

A reading of archaeological and anthropological results of the second half of the 19th Century on paleoanthropological skull in a Prehistoric cave of North West Lombardy

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Dear Editor,

This paper describes the story behind the discovery of the prehistoric skull found in a cave in Northern Italy in the second half of the 19th century. This event immediately aroused the interest of the scientific community at the time. In particular, Leopoldo Maggi, a renowned researcher at Pavia University, studied the skull and offered evidence regarding its antiquity. Probably due to the transfer of the archaeological finds to the new museum in Varese, in 1949, the skull was forgotten in storage.

During our biographical research on Leopoldo Maggi, we discovered the skull in question and thanks to the kind permission of the museum's curator, two years ago we had the possibility to examine the skull, which was still in museum storage. Immediately we noted that the skull showed two cards, one on the front and one on the left parietal bone, with the inscription "Tuff Cave, Valganna", allowing us to firmly identify the cranium as the one studied by Leopoldo Maggi in the second half of the 19th century. Thanks to our work, and a series of enthralling events, this prehistoric skull is now on exhibit again in the new prehistoric section of the Archaeological Museum of Varese.

The Varese province is rich in prehistoric discoveries. The firsts archaeological excavations, conducted near Varese lakes in 1875-1880, led to discovery of several prehistoric finds, especially in the site of *Isolino Virginia* (1), now a UNESCO World Heritage Site. The archaeological material was collected and exposed

in the "Civic Patrio Museum", the first Archaeological Museum in Varese and then, in 1949, it was transferred to the new Archaeological Museum of Villa Mirabello (Varese) (2). In the 1982, the excavation of the *Pizzo di Bodio site* brought to surface a Neo-Eneolithic settlement. (3) The finds derived from these sites, dated to the Early Neolithic, are now displayed in the prehistoric section of the Museum.

We describe also Leopoldo Maggi anthropological investigations conducted on the skull (4, 5) and analyze the scientific publications related to the discovery of the skull.

In particular, we began the work by reading the proceedings of the Seventh Ordinary Meeting of the Italian Society of Natural Sciences (1878), presided by Leopoldo Maggi. After that, we examined the local press of the time, the *Cronaca Varesina* (6).

In 1878, during the Seventh Meeting of Italian Society of Natural Sciences in Varese, the Professor Leopoldo Maggi presented the anthropological investigations results conducted on a skull found in a cave, known as Tuff Cave (Varese, Valganna), two years earlier. About the Tuff Cave, in the book entitled "*Varese and its territory. Descriptive guide*" we can read: "a big cave of about 7 meters in length, 5 meters in height and 4 meters in deep with elegant stalactites hanging from the vault, with large holes that lead into in small tuff caves [...]" (7). In addition to this, Luigi Brambilla in his text "*Varese e il suo circondario*" (8) regretted for the destiny of the Tuff Cave that it was gradually sacrificed to construction industry interests. He emphasized that

the caves located to short distance from the Tuff Cave were completely destroyed.

During some disassembly works conducted in the Tuff Cave, the building contractor Fermo Gritti reported the discovery of a human skull and other bones. His reporting appeared in the *Cronaca Varesina* in 12 January 1873. A few years later, the same newspaper published archaeologist Pompeo Castelfranco (9) letter in which he urged the municipal administration to realize an archaeological dig in the cave. In 1876, the *Cronaca Varesina* published the results of the archaeological investigations. Castelfranco announced the discovery of several human and animal bones, clay, shards. He according to Professor Maggi attributed all the finds to prehistoric times.

These discoveries aroused the interest of the academics. Though belonging scientists coming from different academy areas, such as geology, paleontology, archaeology and anthropology met to further investigations the topic. To researcher Innocenzo Regazzoni was clear the important connection between this discovery and the prehistoric man in Como province (Lombardy). In his report, he attributed the Tuff Cave Skull to the Pre-Glacial period (10). The discoveries of the prehistoric remains in Valganna were also mentioned in subsequent scientific papers. In 1901, Pierfranco Volontè in his book reported the results of the archaeological excavation conducted in August 1876 by Pompeo Castelfranco. The text reporting the discovery of others human bones. In 1935, Riccardo Lodovico Brunella, in a paper entitled "*The prehistoric man in the region of Varese*" (11), wrote that among the several finds recovered during the archaeological excavation "skulls" (the author did not tell us how many) and a "mandible" surfaced. In the archaeological map of Varese, Mario Bertolone remembered 1876's excavation: "*In 1876 Fermo Gritti unearthed from the soil of a cave called Tuff Cave, bones of herbivores. Various fragments and human bones consisting of two mandibles and two skulls (preserved in the Civic Museum of Varese)*" (12).

Several years later, about the discovery and studies conducted on the materials found in the Tuff Cave, the researcher Frecchiami wrote: "*problematic of attribution, again for lack of knowledge and scientific methods to investigate the time*" (13).

During the Seventh Ordinary Meeting of the Italian Society of Natural Sciences (1878), Leopoldo Maggi (14), Professor of Comparative Anatomy and Zoology at the Pavia University, presented the results of his study on the Tuff Cave skull.

The target of the anthropological analyses was to place the skull in a precise moment of the history of the human evolution. The study was based on comparison of the morphological features of the skull with those of others prehistoric and modern skulls. The cranium preserved only the skullcap (frontal, parietal and occipital bones). The identification analyses, based on the observation of the degree closure suture and on the dimorphic traits, revealed that the skull belonged to a 25 years older male. Since the first anthropological observation, Maggi highlighted the principal archaic features of the skull, such as a narrow and low front and a large coronal crest (more than one centimeter). Then, Maggi measured the cephalic index (ratio between the width (distance between the two "eurion") and the length (distance between glabella and opistocranium) to delineate the shape of the skull (*brachy or dolico*). The cephalic index varies in according to age, sex, ethnicity and especially changed during the evolutionary history of man. The prehistoric skulls are more dolichocephalic (elongated) than the modern skulls. The cephalic index of skull cave tuff measuring 66.66 and this designated an *iper-dolicocefalich* skull that is much closer to a primitive form than a modern. Maggi with Giovanni Zoja, Professor of Anatomy at the Pavia University, began to carry out comparisons with other ancient and modern skulls. To undertake this study they consulted the anthropometric studies of Welker, Huxley and Broca.

The first comparison was about a skull found in Valcuvia (North Lombardy), dating back to the Bronze Age and which showed a cephalic index of 78.11. This emphasized the prehistoric nature of the Tuff Cave find. Then, they proceeded by performing comparisons with the skulls of different ethnicities, in particular with eight skulls of Hottentots and thirteen skulls of Eskimos, which presented a cephalic index (average of 69) close to Tuff Cave Skull. Maggi later undertook a comparison with two skulls from the Roman times: one had a cephalic index of 81.25 and the other of 83.56. These indexes were significantly higher than the Tuff Cave Skull. Zoja gave to Maggi his skull

collection preserved in the Anatomical Cabinet of the Pavia University and, among several skulls, only one presented a cephalic index (69.66) close to Tuff Cave Skull. The skull showed all the sutures open and, at the level of lambdoid, it presented twelve wormians.

Maggi highlighted “abnormal” morphological features of the Skull to prove the primitive traits, such as the coronal crest highly developed than modern skulls. Maggi had no doubt about its Prehistoricity. In fact, in the end of his text, he wrote: “From the purely anthropological side, I reserve to speak in the future of this skull, under the paleoanthropological point of view” (15).

By the analyzing of the reports about the Tuff Cave excavations, in particular the archaeological map of Bertolone in which the author reports the discovery of two skull by Gritti (Bertolone et al 1950), a question arises: why did Maggi analyze only one? It is possibly that the second skull was in poor state of conservation so as to render it impossible to proceed with the anthropological analysis. The important is that this skull was rediscovered and thanks to Dr. Daria Banchieri's courtesy, the curator of the museum, we had the possibility to examine it, two years ago. Immediately, we noted that the skull showed two cards, one on the front and one on the left parietal, with the inscription “Tuff Cave, Valganna” that allowed us to identify the cranium as the one studied by Leopoldo Maggi in the second half of the 19th century (figure 1). Also to this, the cranium presents the same traits as described by Maggi. In fact, the skull preserved only the cap and this is very lengthened and crushed on the sides.

As we have already mentioned the Varese area is rich of archaeological remains of the prehistoric period and the recently the reopening of the prehistoric section in the Archaeological Museum is the proof. Only in very fortunate circumstances human remains of prehistoric times can be preserved, as was for our skull: the cave guaranteed a natural protection against the action of atmospheric agents.

The Tuff Cave Skull is not the only piece of the paleoanthropological collection of Varese; there are also two other bone remains, a left humerus and an astragalus, recovered by Dr. Bankers in *Pizzo di Bodio excavation*. The finds have been studied by Professor Mallegni who reported that the remains belonged to an individual male adult (16).

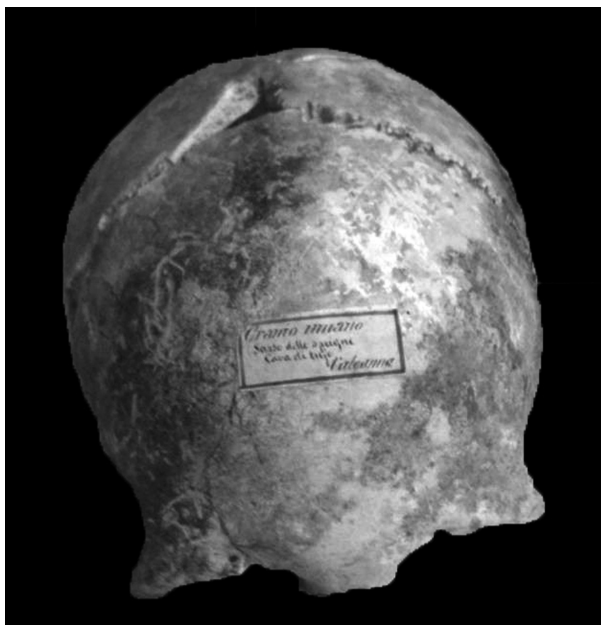


Figure 1.

The anthropological study on human remains is the best testimony of the presence of prehistoric man in our region. In this regard, the Tuff Cave Skull represents an important paleoanthropological find that proves, with others archaeological artefacts found in the Valganna caves the existence of human communities during the Neolithic period.

Thanks to his rediscovery the Tuff Cave Skull was finally exhibited again in the prehistoric section inaugurated in 2013.

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References

1. Binaghi Leva MA, Biandronno (VA), Isolino Virginia. Indagini archeologiche. Notiziario della Soprintendenza archeologica della Lombardia, 1998, pp. 27-28.
2. Bertolone M, Baroncelli P, Conti C, Lavatelli P. Edizione Archeologica della carta d'Italia al 100.000. Foglio 31. Soprintendenza alle Antichità della Lombardia e del Piemonte. Firenze, 1950.
3. Banchieri DG. Il neolitico di Pizzo di Bodio nelle Prealpi

- Varesine. In: Biagi P. (ed.). *The Neolithisation of the Alpine Region*. International Round Table at Brescia, 29 April - 1 May 1988. *Monografie di Natura Bresciana* 1990; 13: 181-6.
4. Armocida G, Porro A. Varese 1878: la Settima Riunione straordinaria della Società Italiana di Scienze Naturali. Convegno per il centenario della morte di Giulio Bizzozero (Torino 14 maggio 2001-Varese 15 maggio, 2001).
 5. Licata M. L'antropometria di Leopoldo Maggi (1840-1905). *Biog Med* 2013; 2: 13-16.
 6. Cronaca Varesina, 12 gennaio 1873; 3 settembre 1876; 1 ottobre 1876.
 7. Bizzozero GC. Varese e il suo territorio. Guida descrittiva. Ubicini, Varese, 1874
 8. Regazzoni I. Paleontologia. L'uomo preistorico nella provincia di Como. Hoepli, Milano, 1878.
 9. Brambilla L. Varese e il suo Circondario. Ubicini, Varese, 1874.
 10. Castelfranco P. Grotta alla Fontana degli Ammalati presso Varese. *Bull Paleotnol* 1877; III: 113-6.
 11. Brunella RL. L'uomo preistorico nella regione varesina. In: Banchieri DG, *Antiche testimonianze del territorio varesino*. Macchione, Varese, 2003.
 12. Maggi L. Sopra alcuni teschi umani trovati a Casteggio (Vogherese) in tombe d'epoca romana. *Atti della Società Italiana di Scienze Naturali* 1872; XV; III: 137-42.
 13. Bertolone M. Recenti ricerche del Centro di Studi Preistorici ed Archeologici di Varese: ricerche all'Isola Virginia (Campagna 1956). *Rivista di Scienze Preistoriche* 1957; 12: 125-6.
 14. Frecchiami M. Storia dell'archeologia in Valganna. *Archivio Storico della Badia di S. Gemolo in Valganna* 1977; VIII: 124-129.
 15. Maggi L. Ossicini suturo-fontanelli nel cranio dell'uomo fossile. *Rend Ist. Lomb* 1899; XXXII: 465-84.
 16. Mallegni F. Breve relazione sui reperti scheletrici umani del primo Neolitico dal sito del Pizzo di Bodio- Bodio Lomnago (VA). *Sibirium* 1994-1999; XXIII: 503-4.
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