and Dayaks to make beads or to set in rings. Carnelian and agate are also found in the headwaters of the Kapuas River at Putussibau, at Badau near the Sarawak border, and at Sepauk village between Sanggau and Sekadau, West Kalimantan.¹ Examples seen by the author have the same mottled appearance as the Santubong and Sambas Hoard beads. Similar mottled carnelian beads are on display in a Dayak shaman’s heirloom necklace at the Negari Museum in Pontianak in the Kapuas delta (Figure 6). Only chemical analysis will determine whether the source of the Sambas and Santubong carnelian beads was the Kapuas region, Java, or even Khambhat (Cambay) in India which remained an important source of carnelian beads in Southeast Asia and Borneo.

Carnelian beads were valued by many Dayak tribes in both Sarawak and Kalimantan (Adhyatman and Arifin 1993:89). They were worn as heirloom beads and valued for their healing and protective powers (Bock 1881:153, 187). They continued to be used by Dayak Bidayuh healers in Sarawak long after they ceased to be worn as heirlooms. By the third quarter of the 19th century, copies of carnelian hexagonal bicone beads were being imported into Borneo from Idar-Oberstein, Germany, and subsequently from Brazil (Everett and Hewitt 1909:7). At the end of the 19th century, beads from Bohemia began to dominate bead imports into Borneo from Singapore (Cheah 2003:31) and included glass imitations of carnelian hexagonal bicones. As we shall see, the Dayaks were not deceived by what they regarded as copies of Borneo’s most highly valued heirloom bead, the lukut sekala, but the Bohemian glass bicone imitations were considered equally powerful as real carnelian beads (Munan 2005:45). During a field trip to Sarawak, Peter Francis (2002:186) attempted to explain to Dayaks the difference between true carnelian beads and their glass imitations, but his views were dismissed as those of an ignorant outsider. Of two carnelian hexagonal bicones seen by the author in a high-value bead collection in the Upper Mahakam, it was the glass imitation, rather than the true carnelian hexagonal bicone, that had been mounted in costly gold wire for use as a pendant (Figure 7).

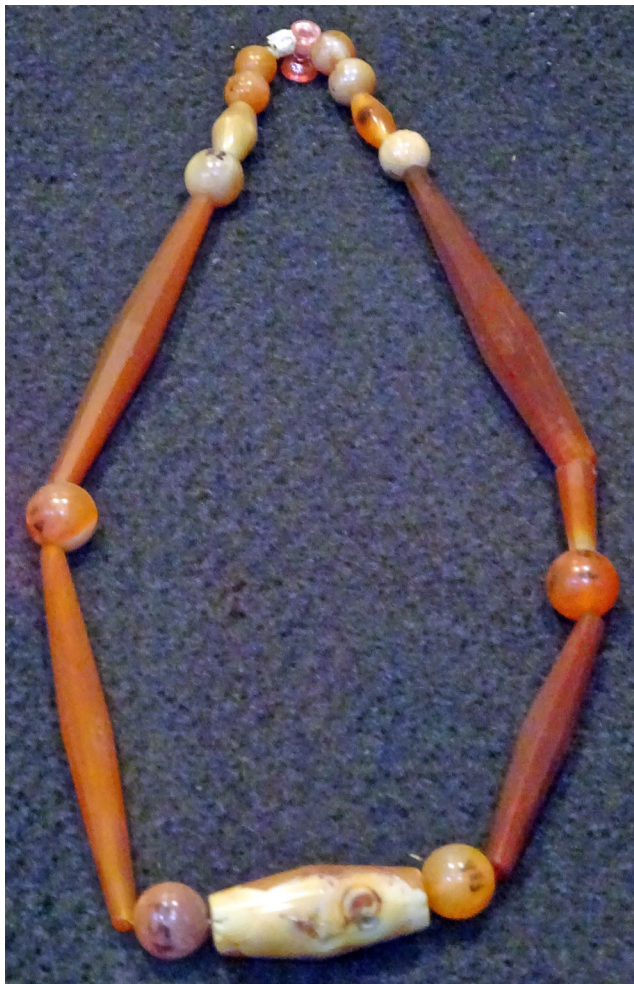


Figure 6. A shaman's necklace of the Menyuke Dayak, Pontianak district, West Kalimantan, which includes long carnelian biconical beads from Khambat or Idar-Oberstein, with an elongated barrel and spheres of mottled agate (Negari Museum, Pontianak) (photo: author).

Blue Barrel Beads

Let mitem, let Itam, let silo, ba let, and numerous other *let* variants (Kelabit), *marik kelam tetak* (Iban), *manik tolam, tumbis tolam* (Bidayuh) (Bala 2013:10, 11; Munan 2005:132).

Let beads (Figure 8), known as blue barrel beads by Sarawak bead collectors, are of wound translucent glass ranging from deep bluish black to light green, light blue, and transparent turquoise. Most are barrel shaped but some are more tube-shaped (Bala 2013:10-11; Munan 2011:132-133). They vary from 8.5-11 mm in length and 7-10 mm in diameter. *Let* beads are particularly valued by the Kelabit Dayaks who consider them to be Borneo's most ancient heirloom beads (Elizabeth Deng, Miri, Sarawak 2019: pers. comm.). They are also valued by the Selakau Bidayuh



Figure 7. A long carnelian bicone (top) and a glass imitation mounted in gold (bottom), Tiong Ohang, Upper Mahakham, Kalimantan (photo: author).



Figure 8. Blue barrel bead (let) in a Selakau multi-strand girdle or belt with one blue melon bead (Textile Museum Kuching) (photo: author).

Land Dayaks of southwestern Kalimantan (Bala 2013:11; Chin 1980:49; Harrison 1964:37; Munan 2011:138), but are found in most parts of Borneo and were widely used in the interior barter trade as far west as the Kenyah-Kayan Dayaks of the Bahau and Apo Kayan (Harrison 1964:37).

Similar beads have been found in Southeast Asian sites at Kuala Selinsing on the Malay peninsula and Pulau Kukao off Thailand, as well as at Borneo sites of the 9th-10th centuries at Tanjong Kubor and Sungai Jaong (Santubong, Sarawak River delta) and the Niah Caves (Ling Roth 1896:282). The origin of these early *let* beads is not clear. Despite their similar appearance, they have a much lower lead content than the *let* heirloom beads circulating in Borneo today and appear to have a different origin (Francis 1989b:3, 1989c:14; Harrison 1968:127-130).²

In the early 17th century, Banten-based British East India Company factors noted glass beads “of colour blue, and in fashion of a tunne (barrel), but of the bignesse of a Beane” made by expatriate Chinese beadmakers at the Javanese port of Banten. The beads were traded by the Chinese – and subsequently by the colonial Dutch who had arrived before the British – to the West Borneo port of Sukadana in the Kapuas River delta region, “which place yieldeth great store of diamonds” (Danvers 1896:221, quoted in Francis 1985b:6; Purchas 1625, 3:513-514). A second Chinese glass beadmaker was based in Sukadana itself (Francis 1985b:6). Why were Chinese beadmakers based in Banten?

In the 14th century, a community of immigrant Chinese beadmakers were operating at Fort Canning in Singapore. They made *mutiraja*, small glass coil beads which had by the 13th century replaced drawn Indo-Pacific beads in the region (Francis 1989a:20). Singapore appears to have been a flourishing port and center of power but its decline was brought about by the foundation of Malacca in the early 15th century (Borel 2010:139; Miksic 1995:258; Seidel 2000:3). Malacca was strategically located on the Malay peninsula on the main international maritime trade route between East and West, and became Southeast Asia’s main entrepôt. It attracted traders from China, the Middle East, South and East Asia, and the Indonesian archipelago. The Javanese controlled the Indonesian island trade to and from Malacca (Coedes 1968:241; Hall 1985:21). After the 15th century, however, this trade seems to have passed from the Javanese to the Chinese who controlled the trade in pepper, sandalwood, ivory, tortoise shell, and Baros camphor, as well as the trade in Borneo gold and diamonds. The Chinese also controlled the trade in “*moetisalahs*” (mutisalahs) and “other kinds of beads” (Rouaffer and Ijzerman 1915, quoted in Meilink-Roelofs 1962:246, Note 72; Tiele 1877, quoted in Schrieke 1955:22, 42), exchanging “*paternosters*” (beads), “certainly in part *Mutisalahs*,” for products such as stick lac as far away as Burma.

In the early 16th century, the Portuguese arrived in Southeast Asia and captured Malacca. To avoid the high tolls exacted by the Portuguese, many Asian traders moved from Malacca to Banten in western Java (Sar Desai 1969:507) which became one of the two chief Southeast Asian ports for the international and local trade (Schrieke 1955:46, 50). Banten controlled much of the Kapuas River trade which depended almost entirely on exchange with the interior. It is unclear when Chinese beadmakers arrived in either Banten or Sukadana and whether, in addition to the let beads mentioned above, they also made mutisalahs and “other kinds of beads” (Rouaffer and Ijzerman 1915, quoted in Meilink-Roelofs 1962:246, Note 72). British East India employees were aware of the Banten Chinese let beads

because they were bartered for diamonds, a trade in which the British wished to become involved. It is possible that the Chinese community in Banten made other beads of which the British were unaware because these were exchanged for regional products in which the British had no interest.

British attempts at Banjarmasin, a large port on Borneo’s southeast coast, to barter the Banten Chinese let beads for diamonds were rejected: only gold coins were accepted by local traders (Ogden 2018:4). It is sometimes assumed that contemporary ports on the same trade networks received the same beads, but the Banten let show that this was not always the case.

Many let beads traded to Sukadana are on display at the Museum Negeri Kalimantan Barat at nearby Pontianak in the Kapuas River delta region, including a large Selakau Dayak belt similar to the example in Kuching (Figure 8), and a Bidayuh Dayak warrior neckpiece of let beads and animal teeth.

The Kelabit identify 14 different varieties of let beads (Bala 2013:11; Chin 1980:49; Munan 2011:138), suggesting that they were made over a very long period at several different sites. New beads visually similar to those found in pre-1200 AD burial caves at Niah, West Borneo, were still being traded inland from Brunei Bay to the Kelabit Dayak uplands in the late 1940s (Harrison 1964:40).

Blue Barrel Melon Beads

Klam dian (Land Dayak), *alet (let) lobak* (Kelabit, Lun Bawang) (Harrison 1950:214).

The *let labak* is the only let bead with “grooves and ridges.” Because of its scarcity, it was particularly highly valued by the Selakau and Kelabit Dayaks (Harrison 1950:208). A single dark blue let labak is included in a Selakau girdle in the collection of the Sarawak Museum (Figure 8 bottom left). Tom Harrison, former head of the Sarawak Museum in Kuching, reported that Anyi, Kelabit headman of Pa Bengar and one of the most aristocratic of Kelabits, was one of the few Dayak who owned a few grooved let or melon beads (Harrison 1950:214; Manis 1949:10-13). One or two let labak were sometimes included in Bidayuh Dayak warrior necklaces, along with blue let beads, cowries, claws, and brass bells (Munan 2005:42).

Let melon beads made of opaque black and white, rather than translucent glass, are included in a Dayak heirloom necklace in the Hilde May collection made in the Upper Mahakam region of Dutch Borneo (Kalimantan) (Figure 9).³ The necklace also incorporates let beads of opaque black,



Figure 9. Dayak heirloom necklace from the Upper Mahakam region of Kalimantan with melon, blue barrel, and raspberry beads (Hilde May collection, Völkermuseum, Heidelberg; photo: author).

white, yellow, and turquoise glass, which are less often seen in Sarawak. A small group of opaque black and white let labak barrels and melon beads from Borneo are also found in the collection of the British Museum (As1972,Q.949.b, As1972,Q.925a-g). Were these opaque glass beads also made by the Chinese at Banten, or perhaps at a different site on the Chinese mainland or elsewhere at an earlier or later period? Were they traded up the Kapuas River, or up the Mahakam on the opposite side of Borneo on its southeast coast, suggesting a quite different trade route?

The opaque let badak melon beads, particular those in white, bear a resemblance to the heirloom beads of the Tani tribes in Arunachal Pradesh (Campbell Cole 2012). They are made of potash-lime glass that was probably produced in China (Carter et al. 2018).

Green Bubbly-Glass “Bear” Eye Beads

Buah (or *buang*) *wang lutong*, *kelam buang* (bear bead), *kelam buang butit telawa* (bear bead with spider belly (Kayah), *kelam* (Kenyah), *kelom kawit* (Kutai Kartanegara, East Kalimantan), *marik limau* (Iban) (Hose and Dougall 1912, 1:Plate 130; Munan 2005:135, 136; Tun Jugah Museum).

Kelam buang are wound beads of semi-transparent bubbly glass with somewhat carelessly applied red, yellow, or white trails creating multiple rings or eyes (Figure 10). Kelem buang were particularly valued by the Kayah and Kenyah Dayaks who are often found as close neighbors (King 1993:44).



Figure 10. Green bubbly-glass “bear” eye beads (kelem buang) (Tun Jugah Foundation Museum, Kuching, Sarawak) (photo: author).

There is considerable variation in the appearance and size of *kelem buang*. Most are spherical and 14-18 mm in diameter (Figure 4E-F), while others are barrel shaped (Figure 4I) and said to have been Kenyah rather than Kayah beads (Hose and McDougall 1912, 1:Plate 130). Some *kelem buang* have additional white or pale blue rings around the perforation (Figure 10 lower left). Others have blue as well as yellow, red, and white rings forming the eye. Some have many smaller or just a few larger red and yellow eyes (Pavaloi and Dietrich 2015:167, Figures 242-245), sometimes unevenly distributed (RV-614-113, Rijksmuseum voor Volkenkunde, Leiden). In some beads, the eyes are so badly executed they are trails rather than eyes (Dubin 1995:227).

In the late 19th century, a *kelam buang* bead was worth only 15 English shillings, in contrast to the *lukut sekala*, Borneo’s most highly valued bead, at £10-£15 (Hose and McDougall 1912, 1:Plate 130). At 20 shillings to the UK pound, the *lukut sekala* was worth 12-18 times more than the *kelam buang*.

All *kelam buang* beads have a pitted or apparently corroded surface. This could be the result of poor quality glass or lack of beadmaking expertise. Repeated heating would normally allow the glass trails to meld with the body of the bead to create a smooth surface. In some beads the trail decoration has fallen out, leaving depressions.

Munan (2019: pers. comm.) is aware of only around 100 *kelam buang* in western Borneo, although examples are found in several collections of Borneo heirloom beads in Borneo itself and elsewhere.⁴ *Kelam buang* were until recently thought by Kuching collectors to have been found only within trading distance of the Kapuas River in its middle

and upper catchments near the Bahau Dayak homeland (Munan 2005:35). The author's research, however, has shown that kelam buang beads in European collections were found at the mouth of the Mahakam River at Kutai Kartanegara, East Kalimantan, on Borneo's east coast (the beads were known locally as *kelom kawit*),⁵ and in the upper Mahakam region, also in East Kalimantan (Pavaloi and Dietrick 2015:167). These kelam buang could have traveled along an important cross-Borneo trade route described by Dutch colonial administrator Nieuwenhuis (1904a:141) in the late 19th century which went up the Kapuas River on Borneo's west coast, across the Müller range in the central Borneo mountain watershed to the Upper Mahakam River region in Dutch Borneo (now East Kalimantan) and on to its mouth on Borneo's east coast. Alternatively the beads could have been traded up the Mahakam via Kutei.

It is tempting to identify kelam buang with beads that Nieuwenhuis found on the surface at an old burial site, also in the Upper Mahakam region, at Tjehan, a tributary of the Mahakam. While he does not give the color or design of the beads, he describes them as having

lost their shiny surface... partly weathered to the middle... In the fabric of the beads numerous bubbles occur, opened by the weathering process, sometimes their surface shows even deep pits. For many enameled beads, the enamel falls out of the pits or it is destroyed faster than the rest of the bead (Nieuwenhuis 1904a:139).

Francis knows of no parallels of the kelam buang outside Sarawak. He describes them as very crudely made and doubted they were made in any established glassmaking center in China, Japan, or Europe, but suggested they could have been made in Borneo or Indonesia (Francis 1989b:16). Their wound manufacture suggests a Chinese origin. From the 14th and 15th centuries, Chinese beadmakers were familiar with the technique of applying trail decoration to wound beads (Borel 2010:Plate 4). Trail decoration was also used by the Chinese on their copies of the chevron beads imported from Venice into Island Southeast Asia after the 1480s.

Perhaps the more crudely made kelam buang were the products of the less-skilled Chinese expatriate beadmaker community in Banten, Java, or Sukadana on Borneo's southwest coast who, as we have seen, were making blue barrel let beads which were also traded up the Kapuas. Or were the many variants of the kelam buang discussed above the product of several competing Chinese workshops elsewhere?

What was the source of the glass from which the kelem buang were made? In the 14th century, recycled

Chinese bottles are thought to have been used to make glass bangles by Chinese immigrant glassmakers at Fort Canning, Singapore (Miksic 1995:345). In the 15th century, the glass used by Banten Chinese beadmakers may also have been recycled or imported from glassmaking workshops on the Chinese mainland. Munan (2005:32, 135-136) suggests recycled ginever bottles, discarded by the colonial Dutch in Java in the early 17th century, may have been used to make the kelam buang. Extravagant consumption of alcohol by colonial Europeans, often the result of the noxious state of the local drinking water, would have made bottle glass readily available (Dalrymple 2004:407). Only chemical analysis of the kelem buang glass will begin to unlock its origin.

Beads With Trailed Decoration

The author's research has revealed some less-familiar Borneo heirloom beads of opaque glass with applied trails. These beads appear to be more associated with the Upper Mahakam region in former Dutch Borneo (East Kalimantan) than with Sarawak. The reason for this is not clear but it may be that they arrived by different trade routes via Borneo's east coast ports.

These include an oblate, opaque turquoise glass bead with yellow and white trails around the perforation (Figure 11 right). A slightly lighter turquoise glass bead of the same design with similar red and white wavy trails is also found in the Upper Mahakam region (pers. obs.). The opaque turquoise glass and delicate wavy trails suggest a Chinese origin. Are these beads copies of, or related in some way to, marbled glass beads made in Song/Yuan China (AD 960-1368) (Kwan 2001:342, Plate 159)? The technique of manufacture is different but the wavy trail design is very similar.

An opaque black bead found in Kalimantan with turquoise trails encircling the bead with red, yellow, and black eyes illustrated by Dubin (1995:227) is another less familiar bead of possible Chinese origin. The origins of two more beads – an irregular barrel-shaped dark blue or black bead with green and yellow trails (Figure 11 second from left) and a dark blue bead with red, yellow, and green trails (Figure 12 top row) – are less clear. Some of them may have been produced by more highly skilled Chinese beadmaking workshops at Quanzhou or elsewhere on the Chinese mainland, made only for export (Borel 2010:3; Francis 2002:78-80; Seidel 2000:3). The Chinese mainland beads form part of a group of combed polychrome beads sometimes associated with beads found in the Philippines, Trowulan, Java, and elsewhere dated to the 14th and 15th centuries (Francis 2002:78-80). According to Francis (2002:79), the distribution of these polychrome beads is



Figure 11. Beads with trailed decoration on a high-status baby carrier, Upper Mahakam, Kalimantan (photo: author).



Figure 12. Other baby carrier beads: striped bead (kelem bela) (bottom right), next to it, a presumed lukut sekala copy, and above it, a bead with trailed decoration, possibly Chinese (photo: author).

restricted to the eastern route of the China Sea trade. Francis adds that combed beads that may be Chinese have also been found at Bonkissam and Bukit Sandong in Sarawak, although the author has been unable to locate them in the Sarawak Museum collection.

This group of polychrome beads with trails also includes a translucent red barrel bead with a combed white wavy design (Borel 2010:Plate 4). It has a high lead content and is assumed to be Chinese. Fragments of glass with similar polychrome decoration have been found at Penkalan Bujang, the site of an entrepôt during the 13th to early 14th centuries, in Kedah on the Malay Peninsula (Jacq-Hergouach 1992:204-210, quoted in Seidel 2000). Beads of this type have also been found at Fort Canning, a site of the 14th or 15th century in Singapore, and at Banten Girang, West Java (Francis 2002:79). According to some reports, an almost identical red barrel bead in shape, size, and design was found in Sarawak (Francis 1991a:Figure 2, 1996:155).

Beads in necklaces of the Hilde May collection (Figure 9) (see also Pavaloi and Dietrich 2015:167) and those on the baby carrier illustrated above – both found in the Upper Mahakam region – appear to contain more opaque plain turquoise glass beads often (although not always) thought to be of Chinese origin. The mouth of the Mahakam is on Borneo's east coast and may have been on different trade routes and attracted different beads.

False Chevron Beads

Purung manuk kiking, *purung matu* (Kayan), *kelam* (Kenyah), *lukut miruk* (Miruk), *bao mon* (Lun Bawang), *manik burung tiong*: (Melanau), *manik chunt* (Bidayuh), *alan ba'un lan* (Pelang) (Hose and McDougall 1912, 1:Plate 130; Munan-Oettli 1988:106, 2005:134).

The false chevron is a wound bead having a white core and a blue outer layer, with applied wavy trails of red and white glass around the ends. They were made to imitate early drawn Venetian chevrons so the earliest false chevrons must date to after the arrival of Europeans in Southeast Asia in the 16th and 17th centuries (Francis 1989b:5; Munan 1988:106).

Early false chevrons are found in Sarawak and western Borneo, as well as Malaysia, Bali, Taiwan, and the Philippines. Francis (1989b:5) reports a false chevron excavated at Batanes in the Philippines (PNM 184-AT) which was paddled at the ends to resemble a true, faceted seven-layer chevron. The high lead content of this bead, its locale, a similar bead from Taiwan (Chen 1968:Plate 78F), and the fact that false chevrons are not known in Europe or in the Africa trade or found on any European bead sample cards, confirms that their source was most likely the Chinese mainland, or perhaps communities of expatriate Chinese beadmakers elsewhere in Southeast Asia (Francis 1989b:2, 5). Nevertheless, their exact place of manufacture remains unclear.

Later false chevrons (Figure 4J-K), made in the same way but larger and more oblate, were made to resemble later European chevrons with rounded ends. These chevrons are found in Formosa, Bali, and the Malay peninsula (Francis 1989c:5), as well as in Sarawak (Beck 1930:179). In the late 19th century, large false chevrons (Figure 4J-K) were valued at 10 shillings, the value of a gong, and among the lowest value of all the Kayan heirloom beads illustrated by Hose and McDougall (1912, 1:Plate 130). The false chevron was never a top-value bead in Borneo, but both true and false chevrons were sought after by all ethnic groups in Borneo (Munan 2005:134). They were particularly valued by the Kayans of Sarawak (Munan-Oettli 1988:410).

Yet more false chevrons, probably also of Chinese manufacture and dating to the late 19th or early 20th century, are found in Borneo in a variety of colors and sizes (Munan 2005:28). In an heirloom necklace seen by the author in the Upper Mahakam, East Kalimantan, black has replaced the traditional blue (Figure 13). In these “copies of copies” of the true chevron, the large wavy trails are so carelessly applied that any resemblance to the original is almost lost.



Figure 13. False chevrons in a multi-strand necklace of the late 19th or early 20th century, Upper Mahakam, West Kalimantan (photo: author).

Mulberry, Pentagonal Faceted, and Melon Beads

Mulberry (aka raspberry), pentagonal faceted (aka twisted square), and some types of melon beads of translucent glass are furnace-wound products formerly thought to be of Dutch manufacture (Francis 1999b; Karklins 1987:12-14). Recent archaeological research has, however, determined that they were actually made in various regional centers in eastern Bavaria, adjacent southern Bohemia, and Upper Austria, and only traded through Amsterdam. They are generally attributed to the 18th and 19th centuries (Karklins 2019; Karklins et al. 2016).

Both mulberry and pentagonal faceted beads were widely exported around the world through Amsterdam, including to Island Southeast Asia. They appear to have been plentiful in Sumatra (Liu 1995:93), Sulawesi (Adhyatman and Arifin 1993:103), and Flores as a result of Dutch involvement in the eastern Indonesian spice trade (Sleen 1973:98).

Melon, amber pentagonal-faceted, and an almost black mulberry bead appear in a necklace dated to the 17th century in the Jakarta National Museum (Adhyatman and Arifin 1993:102). These forms appear to be relatively rare in both Sarawak (Beck 1930:127) and Dutch Borneo (Kalimantan) (Francis 1987:81). A mulberry bead is in a necklace in the Hilde May collection from the Upper Mahakam region

(Figure 9 next to bottom row, between two melon beads). In another necklace in the same collection, a single orange bead may also be part of the mulberry/pentagonal-faceted bead group.

Striped Beads

Kelem bela, *kelem angab* (Kayan), *marik gamang* (Iban) (Munan 2005:136).

The *kelem bela*, known as “pyjama beads” by Sarawak collectors, is a wound barrel-shaped bead of blue or blue-black glass with applied longitudinal trails of red, yellow, green, and white (Figure 12 bottom right). They are regarded as heirloom beads in both Sarawak and Kalimantan (Francis 1989b:4; Munan 2005:136). *Kelem bela* (13.3 mm by 13 mm) have been found in excavations at Bukit Sandon, a site of the 14th-16th centuries in the Sarawak River delta. The stripes are often in the same sequence: red, yellow, red, two greenish-white, red, yellow (or green), red, and two greenish-white (Francis 1991a:234). Most common in Borneo are longer, thinner *kelem bela* (10.5 mm by 13 mm) but with exactly the same sequence of stripes (Adhyatman and Arifin 1993:43).

A very close match for these longer thinner versions of the *kelem bela* is on a sample card of Venetian bead supplier Francis Greil (no. 91, Peabody Museum, object no. 65-33-40/8015) who may have been the source of the large number of *kelem bela* in circulation in Borneo today (Francis 1991a:234; Munan 2005:139). The stripes and size of *kelem bela* (1.2 mm by 10 mm) in the collections of the British Museum (As1896,0317.47) donated in 1896 by Lady Margaret Brooke, Ranee of Sarawak, also appear to match those of the Francis Greil *kelem bela*. As we shall see, the *kelem bela* is not the only Borneo heirloom bead copy on the Francis Greil bead sample cards. No *kelem bela* have been found in Europe or on other European bead sample cards (Francis 1989b:3).

There is no evidence of *kelem bela* at early sites on the Thai/Malay peninsula, nor are they recorded in the Africa trade (Panini 2007; Picard 1987:91). This absence led Francis (1989b:3) to suggest an Asian origin for them. Their wound manufacture, trailed stripes, and presence at a site of the 14th-16th centuries in the Sarawak River delta (Francis 1991a:234) suggest the *kelem bela* were produced by Chinese beadmakers in Singapore, Banten, Java, or on the Chinese mainland, or even perhaps at several of the above sites at different periods.

Striped beads of two different sizes of the *kelem bela* type are in the Southwell collection (Figure 2 upper left and bottom center) (Francis 1989b:3; Mohtar 2011:124).

They are not similar in either shape or pattern to the *kelem bela* discussed above (Adhyatman and Arifin 1993:43) and are referred to as *kelem bela pa'un lan*, again suggesting manufacture at several different Chinese beadmaking sites.

Later copies of the *kelem bela* have turquoise or pink stripes, while others have red, yellow, black, and white stripes, or just white stripes (Francis 1989b:4). These may have been made by Venetian manufacturers and reached Borneo at the end of the 19th and beginning of the 20th century when large numbers of Venetian beads of many different designs were imported into Borneo via Singapore. The *kelem bela* is another example of a Borneo heirloom bead that has been copied many times over many centuries. It was one of the first Borneo heirloom beads to be copied by the emerging beadmaking industry in East Java in the late 20th century (Munan 2011:139).

Swirled-Eye Beads

Lukut sekala (Kayah, Kenyah), *mata tiong* (“bird eye”) (Kalimantan; pers. obs.).

Lukut sekala, swirled-eye beads known locally as “rosette” beads (Figure 12 bottom row center), are a group of small lamp-wound oblate beads of black glass, approximately 10 mm in length and diameter, with filigree and swirled-eye inlays (*ekang na*) on the sides, and sometimes cane inlays around the perforation (Francis 1989b:15; Munan 2005:136). The true *lukut sekala* is Borneo’s most highly valued heirloom bead. In the late 19th century, it was worth the price of an adult male slave (Hose 1926:opp. 89, Bead A). The *lukut sekala* with yellow or sometimes bright red swirled eyes (Figure 4A) was regarded by the Dayak as the most highly valued *lukut sekala*, with the *lukut sekala telang usan* a near perfect example (Munan 2005:135). Ownership of a bead as rare and as valuable as a true *lukut sekala* would have been known to Dayaks throughout a wide area. There are said to be only 40 or 50 true *lukut sekala* in Sarawak today, and a few dozen more in Kalimantan (Munan 2005:79). There are a few lower ranking versions. These include the *lukut bela daha*, a smallish bead of the same family, black with bright red or yellow inlays, while the *lukut sekala barong* and the *lukut selibau* (Figure 14) are larger variants (Munan 2005:136).

There appears to be disagreement among Dayak informants on the exact appearance of the true *lukut sekala*. One illustrated by Hose and McDougall (Figure 4A) and another from a necklace belonging to the Ranees of Sarawak in Beck (1930:Plate K, Bead 29) have white or orange cane decoration around the perforation. The *lukut sekala* in the Sowell collection (Munan-Oettli 1988:Plate, Bead

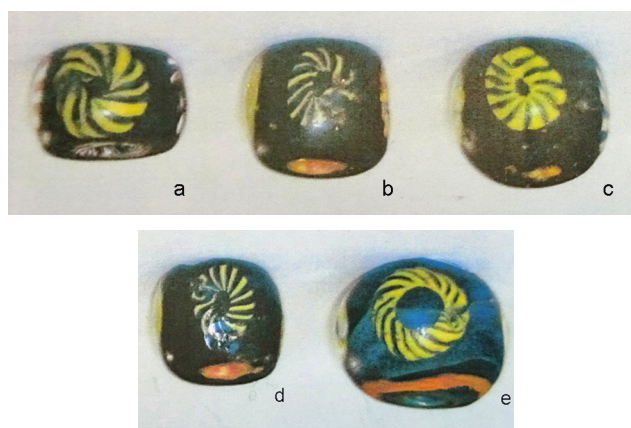


Figure 14. Relative values of *lukut* beads: (a) *lukut selibau*, (b) *sekala doh*, (c) *lukut sekala* (RM 2000), (d) *lukut sekala doh* (RM 1000), (e) *lukut selibau* (RM 500) (Elizabeth Deng, Miri, Sarawak).

406) appears to have no decoration around the perforation although it may have worn off. Informant Elizabeth Deng (2019: pers. comm.) of Miri, Sarawak, states that the *ekang na* or swirled inlays of the true *lukut sekala* should twist to the right (Figure 14). The example of the true *lukut sekala* provided by her also has no decoration around the perforation.

It is generally believed by the Dayak that *lukut sekala* are ancient beads of unknown origin of which copies appeared in Borneo in the late 19th century. Genuine *lukut sekala* are said to be rounder, smoother, and with a better patina than the imitations. Yet no exact parallel of the *lukut sekala* has been recorded outside Borneo (Francis 1989c:14-15) nor found at archaeological sites within Borneo itself. Where were true *lukut sekala* beads made? Francis (2002:185) suggests a Middle Eastern origin. Islamic beads from the first millennium circulated for centuries in many markets, including the trans-Saharan Africa trade. These beads include some with twisted radiating motifs around an “eye,” somewhat reminiscent of *lukut* rayed-eye beads (Panini 2007:50, 110). No Islamic parallel of the *lukut sekala* has been reported, however. Francis (1989c:13, 1992) also suggests an origin in Japan or China, but agrees that there is no evidence for this and believes the most likely source is Venice.

In mid-19th century Venice, techniques such as lamp winding reached their zenith (Francis 1988:13, 20). The glass was purer, shinier, and more brilliant. Black and other dark colors were common and designs included cane inlays and floral motifs (Francis 1999b:9). Many of these new Venetian bead designs were intended for the highly profitable trans-Saharan Africa trade and were inspired by ancient Islamic beads, particularly Islamic eye beads

which had remained highly sought after in West Africa because of their supposed protective powers. The inlays on some Islamic eye beads may have provided Venice with the inspiration for the original lukut sekala (Panini 2007: 45,72,110,111,151,159,160,326, 2017:323-328). Other mid-19th century Venetian beads with Islamic or African precedents include combed (feather) beads and the West African *bodom* and *akuso* beads (Francis 1999b:12, Plate 4B). Very few 19th-century beads of the lukut sekala type have been found in Africa, however. Collector Michael Heide found only one string in all his years in West Africa (John Picard 2022: pers. comm.), and only one strand and five individual beads of the lukut sekala type are in the Picard collection (Picard 1987:Bead 672, 1988:Bead 779, 1989:Bead 784, 1991:Beads 83-84). No lukut sekala beads appear on bead sample cards circulated in Africa. So, how did they reach Borneo?

At the end of the 19th century, author and ethnologist William Furness (1902:118) claimed that a sample of a lukut sekala had been sent by the Chinese traders in Borneo to be copied in Germany. Furness spent a year traveling in Borneo in the late 1890s, but is not among the 19th-century informants respected by Borneo scholar Victor King (1993:15).⁶ Is there any truth to Furness's claims? It seems unlikely that Borneo's Chinese traders would have had direct contact with Europe's beadmakers in the last quarter of the 19th century. How, then, did European beads other than the lukut sekala reach Borneo? Was it via the colonial Dutch in Java, or the British in Singapore? In the late 19th century even the colonial Dutch bought their beads for the Borneo market in Singapore because the beads desired by the Dayak were not available in Java (Nieuwenhuis 1904:140).⁷ It is clear that British Singapore dominated the European bead trade in Southeast Asia, but it was only in the late 19th century that the import of European beads into Borneo began to grow.

In the 1840s, Sarawak's Malay *nakodahs* (ship captains) sailed only annually to Singapore using the monsoon winds, individual traders assisting each nakodah in navigating and maintaining his ship in return for the carriage of an agreed tonnage of trade goods. Goods included sago and other forest products from Borneo which were exchanged in Singapore for European products, Javanese cloth, brassware, and Chinese jars. Beads may have been included but not in sufficient quantities to attract comment (Low 1848:116, 135).

Singapore was located along the main trade route between India and China and had been occupied by the British East India Company in 1819 to prevent Dutch attempts to restore their monopoly over the Southeast Asian regional trade. By the 1880s, with its free-port status and

strategic position, Singapore had emerged as the region's leading entrepôt. Steamers had begun to compete with traditional Malay sailing vessels. Singapore also acted as a distribution center to satisfy a growing regional demand for beads. Some 40% of the imported beads were from Venice, the other 36% from Germany, Bohemia, and the United Kingdom (Cheah 2003:30, 31). Beads were also imported into Singapore from China (Low 1968:116; Nieuwenhuis 1904a:140).⁸

The increase in trade between Borneo and Singapore was the result of a growing colonial demand for local products such as sago, which were exchanged in Borneo for beads, but the eradication of Dayak inter-tribal warfare and head hunting in the late 19th and early 20th centuries was also an important factor. Prior to eradication, because of the risk of attack, Dayak villagers would congregate together in one or a few elevated longhouses and Dayak visits to other river basins were rare (Rousseau 1990:9, 33, 103, 120). With the eradication of inter-tribal conflict, Dayak villages formerly hidden in remote tributaries could settle along major rivers. Chiefs who had previously controlled trade routes and levied payments on traders were no longer able to do so. The collection of jungle produce became easier for Dayak populations as well as Malay jungle collectors and the volume of trade increased (King 1993:35; Rousseau 1990:33, 120). As European control extended inland, colonial forts were established upriver to maintain order (Tillema 1989:17). Malay traders began to gather around the safety of the forts, and over time colonial presence made possible the development of inland bazaars (Rousseau 1990:292).

The growing security also stimulated Borneo's bead trade. It allowed Dayaks to make trading trips lasting several months to neighboring tribes or to the coast to find work. As Dayak bead fashions changed, less favored beads could now be traded over greater distances to Dayak tribes where they were still highly valued (Harrisson 1954:8; Janowski 2003:12; Nieuwenhuis 1904a:139). Where Malay influence spread up the lower reaches of Borneo rivers, Dayaks who embraced Islam and "became Malay" would sell their beads, which led to a lively trade in beads between the coast and the interior (Nieuwenhuis 1904a:139). Beads also arrived in Borneo via the indigenous inter-island trade. Traders with beads from Sumatra traveled up the Kapuas River to the interior, across the watershed to the Mahakam, and downriver to Borneo's east coast to return home (Nieuwenhuis 1904a:141). Newly arrived European colonial officers brought beads with them. Dutch colonial officer Tillema bought glass beads in Amsterdam before his departure. On his sea voyage to Borneo, he bought more beads in Port Said (Tillema 1989:43, 50) at the head of the

Suez Canal. Once in Dutch Borneo, Dutch colonial officials received a monthly allowance to buy beads, salt, and tobacco to give as presents to the Dayaks during their tours into the interior (Tillema 1989:42). European visitors such as Low (1848:243, 258), Boyle (2007 [1865]:186), Bock (1881:13), and Beccari (1904:263) also bought beads to trade and give as presents.

The beads were shipped to Borneo from Singapore on a now-regular weekly steamer (Nieuwenhuis 1904a:140). Along with salt and cloth, the beads were bartered to the Dayak in exchange for forest products from the interior (Janowski 1990:286; Low 1968:323). The Malay traders were, however, aware that the new Singapore beads were less valued by the Dayak than ancient beads, whose true origin had remained a mystery (Janowski 1990:286; Raneé of Sarawak 1913:247). The price differential between new and old beads led some unscrupulous Malay traders to claim that new beads from Singapore had been found at the entrance to a cave, or were made by spirits (Nieuwenhuis 1904a:139). It is possible that the Dayak could have been deceived by an initial small group of lukut sekala, imported from Venice to Singapore and sold by a dishonest Malay trader to the Dayak as ancient beads. But were Borneo's Chinese traders, as Furness (1902:118) claimed, also involved in Borneo's bead trade?

Responding to Borneo's increasing security, Chinese traders began to open shops at key trading points along Borneo's major rivers (Tillema 1989:17). Dutch steamers were able to reach villages higher up the larger rivers, such as the Kapuas. The more competitive Chinese traders began to take on the role of intermediaries between the Dayak providers of forest products and the international market (King 1993:154). Soon Malay middlemen traders were run out of business by small traders up river, many of them Chinese, who were able to send orders via the weekly steamer directly to Singapore (Nieuwenhuis 1904b:15; Rousseau 1990:292, Note 6), making Furness' claims regarding Borneo's Chinese traders' involvement in obtaining copies of lukut sekala from Europe highly credible. In Singapore, European trading houses acted as agents, ordering goods from their respective head offices in Europe. Arab, Armenian, American, Jewish, Indian, and Chinese merchants also set up trading houses in Singapore. Many Chinese middlemen handled trade between European and Asian merchants (LePoer 1989:16-21).

That the lukut sekala was copied in Germany was perhaps a misunderstanding on Furness' part due to the many carnelian bicones then being imported via Singapore into Borneo from Idar-Oberstein. Furness' claim that by the end of the 19th century lukut sekala were regarded by the Dayak as either "old" or "new" is, however, supported by

the original label attached to two lukut sekala beads in the collection of the Museum of Archaeology and Anthropology, Cambridge, England, donated by colonial officer Charles Hose (Figure 15). The Dayak called the "new" lukut sekala beads *lukut barong* or "boat beads" because they were brought upriver into Borneo by Malay or Chinese traders (Munan 2005:34).



Figure 15. The label on a lukut sekala in the Hose collection confirms that some lukut sekala were regarded as "old" and others as "new" in the late 19th century (Museum of Archaeology and Anthropology, Cambridge, England; MAA - Z.2217 CH 159).

It is also clear from Nieuwenhuis (1904a:139, 1904b:9, 143) that by the 1890s, and probably earlier, the beads available in Singapore from Bohemia and Venice included imitations "of old beads" (Beccari 1865:371-373). That lukut sekala copies were made in Venice is confirmed by examples on Venice-based Francis Greil's sample card (Figure 16) which include a small lukut-type bead (Bead 53) and a somewhat larger type with yellow lines between



Figure 16. Detail of a Francis Greil sample card, late 19th century. Beads 53-54 are lukut swirled-eye beads (Peabody Museum, object no. 65-33-40/8015).

each eye (Bead 54). Sadly, the author's research into Greil's activities in Venice has yielded little other than that he was likely to have been a bead distributor rather than a manufacturer.⁹

What appear to be further lukut sekala copies from the late 19th or early 20th century, perhaps supplied by Venetian merchants other than Greil, are more crudely made and in brighter colors. Examples are in the British Museum collection (As1936,1205.1) with an acquisition date of 1936. Yet more copies of the lukut sekala, along with those of many other Venetian beads and other Dayak heirloom beads, are produced today by beadmakers in East Java from reclaimed glass (pers. obs.).

At the end of the 1980s, the value of a true lukut sekala was reported to be \$10,000 (Munan-Oettli 1988) and remains high today. Sadly, this makes it problematic to analyze the glass in order to confirm its true origins.

Small Lukut

A final group of valued beads associated with Borneo appears to be represented more in museum collections than in Borneo itself. The author will refer to these beads as "small lukut," lukut being the Dayak name for high-value beads of various types. Of high quality, small lukut beads are smaller and of greater finesse than the average Venetian beads destined for the foreign barter market. They include slim elongated barrels, slender tubes, and unusual partially segmented beads with the outline of a figure eight. Decorations include stripes and filigree eyes. The only beads of the small lukut type illustrated by Munan (2005:71) appear to be two slender barrels with filigree eyes in a high-value necklace in which every bead is a lukut filigree-eye type, some of which are said to be true lukut sekalas.

Examples of small lukut beads appear in a necklace (Figures 17-18) (As1936,1205.1) and in two small bracelets (As1936,1205.3, As1936,1205.2) held by the British Museum. They are described as originating in Borneo and attributed to the 19th century. Both the necklace and bracelets were acquisitioned in 1936, donated by a Mrs. Diana Good.

More examples of small lukut beads are in a necklace said to be from Kalimantan displayed in the National Museum of Indonesia, Jakarta (inv. no. 21151) (pers. obs.). The same necklace is illustrated by Francis (1992:Plate 3A) and described as "a strand of Kayan beads collected in Sarawak in 1936, priced at half to one Straits dollar apiece"... containing "a few Venetian lamp-wound beads mostly from late in the nineteenth century, most of these glass beads are



Figure 17. Necklace collected in Borneo in the early 20th century which includes several small lukut beads (courtesy: British Museum, As1936,125.1)



Figure 18. Detail of the small lukut beads in the above necklace (third from the left) (photo: author).

Chinese, including many wound false chevrons." Perhaps significantly, the necklace was acquired by the National Museum of Indonesia in 1936, the same year as the British Museum's small lukut beads (Francis 1992:Plate 3A). Was this necklace also obtained from Mrs. Diana Good,

as were the British Museum's small lukut beads? A few slender barrels and spherical small lukut are also included in a necklace of mostly Venetian beads on display in the Sarawak Textile Museum, Kuching (no. 70/101).

All of the necklaces and bracelets mentioned above that incorporate small lukut include false chevrons. Some also exhibit kelem bela, and a small tube-shaped green bead with red, white, and blue eyes (Figure 18 third from left in both rows). This green eye bead, like the kelem bela, is included on a Francis Greil sample card (Bead 58, Peabody Museum, object no. 65-33-40/8015). This bead may have been strung with small lukut beads because of its similar small size and tubular shape. The presence of the larger kelem bela and false chevrons is more difficult to explain.

The author is not aware of examples of small lukut beads outside Borneo other than in the museum collections mentioned above. In their finesse, small lukut are somewhat reminiscent of a string of beads owned by a wealthy Pyuma tribal chief in southeastern Taiwan (Dubin 1995:234), although none of the Pyuma beads are of the same design or shape. Some of the beads in the Pyuma necklace are described today in Taiwan as Osaka-type beads said to be from 18th- or 19th-century Japan (Dubin 1995:234). Are the small lukut beads also from Japan? If so, it is unlikely that they were intended for Japan's local market. Do the lukut sekala type filigree-eye motifs on some small lukut beads (Figure 18 bottom right) suggest they were intended for the Borneo market? Perhaps they were made in limited quantities in a single Osaka workshop. Did they arrive in Borneo through the indigenous inter-island bead trade, or perhaps via a European who had visited Japan?

Some of the false chevron beads (Figure 18 second from right, both rows) included with the small lukut beads in the British Museum necklace and bracelets and in the Kuching Textile Museum necklace mentioned above are of an unusual finesse. This raises the question as to whether the false chevrons are of Chinese origin, or copies perhaps made in Japan? Are the kelem bela and the green eye beads mentioned above also Japanese copies of Greil beads? Are the small lukut from Japan or from elsewhere? The small lukut and the less-familiar, possibly Chinese polychrome trailed beads discussed above suggest that more beads than have at present been identified were circulating on trade networks in the Indonesian archipelago and traded to Borneo.

CONCLUSION

Several points have emerged as a result of the author's research. Firstly, how frequently Borneo heirloom beads have been copied over the centuries. Dayak conservative

tastes ensured that traders sought out copies of already valued heirloom beads (Nieuwenhuis 1904a:152). The Javanese may have copied Islamic beads. The Chinese copied earlier versions of the let blue barrels and Venetian chevrons and in the 19th century, the Venetians copied the lukut sekala, kelem bela, and lukut sak badak. Idar-Oberstein, and subsequently Bohemia, copied the Cambay carnelian bicones, and perhaps the Japanese copied at least the Chinese false chevrons. Today beadmakers in Jember and Jombang Jatim in East Java continue this tradition, making copies of Jatim beads, lukut sekala, and many of Borneo's imported Venetian beads (pers. obs.).

Secondly, despite Francis' (1990:108) belief that beads were no longer buried with the dead in Sarawak after the Sung dynasty (AD 960-1279), beads and graves are closely linked in Dayak myths and there are many references to beads being found by chance in the ground (Ranee of Sarawak 1913:257). Nieuwenhuis (1904a:139) reports that the Dayak were buried with necklaces and belts of precious beads which each year formed a group of beads withdrawn from circulation until rediscovered. He believed that a significant number of the old beads worn by the Dayak had already been buried in graves at least once. Dayak women were reluctant to buy old beads from sellers who could not account for their origin, but a difference was made between beads found by chance as opposed to those known to have been looted from graves (Munan 2005:65). Kenyah tribes based along the Tawang, a tributary of the Kapuas, rejected beads found in local graves if they were not part of their own tradition, but they had no scruples in selling them without revealing their origin to passing traders, who then sold them to unsuspecting buyers further along the Kapuas (Nieuwenhuis 1904a:139).

Despite their dangerous rapids and falls, Borneo's many rivers provided the ancient highways along which beads traveled from the coast inland to the Dayak. Several of Borneo's heirloom beads – let blue barrels, the mottled carnelian beads, the green kelem buang, and even the copies of the lukut sekala – have associations with the Kapuas, suggesting it was an important trade route for Borneo's local and inter-island bead trade (Nieuwenhuis 1904a:139). The Kapuas is Borneo's longest river, navigable along most of its length, an excellent trade route to and from the interior and the chief waterway of western Borneo. The Kapuas River delta on Borneo's west coast faces the China Sea, the geographic center of maritime Southeast Asia and from early times the focus of Indian, Arab, and Chinese traders (Heidhues 1998:273, 275).

Archaeological data show Hindu-Buddhist influence in the Kapuas region dating to the 7th century and 13 sites have been recorded in the region (Utomo 2006:435, 438, 440).

Kapuas River trade depended almost entirely on exchange with the Dayaks of Borneo's interior. Its early ports, such as Lawe, Tanjungpura, and later Sukadana, were the source of highly sought-after goods, such as gold, diamonds, forest products, and perhaps local carnelian. The Kapuas delta ports became feeder ports from which goods were transported to and from major trading hubs in Java, Sumatra, and beyond (Heidhues 1998:273, 275). The Kapuas river also provided the Kapuas/Mahakam cross-Borneo route, used by the Dayak and inter-island bead traders from Sumatra (Nieuwenhuis 1904b:141). Today, Dayaks who spent their youth in Putussibau in the Upper Kapuas remember traders from Sarawak coming to the region in search of beads (Ekodemus, Pontianak 2019: pers. comm.).

Seven of the eleven heirloom beads discussed above have, or appear to have, Chinese origins. Even the arrival of the Venetian lukut sekala copies appears to be linked to late-19th-century Chinese traders. Chinese beads began to dominate at importing sites in Borneo beginning in the late Sung dynasty (AD 960-1279) (Francis 1991b:110). The Chinese were highly organized and competitive traders and, starting in the 15th century, were in control of the Indonesian intermediary trade in luxury goods and the regional bead trade (Rouaffier and Ijzerman 1915:Plate 3; Tiele 1877, quoted in Schrieke 1955:22, 42).

Much work remains to trace the origins of Borneo heirloom beads and the trade routes along which they travelled. The glass of the Borneo beads in the British Museum collections has been analysed by the Institut de Recherche sur les Archéomatériaux (IRMAT) in Orleans, France. The results will be published in 2023. Sadly, the British Museum collections do not include examples of all Borneo heirloom beads. It is hoped that this article will encourage other museums with Borneo heirloom bead collections to follow the British Museum example.

ACKNOWLEDGMENTS

The author would like to thank Dr. Alexandra Green, Henry Ginsburg Curator for Southeast Asia, at the British Museum; Dr. Bernard Gratuze, Director of the Institut de Recherche sur les Archéomatériaux, Orléans, France, and the Bead Society of Greater Los Angeles for their help and support. She would also like to thank the Cambridge Museum of Archaeology & Anthropology, Cambridge, England; SOAS Library, University of London; Völkerkundemuseum, Heidelberg, Germany. In Venice: Alvise Merelli; the Library of Museo del Vetro di Murano; Archivio di Stato; Camera di Commercio de Venezia; Istituto Veneto per Il Lavoro. In USA: The Peabody

Museum of Archaeology & Ethnology, Harvard; The Old Fort Johnson Museum, New York. In Australia: The Museum of Applied Arts and Sciences (MAAS), Sydney. In Sarawak: Heidi Munan for her generosity with contacts; The Sarawak Museum and Library; The Textile Museum, Kuching; The Tun Jugah Museum, Kuching; Garnette Ridu, Elizabeth Deng, and Jane Lian Labang. In Brunei: Brunei Museum Library; Brunei Darussalam Maritime Museum. In Pontianak: Juliana Sujadi; The Museum Negeri Kalimantan Barat; Noverly Nazuluddin, Ekodemus. In Samarinda and Upper Mahakam: translator Rhey Gait and the Dayaks of the Upper Mahakam. In Jakarta: Yekti Kusmartono; The National Museum of Indonesia, Jakarta.

ENDNOTES

1. Geologist Noverly Nazuluddin, Ekodimus, Government Office, Toho District, Pontianak, West Kalimantan.
2. Let type beads, also with a high lead content, have been found at the Calatagan cemetery (ca. 1450-1600) in the Philippines.
3. Between 1977 and 1985, Hilde May lived in Samarinda at the mouth of the Mahakam River in East Kalimantan. She assembled a large collection of artifacts from the Benuaq, Tunjung, Bahau, Kayan, Modang, and Kenyah – the Dayak tribes living upriver in the Mahakam River Basin in Dutch East Borneo (now East Kalimantan). The material is now in the Völkerkundemuseum in Heidelberg, Germany.
4. Tun Jugah Museum and Gallery, Kuching, Sarawak; Hose and McDougall (1912, 1:Plate 130); Southwell collection, Sarawak Museum, Kuching; Hilde May collection, Völkerkundemuseum, Heidelberg, Germany; J. Camp Gallery, New York; Rijksmuseum voor Volkenkunde, Leiden, the Netherlands.
5. Object number: RV-614-113. Origin: Zuidoost-Azië: Insulair / Indonesië / Kalimantan / Kalimantan Timur (provincie) / Kutai Kartanegara (regentschap) “kelom kawit;” <https://collectie.wereldculturen.nl/#/query/831e7c7c-8f21-43d4-9f54-33315201d442>.
6. These were Carl Lumholtz (1920), Charles Hose (1912), and Hendrik Tillema (1989).
7. Beads were very popular among the Dayak but if they did not conform in color and shape to what was desired, they were rejected (Tillema 1989:42).

8. In Singapore, Nieuwenhuis (1904a:140) also reported glass beads “from or recently imported from China, which were sold in Chinese boxes and China paper. These were purely blue, transparent and yellow, opaque glass beads usually cylindrical, 7 mm. long and 8 mm. thick. Other round, red, transparent glass beads of 4 mm diameter, according to my guess, from China.”
9. Extensive research in national archives and bead trade journals of the late 19th and early 20th centuries in Venice yielded no further information on Greil. The heading, however, on a bead sample card held by the Old Fort Johnson Museum, Fort Johnson, New York, reads “Francis Greil, Commission Merchant, Venice, Italy,” suggesting that he was a bead supplier or wholesaler in Venice, rather than a manufacturer.

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