

agricultural institutes and as a reference for others interested in the subject.

The Yemen has begun a programme to make the country self-sufficient in the production of fresh fruits, especially apples. As the new orchards reach bearing age they will require many thousands of colonies of honey-bees for pollination. When that time comes a system of migratory beekeeping must be developed because most areas will not have sufficient numbers of hives close enough to provide good pollination. Apple growers will have to be convinced of the value of bees for apple production, so that they will be willing to pay a fee for the bees brought into their orchards. Because bees rarely make surplus harvestable amounts of honey from apple blossoms, beekeepers may be reluctant to move their bees unless the stimulation the bees receive from the incoming pollen and nectar from the orchards induces them to collect more nectar from successive nectar flows. More knowledge of these special relationships is needed before recommendations can be made and assistance given.

The bees of Yemen are tough and able to stay alive under conditions that would quickly kill other races of honey-bees. Yet most of them are quite gentle when manipulated. In our work with these bees we have seen much variation among the colonies and we believe that a careful programme of selection and breeding the bees of the Yemen could quickly provide improved stock for distribution within the country. The improved stock, movable-comb hives, and some well-timed feeding to reduce winter losses and prepare colonies for nectar flows, all offer promise of more honey for the people of the Yemen Arab Republic, who treasure it so much.

Note

For references on bees and bee-keeping see the useful *A preliminary bibliography on bees and honey in Arabia*, by Robert Whitcombe, Khabura Development Project Sultanate of Oman, Preliminary reports, vol. 2C, no. 4. Centre for Overseas Research Development, University of Durham. Taxation tables in the *Mulakhkhas al-fiṭan* (1411-12) include the item honey from many districts. (Eds.)

The carving of the rhino *jambiyyah* hilt in North Yemen

Jan Chapman

For several years now I have been working on the subject of rhinoceros-horn carving in China, but the problem of discovering how this particular type of horn was carved and treated remains unsolved. Unfortunately, I have been unable to discover any evidence from Chinese texts concerning the tools and techniques relevant to this craft, which died out in China during the first half of the nineteenth century. My visit to North Yemen in April 1984 came about when I learned that the Yemen imports more than 40 per cent of the world's stocks of rhino horn every year, and that it is the only country in the world with a flourishing trade in the carving of this material, which is turned into expensive hilts for the traditional Yemeni dagger (*jambiyyah/janbiyyah*).

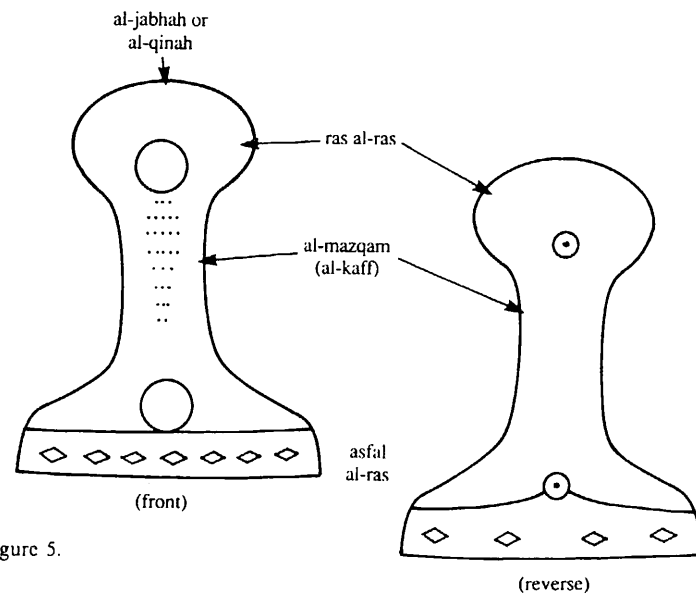


Figure 5.



Figure 6. Dagger handle with inset coins

Anxious to learn as much as possible about the craft before I reached the Yemen, I naturally turned to Professor Dostal's pioneering study *Der Markt von Sana*, Wien, 1979.¹ I found that, although Professor Dostal had recorded something of the making of hilts and produced a vocabulary for the various techniques involved in the production of a *jambiyyah*, his had been a general approach. My journey to the Yemen was made specifically to record and photograph the whole process of cutting and carving the hilt from the horn of the African rhino, and for this reason I was able to gather a considerable amount of new information on this subject.

As I am a sinologist and do not speak a word of Arabic, I was extremely lucky to persuade my friend Dr Gerd Puin to act as my interpreter. It was he who noted down the Arabic names which emerged during my researches, and, in particular, during a demonstration given by an experienced rhino-horn carver in his own home. In order both to quicken up the process of cutting the hilts and to make photography much easier, Gerd Puin fashioned a large slab of white polystyrene into the shape of a rhinoceros horn. This model was first cut into pieces and then filed into shape with the tools normally used by the carver on the precious rhinoceros horn which, by the way, is of a greyish-black colour.

In its natural state, rhinoceros horn – which is a closely packed mass of longitudinal filaments of keratin – grows outwards from a protuberance on the animal's skull. This horn is not, therefore, part of the animal's skeleton, but can be knocked off with a heavy blow. The anterior horns of the two species of African rhino from which most Yemeni daggers are made are invariably longer than the posterior horns of the two species, and the current price for one kilogram of the horn was an unbelievable \$825 – making rhino horn more expensive than gold.² At the base of every horn, in the area adjacent to the skull in the living animal, there is a cavity which I refer to as the 'well' of the horn. Apart from this 'well', the conical shaped horn is solid all the way to the pointed tip. Because of the exorbitant price of the material – which is always purchased in one piece – the rhino-horn carver must naturally waste as little as possible and, for this reason, he will use as much as he dares of the 'well' area.

First he makes two horizontal cuts with either a hand-saw or

electric saw (fig. 7). From a small horn of about twelve inches (30 cm) the carver is able to fashion only three hilts:

- Part A 2 hilts: the wider end being partly hollowed
 Part B 1 hilt: all solid horn.

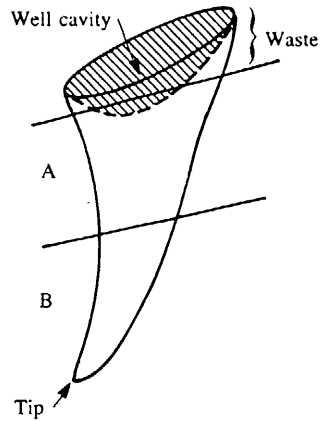


Figure 7.

Having divided the horn into two horizontal sections, the carver takes Part A and splits it vertically into two equal halves. With these three cuts he has produced three hilt shapes (fig. 8). The horn having

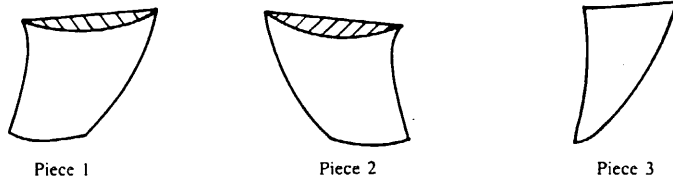


Figure 8.

been cut into the required number of pieces, it is now necessary to remove the skin with a special tool which resembles a very sharp hammer. Once the skin has been scraped off, the piece must be shaped by hand and eye, making sure that the partly hollowed section of the horn becomes the blade end of the dagger hilt. Fig. 10 shows how the natural outline of the rhinoceros horn lends itself so perfectly to the finished shape of the hilt. Holding the concave side in



Figure 9. Removing the skin from the horn

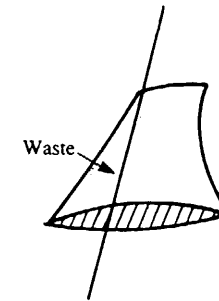


Figure 10.

his hand, the carver now cuts away the waste before he begins to file a curve which will match the other side of the piece (fig. 11).

When pieces 1 and 2 have been shaped to the carver's satisfaction, he then turns his attention to piece 3, the solid tip at the end of the horn. Since the narrow pointed tip is to become the head-end of the



Figure 11.



Figure 12. Cutting to shape

hilt, the carver is faced with the problem of making it wider. He solves this particular problem by using some of the waste material already cut from pieces 1 and 2 to fashion two small triangular pieces which will fit neatly at either side of the tip of the horn. These pieces are called *muqarrannah* (fig. 13).

Whereas the posterior horns of the two African rhinoceros, i.e. *Diceros bicornis* (black) and *Ceratotherium simum* (white) average



Figure 13.

only about twelve inches (30 cm) long, the anterior horns of these two species are considerably larger. As a result of the very effective campaign that has been launched by the World Wildlife Fund, many people are now alerted to the fact that all five rhino species are endangered and that poachers have invaded game parks and killed game wardens in search of the long anterior horns of the African rhino. During my visit to North Yemen I saw anterior horns of the black rhino that measured approximately three feet long (c. 90 cm), and the characteristically long slender horns of the white rhino which measured nearly four feet (c. 120 cm).

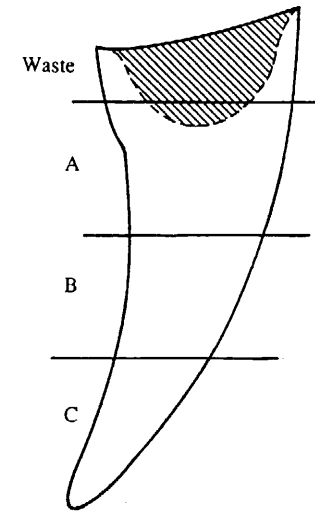


Figure 14.

Fig. 14 shows how a three-foot-long black rhino anterior horn can be divided into a total of 13 hilts, its extra width allowing the carver to cut one horizontal section into three vertical parts. Not all anterior horns are wide enough to allow this, and so the more slender horns of the white rhino are more likely to be cut into a total of eleven hilts – five at the base, then three, then two, and finally one hilt from the tip end of the horn. Naturally enough, the carver is anxious to cut as many hilts as he can from a single horn, and so the anterior horn of the black rhino which yields six hilts from the base area is especially desirable. Moreover, the additional two hilts which

emerge from this type of wide horn are valued above any other by the connoisseur. Fig. 15 shows how the *qalb* or 'heart' pieces emerge as symmetrical rectangles, whereas the *sharkh*³ pieces which adjoin them are always asymmetrical on account of the original shape of the horn. Because of their symmetrical shape, the carver is able to ensure that the curves of the *qalb* hilts are nicely balanced, and, what is more, that he can give the head end of the hilt, *rās al-rās*, a satisfyingly plump contour – a feature which is pleasing both to the hand and the eye.

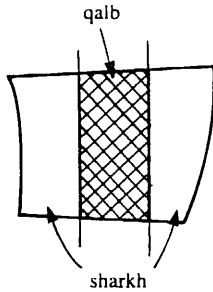


Figure 15.

Unless, however, the horn is exceptionally wide, the production of a *qalb* hilt will necessitate the fashioning of lop-sided, and therefore undesirable, hilts from the *sharkh* pieces. With the best will in the world, the carver finds it impossible to make his *sharkh* hilts symmetrical, and the final result will be at least two lop-sided hilts, one leaning to the left and one to the right. This type of hilt is referred to by the Yemenis as *shawālah min al-yamīn* and *shawālah min al-yasār*⁴ (fig. 16).

Whether the carver is dealing with a large horn or a small, he must always decide how to deal with the hollow base area which is found on every horn regardless of size. Because of its astronomical price, the carver does his best to retain as much of the horn as is possible, and so when making his horizontal divisions he will always include

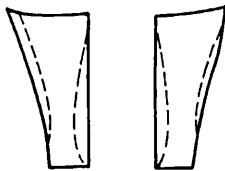


Figure 16.



Figure 17. Using a rasp

as much of the 'well' area as he dares (figs. 7 and 14). As a result of the uneven thickness of these hilts from the base of the horn, the carver invariably turns the 'well' end of his pieces into the blade end of his hilt. This is called the *asfal al-rās* (the lowest part of the head). The weak, slightly hollowed part of the hilt is called *nakharah*.⁵ This inherent weakness can usually be disguised when the traditional collar of silver, *al-mabsam*, is glued to the blade end of the hilt. Particular care should, therefore, be taken to examine the width of the collar to see whether it is wider than usual (fig. 18). If so, it is almost certainly covering a weak part of the horn. One of the first questions asked by a potential buyer of a Yemeni *jambiyyah* is whether the hilt is *maktūm*, in other words, 'securely mounted', or, on the other hand, whether it is *maghshūsh*⁶ or 'having a weak join'. A too-wide collar is an obvious indication of the latter.

The securing of the hilt to the blade is usually carried out by the craftsman who decorates the hilt and not by the craftsman who cuts and shapes it. Since Professor Dostal has given a comprehensive account of the whole process of decoration and fixing, it is not necessary to repeat this here. All I would add is an injunction to anyone studying the Yemeni *jambiyyah*, or thinking of buying one,

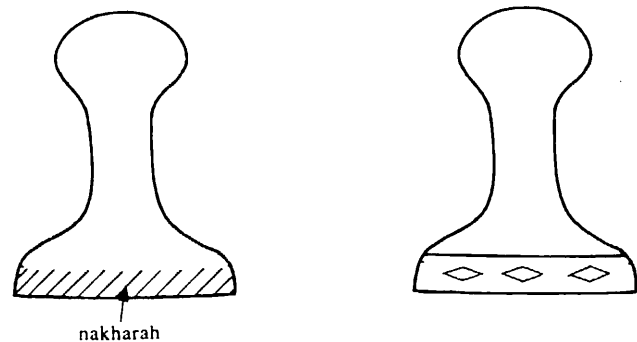


Figure 18.

to pay particular attention to the shape of the hilt. The Yemeni carvers themselves seem to know instinctively from what part of the horn any particular hilt was produced, and to do this it is essential to understand how the natural horn is formed and how it is shaped. Above all, it helps to know in what way the horn is cut into its various pieces, as I have tried to indicate in this paper.

Notes

1. R. B. Serjeant and R. Lewcock (ed.), *Ṣanʿāʾ; an Arabian Islamic city*, London, 1983, has much detail on the Yemeni *jambiyyah*. See index and especially *jihāz* (239b), with reference to the daggers in the pre-Islamic stele from Jawf bin Nāṣir, and a list of names of parts of the dagger, as also, p. 241aff., Professor Dostal's description of manufacture with a revised list of Arabic terms. (Eds.)
2. Scarcity apart, a possible reason for the high price of rhinoceros horn may lie in the properties with which it is accredited. *Ṣanʿāʾ*, 240b, says of the hilt called *Sayfānī* or *zurāf Sayfānī* – 'If a snake (*hanash*) bites you, you take the handle of the *Sayfānī* dagger, and dip it in milk (*laban*), and put it on the wound (*ṣawb*) and it cures it.' Perhaps other valuable properties of this kind are attributed to it. Rhinoceros horn would seem to have been highly esteemed in the past for Jāhīz, *Ḥayawān*, ed. ʿAbd al-Salām Hārūn, Cairo, 1356–64/1939–45, vii, says, 'it is harder and nobler (*akram*) than the two tusks of the elephant'. Again (vii, 129) he adds: 'It is despatched from with us here at Basrah to China, because it happens to come to us before them, When they cut it marvellous figures (*ṣuwar*) appear at the places where it is cut. It has properties besides this for which it is in demand.' (Eds.)
3. *Sharkh*, crack or split, *shurkh* 'morceau en général' Landberg, *Glossaire datinois*, probably the latter sense here. (Eds.)
4. cf. *shawwālah*, scorpion, *Gl. dat.* Perhaps the resemblance if this be the sense here is because of the way the scorpion's tail sticks up in the air. (Eds.)
5. *Nakharah* = *nakhrāh*, nostril? (Eds.)
6. *Maktūm* would mean, lit. 'concealed', and *maghshūsh*, 'fraudulent, defrauded'. (Eds.)

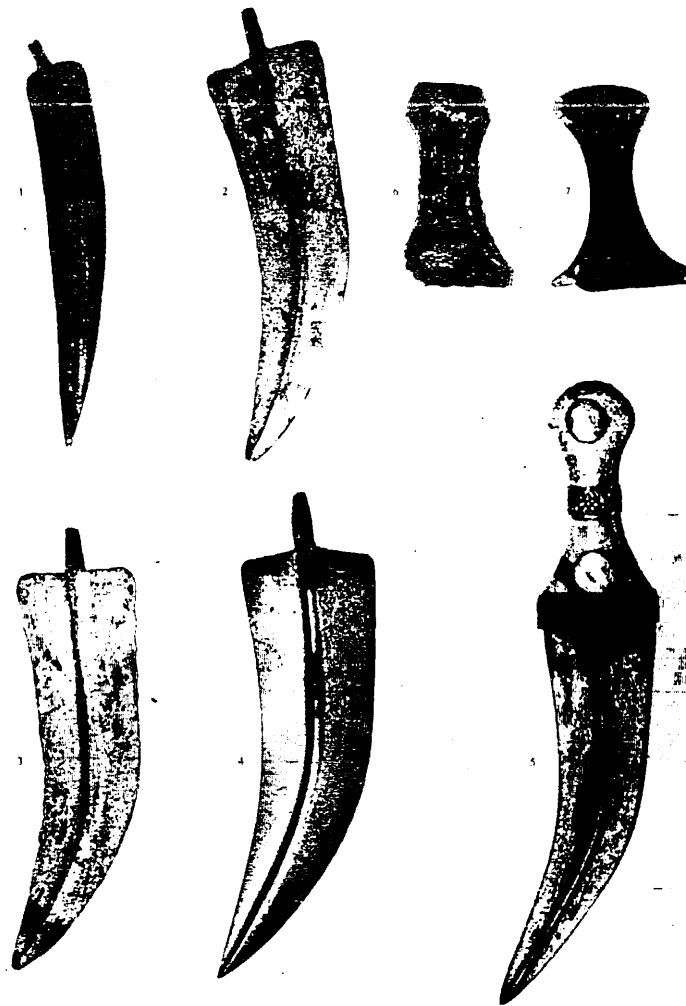


Figure 19. 1–4: four stages in forging the blade of a south Arabian dagger from the original roughly formed shape to the final stage after it has been polished with a steel. 5: A completed dagger with horizontal ornamented chased silver band (*mabsam*) covering the top of the blade and foot of the haft. The haft, here of ivory or bone, is mounted with three imitation gold coins – often these are imitation Venetian sequins. One coin is mounted on the top of the haft. It is further decorated with one chased and one plain band of silvered copper. 6–7: The sawn-out roughly shaped horn haft and the final shape of the haft before mounting.

The process with technical terms is described by Walter Dostal in *Ṣanʿāʾ*, 263a–267b, with illustrations.

These specimens belong to Miss Leila Ingrams, by whose courtesy they appear here.