ARTHROPOD FAUNA OF VIVARA ISLAND, NAPLES, ITALY

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Vivara is a small island (33 ha) of the Gulf of Naples, included on Natura 2000 sites (SPA and SCI), transformed in 2002 in a State Natural Reserve. Its megafauna is composed mainly of small mammals (mice, rabbits, bats), birds (both migratory and resident) and reptiles (lizards, geckos and western whip snake), feeding mainly on insects. So far 229 different species have been described (D'Antonio e Fimiani, 1988). In recent years, the interest has focused mainly on Lepidoptera and a new list of species (85, 13 of which new for the island) was published (D'Antonio and Zeccolella, 2013).

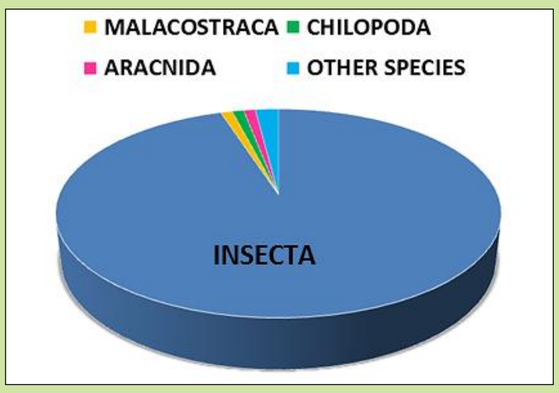
In spite of the efforts made during these studies, the information available on Vivara arthropod biodiversity is likely to be far from complete. In 2014 a census of Vivara arthropod fauna was carried out with the aim to establish a basis for future researches on population dynamics and on the roles played by arthropods in the island food webs.

METHODS

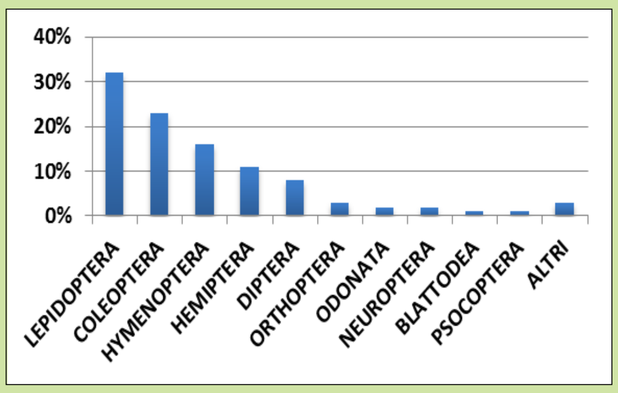
Different approaches were used in order to sample the highest possible number of species. During the day, arthropods were collected with a net, or with the entomological umbrella, or by checking the plant litter on a white dish. For collecting at night (from sunset to midnight), a vertical white sheet was used, illuminated by two camping lamps (a 11W neon tube hanging from the top and 3x1W LEDS lamp resting on the floor in front of the sheet). For nocturnal moths, appropriate baits (foam rubber imbibed with a mixture of red wine, sugar and fruit peels) were hung to tree branches along a circular path. Specimens which could be reliably identified on the field were released. The others were collected and prepared dry (Lepidoptera) or preserved in 80% ethanol (other groups); the immatures, if possible, were reared up to the adult stage to ensure correct identification. For the determination of some Lepidoptera it was necessary to analyse the wing venation or the sexual organs. The wings, treated with a drop of ethyl acetate, were observed by transparency under a binocular microscope. For the study of the genitalia, the abdomen was soaked in 10% KOH for a time dependent on its size, rinsed and dissected in distilled water. For some female specimens it was necessary to stain the internal genitalia with Chlorazol black.

RESULTS

COMPOSITION OF ARTHROPOD FAUNA

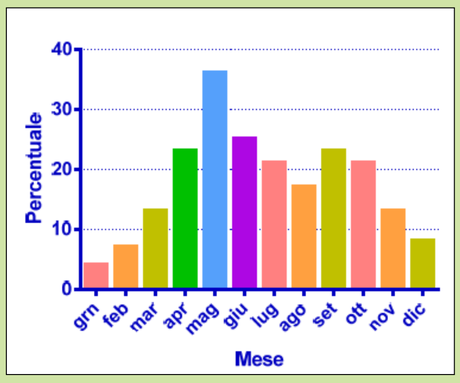


Distribution of species among main classes of Artrhopods: 95% of species observed are Insecta.



Percent distribution of the major order of insects. Lepidoptera and Coleoptera are the more represented taxa.

LEPIDOPTERA



Individuals abundance reaches it maximum in April-May, in coincidence with the maximum flowering on the island.

Micropterigidae	Adelidae
Gracillariidae	Plutellidae
Eriocottidae	Tineidae
Gelechiidae	Blastobasidae
Pterophoridae	Lecithoceridae
Choreutidae	Crambidae
Tortricidae	Psychidae
Geometridae	Nymphalidae
Noctuidae	Drepanidae
Erebidae	Pyralidae

List of families recorded.

LEPIDOPTERA: NEW SPECIES FOUND… AND LOST

In total, 127 species of Lepidoptera were recodered; among these, 27 were new for Vivara and 3 never observed in Campania: *Opogona omoscopa* (left), *Aethes rubiginana* and *Stemmatophora combustalis* (right).

***Zygaena filipendulae* apparently disappeared from Vivara (last evidence documented: D'Antonio & Fimiani, 1988)**

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CONCLUSIONS

The Arthropod fauna of Vivara Island is definitely not sufficiently explored and clearly underestimated as confirmed by the scarcity of data on Arachnida and Diptera species found so far.

A more complete picture of the arthropod fauna of Vivara would allow estimates of its evolving trends in diversity and population dynamics, to the great advantage of the Reserve management.

The absence of previously reported species, or the appearance of new ones, are probably due to a problem of sampling. However, these evidences may represent a warning that habitats on Vivara are changing.