HOLES IN THE SKULLS OF PREHISTORIC MAN AND THEIR SIGNIFICANCE

By T. WILSON PARRY, M.A., M.D. Cantab., F.S.A.

The fashioning of holes in such substances as stone, bone, teeth, wood, shell and slate is a custom which must have originated in comparatively early times in the history of Man. In the Palaeolithic Period holes were bored with much dexterity in teeth[1] and antler and we can never forget the exquisite workmanship accomplished by Palaeolithic Man in the making of the 'eyes' of his bone-needles. It seems to me probable that the earliest use to which a hole would be likely to be put would be for suspensory purposes for personal adornment and we have evidence of this as we find that Palaeolithic Man extracted from the chalk the small, spherical, fossil sponges of *Coscinopora globularis* to fashion beads to adorn his person.[2] For this purpose an artificial enlargement had to be made in the natural orifice of these fossils before he could string them together, on animal fibre, to form his necklace.

In Neolithic days Man had become more enlightened. He believed in spirits, good and bad, and the holes he constructed in certain dolmens were fashioned possibly to facilitate the egress and ingress of the spirit when it wished to leave the tomb and return to it again at its own pleasure or convenience.[3] These holes acquired for themselves a spiritual significance. Again, the large holed stones, such as Men-an-Tol, near Penzance, in Cornwall, were supposed to be invested with healing power and such as were afflicted with spinal diseases were passed through their lumens.[4] Even during quite recent times babies suffering from rickets have been passed through these holes, as such a proceeding was supposed to be of curative value.

A hole, therefore, in any object, might be either a mere

[1] *Brit. Mus. Guide to Antiq. of the Stone Age.* [La Madeleine and Laugerie Basse.]

[2] *Man the Primeval Savage* (pp. 272-276), by Worthington G. Smith, F.G.S.

[3] *Primitive Man* (pp. 121-123) by Edward Clodd.

[4] *Churches of West Cornwall* (p. 228) by J. T. Blight.

materialistic or secular one, or it might become spiritually endowed. All depended upon the use to which it was put. If it were for mere personal adornment it belonged to the former group; but if it were made for the purpose of suspending, let us say, an amulet, to be worn for the express purpose of warding off evil spirits or to protect the wearer against diseases, it immediately became invested with spiritual rites and fortification.

We are now going to turn our attention to holes in bones, particularly to those in the skulls of prehistoric Man, and we shall endeavour to give, as far as we are able, the causes leading to their formation, as also their special significance.

The causes of the various holes discovered in skulls of all ages and times resolve themselves into some five in number[1] and I propose treating each class in order, introducing, as we go along, the special prehistoric culture that lends itself to the section with which we are dealing.

I. To begin at the beginning:—CONGENITAL DEFICIENCES IN THE BONES OF THE SKULL. Every child born into the world has one, at least, and sometimes two, 'openings' in the skull. These are not true openings, that is to say *windows* through the skull bones, but rather spaces left by certain bones which have not as yet grown sufficiently to meet their fellows on the opposite side, or their approximate neighbours to which one day they will become firmly fixed. The *posterior fontanelle* is usually closed at birth, but the *anterior* one does not fill up its bony gap till some two years later.

I now wish to introduce to your notice a skull of remarkable pretensions.[2] It was discovered in an old disused grave-yard at Eastry in Kent (Pl. i, A). I may remind you that historic grave-yards have frequently been found on prehistoric burial sites, so the unearthing of a skull in such a place would not preclude its being of prehistoric date. The late Dr. Robert Munro, for many years Secretary of the Society of Antiquaries of Scotland, first brought this skull to

[1] *Cranial Trephination in Prehistoric Great Britain.* Med. Press. Nov. 16, 1921 (pp. 403-407) and Nov. 23, 1921 (pp. 423-425) by the Author.

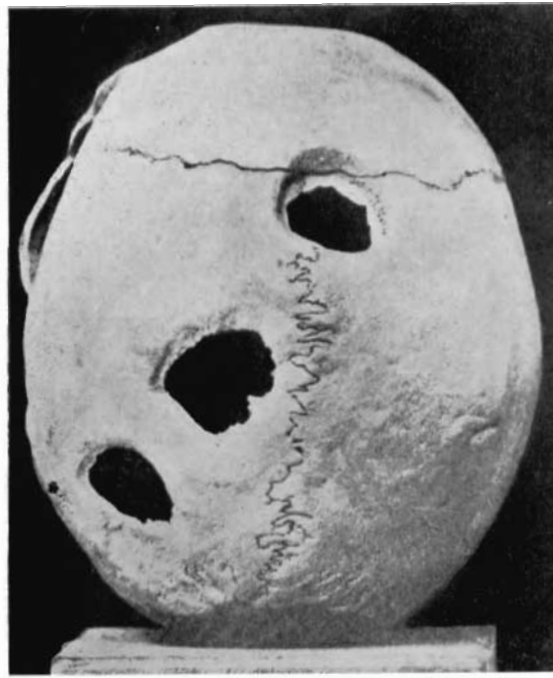
[2] *Prehistoric Problems* 1897 (pp. 235-236) by Robert Munro, M.D. F.S.A. Scot. *Bulletin of the Liverpool Museums*, May 1901 (pp. 37-41). *Journal of Anat. and Physiology*: vol. xxxiv (pp. 228-237) 1900, by A. M. Paterson, M.D.

A. Superior view of the Eastry (Kent) cranium, showing double congenital perforation. This specimen was long regarded as one of double prehistoric 'trephination.'
(*Liverpool Museum.*)

To face page 92.

B. Skull excavated from an Inca graveyard (Huarochiri), showing attempt made to remove part of the skull by quadrilateral incision with a stone saw.
(*Muniz Collection.*)

PLATE I.



A. Inca skull, showing three operations by stone implements for treatment of disorders such as epilepsy, severe vertigo, chronic headache or neuralgia.
(*From Muniz and McGee, as cited in text.*)

PLATE II.

B. Inca skull found in 1915 by the Peruvian Expedition of the American National Geographical Society and Yale University. This remarkable skull shows five separate operations, all successfully accomplished—doubtless for disorders of a paroxysmal nature.
(*By courtesy of Mr. Hiram Bingham.*)

To face page 93.

public notice in his book *Prehistoric Problems*. In this book he states that this skull is the only example of which he knew of double prehistoric trephination. I was very much struck by the pictures of this specimen exhibited in this book and accordingly made a special journey to Liverpool to see the specimen at the Museum in that city. My disappointment was great. An interesting specimen it undoubtedly was. It had two holes in the posterior region of the skull, situated one on either side over the posterior angles of the parietal bones; but, alas, it was no double

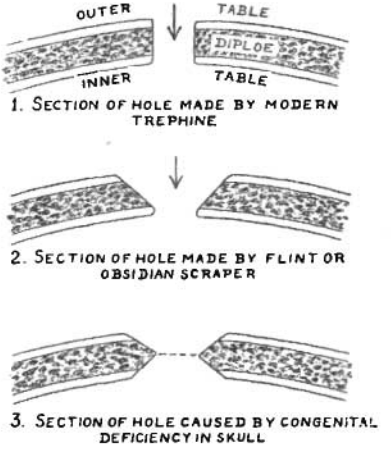


FIG. 1.

Diagram exhibiting the different shapes of holes made by modern and prehistoric 'trephination,' as compared with a congenital deficiency in the bone of the skull.

trephination, it was not a case of trephination at all, it was not even a prehistoric skull. It was the skull of a microcephalic idiot and the perforations in the parietal bones were congenital deficiences, symmetrically placed, as is usual in such cases. The one thing that made the conclusion arrived at a certainty was the following. A prehistoric trephination is made at the expense of the outer table of the skull, the scraping producing a slope downwards and inwards towards the lumen. In this skull only the upper half of the wall of the lumen was made at the expense of the outer table, while the lower half was sloped at the expense of the inner table of the skull, the margins of the sides being slightly rounded (Fig. 1). This was conclusive. No such

lumen as this could have possibly been made *artificially* either during life or after death.

II. INJURIES TO THE HEAD CAUSING, DIRECTLY OR INDIRECTLY, HOLES IN THE CRANIUM.

To illustrate this section I propose to transport you to prehistoric Peru, the land of the Incas and pre-Incarial races. Francisco Pizarro conquered this country in the year 1532, so that it is barely four centuries since the Peruvian prehistoric period ended. The aborigines were possessed of offensive weapons of a formidable character—slings, large wooden clubs in the ends of which were inserted splints of copper or stone and hatchets in which both stone and copper were employed.[1] The natives appeared to have been of a war-like character, for their cemeteries exhibit large numbers of skulls that show unmistakable signs of the free use of the above mentioned weapons (Pl. i, B). Dr. Manuel Antonio Muniz excavated no fewer than 1,000 of these crania and among them he discovered that 19 of them had been trephined. Three of these presented *two* and one *three* distinct operations, thus making 24 clear cases of trephination in the 1,000, which you will see works out at the very high percentage of nearly 2½.

Although the majority of these cases had received surgical attention for fractures, there were some in which no traces of fracture could be found.[2] These latter, it can be conjectured, had been trephined for *medical* reasons, the causes undoubtedly being head-symptoms such as epilepsy and kindred disorders of an acute paroxysmal nature or severe chronic headache, neuralgia and vertigo (Pl. ii). As no rondel or amulet of the human skull has ever been discovered in Peru, we are justified in excluding ethical, ritual or superstitious reasons for this procedure, as was the case in Neolithic France. The religion of the Incarial races appears to have been a very spiritual one. They believed in a Great Spirit, the Creator of the Universe,[3] who, being a spirit, could not be represented by any image or symbol,

[1] 'Prim. Trephin. in Peru,' by Manuel Antonio Muniz, M.D., and W. J. McGee. [*Sixteenth Annual Report of Bureau of Amer. Ethnol.* 1894-1895.] 'The Art of Trephining among Prehistoric and Prim. Peoples'—*Journ. Brit. Archaeology Assoc.* 1916 (pp. 20-24), by the Author.

[2] 'Prehistoric Trephining. *Brit. Med. Journ.* Dec. 5, 1925. By the Author.

[3] *Chambers's Encyclopaedia* [Article—'Peru.']

nor be made to dwell in a temple made with hands, and, at the same time, they held an almost exaggerated reverence for their dead and would not have permitted the mutilation of a dead man's cranium.[1]

III. Disease of the bone causing, immediately or remotely, holes in the cranium. About the year 1887 a finely made cist of Bronze-Age date was discovered at Mount Stuart in the Isle of Bute (Pl. iii, A).[2] It contained the remains of a young woman who had not, at the time of her death, cut her wisdom teeth. In the grave was found a fine example of a Bronze-Age food-vessel and, at the place where lay the bones of her neck, were discovered 98 bugle-shaped jet beads, two terminal triangular and four intermediate rhomboidal plates with a triangular pendant. When re-strung a beautiful example of a Bronze-Age necklace was reconstructed. There is no doubt that the hole in the skull was due to disease. How the disease in the bone originated it is impossible to say. There is no sign of any fracture. Dr. Thomas H. Bryce considers it to have been a case of disease from start to finish.[3] Dr. Robert Munro believed it to have been a case of trephination at the outset and disease at the finish. I made a special journey to Edinburgh to see this skull and came to the conclusion that it was a case of necrosis of the bone, a sequestrum of dead bone having formed in the cavity, which I have reasons to think, from the hollowed out nature of the cavity, had been scooped out by the aid of a flint implement. The surgeon had probably completed the perforation at the base of the concavity and, as likely as not, hastened the end which must have been from a general septic infection.

IV. Mutilation of the Skull after death.

This section embodies five distinct groups.

(*a*) *Posthumous trephination.*

(*b*) *Removal of parts of skull for fashioning amulets.*

(*c*) *Holes made in prehistoric Egyptian skulls by necrophilous beetles.*

[1] See note 1, page 94.

[2] 'On Trephining the Human Skull in Prehistoric Times.' *Proc. Soc. Antiq. Scot.* vol. xxvi, 1891-1892 (pp. 5-33) by Robert Munro, M.D. F.S.A. Scot.

[3] *On the Cairns and Tumuli of the Islands of Bute.* A record of Explorations during the Season of 1903 by Thomas H. Bryce M.A., M.D.

(*d*) *Holes made by picks in the process of excavation.*

(*e*) *Post-mortem decay of part of cranial bones leading to the formation of holes.*

(*a*) *Posthumous trephination.*

Thirteen years ago I received a welcome invitation from the late Sir Victor Horsley[1] to accompany him on a motor trip to Northampton to pay a visit to the Museum in that place to examine a skull which had for long been considered the only example of prehistoric trephination in England.[2] The skull in question had been excavated just outside Hunsbury Camp, Northamptonshire, which is of Early Iron Age date (Pl. iii, B). The trephination was situated on the vertex of the skull and consisted of three circular holes arranged in the form of an equilateral triangle. A glance at this specimen was sufficient to show us that the three holes had been bored by a metal instrument. In my opinion these holes had been bored for the purpose of suspending the skull, probably as a trophy, the result of an Iron Age tribal conflict.[3] A similar specimen to this from the Hillhead Broch at Caithness, in Scotland, was pointed out to me by Mr. Alexander O. Curle, when showing me over this Museum (Pl. iv, A).[4]

(*b*) *Removal of parts of the Skull for the fashioning of Amulets.*

In the year 1865 Dr. Prunières, while exploring a dolmen near Aiguierès, in France, discovered a human skull out of which a large portion of bone, as big as a man's fist, had been artificially removed by cutting and sawing. A small edge of this gap looked as if it had been polished. By the side of this skull he came across five fragments of cranial bones that had been deliberately cut or sawn from a skull for some special object. These fragments, however, would neither fit together, nor would they refil the gap in the skull. They had, indeed, it was shown, been removed from another skull altogether. It was Professor Paul Broca,[5]

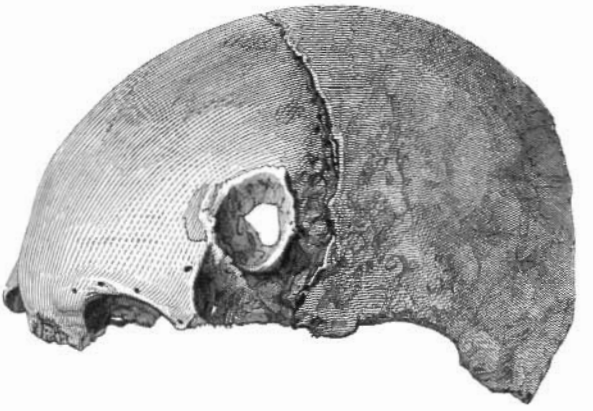
[1] The late Sir Victor Horsley, F.R.S., author of 'Trephining in the Neolithic Period.' *Journ. Anthropol. Instit.* vol. xvii (pp. 100-106), 1888.

[2] Excavations in Cranbourne Chase by Lieut.-Gen. Pitt-Rivers.

[3] *The Art of Trephining, etc.* (pp. 14-16), by the Author.

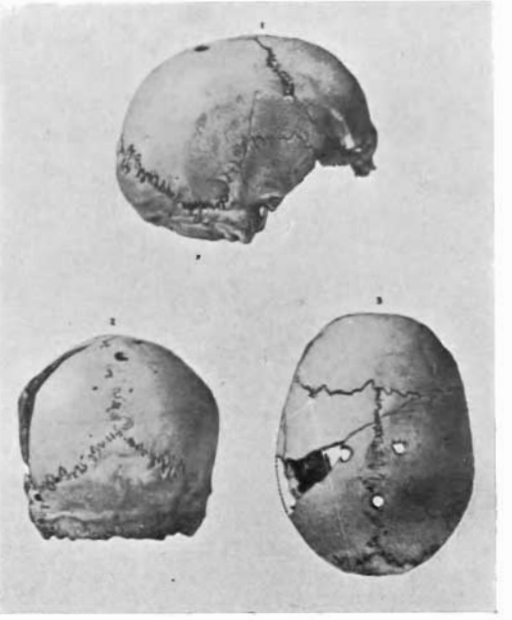
[4] *A Skull found in North Caithness.* By Sir Francis Tress Barry, Bart.

[5] *Sur la Trepanation du Crane et les Amulettes Craniennes a l'Epoque Néolithque* par Prof. Paul Broca, 1877.



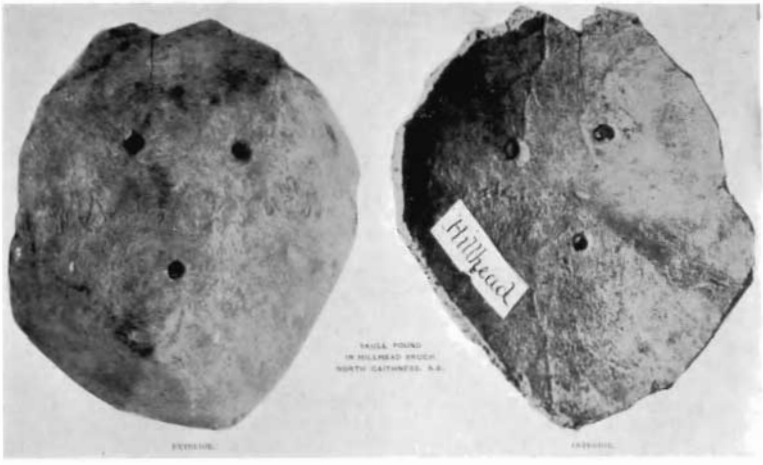
A. The Mountstuart (Bute) skull, found in an Early Bronze-Age cist. A case of disease of the bone and a probable attempt to remove the trouble by flint-'trephination.'

(*National Museum of Antiquities, Edinburgh.*)

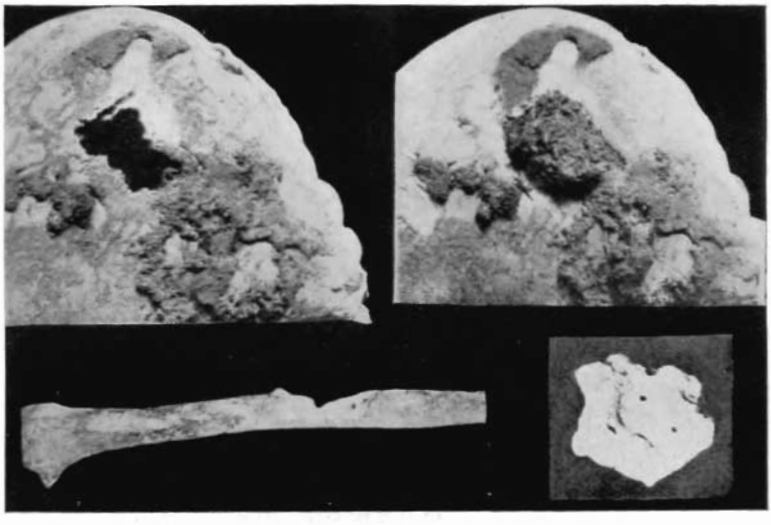


B. The Hunsbury skull (Early Iron Age), showing posthumous 'trephination.'

(*Northampton Museum.*)



A. A posthumous triangular 'trephination,' from the Hillhead broch, Caithness, analogous to the Hunsbury example.
(*National Museum of Antiquities, Edinburgh.*)



B. Top left, part of an Egyptian skull, showing hole made by necrophilous beetles. Top right, same with hole covered by firmly-adhering 'cake' of soil. Bottom right, this 'cake' removed. Bottom left, fibula affected by necrophilous beetles.
(*By courtesy of Professor Elliot Smith.*)

not Prunières, who first pointed out that the piece of the rim of the skull that looked as if it had been polished was actually part of the circle of a trephine-ring, the result of an operation conducted during life the polished appearance being in reality the healed cicatrix of the bone. These five cranial fragments were each found to be possessed of a part with a ' polished ' edge, and their remaining sawn sides testified that their removal from another skull or skulls had been brought about after the death of the individual.[1] Later when large numbers of cranial fragments had been examined from neolithic dolmens, in different parts of France, it was found that some were round, some oval or oblong and artificially polished, while others again were just rudely sawn from the dead skulls. Some were bored and others were notched and grooved, so as to facilitate suspension from, probably, the necks of their owners, for the prophylactic purpose of warding off the disease from which it may be presumed the possessor of the original trephined skull had suffered. Broca explained that among primitive peoples there is an anxious desire on the part of the deceased's relations and friends not, in any way, to vex or annoy the dead man, or his spirit, like the ghost of Hamlet's father, may return to earth to torment them. The amulet having been obtained, the dead man's spirit must therefore be propitiated; so, after taking what was required, a substitute from another skull was inserted in the dolmen; but always more was taken than replaced, so gain was the net result. The whole procedure, Broca shows, was part of an ethical system—strange, complicated and mystical.

(*c*) *Holes made in prehistoric Egyptians' Skulls by necrophilous beetles.*

Two French doctors, Professor Lortet[2] and Dr. Fouquet,[3] asserted that they had discovered evidence of the disease called syphilis in the skulls of prehistoric Egyptians. This evidence was based on the fact that skulls had been unearthed with holes in them and these holes had been described as being due to an ' irregular circumvoluted,

[1] *The Art of Trephining, etc.* (pp. 3-6) 1916. By the Author.

[2] ' La Faune Momifiee de l'Ancienne Egypte et Richerches Anthropologiques,' troisième serie, Extrait des Archives du Muséum d'Histoire Naturelle de Lyon, 1907.

[3] J. de Morgan: *Recherches sur* les *Origines de l'Égypte*, Paris, 1897. Appendix by Dr. Fouguet: 'Recherches sur les Cranes.'

serpigenous ulceration' that had been present during life (Pl. iv, B). Now this description of hole tallies accurately with that of a syphilitic ulceration which erodes the bone, first the outer table, then the diploe and then the inner table of the skull to bring about a perforation of the bone into the cranial cavity.

Professor G. Elliott Smith made investigations and was able to deduce the following facts[1]:—

(1) These irregular holes always occurred in that part of the skull or other bones of the body that were in contact with the soil.

(2) They never occurred in the skulls of those that were buried in rock-cut tombs or in coffins.

(3) A white powder, consisting of pulverised bone, was often sprinkled over the damaged part and the adjoining soil; in many cases this was so obviously fresh that its age could not be more than a few months, whereas the bones had been in the soil for thousands of years.

(4) When such a mutilated bone was removed from the soil burrows of small animals could always be seen leading up to this so-called 'ulcer.' Fragments of the soil from the walls of these burrows and also that taken from the damaged surfaces of bones were examined by Professor Looss and found to contain portions of the elytra of beetles.

Professor Elliott Smith goes on to say that the soil around these co-called 'ulcers' is usually converted into a hard cake which firmly adheres to the bone. Such masses usually form a cap over each hole produced by these beetles in the bone and if the cap be removed it is found to be riddled with the burrows of these beetles.[2]

(*d*) *Holes made by picks in the process of excavation.*

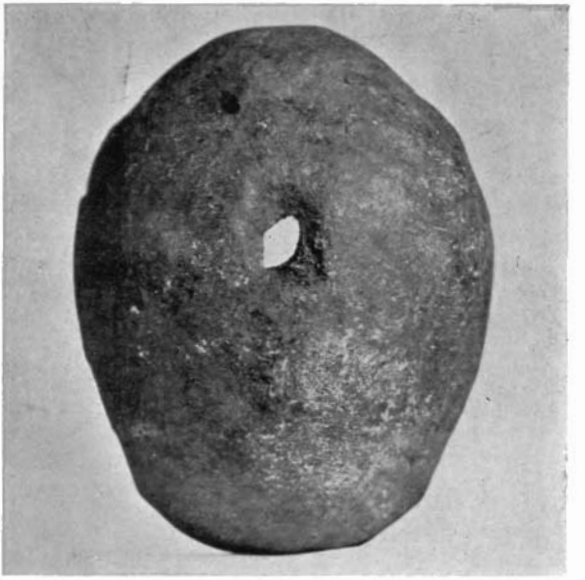
Little need be said of this mutilation of the skull, as it will naturally speak for itself. I show you the picture of a skull on the screen to demonstrate the kind of hole made by a pick.

[1] 'The Alleged Discovery of Syphilis in Prehistoric Egyptians.' By G. Elliott Smith, M.A. M.D. F.R.S. The *Lancet*, Aug. 22, 1908.

[2] Mr. G. J. Arrow of the British Museum (Nat. Hist.) tells me that a necrophilous beetle, prevalent in Egypt, called *Dermestes cadaverinus vulpinus*, was one of that genus of coleoptera that would bring about this destruction of bone in these prehistoric Egyptian skulls.

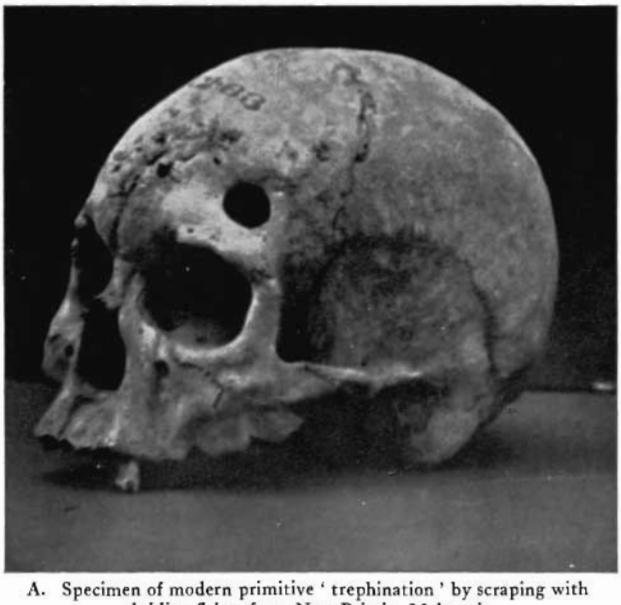
To face page 98.

PLATE V.

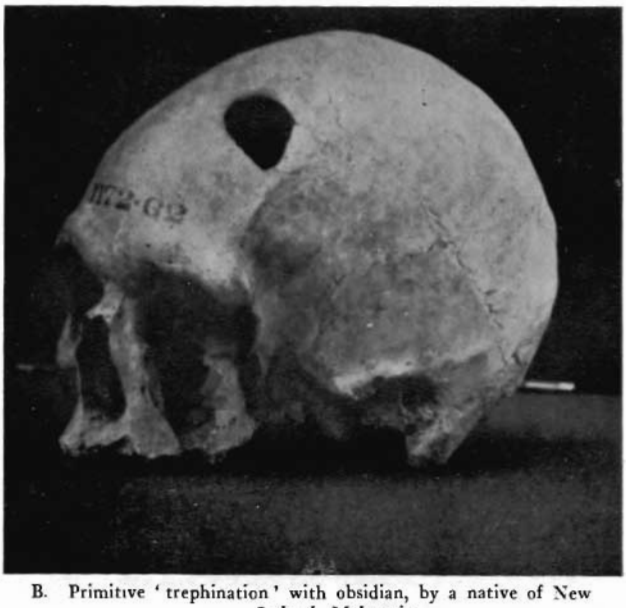


Hole in prehistoric skull made by scraping with flint-flakes. This skull was dredged from the Thames just above Hammersmith Bridge.

(*The London Museum.*)



A. Specimen of modern primitive ' trephination ' by scraping with obsidian flakes, from New Britain, Melanesia.
(*Museum of Royal College of Surgeons.*)



B. Primitive ' trephination ' with obsidian, by a native of New Ireland, Melanesia.
(*Museum of the Royal College of Surgeons.*)

(*e*) *Post-mortem decay of part of a cranial bone.*

The softer part of a bone may become disintegrated more rapidly than the surrounding denser parts, giving rise to central crumbling of the bone which eventually becomes converted into a foramen.

V. The fifth and last section of my classification of the causes of holes in skulls of all ages and times concludes with THE TREPHINATION OF THE LIVING HUMAN SKULL from the earliest operative efforts of the primitive manipulator to the most modern surgical technique of the present day.[1] As we are dealing, however, with those of prehistoric origin alone we must confine our attention, first, to the primitive operation as exhibited by prehistoric Man in the past and also by that of those primitive tribes of to-day who are still in their Age of Stone-Culture.

It is a most curious thing that we should find this extraordinary custom practised, at some time or other, in nearly every part of the world. I feel I cannot do better than put before you an epitome of its distribution in the five continents and in some of the countries where it was employed; but the most curious fact of all is that it was practised in these different countries, many of them widely separated, for quite different reasons and at vastly different times.

To take EUROPE first. As regards time, our age of stone culture ended about 2000 B.C., that in Egypt considerably earlier, while the holing of living skulls is practised *to-day* in some of the islands of the South Pacific Ocean in all its pristine simplicity. I purpose dealing with Great Britain first. I will show you two specimens. The first example we possess is one that was dredged from the Thames about the year 1864 (Pl. v).[2] In the year 1914 this priceless specimen, which was unrecognised, was in imminent danger of being crushed up to make mortar. Its rescue by Mr. G. F.

[1] 'Trephination of the Living Human Skull in Prehistoric Times.' [Address to Listerian Soc. Kings' Coll. Hosp., Jan. 17, 1923] *Brit. Med. Journ.*, March 17, 1923. By the Author.

[2] 'The Prehistoric Trephined Skulls of Great Britain, together with a Detailed Description of the Operation probably performed in each case.' [*Proc. Roy. Soc. Med.* (Hist. Sect.) vol. xiv, no. 10, Aug. 1921]. By the Author. 'The Collective Evidence of Trephination of the Human Skull in Great Britain during Prehistoric Times.' [*Proc. Third Internat. Cong. Hist. Med.* July 17-22, 1922]. By the Author.

Lawrence for the London Museum I have related elsewhere. It is really a magnificent specimen and one of which we may be justly proud. It was made by scraping the bone with flint scrapers. The operation was quite successful. The other skull, discovered by Dr. W. H. Paine of Stroud in the year 1863, was found in a dolmen near Bisley, in Gloucestershire. This is only a partial trephination, the operation having been abandoned either on account of the death of the patient or an unwillingness on the part of the priest-doctor to proceed with it. Prehistoric trephination was exceedingly rare in Great Britain. In France it was very different. France is, by a long way, the leading country in Europe for the large number of specimens that have been discovered there in dolmens, caves, caverns and grottoes. I have already referred to some of the French specimens when speaking about amulets, so I must rapidly pass on to other countries of Europe,—Scandinavia (particularly Denmark and Sweden), Germany, Bohemia, Poland, Russia (especially the Caucasian region), Spain, Portugal and Montenegro.

Crossing over the Mediterranean Sea we will now mention AFRICA. In Algeria, among the Kabyles, the custom of primitive trephination is of very ancient origin. It is practised to-day with specialised metal implements among the Arab Shamans. In Teneriffe von Luschan collected 210 Guanche skulls, ten of which had been trephined. He found others in which the outer table of the skull only had been scraped away. Professor Elliott Smith has examined 15,000 skulls from ancient Egypt and Nubia, but tells me he has never found a trephined specimen. On the other hand, one of these skulls—judging admittedly from photographs, for I have not been able to see the original—seems to me so clearly to illustrate a depressed fracture that has been treated in this way that I should prefer not to dogmatize upon the absence of trephination from those regions. The Guanches are supposed to have migrated from Egypt, so one would not have been surprised to find specimens in this latter country.

In ASIA, Daghestan can exhibit primitive specimens and they have also been found in Japan; but the vast area of Asia has hitherto been unexplored from this view-point and, no doubt, one day other specimens will be unearthed.

AMERICA. In *North America* no specimens of skulls operated upon during life have been found, though examples of posthumous ones have been discovered in several of the states, notably Michigan, Illinois and Ohio.

In Central America Lumholz found two skulls that had been primitively trephined, one during life and the other after death. It was among the ancient tribe of the Tarahumares.

In *South America* many specimens have been excavated, notably in Peru, as have been already mentioned, and also some in Bolivia. To what I have already said in connexion with the Peruvian specimens, I will only add here that I have reason for believing that metal was employed, as well as stone, in some of the operations. The ancient Peruvians knew only of gold, silver and copper and they used a mixture of these which they called *champi*. They made chisels or *estiletes* of this mixed metal. They also possessed an instrument called *tumi*, which consisted of a blade, straight or curved like a crescent, edged and furnished with a short central haft in the form of a T. Some of the holes presenting a somewhat scooped-out appearance look to me as if metal may have been employed during the process.

AUSTRALASIA. I do not know that any specimens have been found in Australia itself, but the custom was prevalent, and even exists to-day, in *Melanesia* (New Britain and New Ireland—Pl. vi); in the *Loyalty Group* (Uvea) and in the *Society Group* (Bora Bora) which latter is some 2,500 miles east of the Loyalties. It is still practised in these islands of the South Pacific, sometimes for fractures of the skull produced by sling-stones and clubs, sometimes for epilepsy and other head disorders and sometimes even to promote longevity, when a particularly handsome youth or beautiful girl is singled out as being an appropriate patient.

PREHISTORIC AND PRIMITIVE TREPHINING

(A) Performed for Curative Treatment.

(I) True Surgical Procedures for fractures of the Skull.

(*a*) Incan. and pre-Incan. prehistoric Peruvian culture.
[Muniz gives a percentage of nearly 2.5 in 1,000 crania excavated promiscuously.]

(*b*) Certain islands in the South Pacific.
[Melanesia (New Britain)—*Authority*,—Rev. J. A. Crump.]

(*c*) Primitive Kabyle Culture.
[Algeria—Messrs. Malbot, Verneau, Hilton-Simpson and others.]

(II) As a Surgical Procedure for treatment of Symptoms not arising from injury.

(*a*) Incan. and pre-Incan. prehistoric Peruvian culture.
[Muniz, McGee and others—For Cerebral symptoms.]

(*b*) Certain islands in the South Pacific.
[New Ireland (New Mecklenburg) for Epilepsy and certain forms of Insanity. (Rev. J. A. Crump) Loyalty Group (Uvea) For headache, neuralgia and other cerebral affections. (Rev. Samuel Ella).]

(B) Performed for Ethical, Mystical, Ritualistic or Superstitious Reasons.

(I) Being a Surgical Procedure arising from the necessity of driving out Evil Spirits that had taken possession.

(*a*) French Neolithic Culture and probably other European Countries.
[Numerous Authorities. During the Third or Carnac division of Neolithic Period.]

(*b*) Some islands in the South Pacific (?).

(II) Performed to promote longevity.

Some islands in the South Pacific.
[Melanesia (New Ireland). Particularly in village of Olotai. *Authority*,—Rev. J. A. Crump.]