



ΓΕΩΤΟΥΡΙΣΜΟΣ ΣΤΑ ΝΗΣΙΩΤΙΚΑ ΓΕΩΠΑΡΚΑ
GEOTOURISM IN INSULAR GEOPARKS

The caves of Psiloritis



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ΓΕΩΤΟΥΡΙΣΜΟΣ ΣΤΑ ΝΗΣΙΩΤΙΚΑ ΓΕΩΠΑΡΚΑ GEOTOURISM IN INSULAR GEOPARKS

The Geoparks of Psiloritis and Sitia in Crete, Lesvos in the North Aegean, and the Troodos Mountains in Cyprus, are monuments of geological heritage that have been incorporated in the European Geoparks Network, while they have been officially recognised as UNESCO Geoparks since November 2015. This recognition, besides adding value to them, also underlines the wealth of geological and cultural heritage at their disposal, and the special importance this heritage has as regards scientific and educational value, as well as concerning their quality and rarity on a European and global scale.

At the same time, it is a comparative advantage that highlights the unique developmental opportunities and potential that is presented, through the promotion, protection, and utilisation of this unique heritage and identity, for the sustainable development of the local communities, and their promotion and transformation into geotourism destinations par excellence.

In the framework of the joint effort to satisfy their common goals and needs, the entities managing the 4 Geoparks, the Museum of Natural History of Crete, and the Department of Forests of Cyprus jointly planned and submitted a proposal to the INTERREG V-A 'Greece Cyprus 2014 – 2020' Cooperation Programme, with the title 'GEOTOURISM IN INSULAR GEOPARKS' and the acronym GEO-IN, which was approved in October 2017 with a total budget of €950,000.

The main Goal of the Action is the growth of Geotourism, aiming at high quality specifications, differentiation, and strengthening of local economies, and, in general, self-sustained growth.

This publication is part of a series of publications aiming to highlight and promote the Psiloritis Geopark, which includes a photo album of Psiloritis geotopes, trail documents, and a speleological guide.



PSILORITIS (Mount IDA)

Psiloritis, or Ida as it was called in antiquity, is the highest mountain in Crete (at 2,456 m) and one of the loftiest in Greece. The north and west sides of the mountain drop away smoothly, down to various level areas and plains where stretch the pastures of the mountains of Mylopotamos, and lower down still the settlements. The east, south and southwest sides of the mountain though seem wild and steep in contrast, as from their peaks near vertical cliffs descend all the way down to the plains of Heraklion and the Mesara or peter out in the Amari valley.

The name of the mountain comes from Ida (sometimes spelt with different terminal vowels), which means 'forested mountain'. Indeed, in antiquity, the mountain was overgrown with timber, mainly made up of forests of oak, Cretan maple and cypress trees, of which little remains today due to excessive logging, overgrazing and fires. The name Psiloritis is a younger term.

This is the mountain in which the beginnings of Greek mythology may be said to lie. The main cave of Psiloritis, the Ideon Andron, was chosen by Rhea as a sanctuary where Cretan-born Zeus could be reared. The cave accordingly became a centre of worship of Zeus, and rightly enough it was regarded somewhat as the 'Bethlehem' of Greek antiquity.

The Ideon Andron has been of importance throughout the long history of the mountain: it is linked too to a number of different events that embody the whole history of Crete.

Legend has it that in these ancient forests the goddess Demeter lay with Jason to conceive Ploutos (Wealth). Here too King Minos ascended to receive the laws of the gods.

The mythical bronze giant Talos, who protected Crete from every would-be invader, gave his name to the small mountain range of the Talaia Mountains (or Kouloukonas) which branches out from the north side of Psiloritis. In the Gerontospelio of Melidhoni, Talaia Hermes was later worshiped.

Mount Ida has had its praises sung by both the ancient poets and more recent ones too. Always it has been a place identified with the beauty and freedom of nature.

Even in Homer Ida 'with its many springs' was noted as being rich in water. In the *Erotokritos*, it is remarked upon again for its springs and wells as for its vegetation, while in Dante's *Divine Comedy* the waters of the small river of Hell come from Ida.







THE NATURAL ENVIRONMENT

The peculiarities of the relief and geology of Psiloritis has formed highly individual conditions in terrain, microclimate and environment that have encouraged all aspects of life there to evolve species and separate forms that reflect the peculiarities of the particular mountain habitat in which they are found.

Flora

The geological and climatic diversity of the mountain is strongly reflected in the different types of its vegetation. The tree-like types of vegetation sometimes form small copses and at other times little forests on the slopes, in ravines and on plateaux.

Mixed woodland with impressive cypress trees and gnarled pines are mainly to be found in the south foothills of the mountain, while deciduous

oaks and woods are present throughout the mountain range, either standing alone or in smaller or larger clusters.

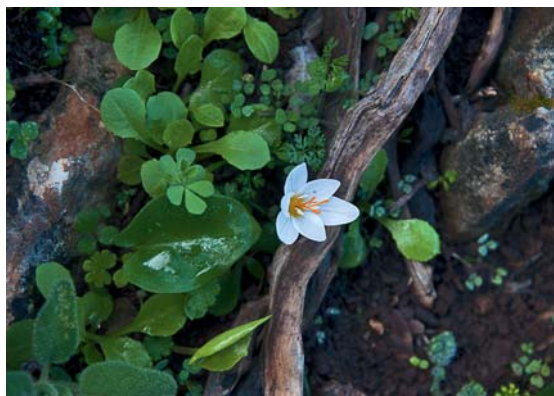
In spring and summer, the lower slopes of Psiloritis are filled with perfume. Spiny broom, achinopodia (*Genista acanthoclada*), thymbra (Mediterranean thyme), thyme, sage, St. John's wort, and thorny burnet – alongside many other species – create a colourful and scented paradise.

The maquis vegetation of the area includes carob, wild olive, mastic, bushy forms of cypress, oleanders, strawberry trees and others, which all are resistant to the Cretan summer drought, having generally thick, leathery leaves and deep roots. They can be seen everywhere, either as individual trees or tangled as a large mass of impenetrable shrubs.

Fauna

The isolation of Crete from continental areas has led to a fauna where many of the animals are in the process of evolving new species, or at least forms that are significantly different from the corresponding continental populations. Here, one of the few remaining populations of the Cretan wildcat hunts and survives, a phantom seldom glimpsed by the wildlife researchers in Crete.

In the greater area of Psiloritis and the Talaio Mountains, are to be seen all kinds of Cretan reptiles (geckos, lizards and the four species of snake that live on the island), as well as most of the mammals of Crete, such as the hare, the spiny mouse, the Cretan marten, the weasel and the badger.



Bird-life

Of particular importance is the area's birdlife, with a large part of Psiloritis designated as an Area of Importance for the same. Hundreds of birds, both large and small, find here places for roosting and hunting, locations to recover from the stresses of immigration and space to take refuge and rear their young.

Of all the Cretan mountain ranges, Psiloritis is the most likely where a traveller on the island will be able to see the famous "kokkala" or gypaetos – the Lammergeier or Bearded Vulture, one of Europe's largest and most spectacular carrion-eating birds. The Cretan population of this bird is probably the last viable one in the Balkans.

The lesser common vultures of Psiloritis also may impress the visitor with their magnificent team flying. These vultures, unlike the solitary Lammergeier, are birds that make large colonies: they nest on the steep southern slopes, using its gentler ones to the north to search for their food.

Besides the big carrion-eaters, a host of other predators complements the ornithological riches of Psiloritis: golden eagles hunt partridges on the slopes, Peregrine falcons, Bonelli's eagle, falcons and kestrels can all often be seen in their flights, quartering Ida.



NATURA 2000

The greater part of the Psiloritis mountain range is included in the NATURA 2000 register, under the code GR 4330005. Various habitat categories are listed, such as:

- Rivers of the Mediterranean with periodic flow
- Mountain and Mediterranean hilly terrain with spiny shrubs
- High-level shrub-land with *Juniperus Oxycedrus* ssp. *Oxycedrus* (prickly juniper/cedar)
- Dispersed and degraded garrigue
- Phrygana with *Sarcopoterium spinosum* (thorny burnet)
- Cretan *Euphorbio-Verbascion* formations: cushion-forming thermo-Mediterranean flora
- Steppe-like rocky meadows, above the tree-line
- Sclerophyllous forests used for grazing, with *Quercus ilex* (holly or holm oak)
- Mediterranean meadows with tallgrasses and rushes (*Molinio-Holoschoenion*)
- Balkan scree-slopes
- Calcareous rockland of the Aegean
- Primary meadows on rocky terrain
- Limestone paved terrain
- Caves that are not open to tourists
- Forests of *Platanion orientalis* (Plane tree)
- Mediterranean pine forests with endemic Mediterranean pine species





GORGES

The geological structure of Psiloritis has significantly favoured the creation of gorges, which in their turn have contributed to the formation there of a landscape rich in geomorphological diversity.

To the east, we have the gorges of Almyros, Gonies, Agia Irini in the Krousonas region, and of Agios Antonios at Asites. To the south lie those of Rouvas, Vorizia and Kamares. To the west is Platanias and to the north are Arkadi, Eleftherna, Margarites of Orthes, Mourtzana, with Zoniana and Myia in the area of Anogeia.

On the cliffs and rocks of the ravines is to be found their most important asset – a wealth of aromatic plants and those acclimatized to the steep cliff-sides, which in the spring and summer enrich the atmosphere with wonderful scents.



THE UPLAND PLAINS

Many of the small and large plateaux of Psiloritis are oases for the endemic species and for biodiversity generally: here are concentrated and preserved the unique species of flora and fauna of Crete. Typical of their sort are the plain of Nida, the Migeros plain, and those at Aravanes, Evdomo, Akolyta, Stroumboula, with a large number of smaller examples scattered across the mountain.



LIFE ON PSILORITIS

The impact of the natural environment on any area is a decisive factor – not only for human undertakings, but also for the very existence of life itself.

The rugged and rocky landscape of Psiloritis, with the absence of fertile lands of any size, has locked the inhabitants into an unceasing struggle with the weather, wearying themselves with their efforts to tame the land and to eke out a living.

This toil has made people resilient, often hard, patient, unflagging, smart and inventive. At the same time nature has helped to fashion their character – free-spirited, courageous and proud.



HISTORY

The history of Psiloritis is inextricably interwoven with that of Crete.

Minoan settlements are found all over Psiloritis, with important centres at Tylissos, Axos, Sybritos, Zominthos, Monastiraki and Apodoulou in the Amari valley, amongst others.

During the Geometric and Archaic periods, the cities of Axos, Eleftherna, and Sybritos, again with others, enjoyed a high reputation and success, while with the coming of Christianity all three supported bishop's seats (episcopal sees).

The region enjoyed great prosperity during the Venetian period, but thereafter during the Ottoman occupation it declined, as did Crete as a whole.

THE RELIGIOUS TRADITION

To judge from the finds made in the Ideon Andron (the Idaean Cave), the ancient Greek religion, with its roots in the Minoan period, survived in the area of Psiloritis until the time of Julian the Apostate (mid 4th century AD). Thereafter Christianity gained the upper hand, seemingly spreading throughout Crete early during the early Christian era.

In the broader area of Psiloritis, besides the monasteries, we also find numerous churches and rural chapels, with exceptional mural decoration, reflecting the evolution and trends of the Cretan School of Painting. This was an important iconographic style that developed during the Venetian domination of the island.



SETTLEMENTS – ARCHITECTURE

Psiloritis boasts a remarkable and diverse folk architecture, with a four-thousand-year long tradition moulding it. This was shaped both by the local geomorphological and climatic conditions and again by the different influences that Crete has received from, mainly, the Mediterranean cultures which it encountered in the course of its history.

Characteristic of the Psiloritis area is the sheer variety of architectural types and styles. The local folk architecture is distinguished by its simplicity – even austerity, as a scale that is centred on the human and the creative use of local materials. Typical examples of this are the dry-stone wall structures, the *mitata*, the summer living-quarters and stores for the Psiloritis shepherds, and again the folk architecture as developed in the villages of Mylopotamos.



CULTURAL – HUMAN ACTIVITIES

The inhabitants of Psiloritis never lost their age-old, almost sacred relationship with their land.

Their main occupations are based in the primary sector, harvesting the natural resources of the land. In agriculture, olive-cultivation dominates, while livestock farming is mainly practised in the traditional way, with free-ranging herds.

Local products also make up the staple ingredients in the traditional Cretan diet that, according to long-term scientific research, has proven to be of excellent quality and nutritional value. It is regarded as one of the healthiest in the world today.



ETHOS, CUSTOMS AND THE FOLK TRADITION

The wider area of Psiloritis enjoys a significant wealth of folk traditions, still upholding a dynamic relationship with the current social and natural environments.

The local ways and means, artistic events, folk art in all its expressions, dance and music and, in general, all the traditional doings of the locals are crucial elements in keeping local traditional culture alive.

The traditional Cretan virtue of hospitality remains deeply rooted in the souls of the inhabitants of Psiloritis.









PILORITIS GEOPARK

Its geographical location is the cause of the natural beauties and the exceptionally favourable climatic conditions for man that Crete enjoys. The especially rich natural resources with which Psiloritis is so endowed, when taken with the unique and complex geological processes recorded in its rocks, make it a perfect case for the study of the geological phenomena. In this way, it contributes to a better understanding of the evolution of Crete and the southern Aegean in general.

The Psiloritis Natural Park was founded in 2001 by AKOMM–Psiloritis Development SA OTA, with the scientific support of the Natural History Museum of the University of Crete.

Because of its rich biodiversity, beautiful scenery and its unarguable depth of history and traditions, the Psiloritis Natural Park was incorporated from the very moment of its inauguration into the European Geoparks Network and later into the UNESCO World Geoparks Network.

Today the Psiloritis Geopark plays an active part in world-wide efforts being made to both protect and improve the environment, alongside matters of natural and cultural heritage: all are conducted under the umbrella of sustainable, local development through education, geotourism and other forms of alternative tourist activities.

The main elements of the Geopark are the quantity of geological monuments the area hosts, the unique natural environment with its wealth of species (many endemic too), and lastly its cultural environment, i.e. culture, history, customs and traditions, which reveal the enduring and harmonious coexistence of man and nature on Psiloritis.





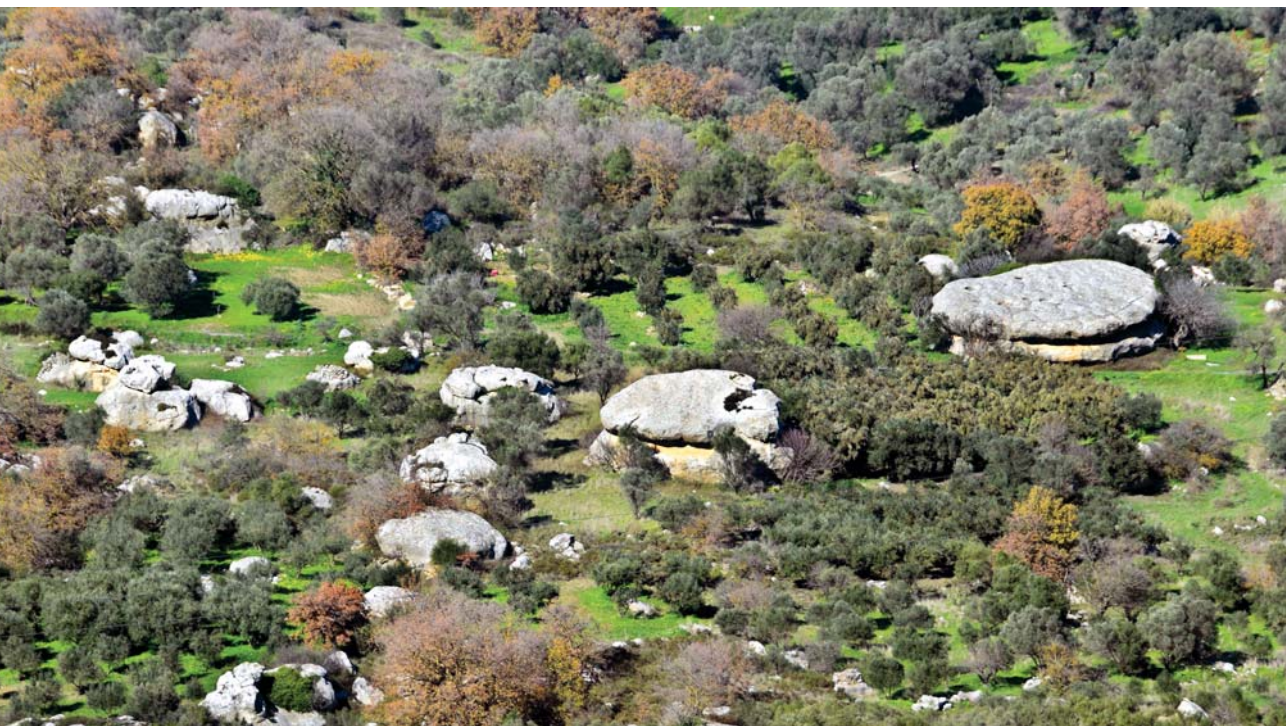
GEOLOGY

Psiloritis – Ida ‘lush with vegetation’, as the Homeric epics have it – where Zeus was nurtured and raised, is not so by mere happenstance and luck.

If the visitor seeks the underlying thread that runs through all the features of the fabric of Psiloritis, he will find it in the very land itself: which sprang up millions of years ago from the Mediterranean with its rocks forged by the constant collision of the African and European tectonic plates. These two plates as they move still determine today the fate of the region. Through the earthquakes, the mountains of Crete continue to rise, and with them –Psiloritis.

Over 2 million years, Psiloritis has grown by some 1500 meters, becoming the tallest mountain in Crete and one of the highest in the Mediterranean.

Water, cold and snow all cut deep into the rocks as they grew and so have created the gorges and the bottomless caves. At the same time, geological fault-lines, like knife-cuts in the ground, have slowly separated Psiloritis from his twin brother to the north, Kouloukonas: so very alike in all but his lesser stature. They have also created the deep surrounding valleys. On Psiloritis, there dominate limestone rocks and marbles, and to a lesser extent sandstones, clays and schists.



Tectonic

The intense forces that compelled the formation of the mountain ranges of Crete gave rise to a multitude of tectonic structures. Folds are relatively limited in number, occurring mainly in the area of the Nida Plateau, but the most representative ones are in the area of Vosakos on Kouloukonas, where are found impressive double-folds in the platy marbles with their typical white silicate inclusions.

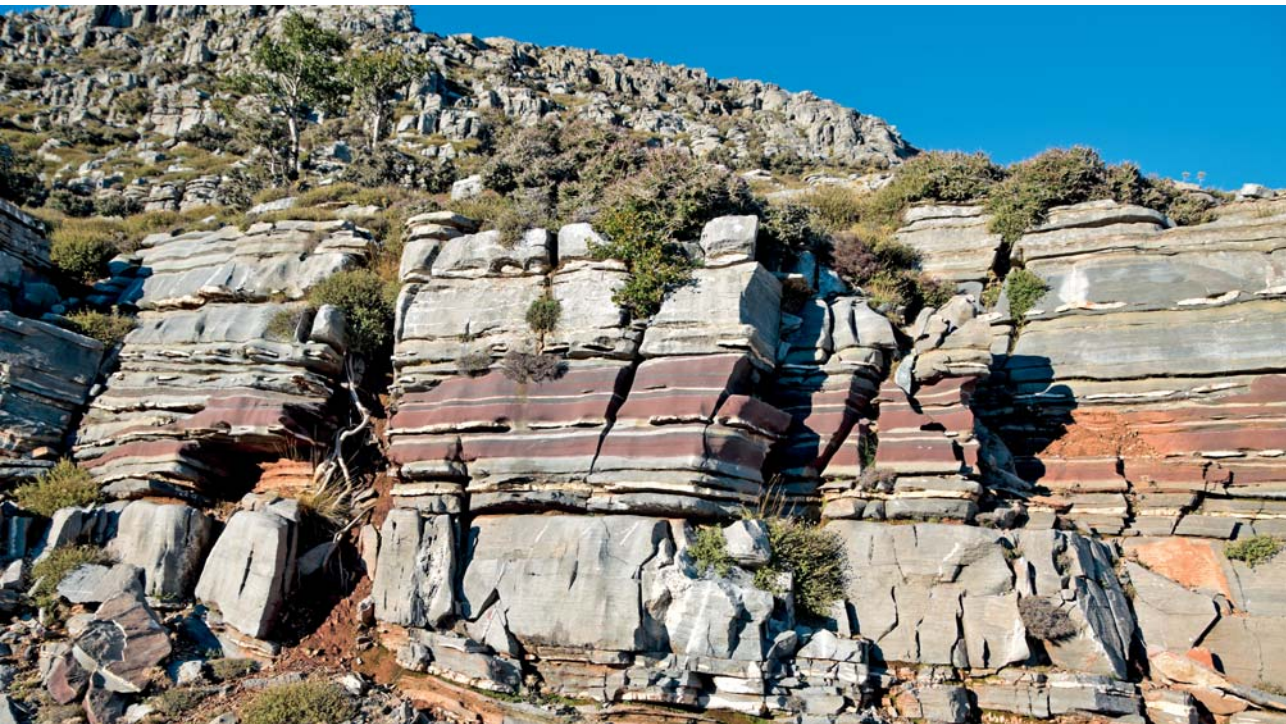
Faults are many – very many in fact, and on a relatively large scale. Almost all the borders of the Psiloritis mountain range are so characterized, owing their very existence to the action of large fault-lines. Very impressive indeed are those of the east slopes of the mountain range in the area of Krousonas–Tylissos, which essentially delineate the mountain range from the Heraklion basin. The same is true at the south edge, where two large fault zones, Gergeri and Fourfouras, define the mountain range from the basins of the Messara and Amari, respectively. On the north margin, there are several fissures, smaller in size, gradually reducing the massif as it descends to the Mylopotamos basin, and also helping form the south edges of Kouloukonas.

Besides these faults, a large one diagonally traverses the entire mountain range, starting from the area of Gergeri and extending to that of



Garazos. It is visible in the area of Nida, basically defining the border of the plateau of the same name: it contains the mouth of the Idaean Cave.

Equally striking from a scientific and hydrological point of view is the Cretan Detachment Fault. In the Psiloritis area in particular and to the north of the Geopark, this demarcates the limestone rocks of the Tripolis Zone from their underlying schist and phyllite rocks, as well as the Psiloritis marbles. Thus, water that penetrates the limestones is stopped deep down in its tracks by the impermeable phyllite and schist rocks: thus are formed spring-lines and caves beyond counting.





CAVES

Undoubtedly, the caves comprise the most impressive elements in the terrain of the Psiloritis Geopark, because of their number and their forms alike. They cover a huge gamut: from simple surface depressions (sinkholes and potholes), such as the Voulismeno Aloni, through cave-like recesses or rock-shelters, such as Spiliara in Rouvas, and embrace underground rivers such as Chonos in Sarchos, Chainospilios in Kamaraki, or the cave at Erfoi, all the way to bottomless abysses such as Tafkoura in Nida, which descends 960 meters. In every way the underground world of Psiloritis worthily rivals in its richness that on the surface.

Many caves are impressive because of their natural beauties. This is especially so for the cave of Sfendoni in Zoniana, covering 3000 sq.m. and partly accessible to the visitor, or again for the cave of Melidhoni with its huge stalagmites and stalactites. They comprise but two of the visitable caves of the island. Other caves, such as Chonos of Sarchos, Koritsi on Nida, or Kamilari by Tylisos, Palmeti in Stroumboulas, Mougkriat Sises and Tsoupa in Kalyvos, not forgetting Arkalospilios at Marathos, Spiliara of Astyraki, Notiki Trypa at Nithavri, Pana in Platania, and plenty more, are all renowned for their difficulty and danger of access, and again for the legends and traditions that their dark walls keep a close secret.

Certainly the most important caves of Psiloritis are first the Ideon Andron on Nida, where Cretan-born Zeus grew up and which thus became the most revered place in Minoan Crete, then Kamares above the Kamares village that yielded unique Minoan ceramics, Sfendoni in Zoniana and finally Melidhoni witness to a massacre during the time of the Ottoman domination. The last two and the Ideon Andron are open to the general public.





SPELEOLOGY

Today, the term Speleology is understood to mean the scientific research into caves and similar karst formations: it covers the formation, structure, physical properties, history, particular life-forms and the natural processes through which they are first produced (speleogenesis) and then change with the passage of the time (speleomorphology).

This is an interdisciplinary field that combines in its present form the cognitive fields of various sciences such as geology, palaeontology, anthropology, hydrology, topography, biology and archaeology, depending on the individual characteristics of each cave and the type of research being conducted into them.



Speleology in Greece

In Greece, Speleology began to develop systematically with the founding of the Hellenic Speleological Society (ESE) in 1951, under the leadership of Iannis and Anna Petrocheilou. Between then and 1970, the Hellenic Speleological Society undertook the recording of some 6,500 caves in Greece, most of them in Crete.

The urgent need to protect and study the caves led to the establishment of the Palaeoanthropological –Speleological Ephorate (EPS) by the Hellenic Ministry of Culture in the early 1980s, which has resulted in an increase in archaeological research into the country's caves.





EXPLORATION

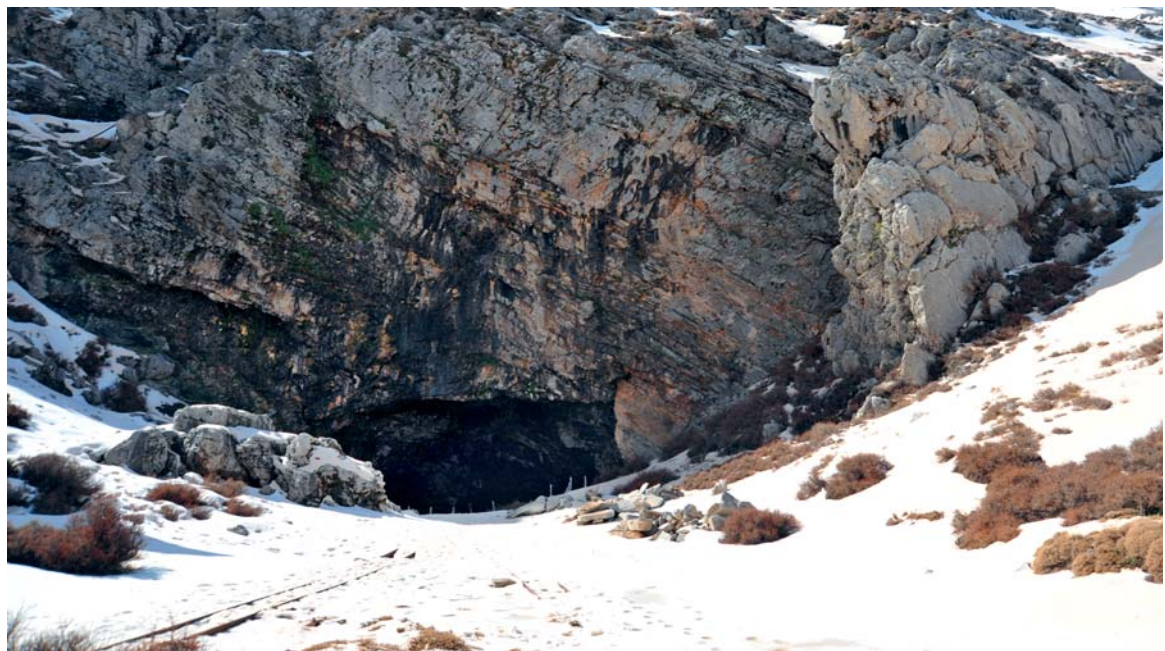
The exploration of caves is a very exciting experience, as those of Psiloritis and indeed of Crete in general are considered among the most beautiful in the world. Visitors come away impressed not only by the beauty of the geological formations, the underground lakes, the strange colours and uncanny echoes, but also because the caves have important historical and archaeological information to offer.

Many caves of Psiloritis and the Talaos Mountains have been explored by now; some are well-developed and open to the public. But there are still many that are untapped or not fully explored. In these latter sort, exploration is allowed only after the obtaining of a permit and of course only by experienced cavers.

The exploration of the caves does require specialist knowledge and skills; those undertaking this activity must be in very good physical condition and of course have all the right equipment.

We must always bear in mind that the caves are not only unique treasures of nature, but in many cases also of human civilization, and that accordingly they are strictly protected by the Archaeological Laws.





ARCHAEOLOGY – HISTORY – FOLK HISTORY

Mankind and the caves of Psiloritis, and of course in Crete broadly, have enjoyed a close relationship since the Neolithic period, when the caves protected humans from the weather.

Thus, the caves are inseparably linked to the people of Psiloritis and their age-old activities. From the very first moment of man's appearance on the island, the caves were exploited as places for worship, as living spaces, for the storing of cheese and other dairy products, as refuges and shelters in difficult times, and as places of sacrifice. That is why most caves have significant archaeological and historical value (and indeed all caves in Greece are considered as potential archaeological sites).

The darkness, the intense humidity and the constant temperature prevailing inside the caves, the dripping of water, the unusual fauna and flora they contain all seem to affect man and the way he perceives a cave – it acquires a transcendent meaning, as something outside and beyond the ordinary world that surrounds us.

This is an attitude that crosses space, time and cultural boundaries. From their Palaeolithic use through the Minoan sanctuaries and on down to the Byzantine ascetics and rural chapels, every cave in Crete has its own unique history or legend. Every story told or myth repeated has its own magic.

In the Minoan period, most of the caves on Psiloritis are associated with the worship of the chthonic deities. This sort of cult in most instances seems to have survived into the later historical years, even after the dominance of Christianity on the island: many places of earlier idolatrous worship morph into places of worship for the new religion. Thus in many cases one will meet chapels inside or at the entrances of caves. Only at the Ideon Andron does it look as if the earlier patterns of worship were preserved right until the time of Julian the Apostate in the 4th century AD.

Many of the caves of Psiloritis also became shelters for the locals during periods of persecution by invaders and conquerors. A typical example is Gerontospilios at Melidhoni. Hither fled 370 women and children from the area and then refused to surrender, but were all suffocated when the Turks set fires at the entrance.

BIOLOGY

As a bio-habitat, the cave presents a particularly distinctive microenvironment with stable and idiosyncratic features, dominated by the constant or near-constant uniformity of the atmosphere that prevails inside it. Small fluctuations in temperature and a high humidity are the factors that help the development of cave fauna and flora.

The fauna is divided into several broad categories:

First are those species of fauna that generally live outside the caves, but visit them occasionally for a particular purpose (a man could be considered such a one).

Second are those species that divide their lives more equally between the cave and the outside world (the most characteristic species here are the bats that nest and roost in the caves, but seek their food outside them).

The third are species that live exclusively and permanently inside the caves and usually in their dark zones. Because of the lack of light these creatures are usually white or transparent in colouring, and blind or with but limited vision.



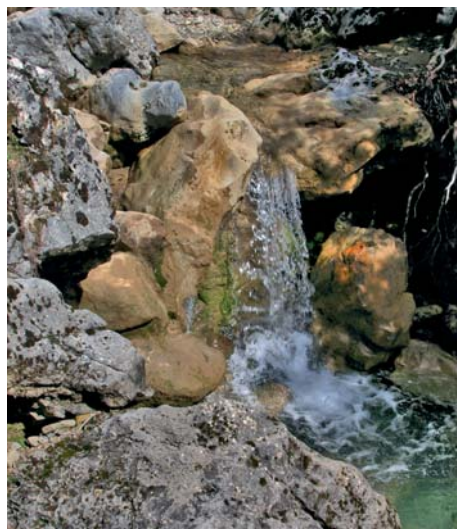


HYDROLOGY – HYDROGEOLOGY

The subject of hydrogeology involves the study of the underground hydraulic network: in extensive limestone areas such as Psiloritis this involves the many types of springs and similar sources of water.

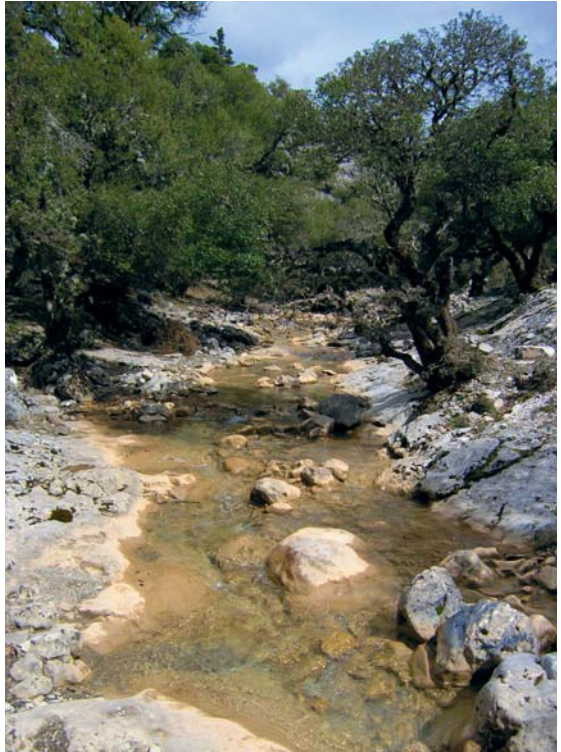
The nature of the carbonate-based rocks that dominate the Psiloritis Geopark does not allow rainwater to form large streams or rivers on the surface. A few large rivers do run through the small valleys of the area: such are the Geropotamos which springs from the north slopes of Psiloritis and crosses the Mylopotamos basin, ending in the sea; the Amarianus that drains the Amari basin, merging with the Platis river to the south; the Koutsoulidis starting in the forest of Rouvas that crosses the gorge of the same name and ends up at the Faneromeni Dam, as well as the Lethaios that originates in the area of Gergeri and after crossing ancient Gortyna ends up in the Geropotamos.

The most important hydrological feature of Psiloritis is that it acts as the water supply to all the underground basins around it, since the rocks operate as huge reservoirs of groundwater, which by way of the labyrinthine underground rivers – basically the cave passages – feed the peripheral springs or underground basins.



The most important of these springs are on the north and south slopes of Psiloritis. The largest is the Almyros in the province of Heraklion: its total annual output ranges from 150-200 million cubic meters, but it is unfortunately for the most part of this cycle brackish. Then follow the springs at Zaros and Gergeri on the south face of the mountain range. These sources are created due to the inclination of the rocky layers and the existence of large faults which cause the water to rise up and appear on the surface in the form of springs. Particularly distinctive too are the sources in Bali that rise under the sea: they also are fed by the waters of Psiloritis. They display the characteristic that for about six months of the year they emit fresh water into the shallow marine bays of the area, whilst for the other six months they take in sea-waters.

Very many springs of much smaller yield, and without a constant output, are found throughout the mountain range of Psiloritis, the Talaia Mountains and Kouloukonas.









THE SPELIOPARK

The dominance of the carbonate-based rocks in the area of the Psiloritis Geopark and especially the unusual succession these rocks make with impermeable ones, when combined with the complex geological history of the mountain, is responsible for the creation of caves without number. In the surface sinkholes and the yawning depths alike, and all the accompanying diverse shapes and sizes of their caves, through the subterranean cavities and voids within Psiloritis run the rivers missing on its surface.

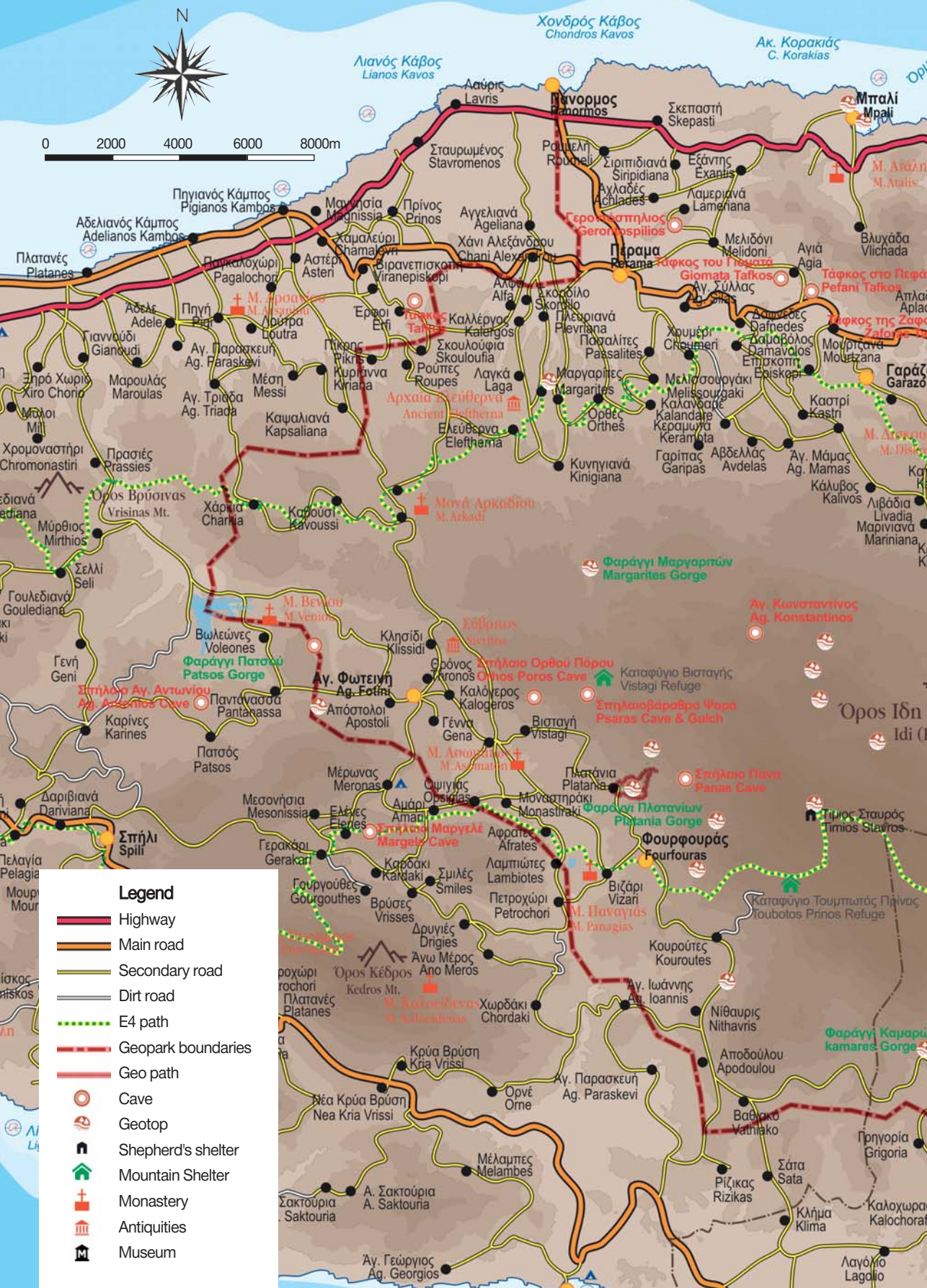
Many of these places are of a rare aesthetic beauty, sites of specific ecosystems, important for the movement and flow of groundwater.

The most important of these caves of Psiloritis could individually qualify as SpelioParks, suitable for all sorts of educational, athletic, scientific and tourist activities.

Of the caves in the Psiloritis Geopark, some are easily accessible and suitable for the general public, such as Sfendoni in Zoniana, Gerontospilios in Melidhoni, the Ideon Andron and the Kamares Cave, but others are challenging even for specialists, such as Chonos of Sarchos or Tafkoura in Petradolakia.

At present, only the caves of Sfendoni in Zoniana, Gerontospilios in Melidhoni and the Ideon Andron on the plateau of Nida have the conditions appropriate for a safe and organized visit, while all the rest are protected by the Archaeological Law and free access is not permitted.





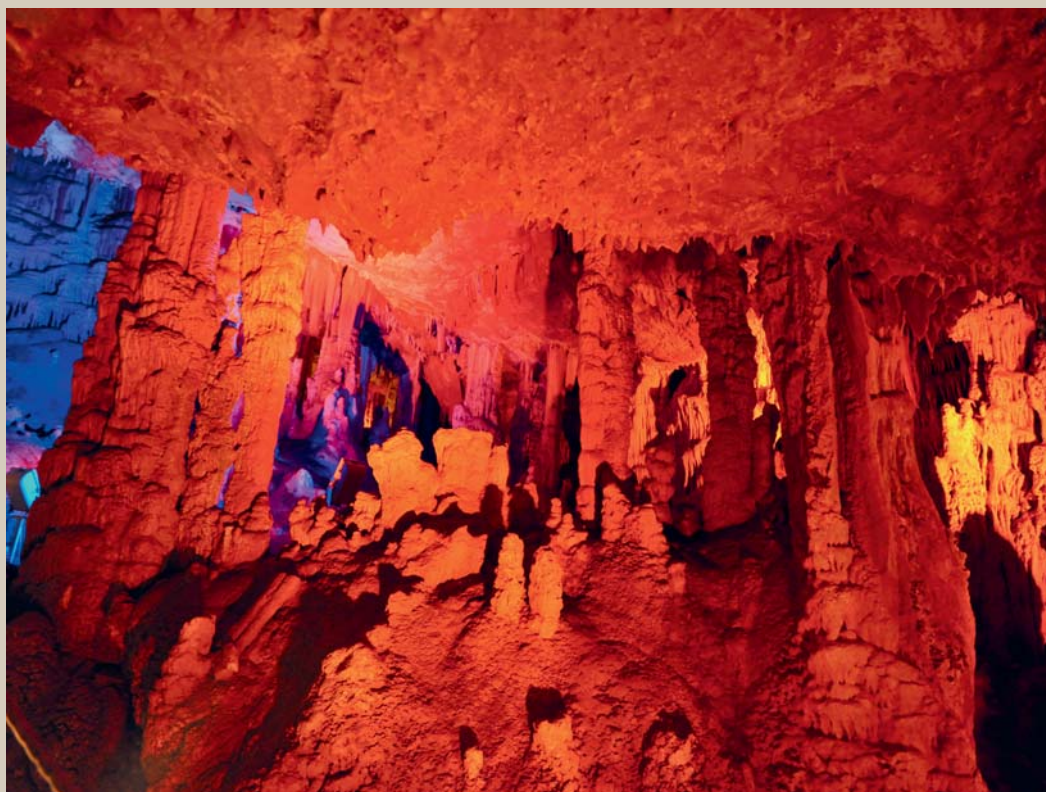


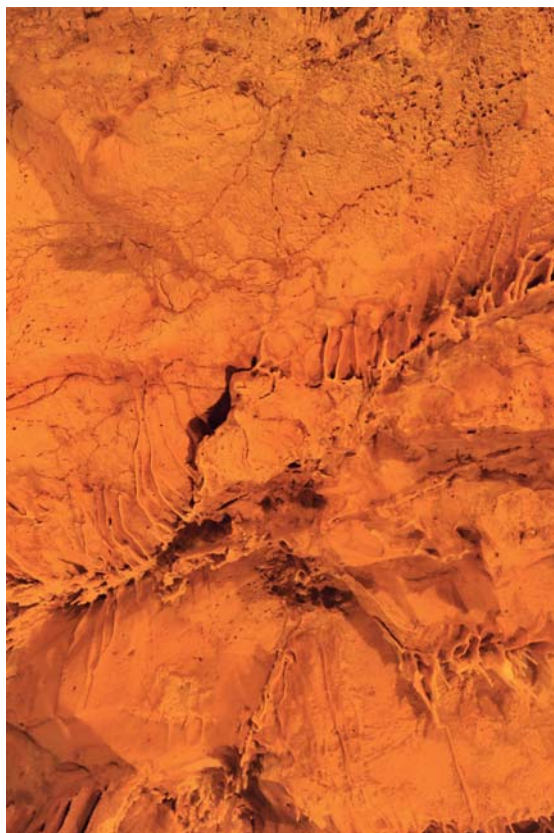




SFENDONI TRYPA

The cave "Sfendoni Trypa"
is located at the entrance
to the village of Zoniana,
in a strategic position
that overlooks the valley
of the Mylopotamos.



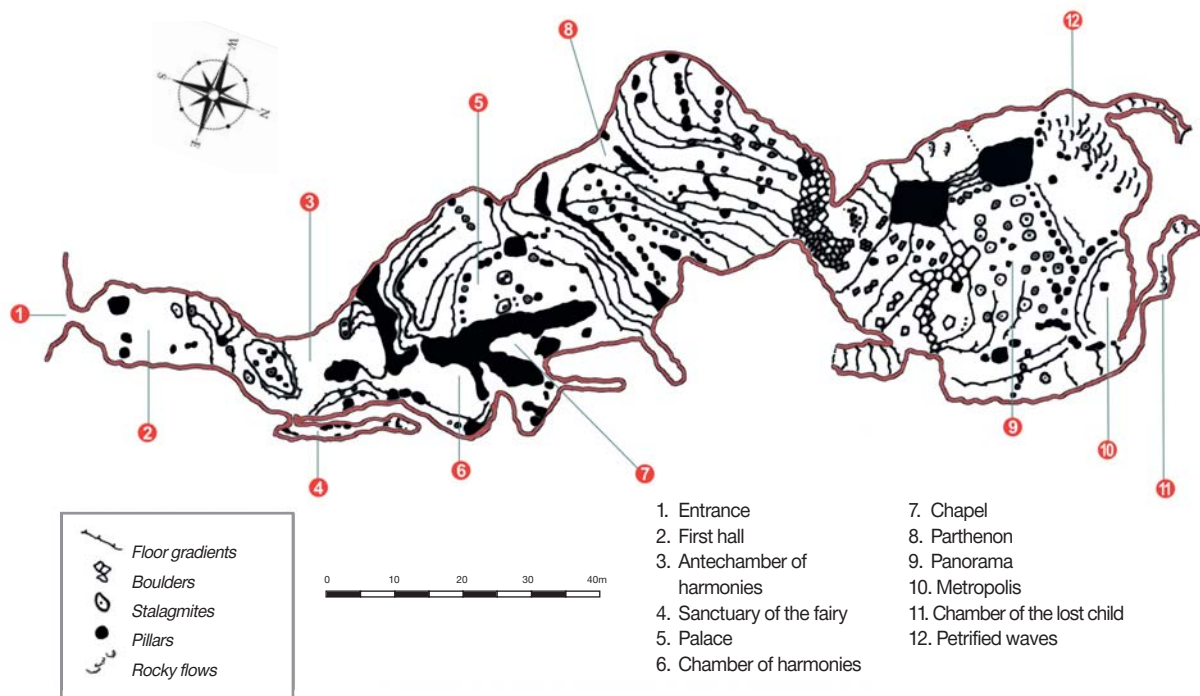


It is one of the "administered" caves of Psiloritis, that is to say it is kept accessible by AMEA: it is one of the most beautiful and important in all Greece, with a stunning physical splendour.

The area outside the cave is impressive too. Vertical cliffs rear up some 50 meters high, massive rocks lie scattered by themselves across the landscape, and amongst them nestle small clusters of thyme, oregano, thorny burnet and other plants – altogether they make up an impressive natural vista.

A major fault has played an important role in the creation of the cave, by demarcating the entire area of the hillside slope. The water followed a crack into the ground, so eventually forming a long cave (145 m) and carving out a total area of approximately 3,000 sq. m. The accessible section occupies about two-thirds of the cave, with the length of the circuit of the path for visitors being about 270 m.

Inside the cave there dwell four species of bats and a few dozen invertebrate species – molluscs, spiders, pseudoscorpions, isopods (such as woodlice), diplopods (such as millipedes), kolembola (such as springtails), orthopteran (crickets and such), amongst others. Some are colourless and blind. At least two species are





known only from this cave. Moreover, the cave has an archaeological value: the pottery, which excavations have brought to light, shows that there was a continuous use from the Neolithic age until today.

In earlier times, the cave seemed to have been used as a hideout too. Tradition has it that a rebel called Sfendonis took refuge in the cave, from whom it acquired the name of "The Hole of Sfendonis".

Another story has a nymph hiding in the cave, who, at a certain time each day, came out and went to the spring a bit lower down at Skafidia. A shepherd who had seen her many times tried to approach her, but she disappeared every time back into the cave. One day he waited for her in hiding, and hit her with a slingshot (Sfendonis).

One version of the myth has the fairy taking refuge in the cave, leaving her blood-stained scarf at the entrance. In another version, the shepherd approached the wounded fairy. Bewitched by her beauty, he tried to kiss her, but she put him off, by telling him that if he did not bother her, she would give him a reed wound with a silk thread that would never run out.

The shepherd, however, persisted in his efforts to kiss her: crying out, the fairy cursed him so that his hands – and those of all the members of his family – would shake and tremble for ever.







IDEON ANDRON

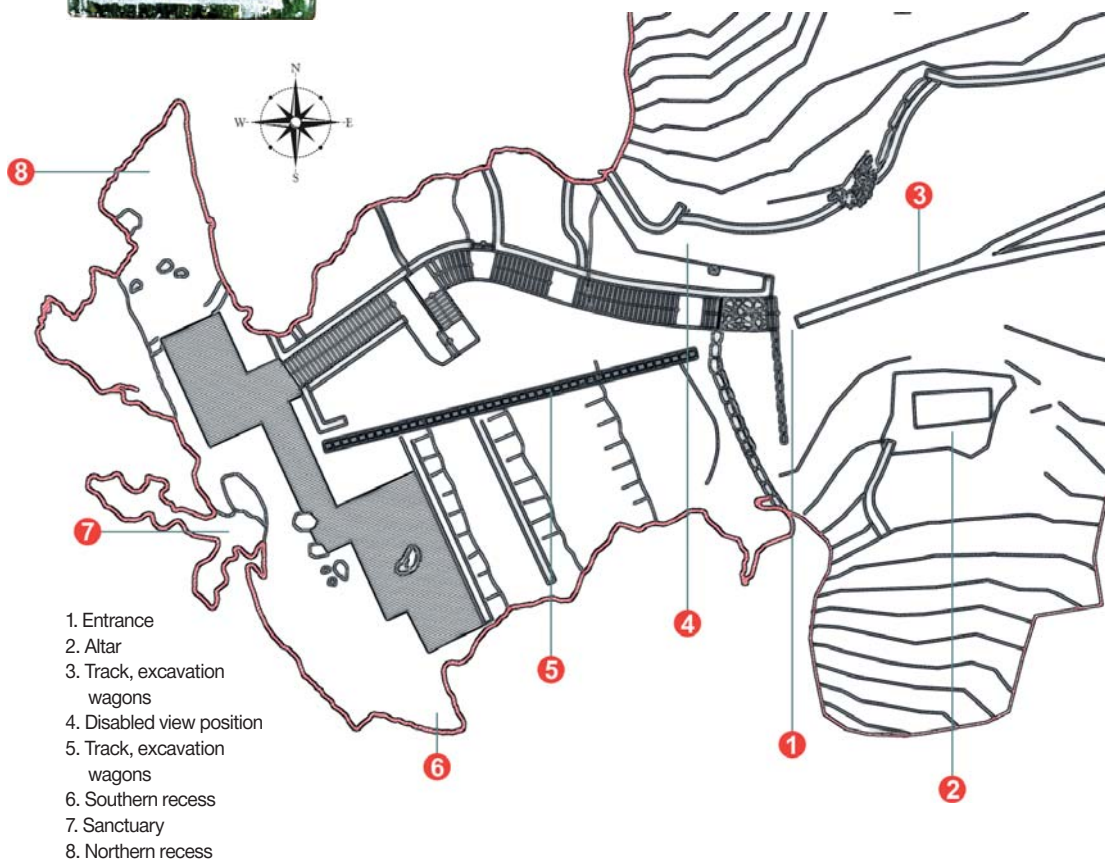
The sacred cave of Crete, it gained Panhellenic and even 'worldwide' reputation – so becoming a great centre of worship and a place of initiation. It is located on the west side of the Nida plateau, at the foot of a steep slope, at an altitude of 1538 m. Here, by tradition, Zeus was brought up to the sounds of the drums and with the dances of the Daktyloi of Ida (Kouretes).





Already by the 15th century BC, there are signs that it was an important place for the worship of Zeus. Indeed there are indications of its use since the Neolithic era. Its fame spread throughout the Greek world, so that it became one of the most important centres of mystical and spiritual activities in antiquity. The rituals of cleansing and initiation attracted a large number of pilgrims, among whom were numbered great philosophers of Greek thought, such as Epimenides and Pythagoras.

The initiation ceremonies took place inside the 'sanctuary' area of the cave, that is high up on the west side of the main chamber, directly opposite the huge entrance. Celebrations in honour of Zeus were associated with the rebirth of nature in the spring. At the entrance of the cave lies the shaped altar for the sacrifices. The rich finds of the cave, made in excavations, confirm the importance of the cave: they include





such as weapons and utensils, bronze and clay figurines, bone and ivory objects, gold jewellery, bronze tripods and lebetes, bronze discs, drums and shields with rich iconographical representations. All these are today housed at the Archaeological Museum of Heraklion.

The first excavations were made by the Italian archaeologist F. Halbherr, after in 1884 a shepherd from Anogeia found the first ancient objects in the cave. Later excavations were made by Stefanos Xanthoudides, Paul Faure and Spyridon Marinatos.

Thereafter, the archaeologists Yannis Sakellarakis and Efi Sapounas-Sakellarakis, after a systematic excavation here, helped fashion a more complete picture of the Ideon Andron.

Yannis Sakellarakis writes thus on the importance and value of the Ideon Andron:

"... there are many references to the Idaio Antro about the conversation Minos had with Zeus every nine years, from Homer on to Strabo, Pindar to Euripides and Plato to Theophrastus: references that made the Idaio Antro famous even in antiquity.

Two great excavations here in 1885 and a





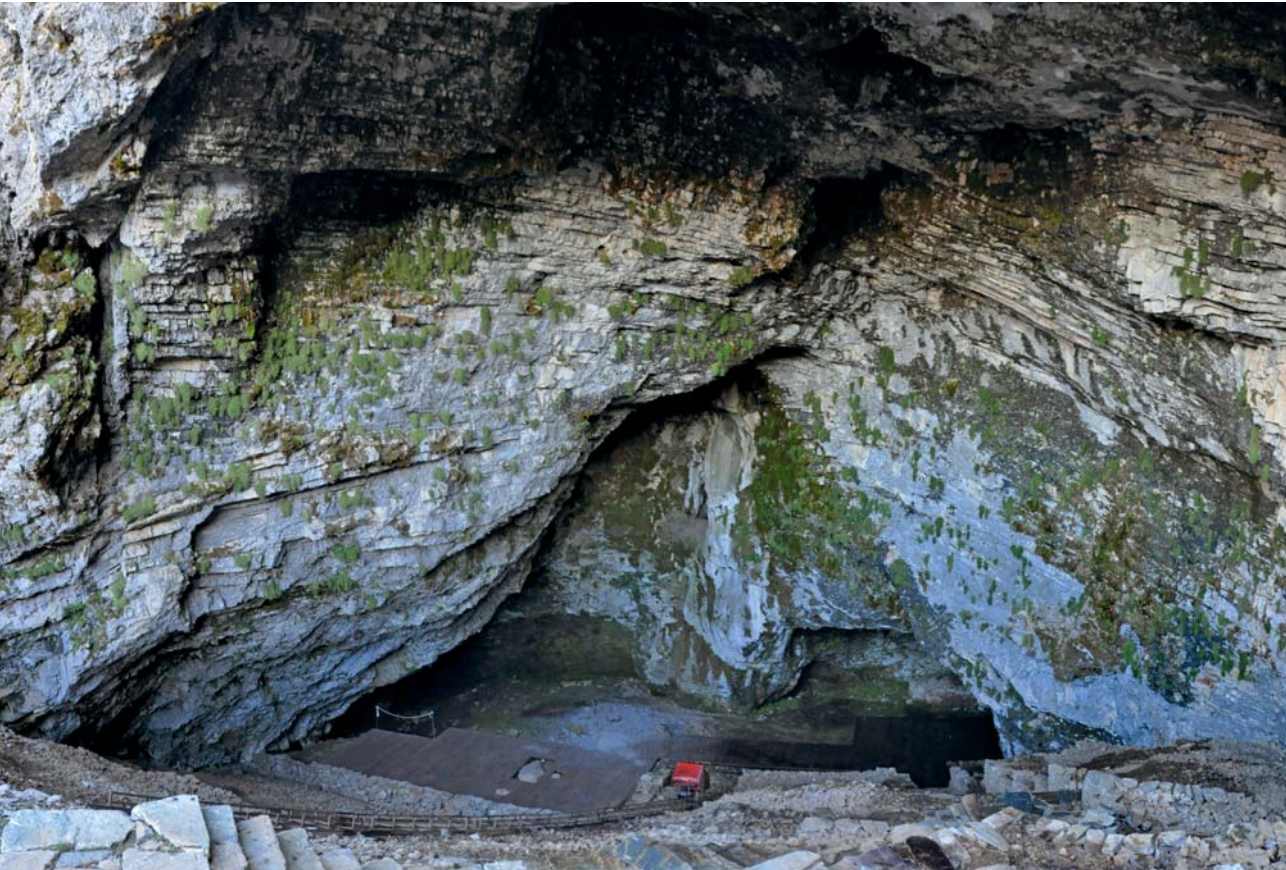
hundred years later in 1982-85 have born witness to the intensity of cult in this 'Bethlehem' of antiquity. The enormous quantities of finds from the most precious of materials – gold, silver, copper, ivory, semi-precious stones – let alone those of faience, rock crystal, glass, bone and clay, accompanied by a variety of vases and vessels, coins, seals and jewellery, stand comparison only with those of other Pan-Hellenic shrines. The famous copper shields of the Idaio Antro are among the finest works of art in the ancient world. There are many imports from Egypt and the Syro-Palestinian coast, but also from further afield than the East. Artisans from northern Syria worked on the construction of the ivory throne of Zeus, which tradition says that Pythagoras beheld. Thousands of pilgrims carried in their hands lamps made in various Cretan workshops, but also at others in Corinth, Attica, Italy and Egypt.

In the Idaio Antro, occupation begins at the end of the 4th millennium BC, in the final Neolithic years, and has continued unbroken since then. Naturally, worship has enjoyed different flourishes: in the 16th century BC, in the Geometric years in the 8th century BC and in Roman times. Even in the time of Julian the Apostate, a certain Plutarch boasts that he was initiated into the mysteries of the Idaio Antro. In

the second millennium BC, the recipient of the cult is the Minoan God of Vegetation, who dies and is reborn every year. That belief explains why his successor, the Cretan-born Zeus – although for all other Greeks an immortal – is believed by the Cretans to die every year at the cave and to be reborn there. As it is so in this place, where winter wipes out every trace of life, only to have it revive again in the spring."

The cave is also associated with newer folk traditions of the inhabitants of the area, such as the story of Charidemos and his wife. He accidentally killed her while out hunting in the woods of Ida. Accordingly the local shepherds call the cave "Spiliara of the Shepherdess" because they believed that they buried the shepherdess here. Whoever finds the grave, they say, will become rich.

Nowadays the cave, after work was done in establishing a route for sightseers, is able to be visited. In the area surrounding the cave there are the bases for old statues, and at the entrance there is the huge altar carved out of the rock.







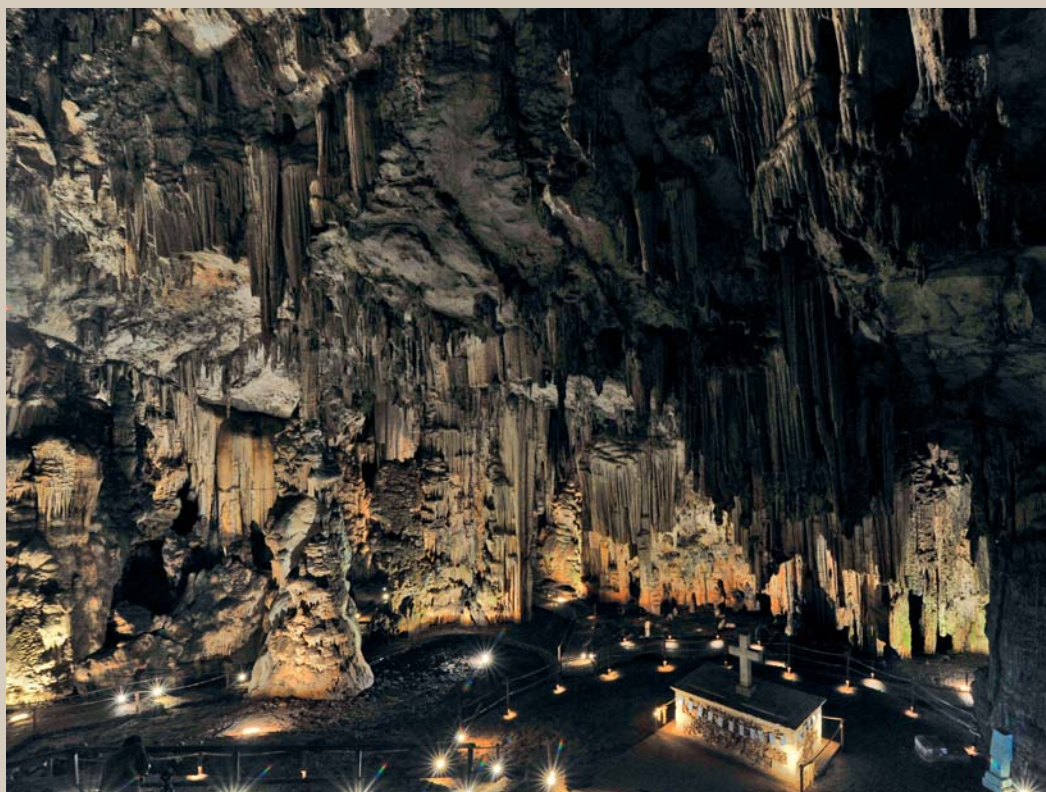




GERONTO- SPILIOS

On the north slope of the hill overlooking Melidhoni is Gerontospilios, one of the most interesting, from the archaeological and historical points of view, of all the caves of Crete.

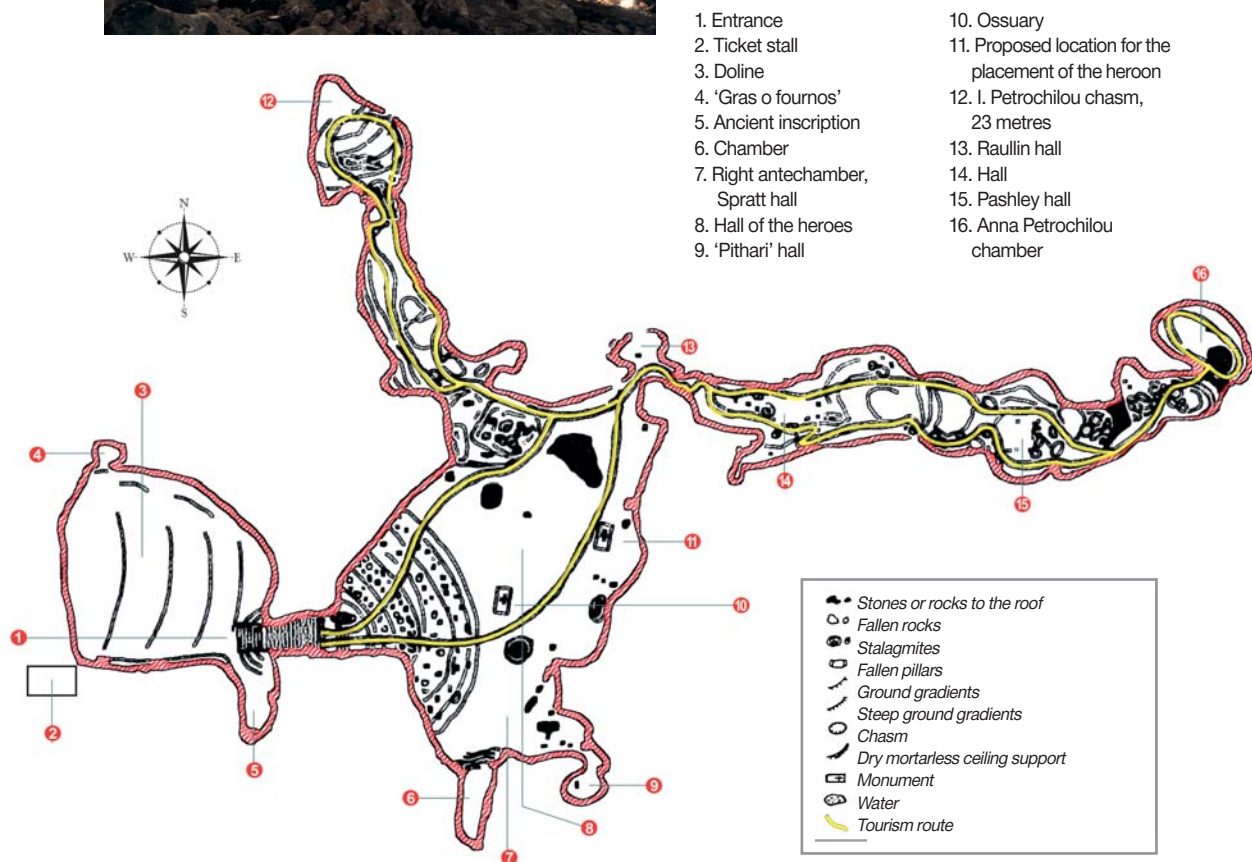
The *Tallaeum Antrum* of antiquity, it is today known as Gerontospilios.





It is a cave in which the visitor can only admire the first but quite impressive chamber, as the others, and the deepest, are closed due to archaeological concerns. Its main hall is one of the largest in Crete, with stalactites and stalagmites of enormous dimensions. The cave mouth lies in the eastern side of a small sinkhole, in fact created by the collapse of part of the cave itself. It is notable for an arched entrance with a view of Psiloritis beyond. Inside, the cave consists of two main spaces, the first of which is 50 x 30 m in size and the second 40 x 5 m, both about 16-25 m high; they are on two levels due to a strong slope and are rich in decorative stone formations. Above the cave are two faults, which lie on the same axis as the chambers.

It is an important archaeological site, where excavations have brought to light rich finds. Research has shown that the cave was used as





a living-space (vases, fireplaces, tools and bones), and also as a place of worship (bronze axes, figurines, lamps) operating from the Neolithic and Early Minoan periods down to the 3rd century BC. At the entrance are inscriptions, some of them dating to 1st or 2nd centuries BC (the Roman period), and related to the worship of Hermes.

During the Minoan and Classical periods, though, the cave was dedicated to Talos, the mythical giant made of bronze that protected Crete. In the Roman period, however, it was Hermes who was worshipped here. The sinkhole before the cave had been adapted for the conduct of rituals. An inscription of that period was cut in front of the entrance to the cave.

However, Gerontospilios is remembered today above all as a place of carnage, since during the Ottoman period hundreds of women and children found a horrible death here. 370 women and children who had taken refuge inside, and refusing to surrender, died of smoke suffocation when the Turks set fires in the entrance. Now there is a stone ossuary in the entrance chamber, while a chapel has been built at the entrance itself.



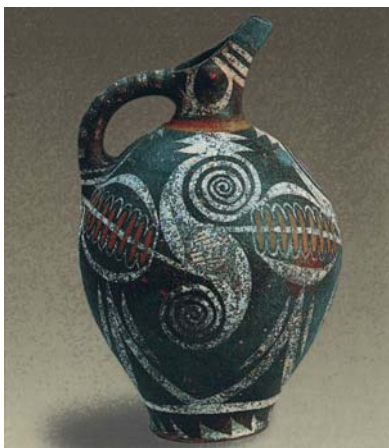




KAMARES CAVE

The cave of Kamares
is located on the south slopes
of Psiloritis, right under
the "Mavri Koryfi":
it is one of a few caves
to be found at such
high altitudes in Crete.





Consisting of a large main chamber, it lies within the dolomite limestones of the Tripolisknappe, and just below the Cretan Detachment Fault.

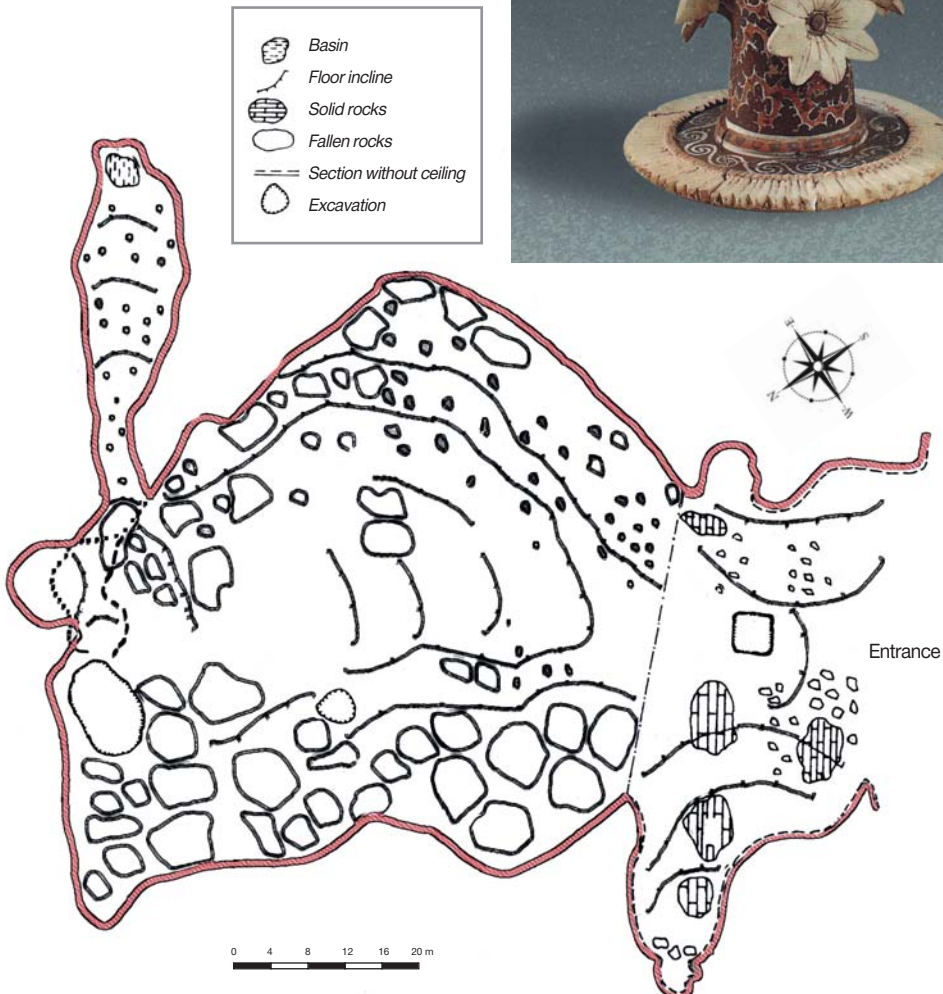
Access to this cave is only possible via the footpaths from Kamares or from the Nida plateau.

The cave has a great archaeological value, as the Minoan clay vases found in it epitomize a particular time and style of that civilization. These are high-quality vessels with very thin walls, a colourful décor (polychrome) and stunning designs. The pots are ornamented in their brilliant red, orange, yellow and white palette against a black metallic-sheened background and are characterized by their ultra-thin construction ('egg-shell').



The Kamares vases belong to the earlier Middle Minoan period. They are most likely to have been produced in palatial workshops (mainly in Knossos and Phaistos) and were exported throughout the wider region of the east Mediterranean.

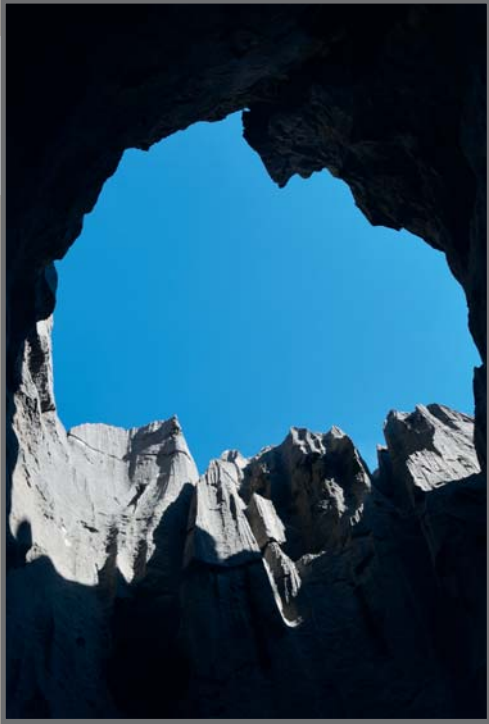
The cave of Kamares, like so many others in Crete, was originally used as a residence by the people of the Neolithic era; it was only during the Minoan times that it became established as a place of worship. The cave was long known to the locals. In 1890, it was first investigated by Italian archaeologists. In 1913, the British School at Athens continued the research for a short while.











OTHER CAVES

- Chainospelios
- The Tafkoura Abyss
- Mougkri
- The Cave of Doxa
- Chonos Sarchou





Chaïnospelios

Outside the village of Kamaraki, is to be found Chaïnospelios, an oblong-shaped cave in the form of a gallery, part of an old underground river bed. The cave is still accessible in most parts.

It is about 200 m long and there is also a parallel gallery (120 m long) with rich natural decoration. The cave lies in the brecciated limestones of the Miocene era (12 million years ago) that sit over the area's ophiolite rocks.

Its narrow and downwards-inclined entrance makes access difficult for those unfamiliar with caving. But the impressive interior ornamentation rewards the visitor. Massive stalagmites of over 6m height, as well as numerous small and large stalagmites, adorn the cave.

For almost the whole of its length the roof of the cave is strongly marked by the erosion caused from the action of the ancient river waters.



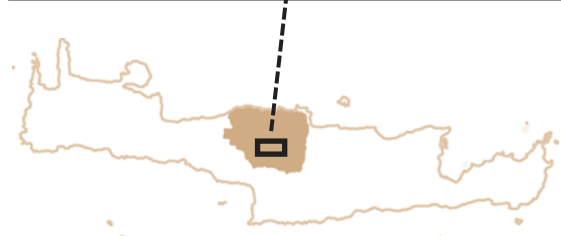
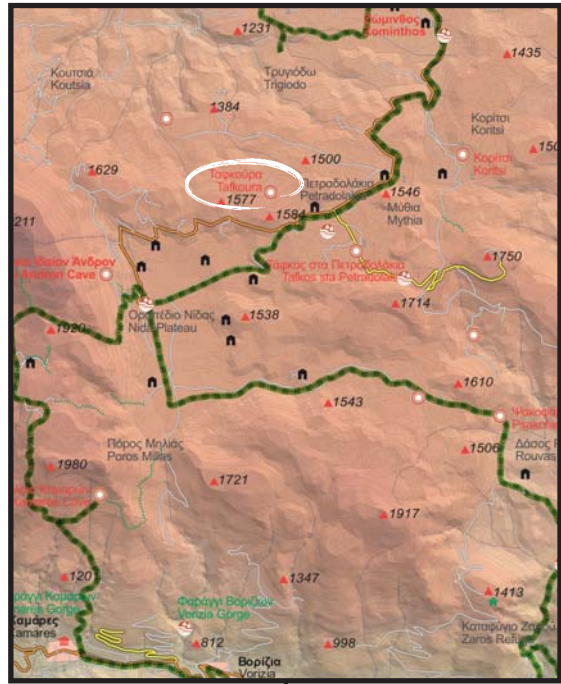
The Tafkoura Abyss

One of the many suchvoids in Petradolakia and indeed one of the most important in Greece is that at Tafkoura. It is the second deepest cave of Crete (descending 960 m from the surface) and one of the deepest in the Balkans.

The cave lies completely within the platy marbles of Psiloritis. Its creation probably began by virtue of one of the many faults that cut through the rocks of the area.

As the rocks of Psiloritis rose, so the watercut down deeper to find its way to the sea, finally forming a cave that has a total mapped length of 6.5 km.

Tafkoura, together with Tafkos in Petradolakia (475m deep), Diploptafki (400m) and Mythia Champathoura (270m) form the deepest karstic water-conduits of Psiloritis. By them, rainwater is led to the karstic spring of Almyros, a few kilometres west of Heraklion.



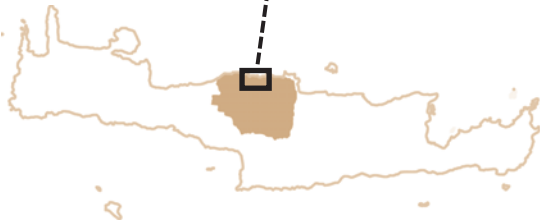


Mougkri

The Mougkri Cave is in the heart of Kouloukonas, northwest of the Vosakas Monastery. It sits in the lower members of the 'platy limestones' of the area, on the axis of one of many faults that affected the region.

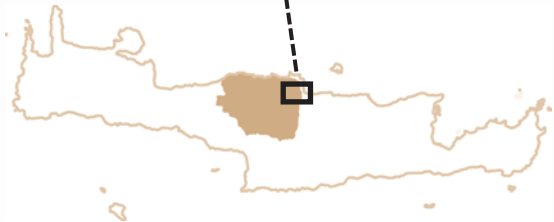
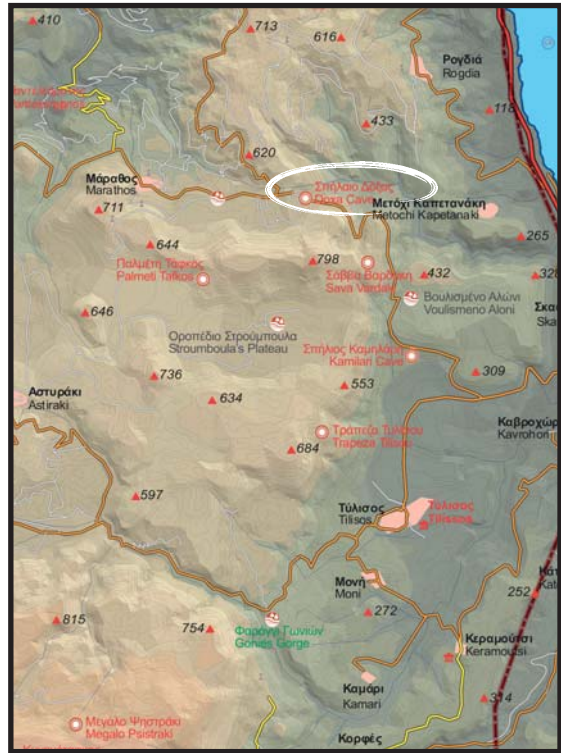
The cave is quite impressive with its rich decoration mostly on the side walls. It comprises two main chambers with an area totalling 2,000 sq. m. In times quite a while past, it housed a more active flow of water, as the large basins cut out of the rock by the water action demonstrate in the deeper parts of it.

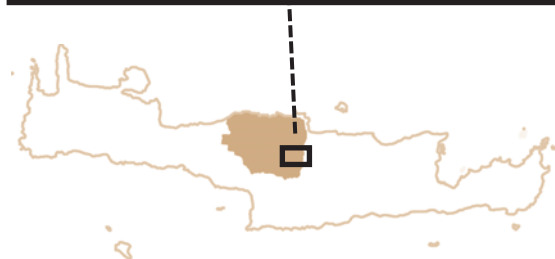
The cave has been used by humans from the Minoan era on. Its access is restricted to specialists.



The Cave of Doxa

This is a small cave in the Tripolis limestone at its contact zone with the rocks of "Phyllites-Quartzites" of the Marathon group. Despite its limited size, the cave has a quite beautiful ornamentation of various colours and shapes. Because of its proximity to the local network of tracks and pathways, access to the cave is relatively easy.





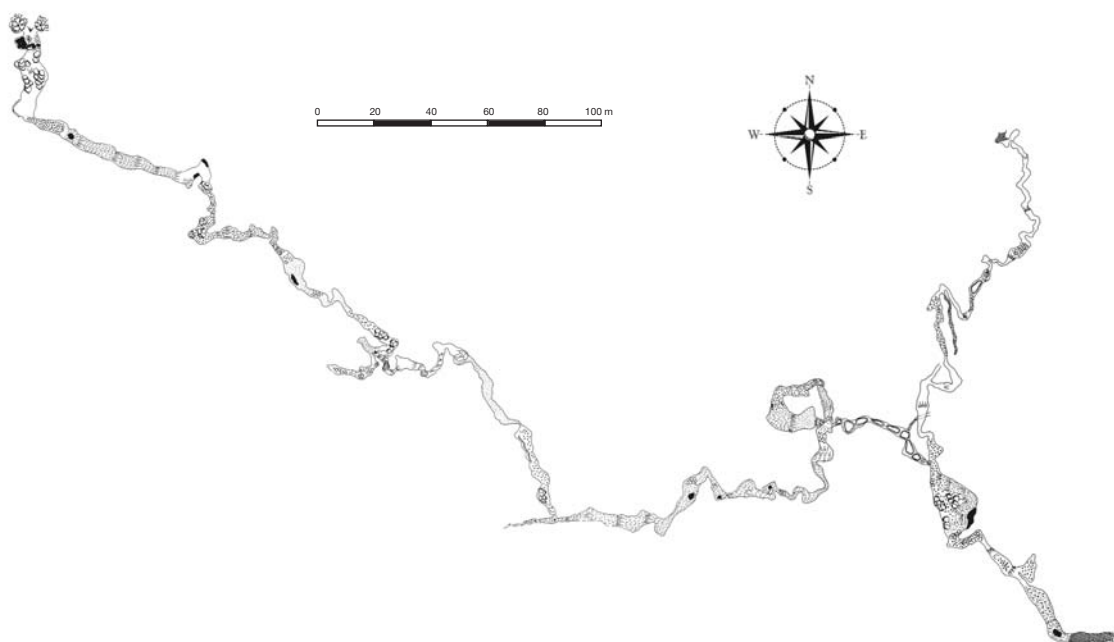
Chonos Sarchou

Chonos in the area of Sarchos is one of the favourite caves of the speleologists, due to its complexity and its length. The cave essentially acts as a sink-trap and occasional spring. In periods of intense rainfall its deeper parts become flooded very quickly, which makes it quite dangerous. Indeed during periods of intense and prolonged rainfall, the entire cave is completely flooded and the water flows out of its entrance.

With a mapped length of almost 1,500 m and a depth of 225 m, this cave is one of the most important supply sources for the Almyros spring which is only 13.5 km off from Sarchos. Probably the cave also communicates through similar sinks with the upland plateau of Krousonas it lies to the north of and along the axis of the large Kroussona–Tyliisos fault area. It is eroded into Tripolis limestone rocks, which at a depth of 100 m turn to dolomites and are strongly influenced by tectonic activities.

Chonos is also a cave with a historical dimension, as it was used many times and oft by the inhabitants of the village as a refuge during the uprisings of the Cretans during the Ottoman years of domination.

Entrance





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'Sfentoni Trypa' cave map page 36, from the book 'Spileo Zonianon Kritis, Tou Sfentoni i Trypa' ('Tou Sfentoni i Trypa' Cave of Zoniana, Crete) published 1995

'Ideon Andron' cave photographs pages 40-43, from the book 'Ideon Andron, To spileo tou Dia ke I thisavri tou' (Ideon Andron, The cave of Zeus, and its treasures) Yiannis Sakellarakis – Efi Sapouna Sakellarakis

'Ideon Andron' cave map page 40: Yiorgis N. Petrakis

'Gerontospilios' cave photographs pages 46-49: Vangelis Goumas

'Gerontospilios' cave map page 48, from the Hellenic Speleological Society Newsletter, Volume VIII, issue 3 (1965) page 71

'Kamaraiko' cave photographs pages 52-53, from the book 'Archeologiko mousio Irakliou, Antonis Vasilakis' (Archaeological Museum of Heraklion, Antonis Vasilakis'

'Kamaraiko' cave map page 53, from the book 'Minoiki Kriti, Antoni Vasilaki' (Minoan Crete, Antonis Vasilakis' published 1991, page 235

'Chainospilio', 'Tafkoura', 'Mougri', 'Doxa', 'Chonos Sarchou' caves pages 58-62, from the book 'Spileologikes periigisis stin Kriti II: Ichor. Taxidi stis fleves tou giganta' (Speleological tour of Crete II: Ichor. Journey into the giant's veins) published 2008, pages 205, 222, 224, 227, 243