

# AN EXAMINATION OF A NEANDERTHAL TYPE FOSSIL SKULL FOUND IN THE CHALCIDIQUE PENINSULA

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On my return from Germany in October 1963, I decided to take the road through Greece so that I could have an opportunity of seeing and examining the skull belonging to fossil man which had been recently discovered at Petralona in the vicinity of Salonica. I learned from the Anatomy Institute of the University of Salonica the whereabouts of the skull, which was the Faculty of Physical Sciences of that University, where it was kept in a locked safe under the care of Professor Dr. P. Kokkoros. I contacted Dr. Kokkoros who was kind enough to show me the skull and who gave me every facility for examining, measuring and photographing it. I must here record my very grateful thanks to him for all his help and co-operation in this matter. I should also like to thank here Professor Dr. Kokkopos, the Director of the Anatomy Institute, for providing me with the necessary instruments and Dr. P. S. Rentzeperil of the Mineralogy Institute, for showing me and explaining some other fossil remains from the Clemoutsi cave near the village of Petralona.

In Greece, palaeoanthropological and prehistoric researches began comparatively late. For this reason, only a few prehistoric sites have been located there, but in recent years this number is increasing. In 1941 in the Seidi cave in the Copais region flint tools belonging to the late Upper Palaeolithic stages were found by Stampfuss and this encouraged research workers to investigate further. (Stampfuss, 1942, p. 132-147). In 1958 the German Archaeological Institute of Athens in the course of researches on the terraces of the river Penaios in Thessaly found 250 flint tools together with worked bones (Bialor, 1962. p. 181). An account of these finds has been published by Vladimir Milojcic. They include examples of a Middle Palaeolithic flake industry of Levalloisian type and an Upper Palaeolithic blade industry. (Bialor, 1962. p. 181). In 1960 Jean Servais of the French School in

Athens found four pieces of worked red flint near Neochori and these tools have been described by Bialor. In his opinion some are of Levalloisian technique belonging to the Levalloiso-Mousterian period, and this indicates that these cultures are definitely present in Greece. Other localities in which these cultures are represented are Elis and the Argolid (Bialor, 1962. p. 182).

The tools belonging to Middle and Upper Palaeolithic periods which have been found both on the surface and in the cave deposits are ample evidence that fossil man lived in Greece. On 16 September 1960 a most important discovery was made near to Salonica which proves beyond doubt that fossil man did indeed exist there. This was a calvarium found by a group of six people in the Clemoutsi cave 37 km. from Salonica as the crow flies near to the village of Petralona which is 250 metres above sea level. The cave, which has been formed at a depth of 13 metres in the Mesozoic limestone, contained the remains of *Ursus spelaeus* Ros. and *Cervus elaphus* probably belonging to the Upper Pleistocene period. The skull was found adhering to the wall of the cave by a stalactite prolongation and was entirely covered by a calcareous incrustation which had protected it. In the same part of the cave where the skull was found were also a large number of mixed animal bones and teeth both on the floor of the cave and in the fissures at a height of 2 to 2.50 metres.

A large part of the incrustation had been removed from the calvarium, but the maxilla, the zygomatics and the lower part of the occiput were still covered by it as far as the superior nuchal line. The ten teeth remaining in the jaw have also been cleaned but the empty sockets are still covered with the calcareous incrustation. The temporals were also covered as far as the porion level. In spite of this incrustation which was only about 1 mm. thick over the whole skull, it is possible to observe some of the morphological characters. The fact that the incrustation is of the same thickness all over the skull would seem to indicate that it must have remained under water for a considerable period, and this theory is supported by the fact that, as mentioned above, the skull was found adhering to the walls together with the bones of animals, which suggests that they must have been deposited there by the flow of water through this narrow channel. This again no doubt indicates a pluvial period, probably correspond-

ing to Wurm I of Europe. After the water receded the accumulated calcium became crystallised during the ensuing dry period.

I will now briefly describe the anatomical, biometrical and morphological characteristics of that part of the skull which had already been cleaned. The calvarium is quite complete and had not been broken or crushed, but the processus zygomaticus on the right side is not complete and the processus mastoideaes on both sides is broken. In addition the posterior part of the lamina palatinus is missing. On the face both sides of the os nasalis are broken. If the calvarium is examined from the norma verticalis, it can be seen immediately that the contour is very similar to that often observed in fossil man, e. g. La Chapelle-aux-Saints, Neanderthal, Spy I and II. The contour from the posterior side is very similar to that of *Pithecanthropus erectus*, but the frontal in the Petralona skull is relatively wider compared with the length than in *Pithecanthropus*. The minimum frontal width is identical with that in the Monte Circeo skull, and exceeds all other Neanderthal skulls in this measurement. This diameter in the Petralona and Monte Circeo skulls is 113 mm., in *Pithecanthropus I* it is 85 mm., in *Pithecanthropus II* 79 mm. (Coon, Table 37). In La Chapelle-aux-Saints 109 mm., Spy I 101 mm., Spy II 108 mm. In the Middle East the Petralona skull also exceeds in this respect the measurements for Tabun I 98 mm., Skhul IV 106 mm., Skhul V 100 mm. and Skhul IX 96 mm. The Petralona skull therefore falls into the Monte Circeo category. The minimum width of the forehead in *Protoanthropiens* is less than 113 mm.

The other characteristics of the Petralona man contribute to its inclusion in the Mediterranean Neanderthal group. The parietals are enlarged towards the back; the frontal is rather low and becomes narrower towards the orbits. The thickness of the orbit at the centre on the right side is 19 mm. and on the left 22.5 mm. The width of the orbits extends as far as the parietals. The orbits continue from one side to the other, with a slight hollow in the centre, and this is a characteristic of the *Palaeoanthropians*.

In the Petralona man the frontal, parietals and occipital, all of which had been carefully cleaned, are normal. The parietals are comparatively large, the widest part being on the posterior side. When the occipital is examined from the norma occipitalis, it can be seen that the right side is slightly flattened. The tips of the mastoids which

have been broken are comparatively small. In the lamboid a vomer bone has been formed. The occipital from the level of the inion as far as the foramen magnum forms a flat platform. This primitive characteristic can be observed more in the Protoanthropians and is very obvious in this skull. The foramen magnum is almost oval, length 42 mm. and width 33 mm. The occipital condyles are slightly inclined backwards and are not symmetrical.

All the sutures on this skull are not closed which shows that this individual was not more than 35 years of age. The anatomic characteristics show that the skull is definitely male.

From the profile of the face the Petralona man resembles mainly Monte Circeo and Broken Hill man. On the other hand it also reminds one of the La Chapelle-aux-Saints fossil man. The face from the front towards the maxilla narrows and the nose is wide. The thickness of the orbits and the width of the nose, together with the depth of the bridge of the nasalis resemble Rhodesia man. The face of Petralona man is short and wide. The width of the bridge is 32 mm., the length of the nasalis spinalis 64 mm., the length of the nasalis prosthion is 93.5 mm. and the aperture piriformis width is 32.5 mm.

The length of the skull of Petralona fossil man is 209.5 mm. and approaches the length of the Broken Hill skull, which is 208 mm. While the width of the latter skull is 144.5 mm. in the Petralona man this is 148 mm.

#### SUMMARY

The Petralona skull belongs to a male of about 35 years of age and represents a primitive fossil type. The first thing that strikes one about the skull is the extremely thick and continuous orbits. The Petralona skull is dolichocephal and the index is 71. The face is comparatively large and in this respect resembles Monte Circeo, La Chapelle-aux-Saints and Rhodesia man.

The contour drawn from the norma verticalis shows similarities with La Chapelle-aux-Saints, Neanderthal, Spy I and Spy II. The occipital resembles mainly that of Pithecanthropus and Sinanthropus. The minimum width of the frontal is the same as that of Monte Circeo, and the forehead is wider than other Neanderthals. The skull in its anatomical and morphological characters reminds one mainly of Monte Circeo and Rhodesia man.

The occipital from the level of theinion as far as the foramen magnum forms a platform. This characteristic, which is seen in the Protoanthropians, places the Petralona skull in a category older than the Neanderthals. It is unusual to find such a primitive characteristic among the Neanderthals. However, the length and width measurements and the morphological characters of the skull suggest that it is a variation in the Neanderthal group.

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