

THE PALAEOONTOLOGICAL CAMPAIGNS OF ALBERTO MALATESTA IN THE MEDITERRANEAN ISLANDS

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ABSTRACT: Girotti O., Kotsakis T. & Petronio C., *Palaeontological campaigns of Alberto Malatesta in the Mediterranean islands.*

A short account of the palaeontological campaigns organized and led by Alberto Malatesta in the Mediterranean islands, in search of Quaternary endemic vertebrates, is presented in this paper. The activity of Malatesta in such a field can be grouped in four periods. The first period (1964-1970) deals with his researches in Sardinia (Dragonara Cave, Nettuno Cave, Capo Figari); the second one (1970-1972) includes the field campaigns in Crete (Simonelli cave and Katharo plateau); the third period (1972-1978) regards the researches in Sicily (Capo Tindari Cave); during the last period (1979-1984) the scientific interests of Malatesta returned back to Sardinia (Is Ozeris quarry, Alghero neighbours). For each locality, a brief exposition of the principal results is presented together with a summary of the research and revision papers that Malatesta and his co-workers wrote on the material collected during the field seasons.

RIASSUNTO: Girotti O., Kotsakis T. & Petronio C., Campagne paleontologiche di Alberto Malatesta nelle isole del Mediterraneo.

In questo lavoro viene presentata una breve sintesi delle campagne paleontologiche nelle isole del Mediterraneo organizzate e dirette da Alberto Malatesta, in cerca di giacimenti di vertebrati endemici del Quaternario. L'attività di Malatesta in questo campo è divisa in quattro periodi. Durante il primo periodo (1964-1970) i suoi interessi sono concentrati sulle faune insulari della Sardegna (Grotta di Dragonara, Grotta di Nettuno, Capo Figari). Il secondo periodo (1970-1972) comprende le tre spedizioni all'isola di Creta (Grotta Simonelli, altipiano di Katharo). Il terzo periodo (1972-1978) vede gli interessi di Malatesta spostarsi verso la Sicilia (Grotta di Capo Tindari). Infine durante il quarto periodo (1979-1984) si ritorna a ricerche in Sardegna (Cava di Is Ozeris, dintorni di Alghero). Per ogni località esplorata vengono date sommarie notizie circa i risultati ottenuti e vengono riportati i lavori che illustrano queste faune, sia quelli di Malatesta e dei suoi collaboratori, sia quelli di revisione o ampliamento di studi, fatti su materiale raccolto durante questi scavi.

Key words: Biography, palaeontological campaigns.

Parole-chiave: Biografia, campagne di scavi paleontologici.

1. INTRODUCTION

The quarter of the XX century that went from the beginning of the sixties till the half of the eighties was particularly fruitful for the palaeontological researches of the then-Institute of Geology and Palaeontology of the University of Rome (included in the last years of that period in the Department of Earth Sciences). The most important character of that period was not only a considerable increase in the number of publications (during the years that followed, the publications were even more numerous), but especially a large increase of the collected fossil material. This was true for all fields of palaeontology (microfossils, invertebrates and vertebrates), but the sector that presented, at least macroscopically, the most spectacular results, was the field of vertebrates. This situation is clearly evidenced by the large number of skeletons of fossil vertebrates that were mounted in the Museum of Palaeontology during those years.

The start of the campaigns for the collection of vertebrate fossils was given by Angiola Maria Maccagno in the fifties, but further development was due to a combination of factors including the presence of Bruno Accor-

di as the Director of the Institute (and of the Museum of Palaeontology) from 1959 and of Alberto Malatesta as the professor of Palaeontology since 1963. The two men differed in many things but certainly shared the interest on the island vertebrate fossils. For Accordi the years at the University of Catania, the study of the endemic hippo of Sicily (*Hippopotamus pentlandi* von Meyer), and the discovery of the cave of Spinagallo (ACCORDI, 1955; ACCORDI & COLACICCHI, 1962) led to an increasing interest on the problems of insular gigantism and dwarfism. For Malatesta similar opportunities were the geological surveys for several geological maps of both Sicily and Sardinia (during his employment at the Italian Geological Survey); in fact they gave him the possibility to identify fossil deposits of endemic island faunas and to direct its scientific interest to this field. So, what characterized the activity of A. Malatesta during this period were the palaeontological campaigns in the Mediterranean islands to collect endemic Quaternary vertebrates and these activities will be discussed in more detail.

The scientific activities of Alberto Malatesta were not limited to the palaeontological campaigns we are going to expose. Many of his work was devoted to the

study of the stratigraphy of various localities of the Italian peninsula and to the systematic study of vertebrates and especially molluscs collected in several sites. Malatesta, assisted by Odoardo Girotti and Giuseppe Sirna, started, since 1964, to collect marine molluscs from the Pliocene clayey deposits of Umbria, along the rivers Chiani, Paglia and Tiber. The collection went on for short intervals during the following years. The systematic results were published in 1974 in a huge volume (MALATESTA, 1974). Malatesta worked on the stratigraphy and on the fossil faunas of Grotta della Madonna at Praia a Mare (Calabria), Torre in Pietra (Latium), and of several other areas of Latium. During these studies he collaborated with Lucia Caloi, Luigi Cardini, Piero Cassoli, Vittorio Conato, Daniela Esu, Elsa Gliozzi, Maria Rita Palombo, and, especially in the last years of his activities, with Francesco Zarlenga (MALATESTA, 1978a; CONATO *et al.*, 1980; MALATESTA & ZARLENGA, 1986, 1988). In September-October 1980 Malatesta and Zarlenga led a campaign to collect Paleocene molluscs in the basin of Rio Massintonto (Maputo), with the financial support of the Compagnia Bonifica. The rich mollusc fauna, containing a large number of new taxa, was described by Malatesta & Gliozzi (1983).

2. SARDINIA: DRAGONARA CAVE, NETTUNO CAVE, CAPO FIGARI (1964-1970)

Returning to our main topic, the island campaigns, it should be noted that Malatesta had already collected fossil material from the Dragonara Cave (Porto Conte,

Sardinia) and some other localities of the area during the first half of the fifties (MALATESTA & SETTEPASSI, 1954), and in 1962 he published the first work on the endemic canid of Sardinia, without giving a precise indication of the fossiliferous locality, since the site was object of a preliminary collection only, and new campaigns were planned (MALATESTA, 1962). The first of the campaigns at Dragonara was organized in the summer of 1964. The team was composed by Pierluigi Ambrosetti, Odoardo Girotti, Valerio Palmerini, Giuseppe Sirna, and A. Malatesta as the leader (Fig. 1). The Dragonara Cave opens to about one meter a.s.l. and is accessible only by sea. The investigating team was camped about 200 m from the cave and reached the site using a boat or, sometimes, swimming. The three weeks of work were particularly successful and notable quantities of material were collected. However, the cave was still full of fossils, and Malatesta planned two additional campaigns. The second campaign (lasted two weeks) was held in the spring of 1969 with the participation of Carmelo Petronio, Valentino Pettinella and Giuseppe Sirna (Figs. 2, 3) and increased the fossil material already collected. The third one was organized in the spring of 1970 and lasted three weeks. That time, under the leadership of A. Malatesta, C. Petronio, V. Pettinella, Claudio Romei and others were the members of the team. The material collected after the first two campaigns was considered sufficient by MALATESTA (1970) to complete a monograph on *Cynotherium sardoum*, the Sardinian endemic canid, on which, as we have seen, he devoted a preliminary note. On the contrary, to describe the endemic deer *Praemegaceros cazioti* (Depéret), the specimens collected during the third expedition were also



Fig. 1 - Summer 1964: group photo at the end of the campaign at the Dragonara cave (Sardinia). From left: V. Palmerini, P. Ambrosetti, A. Malatesta, O. Girotti, and G. Sirna.

Estate 1964: foto di gruppo al termine della campagna di scavo alla Grotta di Dragonara (Sardegna). Da sinistra: V. Palmerini, P. Ambrosetti, A. Malatesta, O. Girotti e G. Sirna.



Fig. 2 - Spring 1969: a moment of rest during the excavation at the Dragonara cave (Sardinia). From left: A. Malatesta, C. Petronio, G. Sirna., and V. Pettinella.

Primavera 1969: un momento di riposo durante lo scavo: della Grotta di Dragonara (Sardegna). Da sinistra: A. Malatesta, C. Petronio, G. Sirna., e V. Pettinella.

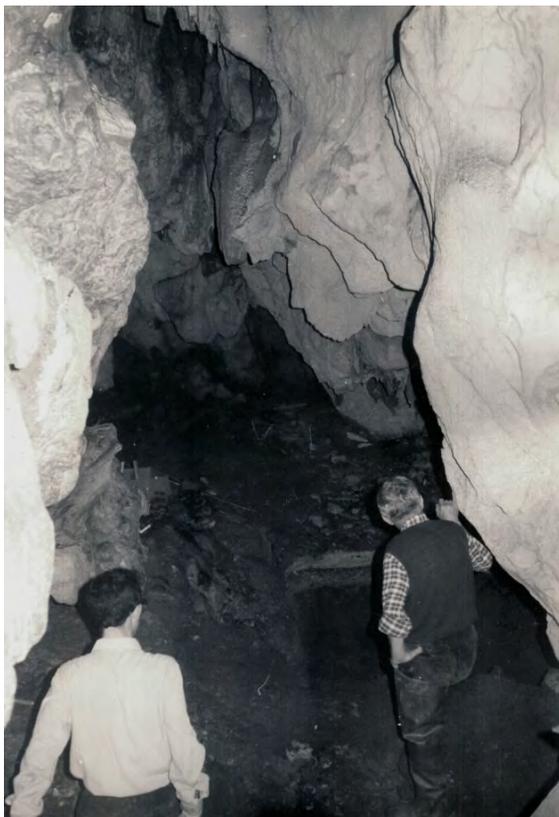


Fig. 3 - Spring 1969: C. Petronio (from back) and A. Malatesta look at the excavation within the Dragonara cave (Sardinia).

C. Petronio (di spalle) e A. Malatesta osservano lo scavo all'interno della Grotta di Dragonara (Sardegna).

considered (CALOI & MALATESTA, 1974). The fossil remains of the deer were further studied under several morphological-functional aspects from CALOI & PALOMBO (1991, 1995) and PALOMBO (2005) and the data obtained from this "population" were used for studies and for models involving adaptive changes in the morphology of the island endemic deer. The "Hunter-Schreger Bands" of the canid of Dragonara were also object of a study (NOVELLI & PALOMBO, 2007). Besides the two large mammals (the canid and the cervid) a small carnivore, four species of small mammals, many species of birds and some species of amphibians and reptiles were discovered at Dragonara. The small mammals have never been studied in an analytical way (there is only a master thesis). A partial study of the teeth of the arvicolid *Microtus (Tyrrhenicola) henseli* (Major) was published by MINIERI *et al.* (1995). For birds MALATESTA & SURIANO (1971) provided a list of species, while the fossil herpetofauna was studied by KOTSAKIS (1980a). The remains of a small carnivore, a lutrine, proved to be of particular interest; despite their paucity, they have allowed to establish a new endemic Sardinian species (MALATESTA, 1978b), some years later transferred (WILLEMSEN & MALATESTA, 1986) to an endemic genus, *Algarolutra majori* (Malatesta). GLIOZZI (1985) studied some postcranial remains of this species. The Dragonara assemblage is at present considered representative of the Late Pleistocene "classical" Sardinian fauna: in her biochronological chart of fossil mammal assemblages of Sardinia, PALOMBO (2006) has proposed the Dragonara Faunal sub-complex of the *Microtus (Tyrrhenicola)* complex, corresponding to the latest Middle Pleistocene - Earliest Holocene time span.

Between the first and the second campaigns of Dragonara, in the early months of 1966, Malatesta and Piero Cassoli, invited in Sardinia by the Tourist Office of Alghero to visit some caves, had the chance to see an otter skull collected by some speleologists in the Cave of Nettuno (near Capo Caccia). Malatesta, informed of the presence of the entire skeleton, organized a mini-expedition during the month of September of that year and, accompanied by some local speleologists (P. Bradis, G. Pala), reached the tunnel Patrizi where a complete skeleton of the lutrine laid, partly outcropping on the sand and partly buried in it, at about 4 m a.s.l. (Fig. 4). Despite the narrowness of the tunnel, it was



Fig. 4 - September 1966: the skeleton of *Sardolutra ichnusae* (Malatesta) inside the Grotta di Nettuno tunnel (Sardinia).

Settembre 1966: lo scheletro di *Sardolutra ichnusae* (Malatesta) all'interno del tunnel della Grotta di Nettuno (Sardegna).

possible to collect all the bones of the entire skeleton, which remained not studied for a long time. The description of the species was made by MALATESTA in 1977, when he established the endemic species *Nesolutra ichnusae* Malatesta, whose age should be Holocene. This lutrine clearly lived in the sea and presumably had similar habits to the recent North Pacific sea otter, *Enhydra lutris* (Linnaeus). Malatesta came to this conclusion observing the penial bone (obviously the skeleton belonged to a male). Several years later, WILLEMSEN (1992) carried on a review of the Plio-Quaternary Lutrini of Europe and established a new endemic genus for the Sardinian sea otter, *Sardolutra ichnusae* (Malatesta). ANGELELLI (1995) carried out a study of the morphology of the endocranial cast of this species.

During the expedition of 1970, after the end of the excavation of Dragonara, the collection of fossil material from a breccia of Capo Figari, was also organized. The site was known for the excavations carried out there by C. I. Forsyth Major (between the end of the nineteenth century and the beginning of the twentieth century) and by E. G. Déhaut who identified a fossil antelope and other mammals. The British palaeontologist did not publish the results of his researches (he just mentioned the presence of a fossil monkey). Malatesta, who had previously visited the place and identified a fossiliferous site he believed (probably correctly) to be the site excavated by Déhaut, organized the collection of samples from a

very hard breccia. He rewarded, at least in part, of his expectations, after the fossils were prepared in the laboratory in Rome. Also if he failed to recover any fossil remain of the monkey, as he hoped, he instead managed to get some important remains of the antelope. The material studied by GLIOZZI & MALATESTA (1980) allowed establishing a new genus for the antelope, *Nesogoral melonii* (Déhaut). A second publication described the endocranial morphology of this ruminant (ANGELELLI *et al.*, 1982). Compared to the fauna of Dragonara, the fauna of Capo Figari is much older. The generic name of the antelope has been used by PALOMBO (2006) to indicate the older of the two faunal complexes proposed for the Plio-Pleistocene faunas of Sardinia: *Nesogoral* Faunal Complex consisting of two sub-complexes. The most recent of these is called Capo Figari / Orosei 1 sub-complex, roughly corresponding to the Early Pleistocene.

According to a communication of Malatesta to one of the authors of this paper (T.K.), during the sixties Malatesta visited also the island of Tavolara (North-eastern Sardinia) and collected some subfossil remains of birds (?*Puffinus*). No organized campaigns of excavation at Tavolara appear to have been organised and, probably, the bird material was collected during a short visit of Malatesta alone.

3. CRETE: SIMONELLI CAVE AND KATHARO (1970-1972)

In the same year of the campaign at Dragonara and Capo Figari, Bruno Accordi managed to achieve considerable funding from the Accademia Nazionale dei Lincei for excavations focused on the collection of fossil insular endemic vertebrates. He then asked Malatesta about the possibility of organizing an excavation at Crete, an island whose Quaternary endemic mammals were partly known through the papers (late XIX - early XX centuries) of Dorothy Bate and Vittorio Simonelli. About that time (late sixties-early seventies) the data on these mammalian faunas were increased through the work of Siegfried Kuss and Paul Sondaar. A. Malatesta (Fig. 5),

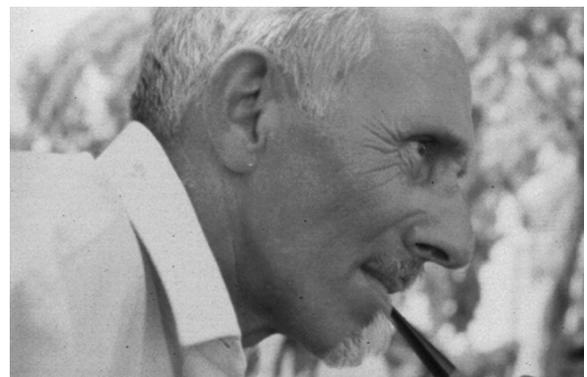


Fig. 5 - September 1970: A. Malatesta at Iraklion (Crete).
Settembre 1970: A. Malatesta ad Iraklion (Creta).

O. Girotti and G. Sirna embarked on an "exploring expedition" to identify possible fossiliferous sites to excavate. Attention was focused on the caves along the cliffs on the northern coast, west of the city of Rethymno. After several attempts, the group was able to find a cave that seemed to promise a large amount of fossil remains, just west of Rethymno barracks, then to west end of the town. During the winter 1971 contacts were made for a collaboration with Prof. Yannis Melentis of the University of Thessaloniki. The expedition set off during September of that year, was led by Alberto Malatesta and comprised, among the Italian members Antonello Angelucci, Giacomo Civitelli, O. Girotti, T. Kotsakis, V. Pettinella, A. Praturlon, C. Romei and G. Sirna, and among the Greek members Y. Melentis, D. Mountrakis and G. Soulios. Later on also B. Accordi joined the excavations. The intuition of the "exploring expedition" proved to be correct. The cave contained an enormous amount of material of Late Pleistocene age. The vast majority of the remains belonged to a small deer. The cave, which was named "Grotta Simonelli" in honor of the Italian palaeontologist of the beginning of the XX century who had first described the remains of the little endemic deer, was not easily accessible by land and the transport of the collected material was done with mules. The excavation lasted five weeks. During this period A. Malatesta, with O. Girotti and, in turn, with another member of the expedition, visited some other fossiliferous sites



Fig. 6 - September 1971: Camping at the Katharo plateau. From left: O. Girotti, A. Malatesta, and T. Kotsakis.

Settembre 1971: Campeggio sull'altipiano di Katharo (Creta). Da sinistra: O. Girotti, A. Malatesta e T. Kotsakis.

known from the geological literature. In particular he visited for five days (with Girotti and Kotsakis) the Katharo plateau (in the eastern part of the island) where BOEK-SCHOTEN & SONDAAR (1966) had reported the remains of a dwarf hippopotamus (Fig. 6). Rather fragmentary fossil remains were scattered over a large surface area of this ancient lacustrine basin. A few days later, while the excavations at "Grotta Simonelli" continued, Malatesta, Girotti and Kotsakis visited the island of Cyprus. Thanks to M. Mantis of the Geological Survey of Cyprus they visited some "classic" places discovered by Miss Bate. But apart from the collection of some small samples, this "exploring expedition" was not followed by any larger campaign.

Preliminary results of the Cretan expedition were published by ACCORDI (1972) and MELENTIS (1974). The restoration of the material lasted for a long time. The analytical study of the cervid *Praemegaceros cretensis* (Simonelli) was published by MALATESTA (1980) and was supplemented by several other minor notes on the rest of the fauna, elephants, carnivores (subfossils), birds, reptiles and the study of the endocranial morphology of the endemic deer (ANGELELLI, 1980; CALOI, 1980; KOTSAKIS, 1980b; MANGILLI, 1980; SURIANO, 1980). Again, like the fossils of the Dragonara Cave, the Simonelli Cave findings offered the possibility of additional studies on several aspects of the adaptations of the endemic mammals (PALOMBO & PETRONIO, 1989; CALOI & PALOMBO, 1996; PALOMBO *et al.*, 2008).

The expedition of 1971 had an epilogue in the next year. Malatesta led a further expedition in September 1972, with the participation of T. Kotsakis, C. Petronio and V. Pettinella (Fig. 7). The expedi-



Fig. 7 - September 1972: Coffee-break at the Katharo plateau. From left: T. Kotsakis, V. Pettinella, and A. Malatesta.

Settembre 1972: Pausa caffè durante la spedizione sull'altipiano di Katharo. Da sinistra: T. Kotsakis, V. Pettinella e A. Malatesta.



Fig. 8 - September 1972: Katharo plateau. Dried streamlet showing lacustrine clayey marls overlain by debris flow. V. Pettinella indicates the outcrop with bones.

Settembre 1972: Altipiano di Katharo (Creta). Letto asciutto di un torrente in cui affiorano le marne argillose sovrastate da depositi di debris flow. V. Pettinella indica il punto dell'affioramento fossilifero.

tion lasted three weeks, two of which were spent on the Katharo plateau. During this field work, some remains of the endemic ?Middle Pleistocene hippo of Crete, *Hippopotamus creutzburgi* Boekschoten & Sondaar, were recovered (Figs. 8, 9); they were described ten years later



Fig. 9 - A detail of the outcrop of Fig. 8 with fossil hippo remains. Un dettaglio dell'affioramento illustrato in Fig. 8 con i resti fossili di ippopotamo.

by CAPASSO BARBATO *et al.* (1982) and reviewed in a morphological-functional perspective by CALOI & PALOMBO (1996). Two of the authors of these pages recall a typical scene that took place in a good hotel in Aghios Nikolaos, which we entered soon after our descent from Katharo (where we stayed for a fortnight in a tent, obviously free camping). The smell around us should not have been the most pleasant, because we saw the reception employees that we watched with vigilant eyes, with a sense of annoyance and almost hostility. But when they heard our cries to Malatesta: "Professore! Professore!", their sights changed and one said to the others: *A! αρχαιολογοι!* and smiled again!

The research group of palaeontologists of the Roma University, again in collaboration with the University of Thessaloniki, carried on other expeditions in Crete in later years, (Kotsakis *et al.*, 1976), but A. Malatesta did not join them.

4. SICILY: CAPO TINDARI (1972-1978)

During the field work in Sicily's northern coast around Capo Tindari, MALATESTA (1958) reported for the first time the presence of a cave filled with abundant fossils, known locally as the "Grotta della Fata Donnavilla". The cavity opens along the cliffs of Capo Tindari at a height of 76 m a.s.l. The access was very difficult and

the cave could be reached only by walking on a small edge protruding from the rock that was even broken partially in some points. The material collected during the fifties was increased in two expeditions conducted in 1973 and 1974 respectively. C. Petronio, V. Pettinella and C. Romei took part to the first, while in the second one Malatesta was accompanied only by C. Romei. During this last field excursion (rather than expedition) various places in the provinces of Enna and Caltanissetta were visited in search of sites with lower Paleolithic industry. However, these searches were fruitless. The last campaign to Capo Tindari dates back to 1978. In addition to Malatesta, who led the group, Francesco Angelelli, L. Caloi, T. Kotsakis, M.R. Palombo, C. Petronio, V. Pettinella and C. Romei were present. During this final expedition, which dedicated to Capo Tindari a week of work, the collection of deer remains was increased and some rare remains of hippo were found (Fig. 10). In the unconsolidated superficial fraction of the sediment some small mammal remains were collected. Just during the last day of the excavation, a serious accident happened, with the risk that some staff member fell down the cliff (that was 76 m height). Fortunately, the intervention of V. Pettinella and C. Romei prevented the successful scientific trip to end in a tragedy. The material collected belonged to two deers, the endemic Sicilian hippopotamus *Hippopotamus pentlandi*, and a small bear, *Ursus* sp. A preliminary communication on the fossils collected



Fig. 10 - Settembre 1978: L. Caloi (on the left) and A. Malatesta look at a fossil bone fragment collected during the excavation of the Tindari Cave (Sicily). On the right, M.R. Palombo is moving out of the picture

Settembre 1978: L. Caloi (a sinistra) e A. Malatesta osservano un frammento di osso fossile raccolto durante lo scavo della Grotta di Tindari (Sicilia). A destra, M.R. Palombo sta uscendo dalla foto.

in the fifties was made by CALOI (1973) who described some remains of deer and hippo. A detailed description of one species of deer was published by GLIOZZI & MALATESTA (1982) who attributed the majority of the cervid remains collected in Cave of Capo Tindari to *Praemegaceros* (*Notomegaceros*) *carburangelensis* (De Gregorio) a form of endemic Sicilian megacerine, for which a new endemic subgenus was proposed. In an appendix to this work CALOI & PALOMBO (1982) illustrated the few remains of endemic hippopotamus. The remains of the second deer, an endemic Sicilian subspecies of the red deer, *Cervus elaphus siciliae* Pohlig, of latest Middle Pleistocene to Late Pleistocene age, were described together with all the remains belonging to this form by GLIOZZI *et al.* (1993). The first species of deer is now ascribed to *Dama carburangelensis* (De Gregorio) by ABBAZZI *et al.* (2001).

5. SARDINIA AGAIN (1979-1984)

In the second half of May 1979, Malatesta organized an "exploring expedition" with T. Kotsakis in Sardinia, which lasted two weeks. A special feature of this expedition was the fact that they moved always by train and on foot. The first result of the expedition was the identification of a rich accumulation of small vertebrate bones in the Alabaster Quarry, an abandoned part of the mine of Santa Lucia in Is Oreris (Iglesiente, SW-Sardinia). The site was already known in the palaeontological literature for the discovery of a skull of the endemic Sardinian monkey, *Macaca majori* Azzaroli, by COMASCHI CARIA (1970). The second fossiliferous locality object of this visit was a cavity discovered by Malatesta in the early '50s to the south of Alghero between Punta Padrellu and Omo Morto. Malatesta remembered a footpath leading to the south of the city of Alghero to the fossiliferous locality. Instead of the path we come across the wide Alghero-Bosa asphalt road, with cars darting at high speed. The fossiliferous cavity was no more, but some blocks lying along the cliff gave few remains of small mammals and especially a small group of fossil bats of Late Pleistocene age, illustrated by KOTSAKIS in 1987.

In November 1983, Malatesta led a second expedition at Is Oreris with Elsa Gliozzi and M. R. Palombo; it lasted ten days and a certain amount of remnants of small vertebrates were collected from the very hard breccia.

A few months later, in April 1984 Malatesta led what it proved to be his last paleontological campaign in the island. The team was composed by L. Caloi, D. Esu, E. Gliozzi, T. Kotsakis and M.R. Palombo. The expedition lasted about two weeks and was almost the farewell to the Sardinian campaigns of Malatesta. During this campaign they been visited a lot of places he had surveyed in the past. In the Alabaster Quarry at Is Oreris, further samples were collected to enrich the collection of small vertebrates under study. A few samples were also collected at Capo Figari (Figs. 11, 12). South of Alghero, while in the locality Calabona the remains of many freshwater molluscs were collected.

The results of both these expeditions were published by GLIOZZI *et al.* (1984) and MINIERI *et al.* (1995) as for the small mammals of the Alabaster Quarry and by ESU (1987) as to the Calabona molluscs. The fauna



Fig. 11 - April 1984: Sampling of the fossiliferous breccias cropping out at Capo Figari (Sardinia). From the left: D. Esu, T. Kotsakis, A. Malatesta, and M.R. Palombo.

Aprile 1984: Campionamento della breccia ossifera affiorante a Capo Figari (Sardegna). Da sinistra: D. Esu, T. Kotsakis, A. Malatesta e M.R. Palombo.

of Is Oreris was composed by two insectivores "*Nesiotites*" *similis* (Hensel) and *Talpa tyrrhenica* Bate, two rodents, *Tyrrhenicola henseli* Major and *Rhagamys orthodon* (Hensel) and one lagomorph *Prolagus sardus* (Wagner), all members of the "classic" Late Pleistocene faunal assemblage of Late Pleistocene. As a matter of fact, PALOMBO (2006) places the fauna of Is Oreris in the faunal subcomplex of Dragonara, although she considered this fauna somewhat older if compared to the fauna of Dragonara.

Malatesta returned again in Sardinia to study, in collaboration with Willemsen, a third endemic lutrine of the island. However this was not a campaign for field work, but a visit to the Museum of Nuoro. The results of the study (WILLEMSSEN & MALATESTA, 1987) were the establishment of a new taxon, endemic to the generic level, *Megalenhydris barbaricina* Willemsen & Malatesta.

6. CONCLUSIONS

Regardless of field work for geological survey and mapping of the fifties, the number of explorative expeditions and excavation campaigns organized and directed by Alberto Malatesta in search of Quaternary insular vertebrates were fourteen (seven in Sardinia, three in Sicily, three in Crete and one in Cyprus).

The excavations were certainly not organized with a detail similar to those carried out by prehistory archaeologists and which are now the norm for palaeontological excavations in the caves. They were the typical excavations organized to recover large mammals, with an increasing attention to the collection of small vertebrates. The analysis and publication of data always followed the criteria of detailed descriptions and illustrations of all bones. The great value that Malatesta's publications have today, decades after their appearance, lies on the detailed description, and remains significant, although the systematic, phylogenetic, palaeobiogeographic and palaeoecologic conclusions can be partly overcome.

Malatesta has not formally taught to most of his students how organize the research. But he directed some of them to the scientific paths they have later followed. He pointed to Odoardo Girotti a field of interest in the study of non-marine molluscs of the Tiber basin. This study started the Girotti's research field on the bivalves and gastropods of brackish and continental deposits. Girotti, on his turn, transmitted this research topic to Daniela Esu and their collaboration in this field continues without interruption since more than thirty five years. Carmelo Petronio, Maria Rita Palombo, Lucia Caloi and Tassos Kotsakis and, in the early stages of his career also Elsa Gliozzi, have been influenced by Malatesta in the researches on vertebrate fossils. If we calculate the percentage of the publications that each of these palaeontologists devoted to problems of insular



Fig. 12 - April 1984: group photo at the end of the campaign at Is Oreris-Capo Figari (Sardinia). From left: L. Caloi, A. Malatesta, M.R. Palombo D. Esu, T. Kotsakis and E. Gliozzi.

Aprile 1984: foto di gruppo al termine della campagna di scavi a Is Oreris-Capo Figari (Sardegna). Da sinistra: L. Caloi, A. Malatesta, M.R. Palombo D. Esu, T. Kotsakis e E. Gliozzi.

vertebrates, emerge that Malatesta's influence has been considerable and constant. This influence was certainly also felt by his other students but we limit to speak here only of those who participated to the palaeontological campaigns to the islands led by him.

Malatesta's character was not easy and during the expeditions he always kept a certain hierarchical structure of the staff. This was pretty easy to obtain standing in the Institute and the Laboratory, but became more difficult in the intimacy of the excavations and in the camps, and this sometimes led to tensions. However, that attitude weakened as the years passed. Even different opinions in cultural and political fields were sometimes occasions of heated discussions, but also those were mitigated over time, with a spirit of greater understanding between the group leader and his younger colleagues, until they reached a real human warmth, when his students in 1995, celebrated his eightieth birthday.

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