

# FACETS OF MALTESE PREHISTORY

Edited by  
**Anton Mifsud**  
**Charles Savona Ventura**

The Prehistoric  
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**OF**  
**MALTESE PREHISTORY**  
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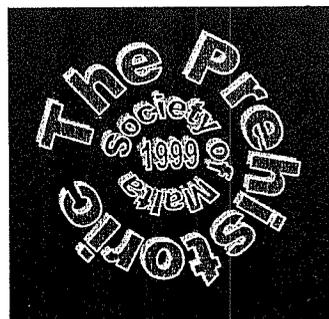
Themistocles Zammit

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Editors: Anton Mifsud and Charles Savona Ventura.

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## INTRODUCTION

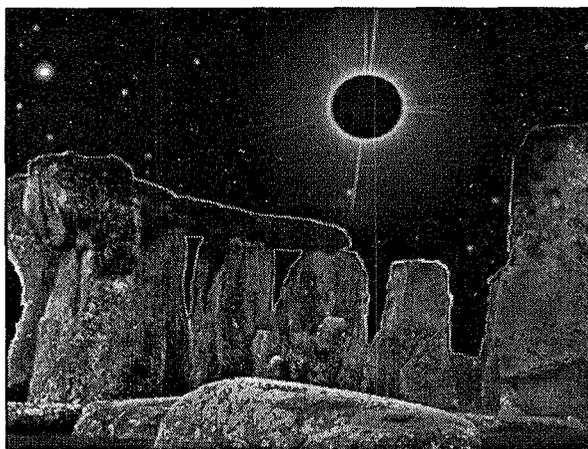
One lunar cycle had elapsed in the autumn of 3756BC, and the Neolithic farmers of the Ggantija phase had already planted their grain in preparation for the rains. The sun had reached its midday position in the sky, when the unexpected started to happen. The sky began to darken gradually, and those who dared to look at the sun could eventually observe that its rim was being nibbled away. The daylight in the sky was being extinguished, and the warmth of the sun was disappearing. Just before total darkness, the remnant of the sun looked like a circle of beads, then a ring with a glow at one end, and finally a radiant halo surrounding a black disk; the stars of the night appeared in the black morning sky.

The impact of this sudden, unfamiliar phenomenon on such an ancient population totally unprepared for such an event can be gauged from the recent world reaction to Eclipse 1999, at a time

when science completely explains the event, which was also precisely predicted in both time and place. It lasted longest in Roumania, where the traditional peasant explanation today is that of a wild animal eating the sun away as a form of punishment for sins committed by man. This belief in a celestial monster was also a feature of early man, whether it was Skoll the wolf, a dragon, a giant frog or a vampire which was devouring the sun. Eclipses were portents of doom, and remedial action was felt necessary by several cultures. The Chippewa Indians shot flaming arrows in the sky in order to rekindle the sun; and the Chinese hoped to drive the monster away by sound and skyrockets. The Aztecs attempted to placate the sun's assistant, Xolotl, through the sacrifice of hunchbacks and dwarfs. The importance attributed to the sun since time immemorial is manifest

also in the persistence of the feast of the unconquered sun by practically all the world cultures of today.

There are no archaeological remains in such episodes, and no historical accounts record it; the earliest documentation ever of a solar eclipse is 2094BC<sup>1</sup>. The main source of information for the 3756BC event experienced by the Maltese prehistoric inhabitants is science.<sup>2</sup> The other side of the coin is antiquarianism, where the remains of the past are accounted for solely on the personal interpretation of the antiquarians, the *men of letters*, the humanists of today.<sup>3</sup>



Eclipses occur roughly every six months, but most are just partial. At one particular spot, the chance of a total eclipse is approximately once in 400 years. In less than half this time, however, between 3790 and 3599BC, the Maltese were exposed to no less than twelve such

episodes involving more than 85% of the sun's surface. A purely humanist declaration would be one which declares that the Neolithic Maltese of 3600BC started erecting their megalithic monuments in response to such a cluster of eclipses, which they must have interpreted as omens of divine wrath. Although an attractive hypothesis, particularly in the absence of a satisfactory explanation for the Maltese

<sup>1</sup> From astrological tablets at Ur, in ancient Babylon.

<sup>2</sup> Stephen Brincat, of the Astronomical Society of Malta, researched this information for me.

<sup>3</sup> Professor F. Mayer of Bonn, for example, interpreted the first retrieved remains of *Neanderthal* man, discovered at Düsseldorf in 1856, as those of a rickety Mongolian Cossack who had fallen ill in 1814, *en route* from Germany to France, and had crept into the cave to die there (Mayer 1864: 1-26).

megalithic explosion, such a *post hoc ergo propter hoc* argument is nevertheless unsupported by evidence.

*"Ideas and theories in prehistory often seem to have a life of their own, surviving and flourishing quite independently of the evidence upon which they might be supposed to rest"* (Renfrew 1979: 263). *"One enters the discussion encumbered by traditions of interpretation that are no longer entirely acceptable"* (Renfrew 1979: 44).

### ***The humanists, the scientists and the third culture***

Several centuries back, the interpretation of evidence, whether written or otherwise, was the domain of a few intellectuals, the *men of letters*; theirs was the monopoly of history. Their only practical limitation was the date of Adam's creation. In 1650, the Archbishop of Armagh in Ireland declared that Adam was created in 4004BC, and this from the account of Genesis when interpreted literally. Five years later a certain Isaac de Peyrere was burnt at the stake for declaring the presence of man before Adam. So there was this attitude against palaeolithic man in general, and this persisted until the nineteenth century.

The challenge to the traditional interpretation of the remains of the past, as defined exclusively by these *humanists*, was eventually forthcoming through the emerging scientists, particularly in the fields of geology, implementology and biology. If the *days* in Genesis were twenty-four hour periods, there was insufficient time for the various geological formations of the earth to have accumulated. People like John Frere, William Buckland and De Perthes were identifying tools which had been manufactured by people before the time of Adam. The geologists such as Lyell were declaring that Ussher's time-scale was not sufficient to account for the formations of the earth. With the discovery of Neanderthal man in 1856 and Darwin's theory of evolution in 1859, palaeolithic man was finally accepted as a human entity preceding Adam. Towards the end of the nineteenth century, palaeolithic man was also credited with the faculty of cave art.

During the 1930's the literary intellectuals, or *men of letters*, assumed the monopoly of intellectuality; they ignored the scientists at the same time that the literature gave no prominence to scientific discovery. This school of traditional *intellectuals* adopted a culture which *"dismisses science"*; it *"uses its own jargon and washes its own laundry. It is chiefly characterized by comment on comments, the swelling spiral of commentary eventually reaching the point where the real world gets lost"* (Renfrew 1997).

A rift between the humanist and the scientist grew with the growth of the latter's discipline, particularly when scientific dating methods became available and challenged the previously established chronology. In 1959 Lord C.P. Snow identified two cultures, the literary intellectuals and the scientists; four years later he predicted that a third culture would bridge the gap between the literary intellectual and the scientist (Renfrew 1997).

The third cultural group emerged; a fresh approach to the problem of interpretation was soon evident among the ever-increasing groups of professionals who manifested a profound interest in prehistory, and who were prepared to disclose their hypotheses in public. Basically they comprised *"those scientists and other thinkers in the empirical world who, through their work and expository writing, are taking the place of the traditional intellectual in rendering visible the deeper meaning of our lives, redefining who and what we are"* (Renfrew 1997).

Scholars such as Mortimer Wheeler (1966) refused to accept the concept of this third culture as initially identified by Lord Snow in 1959; he was still very optimistic that humanist and scientist would eventually come together. Recently, however, Colin Renfrew (1997) has resuscitated the concept of the third culture, and has accepted this emergence as a factual and significant one.

*"The emergence of the third culture introduces new modes of intellectual discourse ... throughout history, intellectual life has been marked by the*

*fact that only a small number of people have done the serious thinking for everybody else. What we are witnessing is a passing of the torch from one group of thinkers, the traditional literary intellectuals, to a new group, the intellectuals of the emerging third culture” (Renfrew 1997).*

*“Unlike previous intellectual pursuits, the achievements of the third culture are not the marginal disputes of a quarrelsome mandarin class: they will affect the lives of everybody on the planet” (Renfrew 1997).*

The humanists can no longer claim a prerogative to an exclusive interpretation of archaeological data; it was, after all, science which transformed the antiquarian into the archaeologist in the early decades of the nineteenth century.

### ***Evolution of Malta’s prehistory***

The prehistory of the Maltese Islands has received the attention of scholars since the very remote past. Ancient authors have written about Malta’s prehistory in very clear terms, and with the revival of these texts during the Renaissance, new perspectives were generated. The geography and culture of the prehistoric Maltese have featured significantly in the ancient texts, and these focused principally upon the links with the continents to the north and south of the Islands.

Celebrated geographers such as Skylax of Caryanda have associated the Maltese Islands with North Africa, the seat of the ancient civilizations of Rome, Greece and Egypt. Early fathers of the Church such as St. Augustine have done the same (XVIII: 10-11). Ptolemy, the renowned ancient geographer of Alexandria, gave accurate readings of latitudes which demonstrate that the expanse of the Maltese Islands extended significantly southward in ancient times (Lib. 3, tab. 2, Cap. 3). Early Greek historians such as Eumelos of Cyrene have stated categorically that the Maltese Islands represented the remains of Plato’s Atlantis, which lay between Libya and Sicily.

The interpretation of Malta’s

archaeological record has evolved significantly since the time of its pioneer, the antiquarian Gian Frangisk Abela. In 1644 the Danish anatomist Thomas Bartholin visited Malta and saw G.F. Abela’s home museum. He concluded that the large bones it housed had belonged to gigantic humans. G.F. Abela agreed with Bartholin; giants must have built the large megalithic structures, and the large skulls with a single central eye opening also indicated that they were Cyclops.<sup>1</sup> This was in 1647.

Towards the end of the eighteenth century, the French knight of the Order, Deodat de Dolomieu, identified Abela’s “Cyclops” as dwarf elephant; he also described fossil hippopotamus in the Maltese Islands. His contribution to the geology of the Maltese Islands was significant in that he amply demonstrated that their present extent did not provide a sufficient surface area to account for the extensive valley formations. British travellers to Malta in the early decades of the nineteenth century, such as Bigelow, remarked upon the cliff formations and suggested similar hypotheses; he also entertained the possibility of the Maltese islands forming part of Plato’s Atlantis. The Maltese architect, George Grongnet, whose *idée fixe* on the subject raised a few eyebrows amongst the local intelligentsia, pursued this theme for four decades.

### ***Excavations in Malta***

In the early decades of the nineteenth century several of the Maltese megalithic sites started to be explored, but without the employment of a proper excavation technique. A great deal of information has thus been lost, in sites such as the Gozo Stone Circle at Xaghra, otherwise known as the Brocchtorff Circle, after the artist who drew it, Charles de Brocktorff.<sup>2</sup>

Throughout the nineteenth century, the giants gave way to the Phoenicians, who

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<sup>1</sup> The large bones actually belonged to elephant or hippo. George Zammit Maempel has observed that this misconception was due to Abela’s interpretation of the skull of Dwarf elephant as that of a one-eyed giant.

<sup>2</sup> Although the Gozo Stone Circle (as labelled by J. Attard Tabone) was depicted by Brocktorff, it has assumed the alternative name of Brocchtorff Circle by others, such as the recent excavators of the site.

then assumed the role of the first colonizers of the Maltese islands. This change of policy had been dictated by the literary sources. The ancient authors had linked Malta to North Africa, and Diodorus Siculus had stated in his writings (V: 12) that the Phoenicians were the first colonizers of the Maltese islands. The Maltese historian, A. A. Caruana, published his *Phoenician Antiquities of the Maltese Islands* in 1882 along these lines.

The Maltese medical doctor, Themistocles Zammit, was the first to conduct the excavations on Malta in accordance with the standard scientific techniques prevailing at the time. In the initial stages he was assisted and guided, in the excavations at Hal Saffieni, by Thomas Ashby, Director of the British School at Rome, who later also assisted Giuseppe Despott at Ghar Dalam.

It was the German scholar, Albert Mayr, in the very early years of this century, who finally severed the link of the Phoenicians with the Maltese megalithic monuments. He initially attributed them to the Bronze Age, and even accepted Arthur Evans' hypothesis (1901: 200) of their partially sepulchral utilization. With Zammit's discovery of Tarxien Cemetery, Mayr eventually agreed with Zammit in attributing the temples to the Neolithic period (Stöger 1999: 35, 36, 44, 49). Malta's early history no longer dated to a millennium before the time of Christ; using parallels with the European Neolithic, Zammit had already dated them correctly to 3000BC. Yet even before the discovery of Tarxien, Mayr was able to discern the "*long and gradual development*" of construction in the Maltese megalithic monuments (Mayr 1908: 91), with the simplest of forms forming a semi-ellipse, which was then modified with time "*through the addition of niches and lateral chambers.*" Mayr started his sequence of temple descriptions correctly with Ggantija, from the "*simplicity of its ground-plan, arrangement and construction*" (Mayr 1908: 4).

### ***Mediterranean archaeology***

Archaeological developments in the Mediterranean around the turn of the

century effected a significant re-orientation in the concept of Mediterranean prehistory. Two great civilizations were discovered in the final decades of the nineteenth century. Schliemann located Homer's city of Troy,<sup>3</sup> and Arthur Evans discovered a new civilization at Knossos in Crete. Arthur Evans designated it as the Minoan civilization, after the legendary King Minos, and identified it correctly as representing a culture preceding Schliemann's Troy. Through his subsequent hypothesis, Arthur Evans contended that it was the source of civilization in Europe and the Mediterranean, through a slow diffusion of its cultural sweep westward. It was also possible to give a date of approximately 1600BC, through cross-references with the historical records of Egypt. The implications of Arthur Evans' hypothesis were revolutionary. Apart from boosting Britain's prestige in the archaeological sphere, it was then apparent that the civilizations in Europe and the Mediterranean, right up to the Iberian peninsula, were later than 1600BC. Further research in the field was founded on the basis of this hypothesis, and the protagonists who subscribed fully to this theory included Vere Gordon Childe and Glyn Daniel.

Gordon Childe was professor of prehistory in Edinburgh until 1946, and subsequently at the London Institute of Archaeology until his retirement in 1956. Childe was a major contributor to European prehistory, and he originated the concept of *culture* in archaeology. He also adopted Arthur Evans' slow diffusion process of a 'cultural sweep' across Europe and the Mediterranean. On the other hand, Glyn Daniel, from Cambridge, concentrated his research on the evolution and development of the megalithic structures of Europe, and he hypothesized for a spread of these megalithic monuments from the East to the West. Both Childe and Daniel maintained their hypotheses for several decades, in support of Arthur Evans, in spite of the evidence which turned up in Malta, and which

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<sup>3</sup> He had actually identified an earlier city beneath Homer's Troy, and had carried away its treasures to Europe.

pointed to the contrary.

Although the Hal Saflieni Hypogeum, with its unique art forms, was discovered at the turn of the century, the sudden demise of its first excavator, Emanuel Magri, was associated with the loss of all his archaeological records. This was in 1907, and the task of its subsequent excavation was then assigned to Themistocles Zammit, considered then and now as the father of Maltese prehistoric archaeology. Under his administration the first proper museum of Maltese archaeology appeared, in 1902, and, in 1925, the Antiquities Protection Act which is still effective today.

The Hypogeum represents the underground equivalent of the megalithic structures above ground level, and the presence of its various art forms was sufficient to disprove Arthur Evans' hypothesis. However, it was in 1914, with the discovery of the decorated megalithic structure at Tarxien, that Evans' hypothesis was seriously crippled. The Tarxien monuments were clearly Neolithic, and Zammit dated them, through analogies to the European Neolithic, to 3000BC.<sup>4</sup> The latter date was clearly earlier than the Aegean civilization, and yet its art forms were equally indicative of an advanced form of cultural attainment.

In a bid to maintain his original hypothesis, Arthur Evans argued that the Maltese culture in Tarxien represented a retarded form, where the Maltese *Bronze Age* population was still at a *Neolithic* stage of development. Just as today, the occasional lost tribe in the Amazon jungle is still functioning at a Stone Age level of cultural development, so Arthur Evans was proposing a similar situation as prevailing in Malta during its Tarxien phase.

Barely three years later, in 1917, Zammit effected another two significant finds. The first was a clear Bronze Age horizon *overlying* the Tarxien megaliths, and this find settled the issue in his favour. In the same year, Zammit discovered an

assembly of microlithic tools at Dingli, and these he correctly attributed to the early Stone Age, then referred to as the Azilian-Tardenoisian, and today known as the late Palaeolithic. It was clear that, not only had the Maltese culture preceded the Aegean one, but also that there was a pre-Neolithic human presence in the Maltese islands. The latter hypothesis was further enhanced by the discovery of a pair of primitive human teeth in the Ice Age horizon of Ghar Dalam. These had been unearthed by the Curator, Giuseppe Despott, and his associate, the engineer Carmelo Rizzo. They initially referred a photograph of the specimens, and subsequently the specimens themselves, to the anatomist at the Royal College of Surgeons in Britain, Sir Arthur Keith. On the basis of their stratification in the *Cervus* (Red Deer) layer, and on their primitive forms, these fossilized *taurodont* molars were then attributed to Neanderthal Man.<sup>5</sup>

The British School at Rome accepted Despott's discovery. Its director, Thomas Ashby, who had previously excavated at Ghar Dalam together with Despott, submitted the latter's article to the *Royal Anthropological Institute* for publication in its journal. Despott was awarded excavation grants by the British Association, and he was able to conduct and publish his later excavations at Ghar Dalam in the same journal. Despott's discoveries were also covered in the prestigious journal *Nature* (25<sup>th</sup> July 1918, 15<sup>th</sup> March 1924), *Whitaker's Almanack* 1919: 730, *Art and Archaeology* (1923 15 (2)) and in the *Illustrated London News*, (19<sup>th</sup> November 1921, p. 686; 25<sup>th</sup> February 1922, p. 262) the British newspaper at the time which dealt with scientific discoveries. In the Italian peninsula, *Il Tevere* (3rd April 1925) afforded coverage, among others. The Royal Anthropological Institute of London, the British School at Rome and the Royal College of Surgeons of London

<sup>4</sup> The calibrated radiocarbon date for Tarxien in 1972 was 3100BC.

<sup>5</sup> Eighty years later, the only amendment to this conclusion is a wider attribution to fossil man in general, rather than Neanderthal Man in particular. Modern taurodontic teeth are not fossilized, and their morphometrics are different. Furthermore, the 1917 taurodonts have been confirmed as stratigraphically correct by the scientific tests carried out in London between 1952 and 1968.

corresponded regularly with Giuseppe Despott on the taurodont molars he had discovered and on their publication.

In 1924 Keith published his *Neanderthal Man in Malta*, and in the following year, he devoted a chapter to him in *The Antiquity of Man*. T. Zammit published his *Malta* in 1926, and for the first time the prehistory of the Maltese islands established a human presence during the Ice Age. British authors, such as Peake and Fleure, also included the Maltese Neanderthal in their history series.

British scientists, such as Dudley Buxton, C.T. Trechmann and G. Caton Thompson, visited Malta and conducted their own research on the life forms in prehistoric Malta. Dudley Buxton studied the Hypogeum teeth, where a number of these showed the presence of fused roots. The latter condition may outwardly resemble taurodontism, and in the absence, at the time, of a radiographic picture or a sliced section of the taurodents, Dudley Buxton (1923) would not comment on their identification.<sup>6</sup> C.T. Caton Thompson provided a stratigraphic table for Despott's excavations, and she clearly demonstrated thereby a palaeolithic human presence at Ghar Dalam which was contemporaneous with the fauna of the Ice Age (Caton Thompson 1925: 13).

The Italian scholars such as Luigi Ugolini (1934) and Carlo Ceschi (1939) concentrated their efforts on the megalithic architecture of Neolithic Malta. Ceschi reconstructed the megalithic structures with stone roofs, in accordance with the various prehistoric models discovered at the temple sites. Ugolini's conclusions also supported the presence of Palaeolithic man in Malta. Whereas Zammit had proved that Maltese

culture had preceded the Aegean one, Ugolini went further and showed that Malta was the origin of Mediterranean civilization. Ugolini's contribution was acknowledged by the British as an "admirable *mise-au-point* ... *Malta exhibits the earliest civilization, after the Palaeolithic, known in the Mediterranean; and it is a civilization of a surprisingly high order*" (Randall McIver 1935: 207, 208). Trechmann (1938) confirmed the conclusions reached by Zammit and Ugolini.<sup>7</sup>

In 1939, Malta had its first professor in archaeology in the person of J.B. Ward Perkins. After a period in war service spent in North Africa, the latter reviewed the Maltese prehistoric situation (1942). He pleaded for a champion to search out the Maltese prehistoric sequence and dating. If the hypothesis of the British scholar Arthur Evans could be resuscitated, then Britain could once again lay claim to the discovery of the origins of European civilization. After the war, Ward Perkins was appointed Director of the British School at Rome.

#### ***The 1951 survey of the Maltese prehistoric antiquities***

The archaeological survey of Malta's prehistory (1951) was the brainchild of Ifor Evans, advisor to the Inter-University Council for Higher education in the colonies. Soon after World War II, Maltese intelligentsia clamoured for such a survey, and the project was set in motion in 1948. In the same year, the earliest rock-cut tombs in the Maltese islands were discovered by C. Zammit and J.G. Baldacchino at Zebbug.

When Christopher Hawkes of Oxford declined the offer to head the survey, J.B. Ward-Perkins of the British School in Rome was approached, and he accepted the task. Stuart Piggott of Edinburgh joined the consultative committee soon afterwards, and J.D. Evans was eventually engaged as a Technical Assistant in October 1952.

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<sup>6</sup> Subsequent radiography has confirmed the molars as taurodontic. Although it was obvious to a trained anatomist such as Arthur Keith, differentiation between taurodontism and fused roots may not have been obvious to the anthropologist Dudley Buxton. The latter's comment would have been very valid for the presently designated Gh.D/3, which was identified as taurodontic without radiography by J.G. Baldacchino (1936). Recent examination of Gh.D/3 by the local professor of dentistry could not, without radiography, differentiate between a taurodont and a molar with fused roots. This tends to strengthen the suspicion that Gh.D/3 is a fake.

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<sup>7</sup> After World War II, J.D. Evans (1959, 1971) suggested that Ugolini's and Ceschi's conclusions had been politically motivated, a suggestion which has since been rejected by Mahoney (1996: 10).

1911-1925



*N. Tagliaferro*



*G. Despott*



*T. Zammit*



*A. Keith*



*G. Caton Thompson*

***PIONEERS OF MALTESE PREHISTORIC ARCHAEOLOGY***

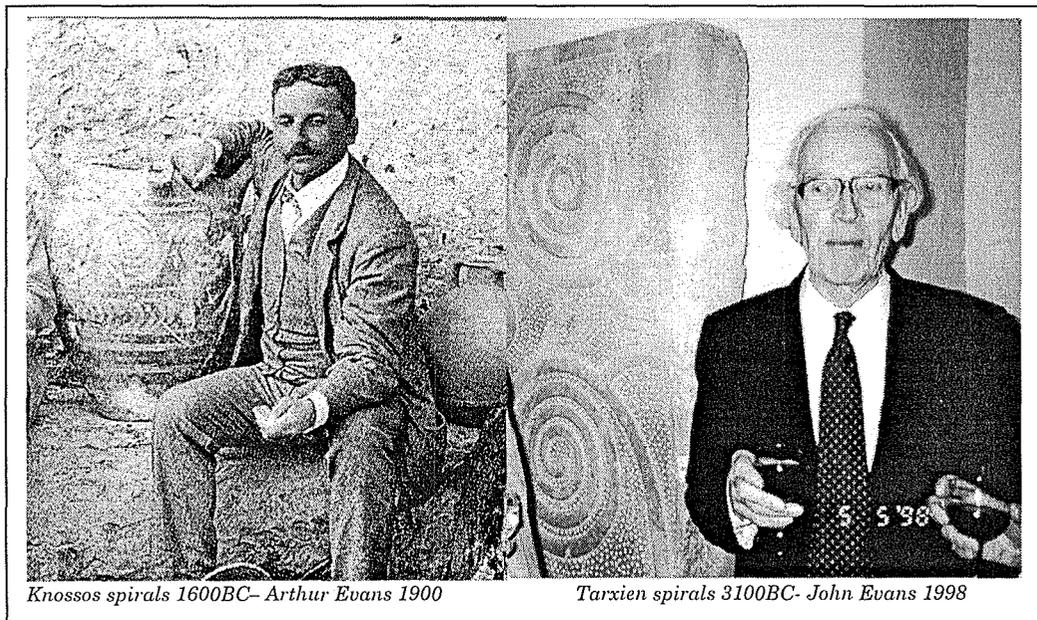
The filming of the World War II movie *The Malta Story*, by J. Arthur Rank Organization, was started during this time, in mid-October of 1952. The chief character, Flight Lieut. Peter Ross, was a British archaeologist who had been promised a Readership at Cambridge just before the war, "*Cambridge being better than Oxford*". Peter interrupted his studies during the wartime years to carry out military service in aerial reconnaissance; he falls in love with a Maltese girl and saves the islands from the invasions from Italy through his aerial reconnaissance missions. The temples are visited and referred to as "*very interesting megalithic remains,*" with "*Mnajdra not properly excavated.*" The flavour of the British archaeologists then involved in the Maltese archaeological survey is unmistakable.

In October 1952 the prehistoric archaeological remains of Malta attracted the attention of a few royal personages. The archaeologist King Gustav and Queen Louise of Sweden, together with Princess Alice of Greece paid a personal visit to the

construction of the temple.

The work of the survey had started in March 1951, and was mainly conducted by four University of Malta students in Engineering and Architecture, under the supervision of Professor Robert V. Galea. Progress was well under way when J.D. Evans joined the team. Graduating with an M.A. at Cambridge in 1950, Evans was sent to Ankara and to Jerusalem to enhance his training. The Survey was fortunate in soliciting the assistance of the Sicilian archaeologist, Luigi Bernabò Brea, who took Evans over for a week in Sicily and the Lipari Islands. The Sicilian prehistoric sequence was thus made to bear upon the Maltese one, and this was further enhanced through Bernabò Brea's visit to Malta in January of 1954. Evans took him round the sites, and Bernabò Brea imparted his valuable assistance towards the Survey.

Before leaving Malta in September (1953), Evans was interviewed by the *Times of Malta*, and in the full-page feature which followed (2.9.1953), Evans rather



Maltese islands, and J.G. Baldacchino showed them round the sites, particularly Mnajdra, Hagar Qim, and the antiquities at the Museum of Archaeology. At this time fresh excavations at Mnajdra by Baldacchino had uncovered a retaining wall and a flight of steps which provided an explanation for the split-level

pompously proposed his modification of Malta's prehistory. According to Evans, who had not by that time undertaken any significant local excavation works, but had merely catalogued a card-index at the Museum of Archaeology, all previous scholars in the field of Malta's prehistoric archaeology had been amateurs. Evans'

new version of the prehistory of Malta was divided into eight phases which excluded the Palaeolithic period. Furthermore, Evans restricted the definition of the Maltese Neolithic period to the later phases, when, according to him, "*marked Mycenaean influence*" introduced civilization into the Maltese Islands. These declarations were clearly echoing the discredited hypotheses proposed by his namesake at the turn of the century.

J.D. Evans' task was twofold. If Arthur Evans' hypothesis was to be resuscitated, the temples required an association with a sepulchral function, and the logical link was an evolvement from tomb and temple; this would also accommodate the megalithic diffusion hypothesis of J.D. Evans' sponsor, Glyn Daniel. Secondly, the Tarxien decorated temples had to be synchronized with the Cretan Bronze Age, and historical records placed this around 1600BC. Basing his arguments on the analogy between the spiral patterns at Tarxien and those on the shaft graves at Mycenae, Evans hypothesized that the origin of the Maltese art at Tarxien had derived from Mycenaean graves. According to J.D. Evans, the earlier Maltese were a primitive race of farmers from Sicily, and they had reached the islands around 2000BC; *civilization* had reached the Maltese Islands from the Aegean, and it was at this time that the Maltese lost their primitive and retarded characteristics.

Extrapolating on Mayr's hypothesis on the developmental sequence of the temples, Evans extended this sequence backward, and proposed a cave to temple transition in the development of the Maltese megalithic culture. He also gave an *absolute* date of 1600BC to the Tarxien temple, and of 1500BC to the Tarxien Cemetery.

Towards the end of 1953, Evans published his prehistoric sequence of the Maltese Islands in the *Proceedings of the Prehistoric Society* of London. Within a few months, in the *Malta Year Book 1954*, Evans published a similar article, this time however coming out against the evidence for the palaeolithic presence in Malta. Without any form of supporting

evidence, Evans declared that Dr. J. G. Baldacchino, the Director of the Malta Museum, had proved that the taurodont molars were not Palaeolithic but Neolithic (Evans 1954a: 56). This inaccuracy has persisted unchallenged to this day, although further tests carried out by Oakley until 1968 further confirmed the pre-Neolithic nature of the taurodont molars.

After a successful short series of talks on BBC radio in 1954, Malta's prehistory was also featured on British television in the spring of the following year. A crew from the BBC was in Malta in March of 1955 in order to film the Maltese megaliths; the documentary which was produced was televised as the third program in the *Buried Treasure* series. John Evans accompanied the television team, and his hypothesis for Malta's prehistory was ventilated throughout the documentary.

According to J.D. Evans, the first inhabitants came to Malta around 2500BC, and they started erecting their first temples at Mgarr on the clover leaf plan around 2100BC; this developed into a three-chamber plan, with Ggantija being built at 1850BC and Tarxien at 1450BC. According to J.D. Evans, Tarxien had derived its cultural influence from the grave shafts of Mycenae, dated to 1600BC (Johnstone 1957: 40-9; Evans 1954a: 57, 58; 1954b: 129). Although Evans actually *confirmed all this by excavation* (Johnstone 1957: 42-3; Evans 1959: 29; M.A.R. 1954-5: vi), this sequence and chronology has since had to be drastically revised.<sup>1</sup>

During this time (1955) a number of Maltese prehistoric skulls were transferred to the vaults of the Museum of Natural History in London; these were mainly from Burmeghez, but also from the Hal Saflieni Hypogeum and Mgarr.<sup>2</sup>

### ***Archaeology and scientific dating in Malta***

Sequence is the key word in

<sup>1</sup> Ggantija was the first temple to be built in 3600BC, and it preceded Mgarr, so that Evans' argument for his temple sequence is invalid. Moreover, there are a number of significant exceptions to the sequence (Trump 1990: 26).

<sup>2</sup> These were traced in 1995 by A. Mifsud.

archaeological practice, and its establishment is attained through stratification. The sequence dictates the chronology of the events which have taken place. The basic principle of stratification is the premise that, in any undisturbed deposit, what lies at the bottom has been deposited before what lies above it.

Science has rendered considerable assistance in the elucidation of proper dating of the remains contained in archaeological deposits. Two techniques of revolutionary significance were effected in the late forties of this century. In the United States, Willard Libby pioneered the estimation of residual radiocarbon in organic remains as an index of their antiquity. However, it was not until the early seventies that an acceptable calibrated method of calculation was available, and even then there was limit to the span of time it could cover. Since the calibration is made with tree rings, the oldest trees, which are still available, set these limits of radiocarbon, and strictly this extends to 8,000 years before the present time. Refined techniques have extended this range to approximately 40,000 years before the present. Beyond this range, a series of other dating methods is available, and these include the Potassium-Argon, Electron Spin Resonance and Uranium Series Disequilibria techniques. The range of dating can thus be extended to millions of years rather than millennia. Calibration in these ranges is impossible at the present time, and the quoted figures are arbitrary.

In the United Kingdom, Kenneth Page Oakley devised another method of dating, which produced a relative chronology rather than an absolute one. It did, however, possess one significant advantage over Libby's radiocarbon technique. The latter method required the presence of carbon, and this element is absent in fossilized specimens.

The process of fossilization entails the replacement of the carbon-containing components in buried organic matter (bone, tooth dentine, horn, antler) with iron and calcium salts. These elements are present in the ground water, which percolates through the matrix containing

the specimen in question. After the lapse of several millennia, the specimen has lost all of its carbon, as it becomes a fossil.

Ground water also contains other elements such as fluorine and uranium oxide, which are as well slowly incorporated into the buried specimen of organic matter. However, unlike iron and calcium salts, fluorine and uranium oxide do not replace carbon but the hydroxy-apatite component of the specimen. Furthermore, the apatite bond is a permanent one, so that the process is irreversible. Oakley utilized this feature in the apatite bond to separate the disturbed deposits from the undisturbed ones. His classical contribution was the exposure of the Piltdown forgery, which had fooled the archaeological world for four decades. Oakley was able to uncover the hoax through the measurement of the apatite bonds of fluorine and uranium oxide in the specimens under question. He was not merely able to confirm the fraud, but also managed to trace the original sources of the specimens which comprised the fake assembly. One elephant molar had originated in Ichkeul in Tunisia, whilst the source of the hippopotamus molar was Ghar Dalam in Malta.

Another method of relative dating, which was pioneered in the United States, was the estimation of Nitrogen. Originally launched by S. F. Cook and R. F. Heizer in 1947, the technique was later (1953, 1959) criticized by the same workers. Oakley himself regularly included the estimation of nitrogen in his battery of tests, but after a trial period of thirty years, he considered it unreliable in the Ghar Dalam context (1980: 9-12, 20).

Whilst Libby's radiocarbon technique slowly overcame its teething problems in the fifties and sixties, Oakley's technique was applied world-wide with remarkable success to a few thousand archaeological specimens, and the results thereof bear this out in two major publications (1971; 1980). However, because an actual figure is more desirable to the archaeologist than a relative one, the natural outcome of selection was the eventual supremacy of radiocarbon as the method of choice in dating archaeological specimens.



*Joseph A. Manché*



*Robert V. Galea*



*J.B. Ward Perkins*



*Stuart Piggott*



*J.G. Baldacchino*



*John Evans*

***Members of the 1951 Maltese Survey of Prehistoric Remains***

Top Row: University of Malta

Middle Row: Directors of Archaeological Survey

Bottom Row: Malta Museum of Archaeology



Yet, just as in medicine the development of Magnetic Resonance Imaging has not invalidated the previous results obtained by Computerized Tomography or simple radiographs, so Libby's method has not refuted nor annulled the results obtained by Oakley's methods.

The presence of Maltese humans during the Ice Age was confirmed by Oakley's techniques. Between 1952 and 1968 a series of chemical and radiometric tests was carried out on Maltese archaeological specimens from Ghar Dalam and other Maltese archaeological sites. The reviewed results have clearly demonstrated that the stratification deposits that contained the taurodont molars in Ghar Dalam were undisturbed, and that the molars were contemporaneous with Red Deer of the Ice age (Mifsud & Mifsud 1997). The results nullified the hypothesis, as proposed by Evans (1954, 1959), that the taurodont molars originally lay in the Neolithic horizons, and that they had fallen down into the Red Deer layer during excavation.

The human remains in the Red Deer layer had also included several teeth, a host of hand and foot bones (phalanges), and two infantile mandibles. The absence of

in Malta during the Ice Age. Remains of items which were used as food were also discovered, in the form of edible shells which had been fractured to extract the flesh. These food remains were discovered in the lower reaches of the Red Deer layer, and as such represent human activity well before the end of the Ice Age. Moreover, these food remains were associated with the presence of tools in the same horizon.

On the southern border of Sicily opposite the Maltese islands lies the early Palaeolithic site of Fontana Nuova, where implements of a Mousterian technology were identified (Bernabò Brea 1950). Similar tools were also identified in the Maltese islands (Evans 1953: 63). The Maltese prehistoric tools do not represent only the late Ice Age technologies, but also those which were contemporaneous with Neanderthal man, approximately dating to 25,000 years before the present and earlier. Several scholars have recognized implements of a Mousterian technology among the Maltese repertoire, and these are typically associated with Neanderthal man. When consulted by Evans in 1954 (Evans 1956), the Sicilian archaeologist Bernabò Brea confirmed and also identified other implements, among the Maltese collection at the National



*The Skorba years – V. Depasquale (Antiquities Committee), D. Trump and C. G. Zammit*

pottery in this layer further confirms the pre-Neolithic dating of these human remains at Ghar Dalam. Thus the stratification and scientific tests clearly indicated and confirmed the presence of humans in the Maltese Islands during the Ice Age.

The human remains were not, however, the sole proof for the existence of humans

Museum, as subscribing to the Clactonian industry. Both the Mousterian and Clactonian tool technologies were contemporaneous with Neanderthal Man. At this point in time it ought to have been evident to any serious scholar that the identification of these tool technologies among the Maltese repertoire of prehistoric implements was confirming Arthur Keith's (1918) attribution of the

taurodont teeth (1917) to Neanderthal man in Malta. This ought to have been particularly evident at the time, when it had followed so closely upon Oakley's confirmatory tests (June 1952). These same tests had been carried out contemporaneously with those upon the Piltown specimens, and Oakley was then being hailed in Britain as the chief protagonist of archaeological science.

### *Trump and Zammit*

In 1959, a young student named Colin from Cambridge gazed in amazement at the massive prehistoric temples and statues of Malta; twelve years later he revolutionized the chronology of prehistoric Europe and the Mediterranean—Malta emerged from insignificance into prominence (Renfrew 1971, 1972). The curator at the Museum of Archaeology at the time was David Trump; within a few years he re-organized the chronology of the Maltese prehistoric period. Indeed, the period between 1958 and 1963 marked another *floruit* in Malta's archaeological achievements; the tandem comprising archaeologist David Trump and museologist Charles Zammit has never been paralleled.

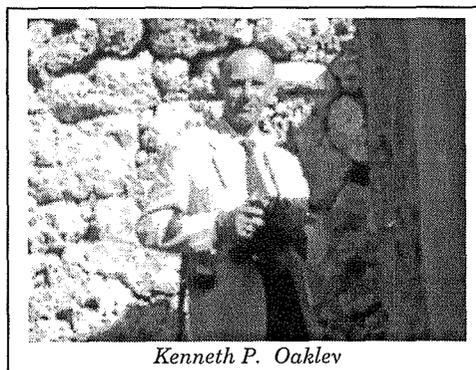
John Evans published his prehistoric account of the Maltese islands in *Malta* in 1959; the picture he painted then was that of a primitive colony "with a poor culture" from Sicily inhabiting the Maltese islands for the first time around 2500BC. According to Evans, the temples started to be built around 2000BC, and it was only under Minoan influence, in 1600BC (a date he regarded as absolute), that Maltese culture started to be manifest (Evans 1959: jacket, 42-3). When contested by the Sicilian archaeologist, Luigi Bernabò Brea, about the prehistoric chronology of Malta, Evans submitted the first Maltese radiocarbon date from Mgarr (BM-100); unfortunately it had been sampled from an incorrect stratum (Trump 1962: 59). The excavations at Skorba by Trump yielded the two missing prehistoric phases, and the radiocarbon dates established a new chronology for the prehistory of the islands. Once calibrated, these dates have since represented the previously established chronology. In November 1961, during his excavations at

Skorba, Trump was visited by Dr. Ercole Contu, Inspector of Antiquities of Sassari and Nuoro, in Sardinia; Contu then remarked on the similarities between the Neolithic constructions and the pottery of Malta and Sardinia.

In 1963 David Trump was succeeded as Curator by F.S. Mallia, who had received his training in archaeology under John Evans in London. Mallia's main contribution to Malta's prehistory was orientated towards the Bronze Age; late in 1964 he actually joined a speleological team to excavate Ghar Mirdum cave at Dingli. Several Bronze Age artefacts were discovered at this site, of which the abrupt termination Mallia attributed to a catastrophic displacement of limestone rock.

In 1963 the Italian archaeological mission excavated a number of sites in Malta and Gozo. These included the Tas-Silg site in Marsaxlokk; the prehistoric megalithic building here was single-apsed and Tarxien phase, and thus contradicted Evans' proposed evolution from single to multiple apses during the Maltese Neolithic.

In the meantime, Kenneth Oakley was in Malta in November 1962, and the photograph below shows him during a visit to Ggantija with the Trumps. He



*Kenneth P. Oakley*

also had meetings with the Director of Museums, J.G. Baldacchino, over the issue of further scientific tests on the Ghar Dalam taurodont molars. In 1964 the Museum of Archaeology issued its *Scientific Reports*, where a censored version of the chemical tests carried out by Oakley was published. Only the unreliable Nitrogen results of the first four specimens were issued, with the

allegedly corrupted figure of 1.85% for Despott's molar. The Nitrogen results of the last three specimens (the two from the Hypogeum and Baldacchino's taurodont molar) were not released. The crucial Fluorine, Phosphate and Fluorine:phosphate ratio results of the first four specimens (tested in 1952) were omitted; on their own strength these had already settled the issue in favour of Despott's molar being pre-Neolithic (Mifsud & Mifsud 1997).

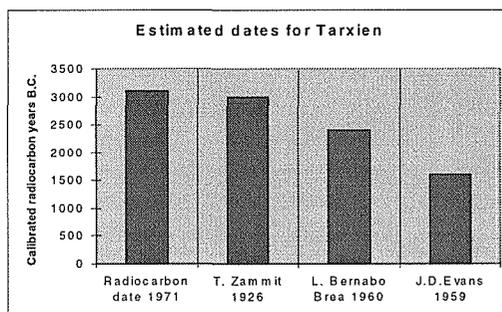
It was at this time that the first accusation of distortion of archaeological evidence by John Evans and Glyn Daniel was alleged. Brian Blouet, Professor of Geography at the University of Nebraska, was in Malta at the time, constantly involving himself in the activities of the Maltese Museum of Archaeology, and he was implying in 1965 that Evans and Daniel had resorted to these means in order to accommodate their theories (Blouet 1965: 9-10).

In 1965, Oakley carried out radiometric dating tests<sup>1</sup> on a series of Maltese specimens from the Mriehel site, where George Zammit Maempel had discovered a unique layer of lava above the Pleistocene horizons (Zammit Maempel 1982: 243-260). When in Malta in 1968, Oakley asked for Despott's molar to be dated by this method. He also asked for casts to be taken of the taurodont molars. Oakley took Despott's molar to the Natural History Museum in London and dated it. Once more it yielded the highest value, and confirmed its antiquity, and its contemporaneity with the Red Deer of the Ice Age. The interpretation of Malta's pre-Neolithic history by Zammit was thus re-confirmed by Oakley's scientific tests, and the situation ought to have then reverted to that originally outlined by Zammit and his contemporaries.

The seventies marked a crucial developmental stage in Malta's prehistory. Evans' catalogue of the *Prehistoric Antiquities of the Maltese*

*islands* appeared in 1971; its significant omissions included the 1964 report of the Italian Archaeological Mission at Tas-Silg, the scientific tests carried out by Oakley on the taurodont molars (Trump 1971: 237), and the human prehistoric skull remains at Mgarr and Hagar Qim temples. Almost immediately after its publication, calibrated radiocarbon dating nullified Evans' chronology, and the following year Trump's *Archaeological Guide* became the standard work of reference insofar as the prehistoric Maltese chronology was concerned. Colin Renfrew's *Before Civilization* established the Maltese islands as the earliest civilization in the Mediterranean.

Furthermore, calibrated radiocarbon chronology has proved that T. Zammit had been right all along. The Tarxien temples are now dated to 3100BC (Zammit's figure was 3000BC, whilst that of J. D. Evans was 1600BC). Moreover, Zammit's correct archaeological techniques also produced an accurate interpretation of the Tarxien Bronze Age, whilst Evans' correlations of both the Tarxien temple and the Bronze Age site are incorrect. Neither Arthur nor John Evans proved to be a match for the doctor.



The next major evolvment in Malta's prehistory was the conference at the University of Malta, on *Archaeology and Fertility Cult in the Ancient Mediterranean*; Anthony Bonanno had organized this in 1985. The consequences of the event were manifold; the two major developments were the excavation campaign at the Brochtorff Stone Circle and Anati's discovery of palaeolithic art forms at Ghar Hasan.

Between 1987 and 1994 the Brochtorff excavations yielded the remains of several

<sup>1</sup> Between 1955 and 1975 Oakley had carried out a total of 1,200 radiometric dating tests world-wide; this method was non-destructive and measured the radioactivity of the daughter elements of uranium oxide (Oakley 1971, 1980).

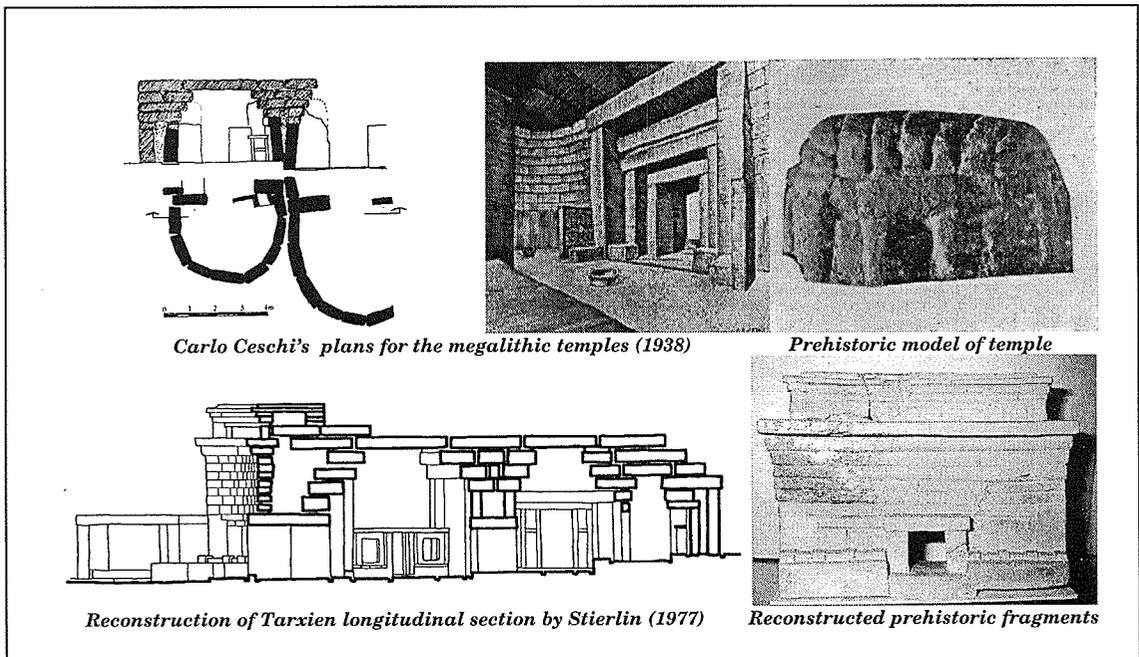
hundreds of prehistoric humans; new light was shed on the mortuary practices of the prehistoric Maltese, and several radiocarbon dates from the site have enriched the Maltese prehistoric series.

At Ghar Hasan, a natural cavern on the southeastern aspect of Malta, the remains of prehistoric rock-art forms are still to be seen. These were first identified in 1989 by the team led by Emmanuel Anati, the Italian archaeologist and prehistoric art expert. During their survey of the local archaeological sites, they uncovered a repertoire of cave art forms at the cave of Ghar Hasan; they had been preserved beneath a layer of stalagmitic material. Since exposed they have been vandalized severely, and survive only in the scantiest amount; the best shows the only surviving fragment of an elephantine image. The identification of such a mammal is significant for chronological purposes, for the elephant was endemic in Malta only during the Ice Age. Its representation in art forms at Ghar Hasan bears witness to the contemporaneity of this mammal with Maltese humans during the pleistocene period, the Ice Age in Northern Europe.

the Ghar Dalam taurodonts (Fedele 1988: 68). They submitted a report to the Malta Museum of Archaeology, wherein they also provided photographs and sketches of the paintings (Anati 1989b).

Marija Gimbutas attended the 1985 conference, and *The Civilization of the Goddess* (1991) featured her interpretation of the Maltese temple architecture *vis-à-vis* the Mother Goddess theme. According to Gimbutas, the form of the temples represents the body of the Goddess, whilst that of the Hypogeum represents her egg-shaped womb. She adapted J.D. Evans' cave-tomb to temple sequence in order to extend the concept of the sanctuary function backward in time to include the rock-cut tombs themselves; the rock-cut tombs became sanctuaries in their own right (Gimbutas 1991: 174, 262).

The non-implementation of the *Heritage Act 1996* was good news for research workers; the offending paragraphs were to be found in 'Part X – Investigation', paragraphs 37 and 38. During this year Leonard Mahoney published his *5000*



Anati and his colleagues remarked on the anomaly in Malta of the absence of other evidence of Palaeolithic man. They were not acquainted with the entire prehistoric tool repertoire of the Maltese Islands, and they were in no position to question the results of the scientific tests carried out on

*years of Architecture in Malta*, wherein his expertise in the architectural profession was made to bear also on several issues of Neolithic architecture. The rock-cut tombs had not evolved into the temples above ground; contrary to what Evans had asserted, Ceschi's roofing plans for the

temples were totally sound and feasible (Mahoney 1996: 1, 6, 10).

In 1997 Mifsud and Mifsud published the available archaeological evidence for a Magdalenian human presence in Malta; evidence was also produced to support their allegations of distortion of data insofar as the scientific tests on the taurodont molars were concerned. This hypothesis was contested by John Samut-Tagliaferro, osteopathologist at the department of the Malta Museum of archaeology, but supported by Charles Savona Ventura.

Savona Ventura and Mifsud reviewed the Ghar Dalam stratigraphy in 1998, and a new horizon was identified as the Carnivore layer. The importance of this stratum lies in its being the matrix also for human remains (Savona Ventura & Mifsud 1998).

1999 marks the centenary of the Hal Saflieni Hypogeum; at least three publications on Maltese prehistory are out this year. The local pharmaceutical companies, particularly Vivian Commercial Company, have sponsored the publication of *Prehistoric Medicine in Malta*, which was published by the present editors this year. Concurrently with this publication, *Malta – echoes of Plato's Island* investigates the ancient texts for the whereabouts of Plato's lost island. The *Temples of Malta* featured at Oxford University Day School in January this year; attendance was maximal. In May 2000 *Ancient Malta* will be featured in Cambridge.

The Prehistoric Society of Malta, in liaison with Christopher Stringer,<sup>2</sup> has recently provided another three new radiocarbon dates to the Maltese repertoire. These include the first ever dates from the Hal Saflieni Hypogeum and Burmeghez; another eight radiocarbon dates from these two sites are being scheduled.

#### **Contributors to Facets**

The spectrum of contributors towards this

volume covers a wide range of scholars, students, and members of the third culture. It includes the professors and senior lecturers in archaeology at the University of Malta, Anthony Bonanno and Anthony Frendo, who are responsible for the teaching and practical training of the new generations of archaeologists in Malta. Both Bonanno and Frendo have respectively held the singular post of Head of the Department of Archaeology at the University since its inception in 1987. Two senior archaeologists from the Department of Archaeology at the University of Cambridge have also participated. David Trump has been well-known in the archaeological sphere of the Maltese islands since the late fifties, and Simon Stoddart has featured significantly in recent years in directing and publishing the excavations at the Brochtorff Stone Circle in Xaghra, Gozo. Both have rendered sterling assistance in the building up of Malta's prehistory. The archaeology group also comprises Nicholas Vella and Andrew Townsend, two recent doctoral graduates in archaeology at the University of Bristol. Townsend is remembered at the Brochtorff excavations for being fortunate enough to pick up both the twin goddess and the stack of figurines, the two prize finds at the site. Vella is a recently appointed lecturer in archaeology at the University of Malta and coordinator of the archaeology programme at the Malta Centre for Restoration, Bighi. He has featured both at the Brochtorff site and at the on-going excavations at Tas-Silg, where he is site supervisor. Joseph Magro Conti is another Maltese archaeologist who, on behalf of *Fondazzjoni Wirt Artna*, is significantly and practically involved in the conservation and preservation of the cultural and archaeological heritage of the Maltese islands.

The professional archaeologists may be the main protagonists in constructing prehistory, but the participation of other disciplines is crucial. The Maltese architects of today are ideally suited to judge not merely the physical efforts of the Neolithic master masons, but also the driving forces behind their accomplishments. Richard England claims that he draws his own inspiration from his ancestral megalithic builders. He is

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<sup>2</sup> Head of Human Origins, Department of Palaeontology, at the Museum of Natural History in London, where the specimens were preserved.

not only well known for his architecture, which blends perfectly with the landscape, but also for his overt demonstrations against the destruction of our heritage, such as by the quarrying processes at the Maghlaq region.

Christopher Hunt and Patrick Schembri have joined forces to review the quaternary environments and biogeography of the Maltese Islands. Hunt is the Head of the Department of Geographical and Environmental Sciences at the University of Huddersfield, whilst Schembri is professor and Head of the Department of Biology at the University of Malta. Both are already well known for their international contributions in the field.

Themistocles Zammit has shown that the medical profession as well can contribute significantly towards Malta's prehistory, and four members of the Maltese medical and kindred professions have participated with their contributions towards this publication. Charles Savona Ventura is a consultant in obstetrics and gynaecology; his contributions towards Maltese medical history and the natural history of the Maltese islands are well known. His contributions as joint author with Anton Mifsud have in recent years included a review of the Ghar Dalam stratigraphy and *Prehistoric Medicine in Malta*. Anton and Simon Mifsud are both specialists in paediatrics, and their contributions towards Malta's prehistory has been mainly through their joint publication in 1997, *Dossier Malta - evidence for the Magdalenian*. Charles Galea Bonavia is a dental surgeon; he has liaised with his medical colleagues in investigating a practically unknown area for its palaeontological aspects; he is also an expert ornithologist. However, the contribution on prehistoric birds has been submitted by another ornithologist, J.J. Borg, presently in charge of the nature reserve at Mellieha. Both the latter and Charles Galea Bonavia have recently contributed significantly towards the local ornithological scene at the Ta' Cenc area. Daniel Sciberras is a sixth form student; he represents the younger generation who are investigating and assessing the evidence in historical and prehistorical issues, and who are questioning the

established notions of interpretation if these are not sufficiently backed up.

### **Facets 1999**

Towards the end of the second millennium, the interpretation of Malta's prehistory is being subjected to a revision. The date of the earliest occupation of the Maltese islands is still undefined; the presence of pre-Neolithic man in Malta cannot be excluded by negative evidence alone (Trump 1999: 33). The present head of archaeology in Malta starts the ball rolling. Anthony Frendo analyses and utilizes the process of epistemology in the elucidation of the recent controversy over the presence of Palaeolithic Man in the Maltese islands. His conclusions favour such a presence; it is more than probable that the first Maltese inhabitants were hunter-gatherers, and that they preceded the Neolithic farmers of the sixth millennium BC by as many as another six millennia. They gathered wild fruit and hunted the animals of the Ice Age; these animals constituted a significant component of the human environment.

Grahame Clark introduced an ecological approach towards archaeological study in the early 1950s; another that was more directly relevant for archaeological fieldwork thus substituted the traditional artefact-dominated culture-historical approach. Clark argued that several aspects of ancient society could be understood by studying how human populations adapted to their environments. This ecological approach to archaeological study requires the collaboration of several different specialists, which include, among others, biologists to identify animal bones, plant remains and pollen in the archaeological record, and geologists in order to assess the ecological and climatic conditions under which the archaeological deposits were laid down.

The Pleistocene deposits, with their biological remains and mode of deposition, are reviewed in an attempt to build up a biological and environmental sequence for the period ranging from the Pleistocene to the Holocene. Dating of these deposits has been chiefly based on faunal associations; the importance of a clear faunal chronostratigraphy is thus evident.

Typographical assessment of the archaeological deposit helps establish the climatic conditions under which that deposit was laid down. These efforts to glean information about the environment during archaeological fieldwork help build up an ecological picture of prehistoric man's environment and his way of life.

The earliest mammals of the Maltese Pleistocene period are discussed by Charles Galea Bonavia, and the area which is investigated for such remains is the Maghlaq region on the south-east coast of Malta. A comprehensive analysis of the Pleistocene fauna is then presented by Christopher Hunt and Patrick Schembri, who have both drawn heavily from their recent research work to produce this updated and exhaustive review. Prehistoric man in Malta also hunted birds on the wing in order to maintain himself, and J.J. Borg outlines the Maltese repertoire of quaternary avifauna in a preliminary checklist. The environment which is suggested by these birds which prevailed at this time, the Pleistocene, or Ice Age, includes both woodland and marshland. These papers by Hunt and Schembri, Galea Bonavia and Borg should serve as a work of reference for both students and scholars investigating the Maltese pleistocene period. A proportion of these animals made it possible for the Maltese man the hunter to survive, and, as in other prehistoric sites elsewhere, the Red Deer featured prominently as the quarry for early man in Malta.

Once his requirements for food and shelter were catered for, prehistoric man in Malta extended his horizon to embrace art, architecture and the supernatural. David Trump discusses the logistics of temple building during the late Neolithic period, when the native Maltese were already recognizing and solving architectural problems well ahead of their colleagues elsewhere. The megalithic Maltese dolmens are discussed by Daniel Sciberras; Evans, Trump and Bonanno assume they date to the Bronze Age, whereas Stoddart sees no conclusive proof of their forming part of a death ritual. No human remains, ashes or urns have ever been found associated with them. Nor can the sherds date these structures to the

Bronze Age, for these ceramic remains in their proximity have also represented the Neolithic and Punic periods. Another point that is raised is that the architectural association of some specimens with the megalithic temples cannot be dismissed as insignificant.

The leap towards the supernatural extended upward to the skies, the sun and the stars. Charles Savona Ventura deals with the complex concept embracing mythology, religion, science, healing, ritual and magic as practised by the prehistoric Maltese.

Pre-Neolithic man in Malta lived in caves and designed his images upon the cave walls. These depictions have already been described by Anati (1989), Mifsud & Mifsud (1997) and by Mifsud and Savona Ventura (1999). In the Neolithic period, the Maltese farmers, agriculturalists, and the temple-builders in particular designed other forms of art. Andrew Townsend does not fall into the "trap of minimalist or descriptivist thought", but makes the most of what is available, acknowledging Zammit's methods at Tarxien as a major contribution. Townsend reviews this repertoire of Maltese Neolithic art in order to elucidate its social context in Malta.

A thoroughly seasoned Maltese architect provides the link between the physical and supernatural parameters in the accomplishments of the temple builders. Richard England shows that the Maltese temples not only predate Stonehenge and similar structures by a millennium, but that the latter structures do not display their art in architecture, but in sculpture. The Maltese temples *enclose* space; the Stonehenge and like structures exist *in* space. The circle and variations of the circle naturally resonate with humanity's sense of sacredness and wholeness, and in his identification of the Maltese temples with mandalas (from the Sanskrit for circle) of the Middle sea, England is defining them as sacred circles of stone, enclosing sacred spaces that remind us of the immanence of sanctity and its potentiality in ourselves. A Mandala is a complex circular design, intended to draw the eye inward towards its centre; it transcends time and space, and is a

symbol of the interplay between time and eternity, form and formlessness. It is designed to facilitate the integration of the polarities of existence as experienced by human consciousness, and can best be seen as an exploration of the interface between the finite and the infinite, the personal and the transpersonal, the microcosm and the macrocosm.

The same concepts of space enclosures and design also apply to the Hal Saflieni Hypogeum. The walls merge into the floors, and its repertoire of art and architecture was not designed for a megalithic tomb; the whole labyrinth rather represents a womb, a symbol of life.

The supernatural parameter extended also into the womb of the earth, the final resting place of the dead. At the turn of the century significant prehistoric burials and deposits of prehistoric human remains were found respectively at Burmeghez, limits of Mqabba, and at the Hal Saflieni Hypogeum. Anton and Simon Mifsud review these sites in an attempt to show that, whereas the Burmeghez site reflects a true prehistoric ritual burial site, the primary and original purpose of the art and architecture of the Hal Saflieni Hypogeum was not a sepulchral one.

The issue regarding the original function of the Hal Saflieni Hypogeum is a crucial one, and a controversy still exists. Was its art and architecture designed in a tomb context, or was it meant as a subterranean temple, or sanctuary, possibly associated with the rites of the dead? If it were possible to simply ignore the non-sepulchral paraphernalia in order to label it as a megalithic tomb, then it can be related in form and time with the other prehistoric rock-cut tombs of the Maltese islands. If, on the other hand, its art and architecture were designed in a temple context, as Zammit and Trump suggest, then its architecture is also confirming that the temples above the ground were roofed as well, not with timber, but with slabs of limestone. This was shown to be so by the Mgarr model; it was actually suggested by Ceschi in 1938, and has been confirmed recently by Piovaneli and others. The tomb

proponents argue in an opposite direction. If the Hypogeum was a tomb, then the temples were tombs as well, and they would merely fit into the European sequence of megalithic chamber tombs, as proposed by Daniel and Evans in the late fifties.<sup>3</sup> The contribution by Anton and Simon Mifsud presents the evidence to show that the Hal Saflieni Hypogeum was not primarily and originally designed as a tomb, but as a sanctuary.

In more recent times, the Maltese archaeological site which has yielded the most significant amount of prehistoric remains was that at the Gozo Stone Circle in Xaghra, the Brochtorff Circle. The person responsible for its rediscovery, Joseph Attard Tabone, describes the history of its initial excavation, its loss and subsequent re-identification. The processes of life, ritual and death are reviewed by Simon Stoddart, one of the co-directors of the excavation campaign which extended between 1987 and 1994. Stoddart proposes newer methods beyond the "*dry bones that form the basis of our interpretation.*" He enhances the involvement of all the senses (vision, touch, sound, taste), especially the oft neglected audio parameters of the burial ritual, and indicates the significant effects of vocal resonance at Hal Saflieni in the Oracle chamber (See also Chalmers 1999).

The abrupt end of the temple-builders of Malta is still unknown. Hypotheses which have been suggested include disease, over-exploitation of resources, and major warfare. Aggression and defence in prehistoric Malta is a subject which has been poorly dealt with so far; the absence of weapons in the archaeological record for the Maltese Neolithic period is assumed to reflect a non-belligerent attitude of the Maltese Neolithic folk. Joseph Magro Conti bases his study on the local repertoire of artefacts which were possibly utilized as weapons during the prehistoric period in Malta, and conducts his investigation on analogies with similar implements abroad.

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<sup>3</sup> The caption for the photograph depicting Evans in the Hypogeum reads an "*extraordinary underground catacomb*" (Johnstone 1957: plate 25).

Bonanno relies heavily on the original excavation reports by Themistocles Zammit; these had been executed along the highest scientific standards prevailing at the time. Bonanno makes two significant recommendations. It is time for those artefacts which belong to the Early Bronze Age to be displayed in the right section, rather than in the Temple period section at the Museum of Archaeology in Valletta. The extensive repertoire of photographs at the same Museum should not be allowed to remain dormant forever. Bonanno's main theme, however, is re-utilization of megalithic structures. The temple builders were succeeded by Bronze Age people who adapted the megalithic structures for other purposes. Was there a continuity of religious cult at the temples such as Tas-Silg, eventually with an assimilation of the Neolithic goddess into the Phoenician deity? Was there a ghost Tarxien Cemetery phase at Tas-Silg? This re-utilization of the temple sites by the Bronze Age Maltese is analyzed by Anthony Bonanno, and the sites which are selected for this study are, besides Tas-Silg, Tarxien and the Xaghra Stone Circle.

Were the successors of the Neolithic Maltese foreign invaders, or were they the same people, as Stoddart is suggesting? What sort of ritual continuity existed after the end of the Neolithic period? At the end of the Maltese prehistoric period, a carry-over of religious practices into the Phoenician period is assumed to have taken place. This interpretation is questioned by Nicholas Vella; superimposition of architectural remains *per se* constitutes no proof of such continuity in religious beliefs. Rather than simple juxtaposition in the archaeological record, formation processes are the key parameters for investigation in the interpretation of the archaeological evidence. The prehistoric statue at the Tas-Silg site is investigated by Vella in this context in order to show that, in Malta, proof is lacking for such a ritual continuity from prehistory into history.

These are but a few of the various facets of Maltese prehistory which require to be re-addressed in the light of new research. Long quotations from the original texts are a feature of some of the contributions towards this volume; this has been felt to

be necessary in order to permit the reader to reach his own conclusions in controversial interpretations of the texts in question.

Frendo quotes Trigger (Infra: 26), "*the greatest obstacle to making progress in archaeology is complacency.*" "*Deeply entrenched*" interpretations may have to go. Zammit quoted in manuscript from Edward Clodd, *The Story of Primitive Man*, "*Progress is a modern idea ... the Orientals hate it ... the Chinese loathe it ... a stationary state is by far the most frequent condition of man. Races are bound hand and foot by custom, by taboo ... Vested interests and apathy have been the foes to advancement, so strong is the reluctance to change, so great the pain of a new idea, so dominant the power of feeling over reason, of that wish to believe which demands no effort, against that desire to know, which involves strenuous inquiry and application*" The situation which prevailed at the start of this century has persisted to its end.

And, in a related context, Oakley (1964: 94) quoted Max Planck, the Nobel prize winner for his theory of Quantum Mechanics: "*A new scientific truth does not triumph by convincing its opponents, but rather because its opponents die, and a new generation grows up that is familiar with it.*" The first draft on *The Maltese Dolmens* was written as a secondary school essay, at an age when young people start to insert their own impressions and opinions in writing. It has been included to convey some of these thoughts on Malta's archaeological heritage among Maltese youth today.

Richard England (1980: 45) quotes Goethe "*Daring ideas are like chessmen moved forward, they may be beaten, but they may also start a winning game.*" This series of articles is meant to stimulate a new generation of Maltese archaeologists to reconsider Malta's prehistoric past in the light of new evidence as it emerges. This volume is being published by the Prehistoric Society of Malta 1999. It is dedicated both to the father of Maltese prehistory, Sir Themistocles Zammit, and to the generations of the new millennium, to Maria, Michaela and Abigail's unborn daughter.

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# ARCHAEOLOGY, EPISTEMOLOGY, AND THE EARLIEST PHASE OF MALTESE PREHISTORY

Anthony J. Frendo

## *Introduction*

The relationship between archaeology and philosophy in general as well as that between the former and epistemology in particular has become a commonplace in archaeological research. This paper is not concerned with such vast themes in general; it simply purports to throw some light on the relationship between archaeology and epistemology as exemplified in the earliest phase of Maltese prehistory, and it aspires to do this via the presentation and application of the epistemology advocated by a philosopher still virtually unknown in archaeology.

## *Bruce Trigger*

The problem of the relationship between archaeology and epistemology in general has been recently dealt with in an admirable manner by Bruce Trigger in a study (1998) which is replete with useful bibliographic references. Trigger traces four main steps in the relationship between archaeology and epistemology from the 1960s up to the present moment revealing three main epistemological stances, namely positivism, realism, and idealism. In the 1960s, processual archaeology was positivist following a “*deductive-nomological model of confirmation*” (Trigger 1998: 6). Later on, archaeologists adapted the former rigid positivist stance by advocating “*a statistical-relevance model of explanation*” (*ibid.*). By 1984 some had taken a realist position (Trigger 1998: 7), but this did not last long since shortly thereafter up to the current time many archaeologists were in fact practising an epistemology of idealism owing to the impact of postmodernism on the social sciences in general (*ibid.*). However, it should be pointed out that Trigger notes M. Bunge’s position which indicates that “*all reasonable and productive scientists are scientific realists in practice, whatever epistemology they advocate*” (Trigger 1998: 7, n. 31).

Epistemology “*or the theory of knowledge, is that branch of philosophy concerned with the nature of knowledge, its possibility, scope, and general basis*” (Hamlyn 1995a: 242). The three aforementioned epistemological stances (positivism, idealism, and realism) indicate that this crucial branch of philosophy involves many moot questions and that it is very pertinent indeed to archaeology. The New Archaeology (processual archaeology) showed that “*in positivist epistemology, explanation takes the form of establishing regularities between different classes of observable phenomena and trying to group these to form more general patterns*” (Trigger 1998: 5). Trigger reminds us that the opposite pole of positivism, namely idealism is not a novelty in archaeology. Indeed, it can be traced back to Robin G. Collingwood who was both a classical archaeologist and a philosopher and whose idealist position means in practice that “*archaeological interpretation therefore consists of the ideas that modern archaeologists have about the ideas that people once had, and is an activity in which a scholar seeks to relive the past in her or his own mind*” (Trigger 1998: 3). When pushed to its logical conclusions, idealism is seen to enhance subjectivism and relativism and it is therefore understandable that it has led to postmodernism’s influence on archaeological research, namely that it lies at the basis of post-processual archaeology; indeed, according to the latter stance “*there never was a single past, only conflict and diversity in the struggle of other people to interpret their worlds. As we have seen, there need be no single meaning applicable to the materials we study, indeed their historical significance may lie precisely in their ambiguity*” (Barrett 1996: 577).

The extreme poles of positivism and idealism are mediated by realism, which at one and the same time supports both the proper role of imagination and verification not only in research in general

but also in archaeological investigation; indeed, *“the greatest obstacle to making progress in archaeology is complacency. Without the ability to imagine alternative explanations, archaeology languishes. On the other hand, without the opportunity and determination to test ideas, imagination is of little value”* (Trigger 1998: 27). Any archaeological interpretation has to be backed up by evidence which can and should enable us *“to alter even deeply entrenched understandings”* (Trigger 1998: 23). This does not mean the adoption of *“the formal positivist definition of laws as generalizations based on observations”*, because strictly speaking this would entail observing all the relevant cases of all times including the future - and this is impossible; indeed, in the real world *“proof always involves some element of faith”* (Trigger 1998: 21). In fact, realism also accepts the scientific investigation of *“processes or phenomena”* which though *“presently unobservable”* can be known conceptually, even if this is the only manner whereby they are known (Trigger 1998: 6).

The foregoing points show clearly that Trigger is advocating a healthy and balanced type of realism which can be very fruitfully practised in archaeological research. However, a close analysis of his position reveals that there is one epistemological point in his realism which appears to stand in need of refinement if his stance is to be fully realist and if certain errors in archaeological interpretation are to be avoided. He justly draws a distinction between archaeological interpretation and archaeological data, but at one point he seems to identify the latter with facts for when discussing the reaction of British archaeologists in the 1940s and 1950s to Collingwood's viewpoints he says:

*“Like Collingwood, they [the British archaeologists of the 1940s and 1950s] accorded ideas a major role in shaping human behaviour, but unlike him, they drew a clear distinction between facts and interpretations. They believed that archaeological data constituted the real and cumulative core of the discipline. Interpretations, on the other hand, were*

*matters of opinion that had little lasting importance”* (Trigger 1998: 3).

As it will be shown below, facts cannot simply be equated with data because a fact is a conclusion, namely a correct interpretation of the data which is reached on the basis of the self-correcting process of understanding.

### **Bernard J.F. Lonergan**

The epistemological position just outlined is that of critical realism and it has been advocated by Bernard J.F. Lonergan who, despite his important contributions to cognitional theory, is largely unknown even in philosophical circles. Thus, for example, he does not feature in the *Oxford Companion to Philosophy*; his name can neither be found in the entries nor in the index of this important philosophical work of reference (Honderich 1995). Indeed, *“of all contemporary philosophers of the very first rank, Bernard Lonergan has been up to now the most neglected. In what follows I shall attempt to summarise his philosophical position, in such a way that attention may be drawn to it from a wider audience than has been so far forthcoming”* (Meynell 1976: 1). Besides numerous articles, Lonergan has written two books with a bearing on the field of epistemology; one of them is a philosophical treatise on cognitional theory (Lonergan 1958), whereas the second deals with method in theology presenting in a summary fashion the main points of the first book and applying them to the field of theological research (Lonergan 1972). His writings contain important viewpoints on epistemology which can be fruitfully applied to archaeological research.

Lonergan once wrote: *“The primary need is for the theologian to know what he is doing when he is doing theology”* (1974c: 137-138). *Mutatis mutandis*, the same can be said of the archaeologist. In order for one to know what he is doing when he does something three prior questions have to be answered. The first is a question of cognitional theory asking: *“What am I doing when I am knowing?”* The second is one of epistemology and it queries: *“Why is doing that knowing?”*, whereas the third belongs to the field of metaphysics and it asks: *“What do I*

know when I do it?" (*ibid.* 138). The first two questions are linked since they both really deal with the theory of knowledge or epistemology. The third question pertains to the field of metaphysics which is generally considered "*the most abstract and in some views 'high-falutin' part of philosophy, having to do with the features of ultimate reality, what really exists and what it is that distinguishes that and makes it possible*" (Hamlyn 1995b: 556). However, for Lonergan even this third question is linked with cognitional theory for the answer to it follows from the answer to the first two questions (Lonergan 1974d: 37).

The answer to the foregoing three questions does have a bearing on archaeological research too, for when they are answered "*with philosophic generality, one is already in possession of a transcendental method, that is, of a method, that is as yet not specified by any particular field or subject but, by suitable additions and adaptations, can be specified to any field or subject of human inquiry*" (Lonergan 1974a: 203).

Thus, the whole basic issue in any field of inquiry, including archaeology, is one of cognitional theory. We have to know what knowing is in order to avoid the pitfalls of false interpretation. Lonergan's epistemology indicates that we come to know the truth in three steps which have been well summarised by Meynell. The first is that of experience which "*only gives us uncoordinated scraps of data*"; the second is that of understanding which "*grasps by 'insight' the intelligible unity in these scraps of data, in the act of concocting a theory which accounts for them*", and finally there is that of judgement whereby "*we affirm that the theory is true*" and we verify or falsify "*the judgement typically by renewed appeal to the data*" (Meynell 1976: 3). All this may seem so simple and obvious, and yet it is not so. Thus, for example, "*empiricism and materialism both presuppose in different ways, that it is only experience, and not the whole process of experience, understanding, and judgement, which actually puts us in touch with the real world; real knowledge of the real world, for these philosophies, is fundamentally a*

*matter of taking a look at what is open for inspection rather than of inquiring intelligently and reflecting reasonably*" (*ibid.*).

Lonergan's three stages of human cognitional activity allow him to draw a distinction between the "*external sources of historical interpretation*" and "*the sources of interpretation immanent in the historiographer himself*" (1958: 565). The former are the data which lie in the field of the historian's or archaeologist's experience and which are in fact "*spatially ordered marks on paper or parchment, papyrus or stone*" (*ibid.*). But the latter sources are the researcher's own cognitional dynamic structure of knowing which includes experience, understanding and judgement (*ibid.*). By exercising well these cognitional operations, the researcher should be able to see "*the range of possible meanings of documents*" and "*to determine which of the possible meanings are to be assigned to each of the documents*"; only under such conditions is it possible for there to be correct interpretation (Lonergan 1958: 578). Such a capability of the interpreter to see the range of possible interpretations of the data is called a "*universal viewpoint*"; this is "*simply a heuristic structure that contains virtually the various ranges of possible alternatives of interpretations*" (*ibid.* 564). It seems that archaeological interpretation is possible because of such a universal viewpoint which enables the researcher "*to transport his thinking to the level and texture of another culture in another epoch*" (*ibid.* 565). Such a viewpoint is universal not by being abstract but by being potentially complete in virtue of the researcher who activates his dynamic cognitional structure until he is satisfied that the truth has been reached; indeed, "*there are no interpretations without interpreters*" (*ibid.* 566). Thus, there is an indissoluble link between subject and object, between the researcher and the objectivity of the truth he strives for, something which he achieves via the "*self-correcting process of learning in which preconceptual insights accumulate to complement, qualify, correct one another*" (Lonergan 1972: 209). Indeed, an interpretation is said to be correct if there truly are no further relevant

questions to be asked regarding a problem at hand (*ibid.* 163-164, 167). The objectivity of truth does go beyond the subject, but only because he is "capable of an intentional self-transcendence, of going beyond what he feels, what he imagines, what he thinks, what seems to him, to something utterly different, to what is so" (Lonergan 1974b: 70).

Thus according to Lonergan's epistemology, facts cannot be identified with data; indeed, facts are established after the data have been correctly understood, namely when a correct judgement has been reached. In this context, it is important to remember that we have no tape-recordings or cinema stemming from antiquity; indeed, "there is no verifiable cinema of the past nor any verifiable sound-track of its speech. The available evidence lies in spatially ordered marks in documents and on monuments, and the interpreter's business is not to create non-existent evidence but to understand the evidence that exists" (Lonergan 1958: 582). Such a situation makes it even more urgent for the scholar, including the archaeologist, to realise that "confusion about knowing leads to confusion about interpreting" (Lonergan 1972: 154). And if confusion is to be avoided it should be remembered that unless the data, such as archaeological remains, are to be simply re-issued in exactly the same manner as that in which they were retrieved, then they will obviously have to be mediated to us via the experience, intelligence, and judgement of the interpreter; in fact, "the less that experience, the less cultivated that intelligence, the less formed that judgement" the greater is the risk that the data will be misinterpreted (*ibid.* 157) - a meaning will be imputed to them which is foreign to that which they once had in antiquity.

#### **Earliest dates for Maltese Prehistory**

All the foregoing points on the relationship between archaeology and epistemology, especially the main tenets of Lonergan's cognitional theory, have a bearing on the problem of the dating of the earliest phase of the prehistory of the Maltese islands. It is a commonplace that

the earliest human inhabitants on these islands are currently thought to have come here around the end of the sixth millennium BC during the Neolithic period. This quasi-dogmatic stance was severely put to the test when Anton and Simon Mifsud (1997c) claimed that this date had to be pushed back to a much earlier period, namely the Palaeolithic. Indeed, they say that "these last two centuries have witnessed the emergence of several archaeological artefacts which have modified the history of the Maltese Islands. The prevailing political situation has on several occasions clouded these discoveries into obscurity, specifically those which might trace the Maltese roots to a barbaric non-Latin stem" (*ibid.* x).

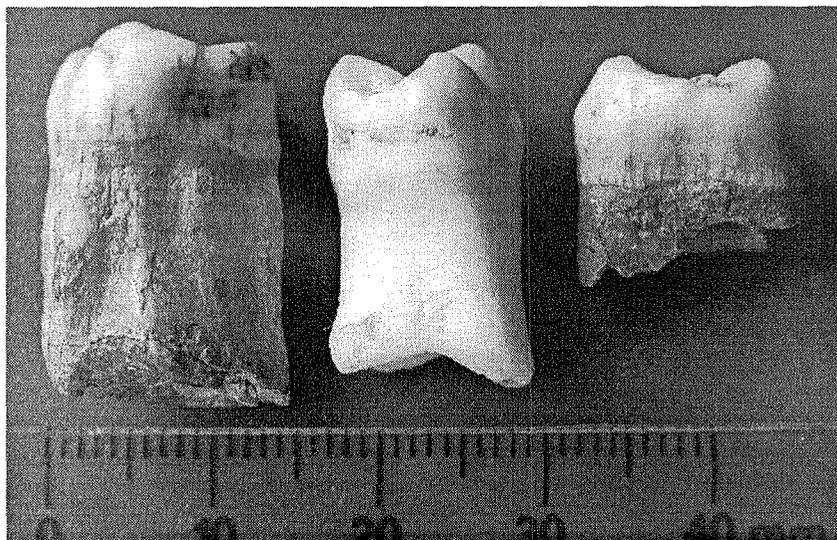
At the beginning of this century it was common to understand the very ancient human teeth and tools found on the Maltese islands as pertaining to Palaeolithic man, a view which was held until 1964 when two taurodont teeth (formerly thought to belong to Neanderthal man) were said to be (on the basis of nitrogen tests) modern. However, research on the sources indicated that some of the original results of the nitrogen tests had been tampered with, and that the fluorine and uranium oxide tests (which were more suitable but never published) showed that the aforementioned taurodont teeth predate the Neolithic period. This means that early man must have come to the Maltese islands in pre-Neolithic times; indeed, the microliths found on these islands, and Emanuel Anati's research on the cave art here confirm this conclusion (*pers. comm.* Anton Mifsud; see also, Mifsud & Mifsud 1997c: 43, 108-109, 146-150, 168-171, plates 2-5 and references there).

It is obvious that such conclusions are very different indeed from the common opinion regarding the date of the earliest presence of man on the Maltese islands, and in fact the aforementioned research by Mifsud and Mifsud triggered off a debate in the local newspapers. When one looks at the different viewpoints, one cannot help concluding that problems of an epistemological nature seem to be at stake.

*Hence, it is useful to see this problem in*

the light of the relationship between archaeology and epistemology which was treated above. The aforementioned evidence which was adduced by Mifsud and Mifsud to show that early man first came to Malta during the Palaeolithic was of a triple kind, namely dental, technological, and artistic. In what follows, the discussion will concentrate on the arguments centred on the dental evidence, and this for two reasons; partly owing to lack of space, and partly owing to the fact that in this case the technological and artistic evidence are - strictly speaking - circumstantial in nature. There could always be the possibility that types of tools and styles of art which characterise the Palaeolithic age can in fact spill over into and find themselves as residual in a later age such as the Neolithic. But there could be no such chronological ambiguity with teeth once they have been satisfactorily dated by scientific means.

by Baldacchino had in fact been switched. Samut-Tagliaferro criticised this stance as unfounded; instead, he thought that the contradictory results of the various scientific tests on the two molars just mentioned seemed "to render a confident conclusion about them unsustainable" (1997b: 33). So we are confronted with a choice: we either assert that the various scientific tests made on the two aforementioned molars simply cannot give an adequate answer, or else we opt for an epistemological stance which asks the necessary further relevant questions regarding a problem at hand and, in this case try to account for the contradictory scientific results in an adequate manner. It is this latter choice which the Mifsuds took in their untiring quest to unravel the problems regarding the contradictory scientific results just mentioned. Thus, for example, they remind us that the molar retrieved by Baldacchino had three important characteristics as described by



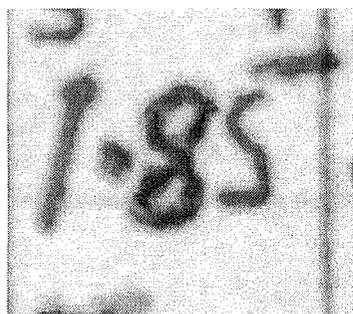
*The Ghar Dalam taurodonts flanking the largest Maltese modern taurodont*

### ***The dental evidence***

The first important reaction to the publication by Mifsud and Mifsud (1997c) appeared in a review of it by Samut-Tagliaferro (1997b). The main issue focused on the dental evidence which had been adduced by the Mifsuds. The latter had claimed that the value of nitrogen on the molar (Ghar Dalam 2) which had been found by Despott had been corrupted, whilst the molar (Ghar Dalam 3) retrieved

him, namely that it was a left lower third molar, that it was fossilised, and that it was a taurodont (Mifsud & Mifsud 1997a: 13). Moreover, in 1952 this molar had been tested by Oakley for its percentage of nitrogen and the low level of the latter was in fact enough to classify this tooth 'as a Palaeolithic specimen' (Mifsud 1997a: 26). The percentage of nitrogen in question was only that of 0.44, and this result had never been communicated to Dr. Baldacchino (*ibid.*). Indeed, it was

published for the first time by the Mifsuds in 1997 (1997c: pl. 5). When Oakley was in Malta in 1968, he requested to re-examine two taurodonts from Ghar Dalam one of which was Baldacchino's molar originally tested for its nitrogen content in 1952. Now it was found that the molar was modern and that it had lost its fossilisation; the molar must have been switched (Mifsud 1997a: 26). Indeed, radiography in 1995 also indicated that the tooth examined was not ancient (*ibid.*). Thus, the evidence marshalled by Mifsud indicates that the tooth examined in 1968 and 1995 is not the same as that examined originally in 1952. There is no direct evidence to affirm that an intentional switch did take place, but it is well nigh conclusive that the tooth in question is not the same.



*The figure which dictated the fate of the Ghar Dalam (1917) taurodonts - Scientific Report 1964*

Samut-Tagliaferro accepts the fact that the current figure of 1.85% of nitrogen content for the aforementioned molar Gh. D/2 was superimposed on the original result, namely that of 0.8%. He explains this as due to the repeated tests which must have been carried out on the tooth; indeed, all other teeth from Malta which had been examined for their nitrogen content underwent the same procedure with the original figures being adjusted. However, tooth Ma.1 had a second result of 0.79% which was written above the first one, namely 0.39%. Thus, there is no need to postulate any real change of the results registered (Samut-Tagliaferro 1997a: 56). However, an epistemological stance which pleads for an examination of all the evidence and asks as much further relevant questions as possible in the above-mentioned self-correcting process of

understanding, should make us realise that the figure of 1.85% is indeed strange and stands in need of an explanation. First of all, it is clear that the difference between 1.85% and .8% is not quite so minimal as that, for example, between 0.79% and 0.39%. Moreover it has been shown that, although all the nitrogen readings had been changed for symmetry's sake, the only one which was "altered in a different ink is for Gh. D/2; all the other readings are unaffected. This suffices to explain the apparent contradiction of Gh. D/2's nitrogen result with the fluorine, phosphate, the F/P ratio, the iron and the uranium oxide, which all confirmed the antiquity of Gh.D/2" (Mifsud & Mifsud 1997a: 13).

At one point in the debate on the antiquity of the two aforementioned molars from Ghar Dalam, the fossilisation of Gh. D/3 was compared with that of Neolithic teeth from Hal Saflieni and the Burmeghez Cave with the result that the degree of fossilisation was very similar indeed; this was taken to mean that Gh. D/3 did not date to pre-Neolithic times (Samut-Tagliaferro 1997a: 56, 57, pl. 2). Once again, however, a different conclusion could be reached if one's epistemological stance untiringly tried to examine all the pertinent aspects of the data at hand and to leave no further relevant question unasked. Indeed, it was pointed out that the aforementioned conclusion regarding the date of Gh. D/3 was incorrect because like had not been compared with like: the state of fossilisation depends on hydrodynamics, and the latter are very different at Ghar Dalam from those at Hal Saflieni and Burmeghez (Mifsud & Mifsud 1997b: 48).

### **Taurodontism**

Another important aspect regarding Gh. D/3 is that of taurodontism. Once again, it is the examination of all pertinent aspects of the data which leads to correct conclusions. The current molar which is allegedly Gh. D/3 is indeed a taurodont which (as shown above) had been recently dated to modern times; but, it is "of the meso-variety, which is also commonly found in modern humans" (Mifsud 1997b: 28). On the other hand, "Keith's original definition of taurodontism referred to the

hyper-form, insofar as it is associated with Neanderthal man. The hypothesis about the switch of Baldacchino's molar with a modern one is thus enhanced" (*ibid.*). Hence, the molar found by Baldacchino seems to be truly ancient.

### Discussion

In epistemological realism the final appeal to the data is crucial if correct judgements are to be made. The foregoing paragraphs show how such an appeal is leading to the accumulation of evidence which points towards the pre-Neolithic date of Gh. D/3. Moreover, it seems that there is further strong empirical evidence due for publication which supports this conclusion (Mifsud & Mifsud 1997b: 49). Once this evidence is published and seen to be exactly what it purports to be, then the matter regarding the pre-Neolithic date of Gh. D/3 would seem to be settled.<sup>1</sup>

One's particular stance on cognitional theory does affect the manner in which one conducts one's archaeological research. One could be unaware of one's own cognitional activities or of what it means to know and to reach a correct judgement thereby establishing facts, but despite this one still actually practices some type of epistemology. And the type of epistemology actually used does make a difference. The first part of this study has shown that in fact realism is the healthiest and most practical epistemological stance that an archaeologist can take; indeed, it was shown how other positions, such as idealism or positivism, can be self-defeating and contradictory. Bernard Lonergan's particular type of epistemological realism was closely examined and shown to be very applicable to archaeology. Indeed, the second part of this study focused on the study of some of the evidence regarding the date of the earliest human inhabitants on the Maltese islands. It was shown that the epistemological stance actually taken determined the results of the investigation. Lonergan's epistemological tenets actually helped the analysis of this

case study. Time and time again, the notion of the universal viewpoint which allows one to rise above one's feelings and restriction of time and place, the healthy use of imagination which allows one to form hypotheses in need of verification, the taking into consideration of all possible aspects of the data at hand, the continual asking of further relevant questions to a problem at hand, the final appeal to the data before a rational judgement is made, and the fact that truth is reached in judgement and not in understanding thereby underscoring the need of reflection and verification, all helped to show that at this moment in time the evidence tilts in favour of that position which claims that we do have some evidence to show that man came to Malta before the Neolithic.

This conclusion runs counter to the contemporary common opinion regarding the date of the earliest human presence on the Maltese islands. But a close look at the arguments and epistemological stances actually taken in studies concerning the date of two particular molars (Gh. D/2 and Gh. D/3) from Ghar Dalam supports the new conclusion. Additional evidence of a technological and artistic nature could have been taken into account, but in order to avoid any chronological ambiguity due to the possibility of typological continuity in different epochs, such evidence was not considered in this study.

### Conclusion

The research on the date of the dental evidence supports by itself the claim that humans came to the Maltese islands before the Neolithic period. Lonergan's epistemological tenet that the data have the last say but that they do so as mediated *via* the researcher's faculties of understanding and reflection (see above), has been practised in the new archaeological research undertaken by the Mifsuds. They have shown that "*there are no interpretations without interpreters*" (Lonergan 1958: 566) and that a fact is not the point of departure but the point of arrival of the human self-correcting process of understanding; indeed, a fact is "*the natural objective of human cognitional process*" (*ibid.* 331). The

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<sup>1</sup> No Nitrogen tests were ever carried out on Gh.D/1, Gh.D/2 and the presently designated Gh.D/3 (Mifsud & Mifsud, *The Archaeological Survey 1951*, forthcoming) [eds.]

epistemology they actually practised indicates virtually beyond any reasonable doubt that “during the Magdalenian, approximately 15,000 to 18,000 years ago, humans roamed the Maltese islands together with Pleistocene Siculo-Maltese deer and the occasional pachyderm. Malta’s history is thus extended backward by eight millennia” (Mifsud & Mifsud 1997c: 169).

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