The Hercules Motif on Greco-Roman Surgical Tools

As those who study Greco-Roman minor objects know, everyday utilitarian items in Classical Antiquity, particularly those made of metal, frequently were attractively decorated. This feature is particularly characteristic of surgical tools. Perhaps the tendency to lavish special attention on surgical tools is to be ascribed to the conditions under which surgery was practiced. Since there were no antiseptics, no antibiotics, and no anesthesics employed, any operation was bound to be painful and dangerous. For this reason physicians must often have been obliged to persuade their patients that the risk was worthwhile, and attractive-looking equipment should have helped in this regard. A passage written by Lucian, the second century satirist, is apropos. In *Adversus Indoctum* (29) he belittles quacks and charlatans who compensate for their incompetence with ivory splints, silver bleeding cups, and scalpels inlaid with gold. Thus Lucian gives us some grounds for arguing that the aesthetic quality of a physician/surgeon's equipment reflected on his ability to cure.

Whatever the reason for this aesthetic predilection, it is a fact : virtually every surgical instrument of metal features some sort of decor. In some cases this amounts to no more than striation or polygonal sectioning. In others, abstract motifs occur such as raised and incised rings or lattice/diamond patterns or circles inlaid in silver (see Bliquez, 1981, p. 12).

Sometimes the decor is more natural, as in the case of pieces decorated with animal and vegetable designs (see Künzl, 1986, Taf. XXX). Among these naturalistic decorations falls the one of concern in this paper : a bark and knot pattern, as of the limb or trunk of a tree. This I shall refer to as the « knotty limb » pattern. While it may be depicted in a more subdued fashion (e.g. Fig. 1) or in a more assertive arrangement (e.g. Fig. 2), the knot pattern is clearly recognized by those scholars who have attempted to describe this motif (e.g. Hassel, Künzl, 1980, p. 407 (10) : Riha, 1986, p. 82 (620)) ; so there should be little doubt as to its proper identification.

One of the most striking aspects of the « knotty limb » pattern is the frequency with which it occurs on surgical tools. At least 18 items can be cited. These include :

A. Three specimens of a double needle/probe associated with eye operations such as couching of the cataract (Feugère, Künzl, Weisser, 1988 ; Jackson, 1986, p. 126, 151). These are preserved in :
   1. The Römisch-Germanisches Zentralmuseum, Mainz, inv. no. 0.37841, from Asia Minor (Hassel, Künzl, 1980, p. 407, 408 (10) ; Künzl, 1983, p. 47, 49 ; Feugère, Künzl, Weisser, 1988, p. 37 (e)) (Fig. 2).
   2. The Smithsonian Institution, Washington, D.C., The National Museum of History and Technology, inv. no. 252498, allegedly from near Nazareth (unpublished).

B. Three sharp retractors of the sort used for hooking and raising tissue as in the tonsillectomy operation. These include specimens in :
   1. The Römisch-Germanisches Zentralmuseum, Mainz, inv. no. 0.37840, from Asia Minor (Hassel, Künzl, 1980, p. 405, 408 (6) ; Künzl, 1983, p. 47, 49 ; Feugère, Künzl, Weisser, 1988, p. 37 (a)) (Fig. 2).
   2. The Indiana University Art Museum, Bloomington (Burton Y. Berry Collection, inv. no. 76.35.44u) (Fig. 1).
   3. Aschersleben, Kreismuseum, inv. no. 778, from Aschersleben (Grimm, 1936, p. 105-106 ; Künzl, 1983, p. 100-101 ; Künzl, 1984, Taf. XXIX) (Fig. 3).

C. A grip in Aschersleben from the same instrumentarium as B, 3 (probably also for a sharp retractor) likewise features the « knotty limb » pattern ; inv. no. 780 (Grimm, 1936, p. 105-107, Künzl, 1983, p. 100-101 ; Künzl, 1984, Taf. XXIX) (Fig. 3).

D. Six scalpel handles mounting the usual leaf-shaped dissector at the end opposite the steel blade (now missing in all cases except specimen 4 where the blade is of the « bellied » type). These handles differ from numerous other surgical parallels only in that they feature the « knotty limb » pattern. They are housed in :
   1. The Römisch-Germanisches Zentralmuseum in Mainz, inv. no. 0.38192 (unpublished, I owe the reference to E. Künzl) (Fig. 4 and 5).
   2. The Römermuseum Augst, inv. no. 68.2608, from Augst (Riha, 1986, p. 82 (620), Taf. 56).
   3. The Colchester Museum, inv. no. 226.37, from Colchester (unpublished ; I owe the reference to R. Jackson).
   4. The Landesmuseum des Niederrheins, from Krefeld-Gellep (Waterman, 1973, p. 745).
   5. Luxembourg, Musée de l'État (unpublished ; I owe the reference to E. Künzl).
   6. The Antikensammlung, Staatliche Museen zu Berlin (Misc. Inv. 10.576), from Cyzicus (published in this volume by Huberta Heres).

E. A scalpel handle crowned with a fist which once held some pliant object ; Römisch-Germanisches Zentralmuseum, Mainz, inv. no. 0.38193 (unpublished, I owe the reference to Künzl) (Fig. 4 and 5).

F. A handle for some sort of iron or steel instrument from Xanten, now in the Archaeological Park there (Reiche, Schalles, 1987, p. 39).

G. A bone elevator from Bingen, now in the Dresdner Bank there (Como, 1925, p. 155-157 (18) ; Künzl, 1983, p. 82 (18) ; Döderlein, 1977, p. 31).

H. A curette from the same source and housed in the same facility as G (Como, 1925, p. 155-157 (14) ; Künzl, 1983, p. 82 (14) ; Döderlein, 1977, p. 41, 43).

Fig. 1. Retractor ? Photo Indiana University Art Museum, BYB 489.9.

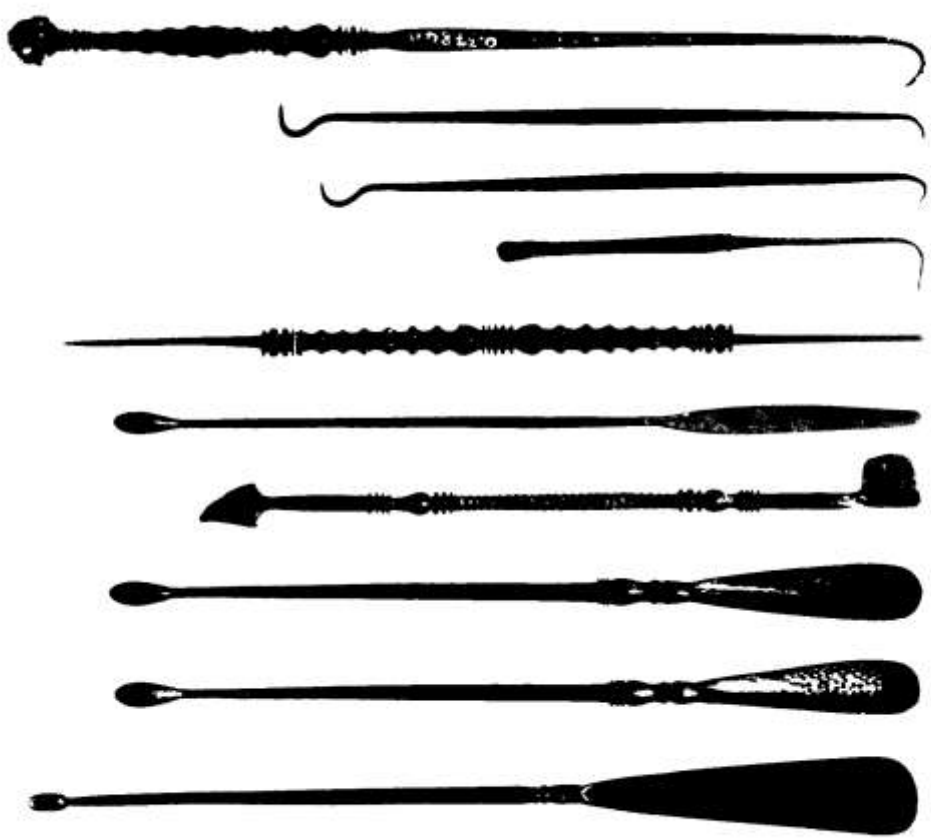

Fig. 2. Retractor and cataract needle with « knotty limb » pattern shown with other instruments from Asia Minor ? Photo Römisch-Germanisches Zentralmuseum, Mainz, T 78/209.

I. A strigil from a physician's grave excavated at Cologne (Friesenplatz) and now in the Rheinisches Landesmuseum, Bonn (inv. no. 3687) appears to have the « knotty limb » (Künzl, 1983, p. 91-93). While the strigil is primarily an instrument of hygiene, it was sometimes used for the administration of medicaments (Milne, 1970, p. 88-89).

Those pieces that can be dated are : A, 1 (1st half, 3rd cent. A.D.), B, 1 (1st half, 3rd cent. A.D.), B, 3 (3rd cent. A.D.), D, 2 (2nd half, 2nd cent. A.D.), D, 4 (20-69 A.D.), G and H (1st half, 2nd cent. A.D.), I (3rd-4th cent. A.D.). Thus, the chronology of the « knotty limb » pattern can be positively traced at least from the first through the third centuries A.D.

I regard all of the above pieces as having been used for surgical purposes based on their proveniences and/or shapes.

Three more items, also featuring the « knotty limb » pattern are to be found in the Naples Museum; I view them likewise as surgical ; but, since their precise proveniences cannot be established and since some might dispute their individual functions, I prefer to classify them separately for the moment and to return to them later.

As the above catalogue shows, the « knotty limb » pattern was extremely popular on Greco-Roman surgical tools ; in fact it was probably the most popular of the naturalistic designs. Its frequent occurrence prompts speculation as to the reason for its preferment. To be sure, there could have been a practical end in view : *i.e.*, the roughened surface produced by the pattern will have been useful for strengthening the surgeons grip in the course of an operation (Jackson, 1986, p. 140). Still, other designs will have been equally or even more effective in this regard. Nor can the answer lie in aesthetic predilections since we have no reason to suppose that Greeks and Romans found tree limbs more attractive per se than, e.g., palmette and acanthus patterns. So we are left with the possibility that symbolic considerations were in the mind of the manufacturer and/or the physician who commissioned the work.

Some years ago Franz Joseph Hassel and Ernst Künzl suggested in passing a connection between the « knotty limb » pattern and the club of Hercules (Hassel, Künzl, 1980, p. 407). For them the « knotty limb » pattern symbolized the power of the hero and god himself. In support of this view I cite four knife handles in the National Archaeological Museum in Naples said to be from Pompeii (inv. nos. 77694, 77695, 77696, 117667). Each of these specimens have handles actually shaped like the bust of Hercules.

The identity of the figure on these pieces has been disputed by John Stewart Milne, who in 1907 argued in favor of Minerva Medica (Milne, 1970, p. 19, 25). However, the correct identity will be obvious through the series of photos which I made in the Naples Museum in 1985 (Figs. 6-8).

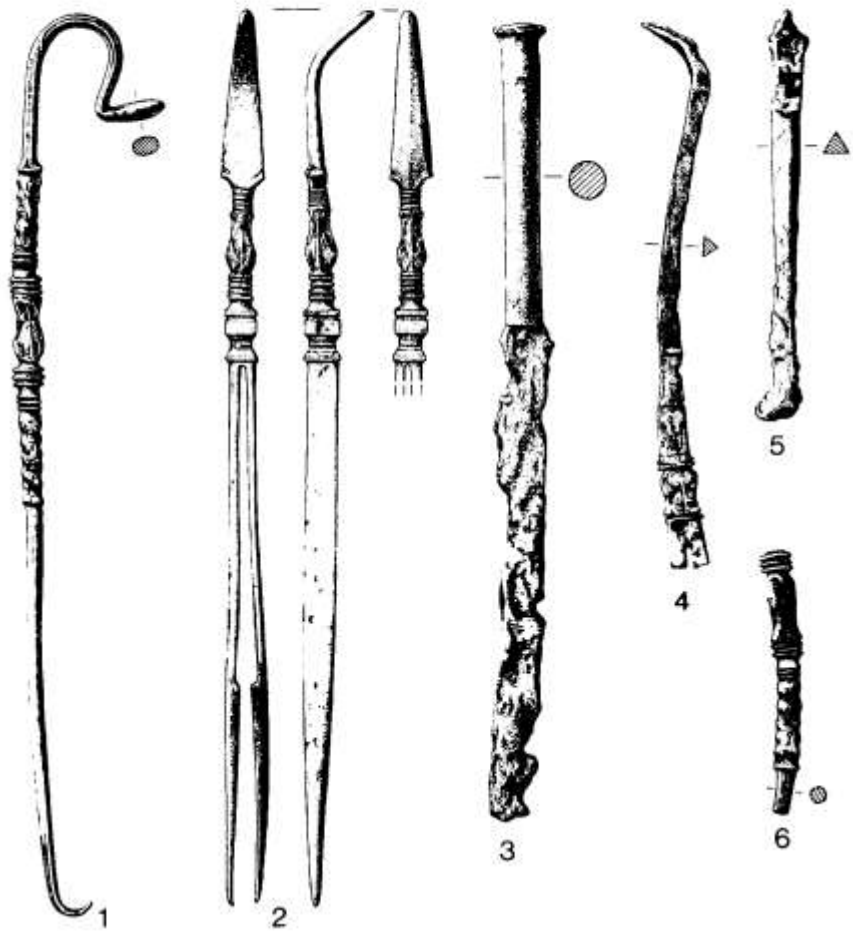

Fig. 3. Retractor and grip (probably for retractor) with other instruments from Aschersleben ? Photo Römisch-Germanisches Zentralmuseum, Mainz.

Minerva Medica does not wear a lion's skin ! Mario N. Tabanelli, without commenting on the identity of the figure, asserted that these handles functioned as « *pestelli* » (Tabanelli, 1956, Tav. XXVII). It is conceivable that they were sometimes used as grinders for medicaments. But their slotted bases for the reception of their now missing steel blades show that they were primarily intended, as stated above, as knife handles. What sort of blades did these slots contain ? Fortunately on old photograph by Alinari (P^{c}. I^{a}. no. 19087) depicts three of the pieces with their blades intact (Fig. 9). Two are of a subtriangular type frequently referred to in Greek and Roman

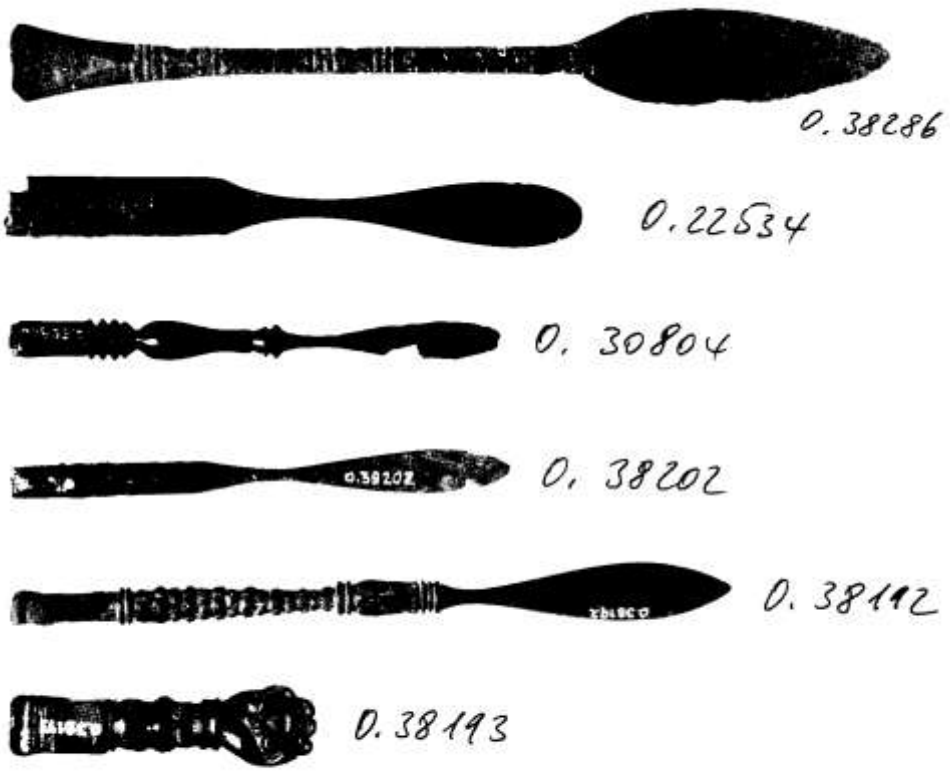

Fig. 4. Scalpel handles in Mainz, two with « knotty limb » pattern? Photo Römisch-Germanisches Zentralmuseum, T 83 1912.

surgical manuals as « breast-shaped » or « bellied ». As Ralph Jackson has noted, this type is the one most frequently found among surviving surgical blades and the one most frequently depicted on the monuments (Jackson, 1986, p. 132). In view of the fact that these sub-triangular blades are not referred to any other use than surgical and in view of the small size of these Hercules knives, I do not doubt that these pieces functioned, or were at least designed to function, as surgical scalpels. Therefore, the connection between Hercules and Greco-Roman surgery seems firmly fixed.

Likewise, I do not hesitate to connect Hercules and the « knotty limb » pattern. If the relationship between the two is not obvious, then the retractor in Mainz (B, 1, above) provides a firm link. This piece not only features the « knotty limb » pattern but also a finial in the shape of a lion's head (Fig. 2). As the former suggests the club of Hercules, so the latter recalls the skin and head of the Nemean lion, traditionally worn by the dauntless Dorian hero. Surely the presence of two such attributes of Hercules on one instrument is no coincidence. In short, there is every reason to

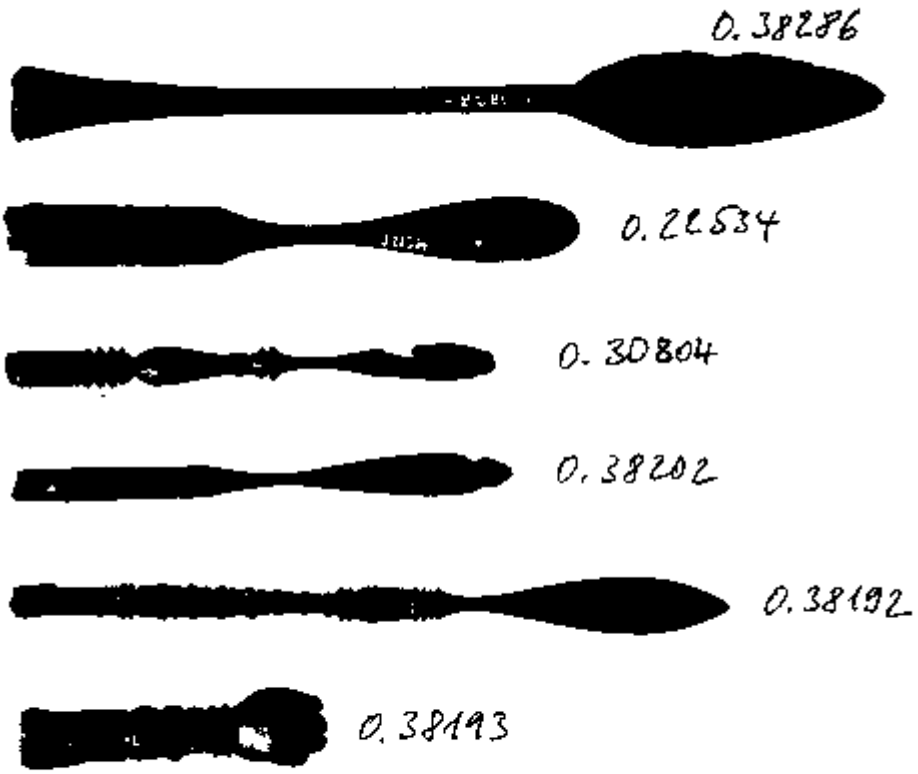

Fig. 5. Scalpel handles in Mainz, two with « knotty limb » pattern? Photo Romisch-Germanisches Zentralmuseum, T 83/1913.

conclude that the « knotty limb » pattern, the lion's head, and the Hercules handles in Naples form a nexus which one can refer to as the Hercules motif.

The relationship between the « knotty limb »/club pattern and the actual image of Hercules on surgical tools is closely paralleled by the snake or snake's head and the image of Aesculapius often found on them. Like the knotty club the snake/snake's head represents the healing power of the god whose attribute it is. Occasionally, Aesculapius himself is figured on surgical/pharmaceutical items, as on the pestle in the Meyer-Steineg collection in Jena (Künzl, 1983, p. 49 (1)). Here Aesculapius holds out a patera to feed the snake. Usually, though, only the snake or its head, the symbol of the god, appears, as on the well-known trivalve specula in Naples (Figs. 10, 11) and approximately seven other instruments (Künzl, 1983, Abb. 7, 18 (8), 80 (1), 81 ; Milne, 1970, Pl. XI (2, 4), XX (2)). So, too, the actual image of Hercules is seldom represented ; rather it is his club that one most often finds displayed.

One further instance of a god's symbol representing him on surgical tools should also be cited. This is a small scalpel handle in Mainz which forms part of the same instrumentarium as A, 1 and B, 1 above. The handle is shaped like a crouching mouse gnawing on some object. Recently

Fig. 6. Scalpel handles from Pompeii shaped like bust of Hercules? Photo Römisch-Germanisches Zentralmuseum, Mainz, L 1036/2.

Fig. 7. Scalpel handles from Pompeii shaped like bust of Hercules? Photo Römisch-Germanisches Zentralmuseum, Mainz, L 1036/3.

Fig. 8. Scalpel handles from Pompeii shaped like bust of Hercules? Photo Römisch-Germanisches Zentralmuseum, Mainz, L 1039/3.

Fig. 9. Scalpels from Pompeii ? Photo Alinari P. I. N. 19087.

a persuasive case has been made for connecting this mouse handle with Sminthian Apollo whose cult was associated with that of Asklepios Soter in Asia Minor (Künzl, 1982). Thus, we have still a third instance of a healing god recalled on a surgical tool by a representative symbol. However, the mouse handle is unique. Thus, the main difference between the Sminthian Apollo and the Aesculapius motifs, as opposed to the Hercules motif, is the much more frequent occurrence of the latter on surgical instruments of the 1st through 3rd centuries A.D.

The preference of the Hercules motif over the Aesculapius motif is genuinely surprising when one considers the central role played by Aesculapius in medicine for both the Greeks and the Romans. On the other hand, there is no link between Hercules and the medical art in the mythical traditions about him and very little that connects him with healing in the practices of his cult. Most recently a spring sanctuary uncovered at Deneuvre (Meurthe-et-Moselle) has been linked to Hercules and to healing (Moitrieux, 1987). Two stelae portraying the adult Hercules at ease with a live serpent, an ex-voto apparently depicting an eye, and a number of « pro-salute » invocations recovered on a site featuring springs, which are characteristic of healing sanctuaries, are cited by the excavator in support of his conclusions. Elsewhere in the Roman Empire there are a few other sites where Hercules plays some role in healing, sometimes in association with Aesculapius (Moitrieux, 1987, p. 235-236). On the whole, though, these locations are few and they promote healing by religious means, *i.e.*, by faith healing and cult practice. In contrast the numerous instruments with the Hercules motif extend the influence of the god/hero into the sphere of surgical technique.

At this point we are compelled to ask why Hercules and the club which is his attribute should be so popular a motif on surgical instruments. The answer probably lies in the traditions of Hercules life and career of labor and hardship. Through them he was seen as a paragon of endurance and resolute suffering. In this regard it is noteworthy that, when the Hercules motif occurs, it does so, in virtually all instances, on instruments which cause or are used in situations of intense pain : e.g. probes/needles, scalpels, elevators, retractors and, if I am right about a handle from Pompeii (see below), birthing hooks. In contrast, except for the strigil from the Cologne grave, we never find the knotty club on the « tamer » items in a physician's instrumentarium, e.g. spoons, ligulae, spatulae, and small forceps or pincettes. Thus, the image of his club or of Hercules himself functioned on surgical tools as an apotropaic device that was meant to promote the health and survival of the patient as well as his capacity to endure the pain of the operation.

To return to the two stelae recovered at Deneuvre, it is interesting that, in addition to the healing snake, Hercules also holds or leans on his club (Moitrieux, 1987, p. 231, 233). The hook from Aschersleben cited above (B, 3), also combines both of these motifs (see Fig. 3).

The use of Hercules club on surgical tools fits with its apparent purpose on other objects produced under the Empire : e.g., pendants. These surely served as amulets with an apotropaic function. Here, however the function was broader, *i.e.*, to keep away evil in general (see e.g. Werner, 1964 ; Noll, 1984).

The occurrence of the « knotty limb » pattern (= the club of Hercules) on pendants, etc. serves as a reminder that this motif is not confined to surgical tools alone. Yet its extreme popularity on this class of Greco-Roman minor objects should now be firmly established. If so, perhaps we may take a further step bearing on the methodology whereby we treat putatively surgical tools.

I believe that in cases where an item looks surgical but cannot, for some reason be shown conclusively to be such, the « knotty limb Hercules club » motif may be used to tip the balance. I am thinking primarily of single unprovenienced items in museums, which may look like scalpels, lancets, etc. but which because they deviate from established types or cannot be traced back to a surgical provenience (e.g. a grave with other indisputable surgical tools) are left in doubt as to their function.

This brings me back to the three pieces at Naples which I put off awhile back.

The first (inv. no. 78003) (Fig. 12) is far the best known. Vulpes treated it as early as 1847 (Vulpes, 1847, p. 61). He regarded it as a lancet and

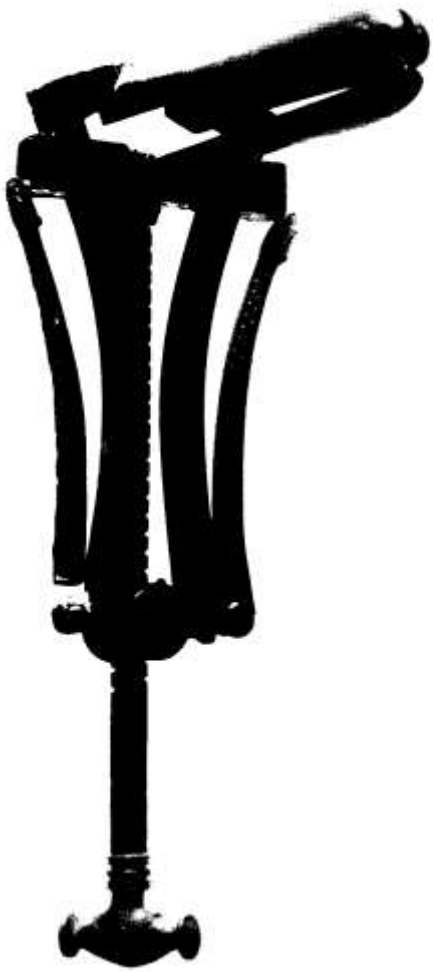

Fig. 10. Speculum from Pompeii ? Photo Römisch-Germanisches Zentralmuseum. Mainz. L. 1038 5.

Fig. 11. Speculum from Pompeii ? Photo Römisch-Germanisches Zentralmuseum. Mainz. L. 1038 7.

claimed that it was found in Pompeii. Milne on the other hand asserted that the piece was merely a cosmetic spatula (Milne, 1970, p. 34). He argued that the blade, which he thought was all of silver, could not bear the rigors of surgical use. My own autopsy in 1985 has revealed that the blade is of sturdy copper alloy with a thin exterior plating of silver, now mostly gone. In short, the blade is strong and sharp, perfectly suitable for a lancet. Here, however, we encounter the objection that no other lancet of this type exists. We also have to deal with the problem of provenience. This item is

not from the House of the Surgeon on the Via Consulare (as almost every surgical instrument in the Museum is said to be) but is ascribed in the *Inventario del Museo* to the Borgia collection. And indeed in the Borgia catalogue, which is kept in the archives of the Soprintendenza, we find a clear description of it and its companion piece (for the latter see Milne, 1970, Pl. XIX, 2): « piccolo cucchiarino rotondo di argento, con manico lavorato di metallo, con coltello con lama d'argento e manico di metallo (V^a^ classe, no. 541) ». Since the provenience of the minor objects in the Borgia collection is obscure, the provenience of this object cannot be shown to be the House of the Surgeon or Pompeii as Vulpes thought. But the piece does feature the « knotty limb » pattern: and it is in just such a situation as this that such a criterion should be brought to bear. This piece, although unique and provenienceless, *is* shaped like a lancet and *is* sturdy enough to have served as such. The presence of the « knotty limb »/Hercules club motif seems to me to tip the balance in favor of Vulpes and its one time surgical function.

In contrast to this well-known piece, the other two items are hardly known outside the Naples Museum. The first (inv. no. presently lost) is a small (5.6 cm) slotted handle of unknown provenience (Fig. 13). The slot is of the type designed to receive a scalpel blade. This factor and the small size of the piece favor its acceptance as a surgical tool. Against this view, however, one can cite the fact that razor handles, such as those recently published from Augst (Riha, 1986, p. 28-33), also insert their blades in slots. Furthermore, one can object that the handle does not feature the dissector commonly found on scalpel handles. Of course, not all scalpel handles have the dissector and, again, the deciding factor may be the Hercules club motif: no razor known to me has it, whereas we have seen it on at least six scalpel handles (D, 1-6, above).

Finally we come to another handle (inv. no. 77693) (Fig. 14) which is given in the *Inventario* only the vague provenience « Pompeii ». Unlike the previous specimen, its now missing iron instrument was pegged into the base of the shaft. Suffice it to say that I believe this instrument was a surgical tool based on the « knotty limb »/Hercules club motif, which is very stylized here.

Two types of surgical instruments were demonstrably fastened with pegs in Pompeii: one type was the surgical chisel, of which at least two examples are preserved in Naples (one bears inv. no. 77699). The other was the traction hook used to remove forcibly an impacted embryo. At least four specimens of the embryo hook (which is to say almost all that survive) are kept in the Museum (inv. nos. 77697, 78010, 116452: the 4th is presently numberless). Elsewhere scalpel handles may also occasionally have been

Fig. 12. Probable lancet, Naples Museum ; photo Römisch-Germanisches Zentralmuseum, Mainz, L 1038/10.

Fig. 13. Probable scalpel handle, Naples Museum ? Photo Römisch-Germanisches Zentralmuseum, Mainz, L 1040/7.

Fig. 14. Probable embryo hook, Naples Museum ? Photo Römisch-Germanisches Zentralmuseum, Mainz, L 1039/3.

fastened to their handles with pegs ; but, if so, this was the exception not the rule (cf. e.g. Grimm, 1936, p. 105 (779) ; Riha, 1986, p. 84 (635)). So, while it is possible that the present piece was a scalpel handle, this is the least probable alternative. I also doubt that it served as the handle for a chisel. Such handles have flat unadorned heads so as to take the blow of the hammer. The head of this piece is well turned and uneven. If meant to be struck with a hammer, it was perversely designed. The remaining alternative, that we have here the grip of an embryo hook, is the one I find most attractive. In view of his difficult birth, the « knotty limb » club motif, the symbol of Hercules, would be especially appropriate on such an instrument. The three well-known uterine specula in the Naples Museum

as well as the four certain embryo hooks housed there offer vivid testimony for the advanced state of gynecology and midwifery in Pompeii, just as we would expect at a prosperous settlement site. Based on its knotty club motif, I am suggesting that the present handle once played a role in this surgical speciality.

Let me close by noting again the relative frequency with which the image of Hercules or his symbol, the knotty club, appears on surgical tools. My estimate (including the three pieces at Naples just discussed) is approximately 25 specimens, a very substantial number. Perhaps we should not be surprised to see widespread reflection of reverence for Hercules on these tools produced under the Roman Empire from the 1st to the 3rd centuries A.D. Even in much earlier times the relationship between the Romans and Hercules was a very close one. The importance accorded him in the Republic is indicated, for example, by the occurrence of his image along with Romulus and Remus on some of Rome's earliest issues of coinage (e.g. Sydenham, 1952, p. 2 (6)) and by the number of his places of worship all over Italy. As Dionysius of Halicarnassus noted in the 1st century B.C. :

> « In many places elsewhere in Italy (*i.e.*, in addition to Rome) sanctuaries are dedicated to the god and altars have been erected to him in cities and along the highways ; rarely could one find a place in Italy where the god is not honored (*Rom. Antiq.* 1.40.5) ».

Modern authorities have drawn for us the picture of a Hercules who pervaded all aspects of Roman and Italian life. To quote one expert :

> « Herakles satisfied the personal cult needs that were left unfulfilled by the state religion and thus came to share in the same religious intensity that was accorded the oriental cults for exactly the same reason ... Herakles, in short, regained religious functions similar to those he had held in sixth-century Greece : he was once more the ἀλεξίκακος, the patron saint who would help one overcome all imaginable difficulties of life and hence he was called invictus, the invincible one » (Galinsky, 1972, p. 127).

It seems clear from the archaeological evidence that we may now include surgical treatment among the difficulties for which Hercules might be invoked as ἀλεξίκακος. If, as modern authorities have concluded, the worship of Hercules declined among the Greeks as it increased among the Romans, there is irony here. Since most Roman surgeons are thought to have in fact been Greeks, it may have been the tastes of their Roman clients which led to the emphasis on Hercules found in the decor of their surgical tools. If this is true then, considering the powerful impact that all things Greek had on Roman life and thought – including of course Roman medical thought – it is ironic that in one sphere at least it was the captors who influenced the captives and not the reverse.

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