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Reviews

In general, the symbolism of the crocodile in this passage is clear enough.[10] An irresistible, untameable, primaeval power, it destroys completely, utterly, finally and without pity. It does not willingly disgorge its prey.[11] Yet the crocodile is also a symbol of regeneration and rebirth: a creator god who inhabits the marshes of the primaeval ocean from which the sun is born. In particular a crocodile swallows the evening sun, to regurgitate it anew each morning.[12] Webaoner is the magician who controls the uncontrollable: the power of death and resurrection. Similarly, later in the Westcar stories, the Chief Ritualist Djedi is able to control the lion and the bull, animals that, with the crocodile, are typically symbolic of uncontrolled or uncontrollable natural or royal power. Djedi can make them walk or stand behind him with their  fallen to the ground.[13] The word used for 'rope' here is uncertain, but the writing at least implies a visual pun, since one obvious reading for the sign is *fḫ*, a root with the general meaning of 'loose', 'released'.[14] These word-plays would doubtless be clear to any Egyptian audience. The more interesting question is how far the mythological symbolism, which is typical of all the stories of the Westcar Papyrus, would be clear to a general public.

C. J. EYRE

Head injuries in Egypt and Nubia: a comparison of skulls from Giza and Kerma*

Report on the examination of two groups of Egyptian and Nubian skulls with head injuries. A system of categories to define head injuries is presented and comparison made with work done by other researchers.

TRAUMATIC lesions, especially fractures, are frequently found in ancient skeletal material. It has been suggested that the main interest in studying trauma is to gain information about the cultural significance of the lesions in question and to arrive at a closer understanding of people's behaviour and types of occupations.[1] Trauma represents the effect of many extrinsic factors upon the skeleton, and so the types and locations of injury will vary between populations and between individuals within a given population. Thus, populations engaged in hunting activities will acquire

[10] Cf. E. Brunner-Traut, in W. Helck (ed.), *Festschrift für Siegfried Schott zu seinem 70. Geburtstag* (Wiesbaden, 1968), 28–37; id., *LÄ* III, 791–801; C. J. Eyre, *SAK* 4 (1976), 103–14; L. Kákosy, *MDAIK* 20 (1965), 116–20; Raven, *OMRO* 64, 20–1; Gutbub, op. cit. 427–8; P. Vernus, in U. Verhoeven and E. Graefe (eds.), *Religion und Philosophie im Alten Ägypten: Festgabe für Philippe Derchain* (Louvain, 1991), 335–8; W. Westendorf, *LÄ* VI, 122–8, esp. n. 1.

[11] Cf. references in Eyre, op. cit. 114; Kákosy, op. cit. 119.

[12] A. Piankoff, *La création du disque solaire* (Cairo, 1953), 68–9; Gutbub, op. cit. 413–25, 427–8; Brunner-Traut, in *Fs. Schott*, 32–7; Kákosy, *LÄ* III, 808.

[13] The lion (7, 4–5) *šm ḥr-sꜣ=f =f ḫr tꜣ*, 'goes after him, its on the ground'. The bull (8, 25–9, 1) *sḫr tp=f r tꜣ*, 'its head felled to the ground', then *ḥr ḥr-sꜣ=f =f ḫr r tꜣ*, 'stood behind him, its fallen to the ground'. The meaning is something like 'with its restraint thrown away', and not merely 'with its leash dangling'; see P. Derchain, *GM* 89 (1986), 15–17, and for *ḫr* or *r tꜣ* in the sense 'expelled', 'discarded', 'abandoned', cf. e.g., Shipwrecked Sailor 53; Lebensmüder 34, 109; K. Sethe, *Aegyptische Lesestücke*[3] (Hildesheim, 1959), 98, 11; T. G. H. James, *The Ḥeḳanakhte Papers and other Early Middle Kingdom Documents* (New York, 1962), pls. 3, vs. 2; 4, vs. 13.

[14] *Wb.* I, 578. Other plausible readings for the sign might be *sšd* (*Wb.* IV, 301) or *mḏḥ* (*Wb.* II, 189–90), although neither word particularly suits the context. The normal determinative for words meaning 'rope' or 'bind' is . For sense alone one might prefer *wꜣ* (*Wb.* I, 244) or *stꜣ* (*Wb.* IV, 351–5).

*I would like to thank Dr R. A. Foley, Director of the Department of Biological Anthropology, University of Cambridge, for permission to study the Kerma and Giza skulls. I am grateful to Dr J. H. Taylor of the British Museum for comments on an earlier draft and particularly regarding Nubia; Dr S. G. J. Quirke, also of the British Museum; Debra Cossey; George Mann and Dr Don Brothwell.

[1] A. K. Knowles, 'Acute Traumatic Lesions', in G. Hart (ed.), *Disease in Ancient Man* (1983), 61–83.

different types of injuries from settled agriculturalists or town dwellers. Those engaged in militaristic activities will sustain different injuries from civilians.

Whilst fractures of the post-cranial skeleton may or may not indicate intentional blows, skull fractures are more likely to indicate deliberate violence. Studies indicate that in antiquity skull injuries were more frequent than injuries to any individual bones of the post-cranial skeleton.[2] Despite the observed cultural differences between injuries, it may be suggested that even widely differing cultures sustain injuries at similar positions on the skull. Cranial injuries are commonly found on the frontal and parietal bones, particularly on the left parietal area. This probably reflects face-to-face assault. The general tendency for the lesions to occur on the left side may indicate that the attacker was usually right-handed. Concurrence of site of head injury does occur between differing cultures. For instance, a predominance of left-sided head injuries has been demonstrated in late Nubian cemeteries.[3] Yet, far from Egypt, the pre-Hispanic Guanche population of Tenerife (Canary Islands) also sustained a preponderance of depressed injuries to the left side of the skull.[4]

It has been suggested that in most cultures more males than females sustain traumatic injuries. The sex difference is especially noticeable with regard to head injuries.[5] Men are more likely to be involved in military activities and heavy manual labour and thus are more likely to sustain injuries to the skull. Yet, in one case, a slightly higher ratio of head injuries in women has been reported.[6]

The writer has recently examined head injuries in two groups of skulls from sites in Egypt and Nubia which now form part of the Duckworth Collection, Department of Biological Anthropology, University of Cambridge.[7] Group One is a series of 309 skulls excavated in the 'Eastern Cemetery' at Kerma by Reisner in 1913–14 and 1915–16.[8] The series is numbered 'SUD 1' to 'SUD 309'. This group had thirty-four head injuries (i.e. 11 per cent). Group Two is a series of 1726 skulls from Giza, known as the 'E' Series. Petrie excavated the material, which is believed to date from the Twenty-sixth to Thirtieth Dynasties. No further information is known about this series.[9] This group had twenty-one head injuries (i.e. 1.2 per cent).

Both groups were aged and sexed. With regard to aging, five criteria relating to the skull were utilized: tooth eruption, tooth wear, cranial suture closure, palatal suture closure and parietal thinning.[10] A consideration of each criterion allowed each skull to be allocated to one of the following broad age groups: sub-adult (up to 21), young adult (21–35), mature adult (35–45), old adult (45+). Of the thirty-four Kerma skulls with injuries, twenty-eight (82.4 per cent) fell into the mature to old age groups, whilst six (17.6 per cent) fell into the young adult group. There were no

[2] V. Alexandersen, 'The evidence for injuries to the jaws', in D. R. Brothwell and A. Sandison (eds.), *Diseases in Antiquity* (Springfield, Illinois, 1967), 623–9.

[3] E. Strouhal and J. Jungwirth, 'Palaeopathology of the Late Roman–Early Byzantine Cemeteries at Sayala, Egyptian Nubia'. *Journal of Human Evolution* 9 (1980), 61–70.

[4] C. R. Martin, R. G. Anton and F. E. Gonzalez, 'Cranal Injuries in the Guanche Population of Tenerife (Canary Islands): A Biocultural Interpretation'. Paper presented at the Colloquium on Biological Anthropology and the Study of Ancient Egypt, British Museum, 4–6 July 1990 (in press).

[5] K. Manchester, *The Archaeology of Disease* (Bradford, 1983), 59.

[6] Martin *et al.*, op. cit., reported a 2.9 per cent ratio for female head injuries against a 2.3 per cent for males in the Northern Guanche populations of Tenerife.

[7] This research was part of an MSc on human remains funded by the Wellcome Foundation. I am grateful to Dr Robert Foley, Department of Biological Anthropology, University of Cambridge, for permission to publish the photographs.

[8] G. A. Reisner, *Excavations at Kerma*, I–III, Harvard African Studies V (Cambridge, Mass., 1923), 59–528. For the Kerma skulls in the Duckworth Collection, see M. Collett, 'A Study of Twelfth and Thirteenth Dynasty Skulls from Kerma (Nubia)', *Biometrika* 25 (1933), 254–84, pls. 1–6.

[9] The above information was obtained from handwritten notes which accompanied the Pearson Collection when it was transported from University College London to the Duckworth Biological Anthropology Laboratory, Cambridge. Karl Pearson, a biometrician, undertook a study of variability in a large series of skulls. He was provided with this sample of Egyptian crania by Petrie. The series is mentioned briefly in W. M. F. Petrie, *Gizeh and Rifeh* (London, 1907), 29, where the material is dated to 'about 600–300 BC'.

[10] The limitations of suture closure as an age indicator are recognized. See D. R. Brothwell, *Digging Up Bones* (London, 1972), 38. Whilst dental eruption and wear patterns are better indicators of age, in the absence of dentition (or post-cranial remains), sutures may be of value in estimating age.

sub-adults. Of the twenty-one Giza skulls, fifteen (71.4 per cent) fell into the mature to old age groups and six (28.6 per cent) fell into the young adult age group. Again there were no sub-adults.

In sexing the skulls, twelve criteria based on Brothwell's work[11] were selected to make observations about the face, mandible and vault. As some skulls did not fulfil all the characteristics of a particular sex, the following range was allowed: male, probably male, indeterminate, probably female, female. Due to the absence of post-cranial remains (of all the Giza skulls and many of the Kerma skulls) it was not possible to confirm the sex through pelvic examination. Of the thirty-four Kerma skulls, eighteen (52.9 per cent) were male/probably male, fifteen (44.1 per cent) were female/probably female, while only one individual proved indeterminate. Of the twenty-one Giza skulls, twelve (57.1 per cent) were male/probably male, four (19.1 per cent) were female/probably female and five individuals (23.8 per cent) were of indeterminate sex. After aging and sexing the skulls, a range of injuries was established and the results analyzed in the light of the above observations on cranial injury.

A system of seven categories, some with sub-sections, was devised to define the types of head injuries found.

I. *Severe gashes* are realized as a long and deep cleft, which may be of uniform depth or undulating. It may present a ⌣-shaped depth or an oblique edge opposite a wedged edge. This would indicate the direction of the blow. The Kerma group had no severe gashes. In the Giza group the most common type of injury is the severe gash, with five skulls presenting this type of lesion (see pl. XXX, 1). Four of the individuals concerned are male or probably male and it seems likely that the gashes were made by axes or swords smashing down onto the head. Thus, it is difficult to suggest a cause other than a military one. The fifth skull is female and it is probable that the mid-frontal gash was sustained during a civil or domestic dispute.

II. *Pierced lesions* are realized as a hole of small to medium size made right through the outer and inner tables of the skull. The inner aspect of the lesion will be wider than the external. They may be (i) a regular shape, with a symmetrical outline or (ii) an irregular shape, with a non-symmetrical outline. Only one Kerma skull presented a regularly-shaped pierced lesion. The lesion is small, round and deep, implying that it was caused by a narrow implement. As the individual is female, this may have been of a domestic nature. The Giza group presented three regularly-shaped pierced lesions. Pl. XXX, 2 shows one of these lesions. It is likely that this individual, a mature adult of indeterminate sex, died as a result of the injury. The lesion shows no healing, retaining its sharp edges, and it is likely that the displaced fragments of bone entered the brain causing fatal damage. Two skulls in the Kerma group, and one in the Giza group, had irregularly-shaped lesions. None showed any signs of healing. Again, it is likely that bony fragments entered the brain, causing infection and death. Military activities (such as spear attacks) may be postulated for these two types of pierced lesions, except for one of the two Kerma skulls, which was from an elderly female.

III. *Depression:* a hollow sunk below the horizontal plane of the skull. Oval, round and kidney-shaped depressions were recognized. Only five of the Giza skulls presented depressions of any kind. The depression was by far the most frequently occurring injury, oval/pear-shaped depressions being the most common form represented. The Kerma group had a high ratio of these injuries, with thirty out of thirty-four skulls (88.2 per cent) exhibiting one or more of the three forms of depression. In the Kerma group both sexes were well represented, seventeen males/probably males and thirteen females/probably females having a depressed injury. Whilst militaristic activities may be postulated as causes for the male depressions, this does not seem likely for the female injuries; there is no evidence that females in Kerma were engaged in military activities. It is possible that females were camp followers providing food for males engaged in war-like activities, or that they were civilian victims of war who received blows from opposing forces. An alternative for both sexes is that they sustained injuries in civil or domestic skirmishes involving clubs, sticks or stones. If this is the case, it may point to a quarrelsome and aggressive community. The high percentage (11 per cent) of head injuries and the high amount of female

[11] Brothwell, op. cit. 51–3.

involvement would support this suggestion. This may be contrasted with the relatively low incidence (1.2 per cent) of head injuries found in the Giza group. Depressions can be seen in pl. XXX, 3–4.

IV. *Cuts:* these are less dramatic lesions of two kinds. (i) Linear: long, narrow and of uniform depth; (ii) nick: a notch of shallow depth and of regular or irregular shape. Two Kerma skulls and three Giza skulls presented linear cuts. They are consistent with a glancing sword action. The Kerma and Giza groups each had only one skull with a nicked cut which may have been made by daggers, arrows or knives. The Kerma example is interesting in having a nicked cut to the lower edge of the left orbit, a type of injury found in the remains of the Eleventh Dynasty soldiers discovered at Deir el-Bahari, one of which had an ebony-tipped arrow head *in situ* in the left eye socket.[12]

V. *Sliced lesions* may also be regarded as 'cuts' but are of a more serious nature. They fall into two categories: (i) complete, where a roundel of bone is totally removed from the skull; (ii) incomplete, where the slice of bone is not severed from the skull. In both types the perimeters of the lesions may indicate the direction of the blow. None of the Kerma group had any sliced lesions. The Giza group had two complete sliced lesions (see pl. XXX, 5). The example illustrated shows a clearly defined porous area of non-healing, suggesting that fragments of bone entered the brain, causing the death of this young adult male. The lesion was probably caused by a sword and may be instructively compared with an example from Lisht.[13] Of the two groups only the Giza group presented incomplete sliced injuries (seven skulls). These fall into two categories: (i) where sections of bone are lifted up from the skull and upon replacement leave a sheared effect. A particularly interesting case shows an incomplete sliced injury down the left temporal area into the auditory meatus. It is likely that this individual, a mature male, suffered a hearing loss after the lesion healed. One of two types of deafness, or a combination of both, may have occurred under these traumatic conditions;[14] (ii) where deep fracturing occurs. A sheared effect may or may not occur, depending on the amount of healing.

VI. *Mandibular fractures:* these may present a complete or partial break in the bone. There were no examples of mandibular fractures in the Giza group and only one in the Kerma group. In addition to having a round depressed fracture of the left parietal, this individual may have a fractured left mandible. Unfortunately, the left ramus is absent, making any diagnosis tentative. The possible fracture has healed with the jaw setting badly aligned. This lesion may be compared with the female described by Nielson as having a face deformed due to fracturing of the temporo-mandibular joint.[15]

VII. *Nasal fractures:* where the right or left (or both) nasal bones are depressed below the normal horizontal plane of the bridge. There were three probable nasal fractures in the two groups. One, from Kerma, has a healed fracture of the left nasal bone (pl. XXX, 6). Two Giza skulls also show healed fractures of the left nasal bones. These suggest a blow from a right-handed person in a frontal assault.

Overall, the two groups showed a different distribution of types of injury. This may reflect different behaviour patterns. The Kerma groups presented mainly oval and depressed head lesions, consistent with attack from stones, sticks, maces and clubs. While the Kerma Nubians may have been in conflict with the Egyptians during the Middle Kingdom and we might therefore

[12] H. E. Winlock, *The Slain Soldiers of Neb-Hepet-Re' Mentu-Hotpe* (New York, 1945), no. 41.

[13] D. J. Ortner and W. G. J. Putschar, *Identification of Pathological Conditions in Human Skeletal Remains* (Washington, 1985), 78, pls. 81–2.

[14] J. Filer, 'Spelling and the Hearing-Impaired', unpublished MSc thesis, The City University, London, 1987.

[15] O. V. Nielson, *The Scandinavian Joint Expedition to Sudanese Nubia. 9: The Human Remains* (Uppsala, 1970), 114 and pl. 16.

expect to find severe injuries associated with military activity, the types of injuries displayed are in general more suggestive of civil or domestic disputes. The Giza group presented the full range of head injuries, except for mandibular fractures. It had a greater number of severe injuries, including severe gashes and incomplete and complete sliced injuries. These are more suggestive of militaristic behaviour. These injuries are consistent with attack from swords, axes and crushing weapons and suggest a more advanced technology. Whilst the use of bronze cannot be discounted, iron, needed for more durable weapons, was available during the Twenty-sixth–Thirtieth Dynasties.

In keeping with the findings of other researchers, it was found that the two groups showed a similar distribution in the sites of injury. The greater number of injuries occurred on the frontal and parietal bones. Previous researchers reported a high incidence of left-sided injuries. Both the Kerma and Giza groups also showed slightly more left-sided than right-sided injuries, consistent with a right-handed frontal assault. It has been found that, generally, males sustain more traumatic injuries than females. This was the case in the Giza group but the Kerma group showed a high incidence of female injury with fifteen female/probably females out of the thirty-four cases (44.1 per cent) sustaining head injuries. The lack of evidence for women in military activity in ancient Egypt and Kerma would suggest these injuries were incurred in other than military forms of dispute.

JOYCE M. FILER

A falsely attributed monument

The cartouches naming Psamtik II as the king shown on the 'intercolumnar slab' in Vienna (Kunsthistorisches Museum 213) are secondary. The monument was originally made for Psamtik I or Necho II.

FIVE so-called intercolumnar slabs are known to Egyptologists: three of them are in the British Museum (BM 20, 22 and 998), a fourth is in Bologna (Museo Civico 1870) and the fifth in Vienna (Kunsthistorisches Museum 213). They seem to be made of the same dark, grey-green stone,[1] and were originally of approximately the same height (*c.* 120–125 cm). It has been plausibly suggested that all five derive from one and the same structure,[2] but exactly how they were employed architecturally is disputed.[3] Two of the slabs in London (BM 22 and 998) and that in Bologna were commissioned by Nectanebo I[4] in imitation of the remaining slabs, BM 20[5] and the piece in Vienna,[6] both inscribed for kings of the Twenty-sixth Dynasty. BM 20, discovered at Rosetta, bears the cartouches of Psamtik I, while the texts on the Vienna slab (pl. XXIX, 3) name that king's grandson, Psamtik II.

In June 1990, I had the opportunity to examine the slab in Vienna. I was surprised to discover that the cartouches which identify the royal figures on both sides of the slab are secondary. In

[1] Identified in the case of the Vienna slab as *Grünschiefer* by Dr Helmut Satzinger, Director of the Ägyptisch-Orientalische Abteilung in the Kunsthistorisches Museum, who generously furnished this and other information on the piece. *Pace* K. Mysliwiec, *Royal Portraiture of the Dynasties XXI–XXX* (Mainz, 1989), 47, who describes its material as 'grey granite'.

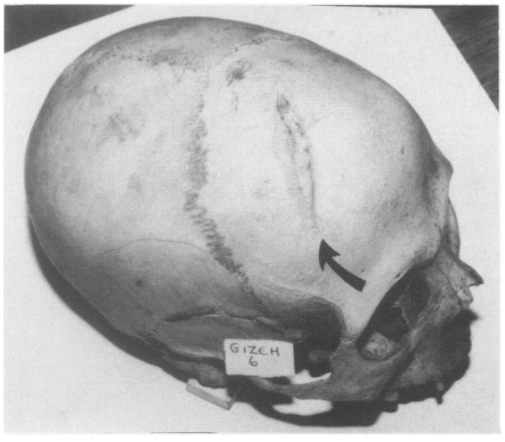
[2] B. V. Bothmer *et al., Egyptian Sculpture of the Late Period, 700 B.C. to A.D. 100* (exhibition catalogue; The Brooklyn Museum, 1960), 91 (comment); cf. H. Satzinger, *Ägyptische Kunst in Wien* (catalogue of the Egyptian section, Kunsthistorisches Museum; Vienna, no date), 57.

[3] While most authorities assume they served as screen walls erected between columns of a kiosk or pavilion—hence the descriptive designation 'intercolumnar slab' (see, e.g. Satzinger, op. cit. 57)—Bothmer (op. cit. 91) calls them 'barrier reliefs'; cf. also E. Komorzynski's remarks, *Das Erbe des alten Ägypten* (Vienna, 1965), 210.

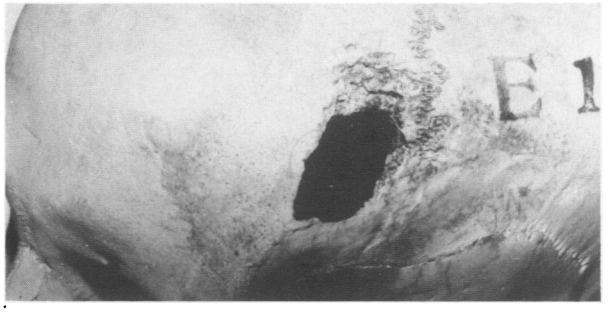
[4] Bothmer, op. cit. 91. See the entries in Mysliwiec, op. cit. 69 (Nectanebo I, doc. 1a–b and 2).

[5] Mysliwiec, op. cit. 46 (Psamtik I, doc. 1).

[6] Ibid. 47 (Psamtik II, doc. 4).

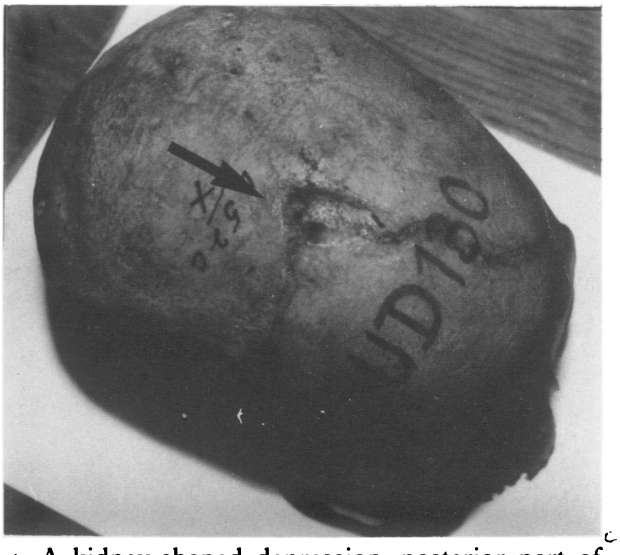


1. A severe gash, mid and right frontal bone (arrowed). Giza 6 (E492). Mature probable male

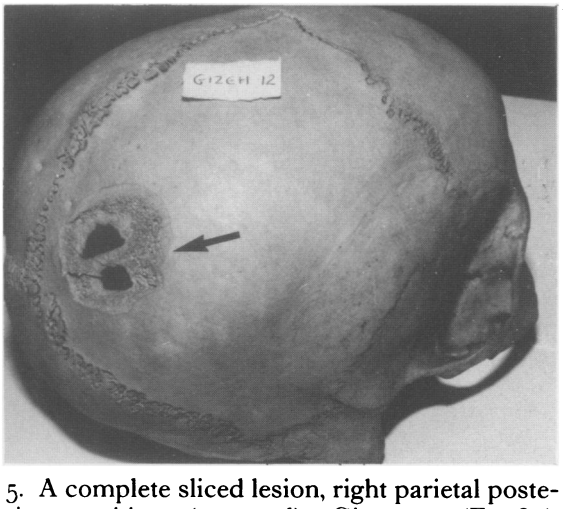


2. A regularly-shaped pierced lesion, left temple. Giza 16 (E1463). Mature adult, sex indeterminate

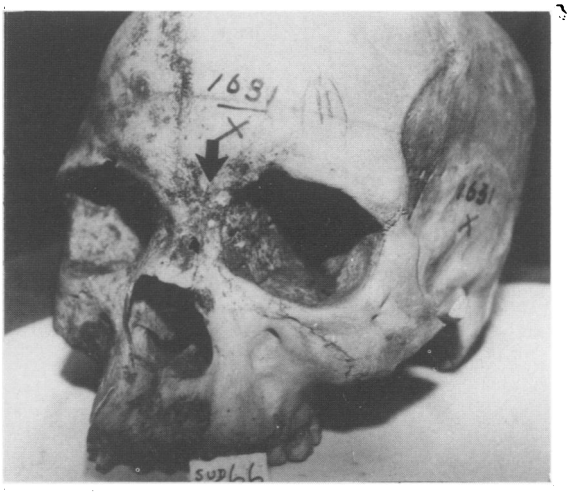
3. An oval depression, left frontal bone (arrowed). SUD 30. Mature male



4. A kidney-shaped depression, posterior part of the mid frontal bone (arrowed). SUD 130. Elderly female



5. A complete sliced lesion, right parietal posterior position (arrowed). Giza 12 (E1085). Young adult male



6. Fracture left nasal bone (arrowed). SUD 66. Mature probable male