

Dental transfigurements in Borneo

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Dental transfiguration, formerly termed dental mutilation, has been practised by many societies worldwide. This article gives many of the forms that have been attributed to the indigenes of the island of Borneo. The method has been performed by review of anthropological books, sparse dental references, Borneo research literature, and popular writing.

‘.....ride rough-shod over my teeth; I have been sawed, hacked, chopped whittled, bewitched, bewildered, tattooed.....’ S. J. Perelman (*Crazy Like a Fox*)

The indigent tribes of the island of Borneo, in company with many other peoples throughout the world, are known to practise or have practised tooth mutilation. Fastlicht suggests that the term is probably a misnomer.¹ A disfigured tooth could be considered highly aesthetic; likewise, it could be a method of differentiating between classes; or a means of designating a particular tribe. It might have a magic or religious significance. Current dental anthropological literature prefers the term ‘dental transfiguration’ instead of ‘dental mutilation’. Turner feels that the latter imparts a racial tone and therefore its use should be abandoned.²

The dental transfigurements of the inhabitants of the north-west coast of the huge island of Borneo were reported by Henry Ling Roth in his book *Natives of Sarawak and British North Borneo*, originally published in 1896.³ He collated some of the observations made in the middle of the nineteenth century, by travellers and missionaries, all would-be anthropologists. They toured that area which now comprises the States of Sarawak and Sabah of the Federation of Malaysia, the independent Sultanate of Brunei Darussalam, and the Province of Kalimantan of the Republic of Indonesia.

In this article, I intend to describe these

In brief

- Examples of dental ‘mutilation’ by the indigenes of Borneo
- The consolidation of sparse references from numerous sources
- Facilitation for anthropological comparison and cross-reference

earliest printed descriptions, and then, with more modern evidence and literature trace these disfigurements into the twentieth century.

Prior to the written records of Henry Ling Roth and other contemporaries, the only indication of early dental status in Borneo comes via the archaeologist. The diggings conducted by Lord Medway in 1959 at the Niah Caves, situated in the Fourth Division of Sarawak (long. 113° 47’ E, lat. 3° 48’ N) established that man-made dental disfigurements were unknown in the people that inhabited the caves circa 15,000BC.⁴ Incomplete skulls, dated by the Carbon-14 method, exhibited only the erosion of severe attrition. This would be consistent with a diet of tough meat that was probably never softened by prolonged cooking techniques. It is unlikely that iatrogenic disfigurement would have been practised since the resulting loss of teeth would inevitably have meant death from starvation or sepsis or both.

Years later, in the nineteenth Century, Roth recorded his comprehensive visual observations of dental habits.³ His first descriptions of oral features that he quotes

from his collected reportage are very flattering. In describing a land Dyak girl an observer writes: ‘...I beheld magnificent teeth...’ Later the same person says of a mountain Dyak, ‘...they have good eyes, good teeth and good hair;— more than good: I may say splendid.’ The quotes were by a naval officer, Lieutenant Marryat. Depending upon the length of his ship’s voyage, his views could be biased; but, later, he is to describe and sketch disfigurements.

Unfortunately, these seem to be the only positive references to good dentitions as Roth proceeds to identify six patterns of disfigurement. His first classification was betelnut chewing. This habit stains teeth and is, therefore, not included in this article as it is a non-destructive dental transfiguration.

Roth’s second classification was the deliberate staining of the dentition, where dental structures may have been changed in the processes.

Blackening of teeth

Prior to the work of Roth, Pfeiffer writing in the popular Victorian journal, *The Illustrated London News*, in 1850, informed his readers that Dyaks, ‘...file their teeth and colour them black...’⁵ The teeth were turned black by the application of burnt coconut shell mixed with oil. The mixture was applied to the tooth surface that may or may not have been abraded. The result gave the impression of black varnish. Its purpose seems to have been the indigents’ objection to white teeth that were only suitable for dogs and Europeans.

Fifteen years later, in 1865, Frederick Boyle enquired of Dyaks about their method of staining.⁶ In *Adventures amongst the Dyaks* he writes that a dry wood known as ‘sinka’ was heated on a metal blade that had been moistened with drops of water. Sap oozed from the wood to form a viscous liquid with the water which was then applied to the dentition. The dye evidently only stained teeth, having no effect on bone or horn.

In his observations of the Tuaran Dusuns, in 1922, Evans believed that their teeth were

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blackened with a compound made from copper sulphate and the young fruits of the pinang, or betel palm.⁷ It is difficult to ascertain whether the blackening was the stain of chewing or an applied varnish. Evans also suggests that burnt coconut shells were used for this purpose.

In 1955, Peacock reported that the Dusuns in Sabah still practised dental staining.⁸ Their method was again to heat the bark of a tree (unspecified) until a resinous exudate appeared. Applied to the tooth surface, it provided a hard life-long covering.

Across the South China Sea in Vietnam, artificially coloured black teeth were also common. Flynn, in 1968, studied extracted 'black' teeth.⁹ She found no evidence of caries in the 350 teeth and concluded that the blackening process provided caries prophylaxis. Her paper likens the technique to acid etching, citrus fruit being the active agent. The applied coating was a mixture of black paint, ginger and mango, which bonded to the decalcified enamel.

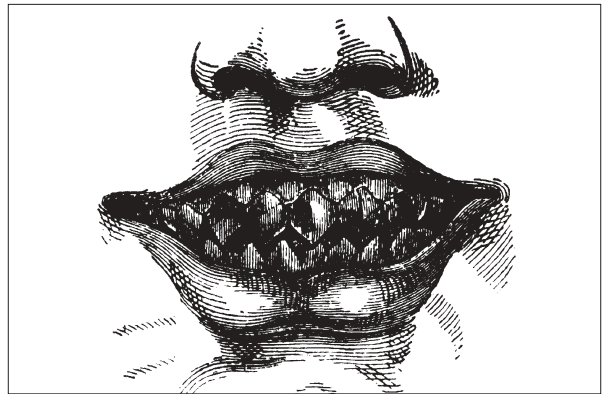
Filing

As Pfeiffer has already hinted, filing was a common practice.⁵ This was echoed, by Boyle 15 years later, when he wrote '...that the Dyaks often pointed their teeth as sharp as a needle.'⁶ The description of this most disfiguring and painful mutilation, by both authors, had been pre-empted by Lt. Marryat during his naval service aboard the survey ship HMS Samarang in 1848. He sketched the iatrogenic dental deformities of the Rejang Dyaks. His illustration (Fig. 1) was published in 1896 when it appeared in Roth's tome.³ No explanation was offered by any of these early observers as to the reason for these gross transfigurements to the dentition.

While Roth was collating his observations, the Dutch were exploring an area of southern Borneo that is now Kalimantan. Dr Schwaner noted a second type of filing of teeth; a minor and less radical form of disfigurement.¹⁰ In his travels of the Barito river basin, he discovered that when puberty was attained by either sex, slight filing was applied to the incisal edges.

Chronologically, the next extensive observations of tooth filing came from Carl

Fig. 1 Dyak teeth filed to a point (after Lieut. F. S. Marryat) Reproduced from 'The Natives of Sarawak and British North Borneo'



Lumholtz, a Norwegian who travelled in Borneo between 1913 and 1917.¹¹ He was retracing the steps of a fellow countryman, Carl Bock, who had earlier meandered the jungles of the eastern, now Indonesian, side of the island.¹² Unfortunately *The Headhunters of Borneo* that Bock had had published in 1881 contains no dental references. Lumholtz, however, is most comprehensive. *Through Central Borneo* (1920) contains much about filing customs but does not differentiate types or degrees of the transfigurement. He is, though, very specific about the tribal distribution.

According to Lumholtz, the grossest mutilates it seems were the Kayans who filed ten upper teeth, ie central incisor to second bicuspid in both quadrants. All would be stained by betel chewing habits. Subsequent study of the Kayan territories, in the north-east of the area, revealed that three sub-tribes, the Oma-Gaai, also known as Segai, the Oma-Laren and the Oma-Hiban all followed the filed ten teeth pattern of disfigurement. Perversely, the Oma-Laken sub-tribe who inhabited the headwaters of the Kayan river, did not indulge in filing practice upon their dentition.

The jungle nomads of Borneo, the Punans, imitated the Dyaks. This would imply that their teeth were filed to points. Eight upper anterior teeth were involved in both sexes. The operation was performed when the boy or girl was fully grown, presumably at puberty and at ceremonies associated with it. Lumholtz claims that it was more painful for the girls as their teeth were filed shorter. For what reasons, he does not record.

A ceremonial nature for the practice of dental 'mutilation', was implied by Appell in 1990.¹³ He writes that tooth filing would probably be carried out to an accompaniment of chants. This would also occur with the other body ornamentation of tattooing, ear lobe extension, penis pin insertion and body scarification. Appell did not specify as to which tribal societies performed these rites.

Among the Kenyah, it was only the females of the tribe that displayed filed teeth. 'Filed off' was the phrase used which implies gross mutilation and subsequent disfigurement. The male tribal members sported metal 'plugs' (see later).

With the Murungs, the transfigurement was probably fairly minor although six upper and six lower anterior teeth were involved. The anthropologist recorded that a kapala or headman had had his teeth 'treated' on three occasions; the first, when he was a boy; secondly, upon the birth of his first child; and third, following the arrival of his fourth child. A blian, a priest-doctor, a Murung of lesser position than the kapala, was recorded as having two filings; at puberty, and after siring his second child. Does this mean the timing of the filing was dependent on the individual's status within the tribe?

Filing was not universal among Saputas. Examples of eight maxillary and six mandibular 'modified' teeth are quoted whereas, with Bukit people, eight upper anteriors were 'cut'. The Penihangs, who lived along the Mahakam river, had the option of copying the filing patterns of their neighbours, the Punans or the Bukats.

Two years after these extensive studies

made by Lumholtz, Evans published his research about the Tempassuk and Tuaran Dusuns of British North Borneo.⁷ 'They were ashamed to display long teeth in case they resembled animals,' implied that the Dusuns were filing their teeth short. Evans was to note one case where gross filing had removed the clinical crowns of the six upper anteriors; in addition, some mandibular 'shaping' had also occurred. He stated that this was an exception rather than a rule.

A similar situation was reported in the colony during the 2 years prior to the Second World War. Laband in his studies of children's teeth noted, '...it was the custom among the tribes to file the front teeth of their children'.¹⁴ He recorded an incidence of 33 cases from a survey of 368. In all but one case, filing was less than a millimetre but involved the two canines and the four incisors of the upper jaw. The exception was again total removal of the clinical crowns revealing open infected root canals. Laband felt that the custom was dying out. He did, however, observe that there was evidence of extensive filing amongst older people. He was unable to obtain an explanation for the practice from them.

After the war, the particular practice of transfigurement and other dental customs were still common enough to be reported by Peacock.¹⁵ He was a Colonial Service dentist who worked in British North Borneo, now Sabah, in the 1950s. He noticed the pointed shape, that had been sketched by Lt. Marryat, among the Murut tribe. A second unspecified tribe, he stated, '...chipped away the bulk of the incisors to produce concave surfaces reminiscent of mattocks.' The crude outline of the 'mutilation' was achieved with the all-purpose parang, a heavy bladed knife akin to a machete. The slice preparation was given a finished look by fine abrading with a stone.

Peacock's enquires into the origin of these customs were answered with, 'Adat, orang-orang, tua duhulu'; 'it is the law of the old people'. Further probing revealed possible explanations. Pointed teeth made them warlike at times of tribal war. Pointed teeth mirrored the dentition of the wild pig that forms one of the main protein elements of their diet. The pointing would promote



Fig. 2 An Iban or Dayak with studded teeth.
By courtesy of W H Furness, 3rd. Reproduced from *Customs of the World*¹⁸

good hunting. Pointed teeth would act as a talisman to ward off the spirits of their dead ancestors that would descend from their resting place atop Mount Kinabalu from time to time. Another alternative explanation was the belief of some indigenes that their afterlife was to be spent in purgatory where they would be fed green bamboo. The pointed teeth would then facilitate mastication rendering the cane to a harmless pulp devoid of potentially traumatic splinters. Echoing the earlier comments of Laband, two decades prior to himself, Peacock told me in a personal communication '...that by the time I left the Colony, the younger generation were not being mutilated by their elders'.¹⁶ I saw no signs of this form of transfigurement during 7 years spent in the region at the end of the seventies.

There were echoes of Schwaner,¹⁰ however, as Peacock reports, with requests from some members of the Malay and Chinese populations, especially females, to have the incisal edges of their upper anterior teeth ground to an even length. I also found that minor incisal filing remained a common request from young people from both these ethnic groups in Brunei.

Although slightly outside of the study area, it is worth noting that on Bali, also in

Indonesia, tooth filing, is an important religious event; the ceremony of Merpandes. (Guide to Bali).¹⁷ It is essentially to scare away some of the human sins and weaknesses such as greed, desire, anger, jealousy and confusion of the mind. The deed is performed by a Brahmin priest who files the teeth to a straight and regular edge. This cannot, however, be directly compared with the nineteenth century statement made by Schwaner as his tribes were animist whereas the Balinese are hindu.

Wires and inlays

Roth quotes several anthropologists that had noted various inlay designs among different indigenous tribes:³ the Undups, Skarangs and Saribus of southern Borneo; the Dyaks of the Baram river basin; and the Dulit Dusuns of northern Borneo. Adornments were of the stud variety using non-precious brass. They were placed in cavities created with a bow-drill. In a chapter about Borneo in *Customs of the World*, Charles Hose uses an illustration of a Dyak with drilled teeth (Fig. 2).¹⁸ The four maxillary incisors are blackened and pointed and bear brass inlays fashioned from wire into crude stars. Vitality of the teeth has been lost.

Evans contradicts Roth's observers, although there could be individual sub-tribal variation, for he reports no signs of inlaid teeth among his study group, the Tuaran and Tempassuk Dusuns.⁷

As mentioned earlier by Lumholtz, Kenyah men sported metal plugs in their teeth whereas their womenfolk had theirs filed.¹¹ The plugs were fashioned from yellow metal wire obtained in the coastal trading town of Tandjong Selor. The wire was inserted into drilled holes in one, two or three incisors usually in the maxillary arch although the mandibular was sometimes used as well. The plug had a round flat ornamental head and the text implied that they were removable.

There was only one direct reference to the use of precious metal. Schwaner reports the use of silver as an inlay, in his study area.¹⁰

Plates

An extension from the inlay was the wearing of a thin brass plate, 'lios'. It was worn over the incisors and was hooked onto the



Fig. 3 Basket crowns, Borneo

molars. This primitive overdenture was found among the Skarangs and Undups. It was often cut into the pointed rows of teeth following the transfigurements previously described. Dyaks adopted a similar 'vener' fashioned from copper and retained by a pin driven through the tooth in a hole created with a bow-drill.

Total tooth coverage in the form of anterior gold crowns was visible in the early eighties, and probably exists today. The Class B practitioner was registered in Brunei and Malaysia. According to Bezoukov, he, the dentist, performed a community service with relief of pain and the provision of acrylic prostheses.¹⁹ This local shop toothsmith was an amalgam of jeweller, goldsmith and dental technician. He also made anterior crowns of the type illustrated. The tooth was prepared by roughly excavating caries and the plugging of the cavities with amalgam or dental cement. On a master model, the crown was manufactured from gold sheet by swaging and soldering. Many are in the form of basket crowns with a common 'window' being a heart (Fig. 3). A former colleague claims to have seen a heart, club, diamond and spade across the four maxillary incisors! Unfortunately, the crude preparation of these teeth often results in rampant recurrent caries beneath the crown. Inevitably, the tooth is eventually lost because of the sequelae from periapical lesions and/or periodontal involvement resulting from the ill-adapted margins of these crowns.

Removal of teeth

The ritual extraction of one or more permanent teeth is a custom that has a universal distribution among primitive cultures. Townend stated '...that in the case of ritual extraction of permanent teeth, we are dealing with a dark superstition.'²⁰ He felt, however, that the reason for the practice must point to a factual basis. This seems to be the case in Borneo where non-therapeutic extraction had either a functional or a prophylactic purpose as opposed to a mystical ritual.

In 1883, a missionary, Mr Wittt recorded in his diary that the Dulit Dusun, '...do not file their teeth but break the upper incisors to gain a stronger blast at the 'sumpitan', or blow-pipe, in order to extend the range of his poison arrows.'²¹ The importance of the blowpipe to the daily life of Borneo indigenes is its essential role as a weapon in hunting for the protein element of their

diet; meat from wild pig, monkeys, birds or small deer.

Reports of the killing range of the weapon vary; the Dyak range, according to Boyle, is 40 yards;⁶ Roth claims a wounding range of 30 yards for the Koti river Kayans;³ and a modern reference in *Brunei Darussalam, A Guide* champions a distance of two rantaits, 40 metres, for Punans and Kelabits.²² It was to increase this effective range or possibly to improve the accuracy of the 'anak', or dart, that dental intervention was practised. Peacock stated that the Dusuns and Muruts extracted their two maxillary incisors to achieve this end,¹⁵ endorsing Wittt. In neither case did the observer give the method of extraction or attempted extraction. Presumably an increased aperture behind an effective lip seal provided the 'stronger blast'. It seems at odds with the theories of the role of dental structures in brass instrument players, as documented by Porter.²³ He says that an intact dental arch functioning with the tongue and lips is necessary for the precision control of the column of air required by musicians.

The other reason for non-therapeutic extraction of teeth was prophylactic. It was to create a means of feeding should a person contract lockjaw with associated trismus. It was reported by Peacock,¹⁵ but the favoured tooth was not specified. This practice is not uncommon elsewhere in the world. It cannot be discounted, however, that there may have been a deeper significance or magico-religious beliefs. Townend suggested that, often, normal physiological processes would be dramatised to reinforce an underlying motive.²⁰ The changing values of the



Fig. 4 Rampant caries in a 3-year old, Brunei

millennium have probably outlawed these specific transfigurements to extinction.

This article has tried to show the gradual decline of various dental transfigurements among the ancestors of the indigent tribes of Borneo. Professional reference material is limited prior to 1925. That year saw the first qualified dentist established in Kuching.²⁴ His task was to cover the whole of the British protected area, now Sarawak and Sabah. Prior to his appointment, dental problems had been shipped to Singapore.

With the gradual disappearance of these old habits and customs, a new transfigurement began reaching epidemic proportions, rampant caries (Fig. 4). Even in affluent Brunei, in 1987, the local newspaper quoted a specialist dental surgeon, Dr. Ayasamy at the initiation of the sultanates fluoride scheme. He said, 'that practically every child in Brunei Darussalam has caries'.²⁵ It seems a pity that abolition of old forms of 'mutilation' is being replaced with an equally repugnant form.

- 1 Faslicht S. *Tooth Mutilations and Dentistry in Pre-Columbian Mexico*. Berlin: Quintessence Books – 1976.
- 2 Turner C G. Dental transfigurement and its potential for explaining the evolution of post-archaic Indian culture in the American Southwest. *Dent Anthropol* 2000; 14: 1.
- 3 Roth H L. *The Natives of Sarawak and British North Borneo*. (1896) Kuala Lumpur: University of Malaysia Press. Reprint ed, 1968.
- 4 Medway, Lord. 'Paleolithic Attrition of Human Teeth, (at Niah)'. *Sarawak Mus J*, 1959, Vol. IX, p 139-142.
- 5 Pfeiffer I. *Rajah Brookes Borneo*. Hong Kong: John Nicholson, 1988.
- 6 Boyle F. *Adventures among the Dyaks of Borneo* (1865). Reprint ed. 1984. Kuala Lumpur: Antara Book company.
- 7 Evans I H N. *Among primitive peoples in Borneo*. (1922) Singapore: OUP. Reprint ed. 1990.
- 8 Peacock B. Observations on the Oral Conditions of Native Races in British North Borneo (2). *Br Dent J* 1955; 99: 129.
- 9 Flynn M. Black teeth: a primitive method of caries prevention in Southeast Asia. *JADA* 1977; 95: 96-97
- 10 Schwaner C A L M. *Borneo: Beschrijving van het stroomgeheid van den Barito*. Amsterdam: P.N. van Kampen, 1853.
- 11 Lumholtz C. *Through Central Borneo*. (1920) Singapore: OUP. Reprint, 1991.
- 12 Bock C. *The Headhunters of Borneo* (1881). Singapore: Graham Brash (Pte). Reprint, 1988.
- 13 Appell D N. Guide to Varieties of Oral Literature in Borneo. *Borneo Res Bull* 1990; 22: 104.
- 14 Laband F. Two years dental work in British North Borneo; relation of diet to dental caries among natives. *JADA* 1941; 28: 992.
- 15 Peacock B. Disfigurative Dentistry. *Dent Mag & Oral Topics* 1966; 83: 113.
- 16 Peacock B. Personal Communication. 1978.
- 17 *Guide to Bali*. Australia: Hamlyn, p28.
- 18 *Customs of the World*. London: Hutchinson, 1: p204.
- 19 Bezroukov V. Structure and types of dental manpower. *Int Dent J* 1979; 29: p191.
- 20 Townend B R. The non-therapeutic extraction of teeth and its relation to the ritual disposal of shed deciduous teeth. *Br Dent J* 1963; p312-315, 354-357, 394-396.
- 21 Wittt F. *British North Borneo. Diary of F. Wittt*. Singapore and Straits Printing Office, 1883.
- 22 *Brunei Darussalam. A Guide*. Brunei: Brunei Shell Group – Seria, 1992.
- 23 Porter M M. Dental Problems in Wind Instrument Playing. *Br Dent Assoc. Booklet*. 1967.
- 24 *Kuching Past and Present*. Kuching: Borneo Literature Bureau, p82.
- 25 *Borneo Bulletin*. publ. Brunei: Kuala Belait, Dec 26th, 1987.