

A Model Chronology of the Animal Weights of Burma (Myanmar)

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1 Introduction























As there are only a few clues for the age and chronology of animal weights (“opium” weights) of Burma, the door is wide open to speculation. Up to the present, Gear and Gear (1992) in their comprehensive book have been the only authors to deal with this problem, starting with 14th-century weights. However, they used small variations in the design of one weight form for time classification, and they also related the issue of different forms to historical events, although they apparently had no evidence for this.

In 1984, the present author published an article on the standard forms of Burmese animal weights, attempting to establish their relative sequence in time. At that time he postponed any discussion of their actual age because the data seemed insufficient. In the meantime, knowledge has scarcely improved and one cannot expect additional information from the literature in the near future. Therefore, this article summarizes current knowledge on these weights, points to new aspects, and draws conclusions as to their chronology.

But the approach is not conventional: The following chronology for the animal weights is proposed on the basis of the verification marks, the development of the design, identical features in different forms, and the legal standards. It must be stated that the dates given in Table 1 are conjectural. A few weights are, however, mentioned in the old literature and these allow a minimum age to be determined; these are given in Table 1 as “prior to.” This provides us with a certain framework for the model, at least for the 18th and 19th centuries.

In Burma itself, no historical documents whatever appear to exist on this subject. The few remarks made by European travellers are not always reliable. Wilson (1827) reports that the weights “change their shapes on the accession of a new king” and Scott (in Temple 1898: 141) added that a new weight form appears, “sometimes with the animal representing the royal birthday.” The latter statement is clearly wrong (Mollat 1984: 422). However, it is not impossible that the accession of a new king together with astrological deliberations led sometimes to the issue of a new weight form.

Tab. 1: Model chronology of the animal weights of Burma.

Hintha		To / Chinthe		Age	
 H1A (c, 8)	→ ←	 T1A (8 and 4 oblong, c)		c. prior to 1600	
 H1B (c, p)	→ ←	 T1B (8)		c. 1640	
 H2B (8, c) ω, 5, 6st	→ ←	 T1C (8, c) 4, 5, 6, 9st, O	 T2 (8, c) 4, 6st	c. 1680	
				15.0 g/Tk	
				16.3 g/Tk	
	 H2C 6st (8) prior to 1739		 C1 4st (8)	c. 1730	
 H1C 9st (8)		 T1D 9st (8) prior to 1776	 C2A 9st (4)	c. 1760	
			 C2B 9st (4) prior to 1837	c. 1780	
Karaweik		Hintha			
 K1 Bird (8)	→ ←	 H3A1 6st (6)	→ ←	 H3A2 6st (6)	c. 1820
		 H3B rarely 6st, Bird (6, c) prior to 1868			c. 1850
 K2 Bird (8)		 H4 Bird, 6st (6)		 B	c. 2nd half 19th till early 20th century
		 C		 D prior to 1917	

Animals: H = Hintha; K = Karaweik; T = To; C = Chinthe

Marks: 4st (5st, 6st, 9st) = 4-rayed star (5, 6, 9-r. st.); ω = *gha gyi*; O = circle; Bird = Bird mark

Basis: (8) octagonal, (6) hexagonal, (4) square, (c) circular, (p) polygonal

→ ← = Identical features

prior to 1776 = first year of appearance in literature etc.

But as there were many kings in relation to the relatively small number of weight forms, no reliable evidence has been found for associating a new weight form with a new king or even a king's birthday.

This article only deals with the standard forms of ducks (Hintha, Karaweik) and lions (To, Chinthe) as listed in Mollat (1984). Odd weights not found in sets are not discussed here. This approach avoids inclusion of imaginative imitations and fakes in this study. Production of fakes has increased considerably during the last 30 years.

2 Standard Forms

Burmese animal weights belong to four basic groups. The Hintha duck (Figs. 2–13, 17–20) and the To lion weights (Figs. 21–25) belong to the oldest ones. Later on the Chinthe lion weights (Figs. 26–28) appeared, the Chinthe being the sentinel in front of pagodas. Both lions have extraneous characteristics depicting horns, horse tails, and cow hooves. The Karaweik bird weights (Figs. 14–16) were issued last. All these forms have a religious and/or mythological meaning. The weights are made of bronze, i.e., an alloy of copper, lead, and tin. The latter has been often replaced by zinc in pieces cast since the late 19th century.

The term “opium weights” for these weights is misleading, because they were used for weighing all kinds of goods including currency, which consisted of pieces of silver bullion. It, therefore, makes no sense at all to infer that these weights had the function of primitive currency itself.

3 The Legal Standards

The standard for weights in Burma is the Tikal (Tk). 100 Tikal make 1 Vis. The old standard is approximately 15 g/Tk; the younger standard of 16.3 g/Tk (1 Vis = 3.6 lbs. = 140 Indian Tola) is still valid today. Both standards were valid for trade and for noble metals. Occasionally, slightly worn 1 Vis-weights of c. 1,540 (Pegu), 1,570, and 1,610 g turn up, suggesting that different local standards were in use. Normally the animal weights range from $\frac{1}{16}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, (4), 5, 10, 20, 50 Tk, up to 1 (and $2\frac{1}{2}$) Vis.

Apart from these standards, there existed reckoned values used by the Europeans for foreign trade, as mentioned in the old merchants' books. The English used a rate of 1,512 g/Vis from c. 1750 onwards, and 1,667 g/Vis (= 3.65 lbs. av. = 142 Indian Tola) from about 1827, i.e., after the first

Anglo-Burmese war. These artificial rates have nothing to do with the standards used by the indigenous population in the country itself.

The author only deals with the two first-mentioned standards, i.e., 15 g/Tk and 16.3 g/Tk, in this article. The role played by local standards is still uncertain because few proven local weights showing a minimum of wear and tear have been found so far.¹

4 Verification Marks

Older weights have a square or circular depression as a kind of verification mark at the front of the base.² Sometimes there is the outline of an animal in the depression. Younger weights show a 4-, 6-, or 9-pointed “star” (4st, 6st, 9st), the points of which however point inwards. Other marks are a bird on the Karaweik weights and the Burmese letter *gha gyi* (ω) on hintas 2A and 2B. This mark is reminiscent of the old Greek small letter *omega*. Rare marks are a circle and a 5-pointed star, the points of which sometimes point outwards. Other marks such as the tip of an arrow are so rare that they should be interpreted as owner's marks, etc. The different marks are typical of definite forms. They were punched with a few exceptions into the right front of the base.

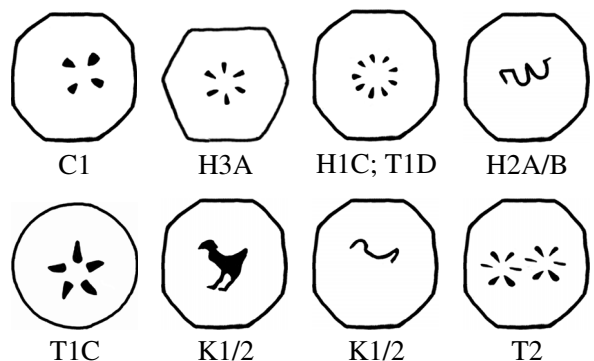


Fig. 1: Verification marks under the base of Burmese 2 Tk animal weights.

As shown in Fig. 1, the marks on the small weights from 2 Tk downwards are punched under the base. The fact that a punch is used for making these marks is demonstrated by two identical

1 Since Gear and Gear (1992) did not take wear and tear into consideration, their standards are too low.

2 The weight is seen from above and in the direction of the animal's view. “At the front” means on the front surface of the base beneath its forefeet. “Left” and “right” follow automatically from this.

stamps under a 2 Tk base (type T2, Fig. 1), the only type of weight on which a pair of marks has been observed so far. Sometimes the mark is absent. In general, nothing is known about the meaning and succession of these marks except that they are younger than the depressions in the base. However, they demonstrate the existence of a royal system of checking and verification. Oldham (in Yule 1858: 327) reported that the use of incorrect weights was punished by imprisonment.

5 Forms

There are various kinds of animal weights. The author is thoroughly convinced that the basic groups mentioned above and their subgroups or forms developed gradually from an old to a more modern design. Although some forms changed their shape slightly with time, in general the designs remained remarkably stable. There is no evidence of amalgamation of two different forms; transitions between kindred forms, p.e., H1B–H1C and T1C–T1D have rarely been observed.

The following forms can be defined (terms after Mollat 1984):

Hintha 1 (H1)

H1A (Fig. 2) seems to be the oldest Hintha form. This form is very simple and the depression in the front of the base is an early characteristic. Form H1B (Figs. 3 and 4) is an adaptation of H1A, by a lengthening of the neck and the presence of plumage. Common to both H1A and H1B is a double notch on the convex wings (which is also observed on a Pyu weight; see Fig. 29), fine grooves indicating the neck feathers and the shape of the tuft that distinguishes them from form H2. Form H1C (Fig. 5) belongs to a younger generation since it has a 9st mark (or only 9 dots), already the higher standard of 16.3 g/Tk, and concave wings. A transitional form (not figured here) does exist, resembling H1B and already having the higher standard and the 9st mark of H1C. All H1 forms show “food” in the bill.

Hintha 2 (H2)

H2 resembles H1A. However, the tuft is different and the wings are concave. The bird’s bill lies on its breast. Food is sometimes present. From the point of view of the verification marks, H2A



Fig. 2: Hintha 1A, 10 Tk.



Fig. 3: Hintha 1B, 20 Tk.



Fig. 4: Hintha 1B, 1 Vis.



Fig. 5: Hintha 1C, 10 Tk.

(Fig. 6) is a transitional form. The early forms have a depression in the front of the base. Later on this was replaced by a *gha gyi* mark impressed at the same location and finally this mark was punched on the right front of the base. H2B (Fig. 7) is a variant with a multiple tuft (2 or 3) and the *gha gyi* mark. A depression is rare.

Both H2A and H2B forms sometimes show secondary verification marks and belong to the old standard of 15 g/Tk. H2C (Fig. 8) is a further development showing a more perfect style, a single 6st mark and, already, the standard of 16.3 g/Tk.

Hintha 3 (H3)

The H3 forms do not appear to have any forerunners. No food is depicted in the bird’s beak, and a frieze of notches³ often appears around the top of the base. The standard is 16.3 g/Tk. H3A1 (Figs. 9 and 10) is compact and plain. The only characteristic features are two bands of neck feathers. H3A2 (Fig. 11) stands out by possessing strongly protruding eyes. The neck feathers extend downwards. Both forms have the 6st verification mark. The last form of this group is H3B (Figs. 12 and 13). The reentrant angle at the base of the neck is conspicuous. The base varies from hexagonal to circular.

³ Gear and Gear call it short verticals (1992: 57).



Fig. 6: Hintha 2A, 20 Tk.



Fig. 7: Hintha 2B, 20 Tk.



Fig. 8: Hintha 2C, 20 Tk.

Normally the verification mark is missing; however a 6st mark or the outline of a bird has rarely been observed.

Karaweik 1 (K1)

The Karaweik 1 bird (Figs. 14 and 15) differs distinctly from the Hintha by the tuft and by well-developed feathers. The octagonal base is seen again. The verification mark is the outline of a bird, which is often rudimentary (see Fig. 1). The standard is 16.3 g/Tk.

Hintha 4 (H4) and Karaweik 2 (K2)

This group comprises a great variety of highly stylized Hintha and Karaweik forms, which the author saw in use on the markets in the Shan states as recently as 1982 (Figs. 16–20). They are, therefore, referred to as Shan weights. H4A has been designed after form H3. However, forms H4B to H4D have apparently no forerunners on which they might have been modelled. Verification marks are the 6st mark or the bird, but they were rarely punched; often they seem to be hand engraved or they are missing. The frieze of notches is not present.



Fig. 9: Hintha 3A1, 20 Tk.



Fig. 10: Hintha 3A1, 1/2 Vis.

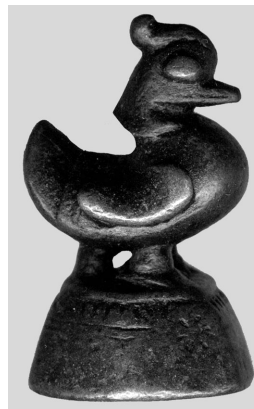


Fig. 11: Hintha 3A2, 20 Tk.



Fig. 12: Hintha 3B, 1/2 Vis.

To 1 (T1)

T1A (Fig. 21) comprises a variety of very old lions. As the forms are variable, it is not easy to compose sets of identical weights (Gear and Gear 1992: plates 32f.). As a common feature the T1A lion is sitting on its hind legs. The tail has the form of a lotus bud or a horsetail. Frequently the lions have a “beard” which corresponds to the “food” of the Hintha. Often the mouth is shut. In general, T1A weights are much worn. Well-preserved weights are rare.

T1B (Fig. 22) is a transitional form to T1C. The eyes of T1B look straight ahead (dog weights). The mouth is still shut but the lion is already standing on its four legs. T1A and T1B have fine grooves indicating the mane. T1C (Fig. 23) is fully stylized, but the depression is still on the front of the base and rarely substituted by the circle mark. The standard is c. 15 g/Tk. The mouth is open. The beard is shaped like a lobe or it is rolled up symmetrically



Fig. 13: Hintha 3B, 20 Tk.



Fig. 14: Karaweik 1, 1/2 Vis.

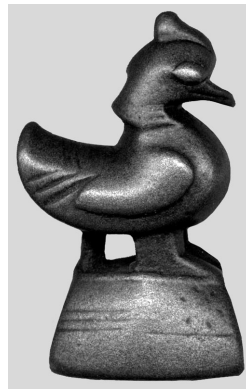


Fig. 17: Hintha 4A, 10 Tk.



Fig. 18: Hintha 4B, 10 Tk.



Fig. 15: Karaweik 1, 20 Tk.



Fig. 16: Karaweik 2, 10 Tk.

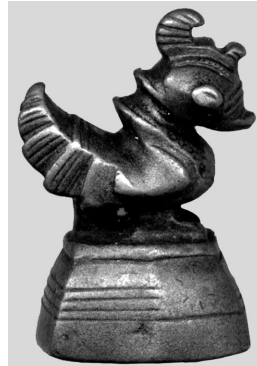


Fig. 19: Hintha 4C, 5 Tk.



Fig. 20: Hintha 4D, 10 Tk.

to the left and right. Often the weights have secondary verification marks (for details see below). A few of the 2 Tk T1C weights, hardly worn, have a 9st stamp under the base and definitely belong, together with some small T2 weights, to the new standard of 16.3 g/Tk. This is probably the rare case that small weights have been cast in an older design, maybe to be used for a special purpose like weighing medicine or precious stones.

T1D (Fig. 24) is the attractive final link of the To weights characterized by a tail with 3 to 4 tufts curving upwards, a 9st mark (sometimes only 9 dots), a (double) chain of small circles and the higher standard of 16.3 g/Tk. Transitional members of T1C–T1D have rarely been observed.

To 2 (T2)

T2 (Fig. 25) is absolutely unadorned. The tail bends directly downwards. This form has secondary verification marks too. The standard is c. 15 g/Tk.

Chinthe 1 and 2 (C1 and C2)

Compared with the compact form of the To lions, the Chinthes appear tall and slender. They all have the higher standard of 16.3 g/Tk. C1 (Fig. 26) has still the 4st verification mark and the old-fashioned octagonal base. The tips of the tufts on the mane curl downwards.

The next younger Chinthe C2A (Fig. 27) is characterized by a square base and the 9st mark. Copper inlays are typical, executed in diverse designs and on distinct parts of the body, sometimes forming the eyes and the forelock. They are even found under the base.

The more playful form C2B (Fig. 28) developed via a transitional form exemplified by a 10 Tk weight that has no handle but no longer any copper inlays. In addition the 10 and 20 Tk weights have a handle and the 5 Tk weight is mostly replaced by a 4 Tk weight. As on the H3 forms, a frieze of notches on the upper rim of the base of C2A and C2B appeared gradually and became a frequent ornament on later Hintha 3 and Karaweik 1 forms.



Fig. 21: To 1A, 20 Tk.



Fig. 22: To 1B, 20 Tk.

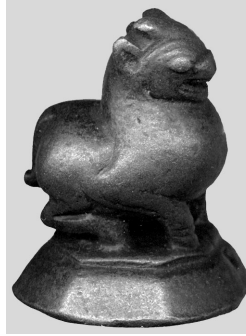


Fig. 25: To 2, 20 Tk.



Fig. 26: Chinthe 1, 10 Tk.



Fig. 23: To 1C, 20 Tk.

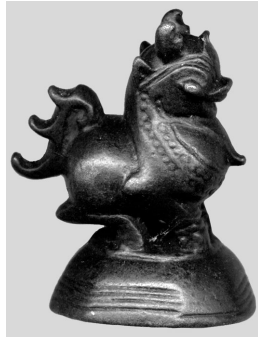


Fig. 24: To 1D, 10 Tk.



Fig. 27: Chinthe 2A, 20 Tk.

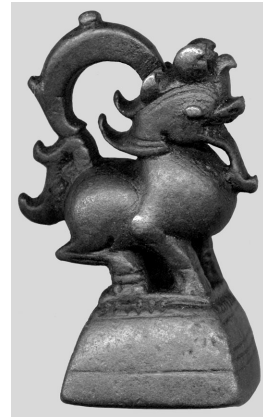


Fig. 28: Chinthe 2B, 20 Tk.

6 Other Forms

Besides the standard weights there are some other weights and figurines found in Burma which have to be discussed briefly. In the first place the so-called Pyu weights must be mentioned (Fig. 29). These rare weights consist of a Hintha bird sitting on a solid bronze base resembling a large pumpkin. The "1 Vis"-weights, which only weigh about 1,200 g, bear a script in Lanna Thai letters. Their origin must be northern Thailand, which was occupied by the Burmese for some periods. If genuine, these weights are relatively old, but there is no evidence that would permit them to be arranged in this chronology.

Another group comes from the Arakan Yomas (Fig. 30). These forms resemble those of the standard weights of central Burma but the shape is often rough. The handles are often elongated backwards. As these weights are mainly made of brass, they do not seem to be older than the 19th century.

Elephant weights do not come from Burma. A number of different brass animals representing the Chinese and Burmese calendars were given away as lucky charms and subsequently sold as "weights." Moreover, they do not show any trace of wear and tear. There are other figurines too; for exam-

ple, a monkey eating a fruit is a Buddhist symbol of "birth." These figurines were cast by the same craftsmen who produced the weights and, therefore, their masses may approximate those of the standard weights, although they are not real weights. Other animals such as cow, peacock, octopus, spider, snail, fish, and turtle are modern fakes.

7 The Chronology (Table 1)

It can be inferred from the same secondary verification marks on forms H2A/B and T1/2 that various weight forms were used contemporaneously, since these marks must have been stamped during the same time period. Symes (1800: 326) reported that the weights "are all fabricated at the capital, where they are stamped and afterwards circulated throughout the Empire." The capitals (Pegu until 1635 and afterwards Ava together with the temporary capitals in the vicinity) were the places of issue. Though Amaduzzi (1776) allotted the arms of the lion to Pegu and the Hintha to Ava, these isolated statements have to be taken with care. The



Fig. 29: "Pyu"-weight, 277 g.



Fig. 30: "Arakan"-weight, 10 Tk.

dates given in Table 1 refer to the supposed dates of the first issue of the respective forms. These were produced until the first issue of the next form and were used together with older and younger weights apparently without any time limit.

The state of development of the designs of H1A and T1A (Figs. 2 and 21) suggest that they are the oldest weight forms. Identical fine grooves for feathers and manes suggest that H1A and T1A appeared about the same time (see Table 1).⁴ The attribution of most of the forms to the 16th century results from general considerations about the succession and the large variety of forms, but it could not be proved on the basis of concrete evidence.⁵

The next generation is represented by H1B and T1B (Figs. 3, 4, and 22). Compared with H1A and T1A, the forms possess a higher stage of development. Both may have a polygonal base. The grooves mentioned above can still be noted on both forms. Only on T1B and H1B did the author observe the same handle, which turns up at the end (see Figs. 4 and 22). They are inferred to be about 1640.

The next younger forms are H2A and H2B (Figs. 6 and 7) on the one hand and T1C and T2 (Figs. 23 and 25) on the other. The shape of the food and beard on T1C and H2A may be identical (cf. Gear and Gear 1992: plates 27 and 38 above) as well as the shape of the depressions on the front of the base. H2B seems to be a slightly younger

variant of H2A, because the depressions are only rarely observed. The *gha gyi* mark is only seen on these two forms. Tentatively all these forms are dated around 1680.

These four forms constitute a certain time boundary because, like some of the older weights, they sometimes have secondary verification marks. Many of these marks are located on the flanks of the base, the 4st usually on the left side. The following marks have been observed by the author:

- on H2A: 4st, 5st, 6st, 9st, circle,
- on H2B: 5st, 6st,
- on T1C: 4st, 5st, 6st, 9st, circle,
- on T2: 4st, 6st,
- on T1A/T1B: 4st.

Nothing is known about the meaning and the dates of these secondary marks. If they had something to do with the change of the standard mentioned above, they would have been stamped at the beginning of the 18th century. It is also possible that these marks stand for different regions or conquered territories. The conformity of the marks on H2A and T1C is remarkable.

H2C and C1 (Figs. 8 and 26) represent a turning point and herald a new generation of weights which has only one punched verification mark on the right front and the higher standard of 16.3 g/Tk. The single 6st mark is observed for the first time on H2C. A 2 Tk H2C weight has a Burmese date of 1101 (A.D. 1739) engraved under the base (Gear and Gear 1992: 203). An engraving has most probably been done unofficially by the owner of the weight. But one can assume that this date indicates a minimum age for this weight type, especially since this figure fits well into the general picture. The 4st mark known from the ancient secondary mark is now the single mark on C1. The octagonal base is an old attribute as well. For this reason, C1 is classified as the earliest Chinthe form. The food of H2C and the beard of C1 are sometimes identical. Apart from some H1C weights, these are the latest examples of food and beard seen with decoration, whereas they are plain on younger weights. Both forms are dated around 1730. The small weights of T1C and T2 of the new standard mentioned above should belong to this period as well.

The next forms H1C and T1D (Figs. 5 and 24) have the 9st mark for the first time and show a more complicated style. For T1D, good evidence exists for its minimum age in the form of a drawing of this weight with all details, published in the year 1776.

Forms H1C and T1D (Amaduzzi and Fig. 31) are estimated at around 1760. The introduction of the 9st mark may correlate with the unification of

4 In Table 1 the forms have been arranged horizontally. This does not mean that they are necessarily exactly of the same age.

5 Gear and Gear (1992) even attribute some forms to the 15th century. As there is no evidence for this age, the present author, being more conservative, does not go along with this. Moreover, not all the "old" weights figured by Gear and Gear, as well as by other authors, appear to be genuine.



Fig. 31: "Arms of Pegu," 1776, cf. Fig. 24.



Fig. 32: Hintha 3, Yule, 1858.

Burmese territory under the Konbaung Dynasty after the end of the Mon uprising in 1757.

As mentioned above, the Chinthe weights C2A and C2B (Figs. 27 and 28) are characterized by a square base and the 9st mark. In Burma they are called "king's weights" or "Bodawpaya weights." As the royal tradition is still strong in Burma, there is no reason to doubt attaching these forms to the powerful King Bodawpaya, who reigned from 1782 till 1819. Further good evidence for this is the existence of the 4 Tk weight exclusively in the C2B sets, described by Wilson (1827: LXI; appendix) as being used for the lion weights he found in Burma. It is not known that C2A was already issued before this king came to the throne. C2B seems to have still been in use in 1837, the year in which a 20 Tk-weight was brought to India by a British army officer (Annandale 1917; plate XLIII, Fig. 6).

A revival of the Hintha seems to have followed the death of King Bodawpaya; the Hintha weights are now strongly simplified and have a hexagonal base. The handles and the bases of C2B and (older?) pieces of H3A1 show the same development of the design, strongly suggesting that C2B was superseded by H3A1. H3A1 develops by enlargement of the eyes to H3A2 (Fig. 11), which also has a 6st mark. H3A1 and H3A2 probably belong to the period between 1819 and ca. 1850.

Karaweik 1 (Figs. 14 and 15) was most probably issued at the same time as H3A2 and H3B. The protruding eyes, the shape of the handle, and the frieze of notches are clearly related to these forms. The bird stamp is also but seldom found on H3B, but it is quite frequent, though hand engraved and, therefore, differing on the Shan weights.

The form H3B (Figs. 12 and 13) was issued prior to 1868 because Annandale (1917; plate XLIII, Fig. 5) figures an H3B form on a hexagonal base,

which was brought to India in this year. In Yule's book printed in 1858 describing a "Mission to the Court of Ava", a weight of the H3 type has been sketched obviously from memory (Fig. 32 see above) and, therefore, showing the wrong proportions. However, it has a circular base, which is a characteristic of H3B; thus it may have been issued 10 years earlier. Since verification marks are often absent, as on this form, many of the H3B-weights seem to have been cast during the late 19th / early 20th centuries. However, marking must already have become less frequent in the 19th century in those parts of Burma which the British had occupied, i.e., after 1826 in Arakan and Tenasserim and after 1852 in the province of Pegu. It is not known how far the Shan forms H4A–H4D and K2 extend back to the 19th century. A few pieces (e.g., H4A) have a clear 6st mark, which would give a hint that they reach back to the time before 1885. This was the year of the full occupation of Burma by the British.

It is remarkable that, in spite of this disaster, the Burmese were able to keep their weight system and even to cast further sets of Hintha weights for daily use as well as, subsequently, numerous series of imitations and fakes of diverse quality for tourists and collectors.

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