

# AVELLA

## NATURA E PAESAGGIO

### GRADING THE AREA

The whole ridge of the mountains Avella-Feverfew falls within the sheet 185 of the Geological Map of Italy (scale 1:100,000) and Salerno, in part, on the sheet 173 Benevento. Topographically and is contained in the tablets of the IGM (Scale 1:25000) of Montesarchio III SE, Nola NW, NE Baiano IV, and Montefredane NO.

More specifically, it is bounded to the N from the Valley Caudina and Maddaloni, south of the Vallo di Baiano, SE from the city of Avellino.

### Geological and structural setting of the area

The ridge of the mountains Avella-feverfew, with a length of about 30 km, is a monoclonal antibody with NW - SE direction and dipping to the NE. It is affected by faults that cross ribassano the structure to the north-east, and the mount Pizzone, however, is affected by a normal fault where the limestones disappear below the flysch terrains, which are geometrically above.

Are present in the soils, ranging in age between the Lias and the Quaternary. Limestone and dolomitic limestone, clays, limestone marl and sandstone.

The limestones of the group Avella-feverfew are the unit geometrically lowest outcropping. Against the carbonate series identifies a powerful plaque flyscioide To cover the land described there are, then, formation of pyroclastic material and detritus deposits. There are, finally, real tuff stone plaques in various locations.

The tectonic structure is made more evident by the monoclonal antibody that forms the calcareous-dolomitic mountains of Avella. Here, the layers hang on average around 35 degrees and dip to the north. Very many are fractures and faults that affect this property and that, generally, they are grouped into two systems: the NW-SE direction (Appenninico) and another perpendicular to this (antiappenninico). They are also present and quite widespread, other fault systems that seem to be the result of a tectonic oldest.

The ridge of mountains Avella-Feverfew consists of carbonate rocks of Mesozoic age, is afferent Unit tectonic Picentini-Taburno. Stratigraphically from the bottom upwards it is characterized:

- Series Mesozoic limestone and dolomite,
- Miocene deposits: from limestone to sandstone;
- Volcaniclastic deposits Plio-Pleistocene and Holocene debris, the latter mainly calcareous.

The Meso-Cenozoic sequences have a structure monoclonalico variously dislocated by faults. The monoclonal generally have to sink to the northern quadrants including with slopes mostly between 15 ° and 40 °, most frequently around 30 °. The complex structural limestone, north of the valley of Baianese, presents a dive towards N-NE.

In particular, the Plio-Quaternary tectonics of age has produced a series of faults with prevailing NW-SE orientation (direction Apennines) and NE-SO (antiappenninica direction).



# AVELLA

## NATURA E PAESAGGIO

The faults in the area are of considerable significance in the context buoyancy geomorphological and also in the basal underground water circulation that occurs in carbonates. The presence of these discontinuities has led to the articulation of the structure into blocks and bodies with giacurali diversified structures, as well as the fundamental alignments orography.

Structural evolution, related to tectonic phases, as well as the degradation processes geomorphological, have led to the identification of depressed areas internal to the carbonate ridges. These depressions in the late Pleistocene have been filled in part by calcareous materials disintegrated, and in part by the arrival of volcanoclastites ignimbrite related to the activity of the Campanian Plain and the Somma-Vesuvius.

### Geomorphology

The characteristic that best highlights, mountains Avella-ferfew, is the difference in energy of the relief. In fact, the northern slope, in general, has some very accentuated with steep gradients are not completely covered by vegetation, which testifies activity modeling processes much more slowly than the southern side that has, by contrast, strong energies of relief, giving a landscape with abrupt alternations of ravines and rocky ridges, overhangs and deep incisions. It can be distinguished through three morphological units consisting of M. Teano, M. Pizzone and M. Cornito which are separated by as many valleys set of lines of faults with NW-SE trend. A feature common to the three units is the presence of flattened summit, interrupted by escarpments.

The modeler main agent of this type of landscape is tectonics, which affected the morphology and on this first track was implanted subaerial erosion and further dividing the karst landscape. Finally, the modeling action on the part of pyroclastic deposits, represented the conclusion of the modeling.

Regarding the southern slope, very significant, is the identification of two morphological units, by the Valle del Clanio. The main one, in the right bank, is a monoclinica elongated in the direction of the Apennines, dissected by numerous valleys, individuatisi along lines of faults. Beautiful examples are represented by the ravines of considerable size, the Vallone S. Egidio and the Walloon Acquaserta, the latter present at the southern base of Mount Travertone. The slopes show a configuration of triangular facets, which are evidence of tectonic genesis of the same. Just take a look at the main limestone blocks of the southern slopes of the mountains Avella ss to note the above structures, such as those of the upstream and Spadanfora Salmola.

The second morphological unit, in the left bank, is constituted by blocks faulted and lowered in different directions. These slopes are less deeply dissected, compared to the previous, which have a hierarchical order of fluvial much more developed, reaching an order 3 in some places, they also are inactive and as evidenced by the dense vegetation that covers them.



# AVELLA

## NATURA E PAESAGGIO

The territory is partly characterized by karst features such as sinkholes, karst fields and ancient mouths of ducts, which is currently open along the limestone wall about 50 meters high from the valley floor. These cavities are located at approximately the same altitude and, not being tied to any lithological discontinuity, should testify an old base level karst. Some of these cavities, once captured by this process of deepening of the stream Clanio, they are flared forming caves.

The ridge of mountains Avella-feverfew, is also characterized by numerous ridges more or less dropped from the slopes. Several observations can be made both along the slopes that overlook the main road, near S. Angelo a Scala than on those of M. Avella S.S.

It 'also possible to observe the forms that show a periglacial modeling: an example would be the niche of nivazione present in the vicinity of M. Ciesco Alto (1357 m.). In fact (although not well evident from the tablet topographical scale 1:25000), it is a semi-elliptical depression with flat base hollowed in the rock.

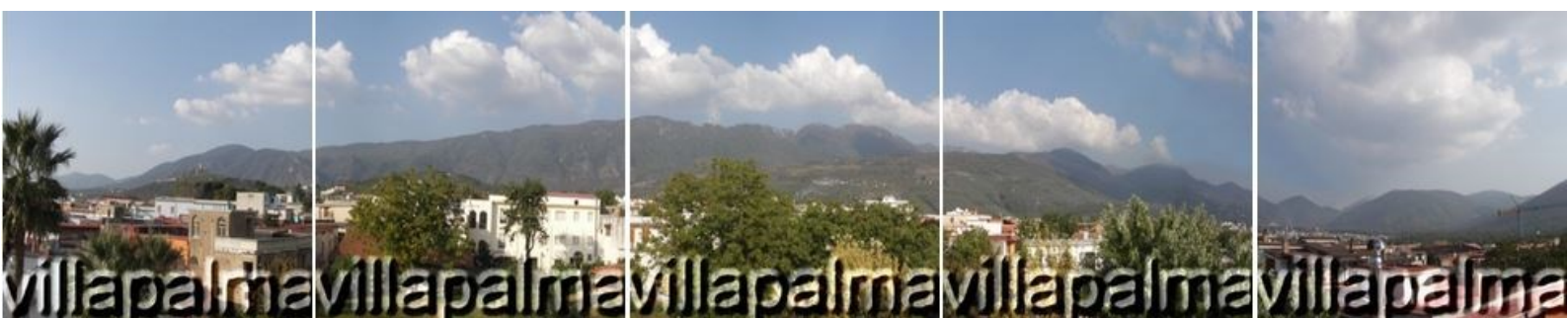
We should not forget, finally, those flaps known forms of ancient paleo, present at different heights on the mountains (1400 to approximately 600 meters) in many examples: Major Field (1350 m), Golf Summerhill-S. John (1050 m), Plan Rapillo (1230 m), Gregory Piano, Piano di Iorio etc.

### Hydrography (from the website of the Park of feverfew)

The surface hydrography seems to be characterized more by streams of torrential character belonging for the most part in the catchment area of the Calore river that runs through the area to the north of feverfew. The area is, however, crossed by a network of small streams limited development. The Virgin river flows in the river near Avellino Finestrelle, a tributary of the River on Saturday. The river basin is located from south to north between the provinces of Avellino and Benevento. The mountain basin that feeds the Regi Lagni established in the territory of the Park and is formed by the waters of the river Clanio, affecting the provinces of Avellino, Naples and Caserta. On the north side, also, arises the Isclero River, left tributary of the Volturno. Another stream is the stream Caudino.

### Karst

Surface karst formations are particularly common features such as sinkholes, furrowed fields, lapies, etc.. Among the major formations must remember the polje Campo Maggiore at about 1300 m, the Campo S. John and Summerhill at about 1050 m s.l.m. and sinkholes of Plan Rapillo at an altitude of about 1230 m. Funnel-shaped morphologies from collapse sinklone such as the one located along the southern slope of the hill Gate, square-shaped by more than 100 m in diameter, almost entirely damaged by mining activities, or in the territory of Mugnano del Cardinale,



# AVELLA

## NATURA E PAESAGGIO

upstream side of the defense about 450 m above sea level For formations underground or deep, to be reliably counted in the area of Avella, the three caves of Camerelle of Plain, the Sportiglioni and S. Michael and Candide Cave (karst tunnel) in the territory of Pannarano.

Cave of Camerelle of Plain: (Cp 721 of the cadastre of the Caves of Campania) is among the three most important from the point of caving., Opens to the amount of 900 meters on the eastern side of the Valley of S. Egidio, near the Fountain Plain, growing to nearly 150 meters in the directions associated SN and O-E.

Cave of Sportiglioni: (Cp 184 of the cadastre of the Caves in the region) at the base of the southern slope of Mount Spadafora, along a tributary valley of the river Clanio. It is developed for more than 120 yards to a negative slope of 17 m in the direction O-E, associated with another NS, with two large adjoining rooms with a big hall, both richly concretions. Biospeleologicamente is the most interesting of the three, and, in the regional context, it presents the current state of knowledge among the top 10 cavity of major importance.

The Cave of St. Michele: (Cp 264 of the cadastre of the Caves of Campania) hidden by dense vegetation on the left bank of the middle part of the Vallone delle Fontanelle, is known since ancient times. Pictorial remains bear witness to the secular use in worship since at least the thirteenth century, with distinct characteristics of culture, people-based.

Caves Candide (Karst Tunnel): (Cp 1256 Land of the Caves in the region) along the escarpment in the valley right near the water veins at 1000 m above sea level, on the eastern side of feverfew. It has a length of about 240 m for a negative slope of 35 m.

Of the southern slope of Mount Fellino should remember the Shelter Fellino, (Cp 867 of the cadastre of the Caves in the region) Upper Paleolithic prehistoric station, unfortunately irreparably destroyed by a quarry, and the Cave of New Fellino, still retains its original white beauty when has befallen the same fate.

Other caving formations are ever in the area Roccarainola, if you open the huge mouth of the cave of the same name (Cp 269 of the cadastre of the Caves of Campania), overlooking the majestic oldest part.



# AVELLA

## NATURA E PAESAGGIO

### Fauna

For the fauna we can begin by insects. The species, the distinguished naturalist 800, enumerates Costa dei Monti Avella-Feverfew are very numerous, with a marked abundance and importance for beetles and wasps, for which he wrote the last quote: "There maybe a region of the Kingdom which in this respect compared to star de 'Partenii. " In the field of arthropods in general it is necessary to highlight the rich and specialized fauna of the Cave of Sportiglioni, where so far, have been identified the following four endemics: Rhizoglyphus sportilionensis. (Mite), Haplophthalmus mengei legreci (isopodo), Disparrhopalites patricians (springtail) and Bathisciola partenii (beetle). Returning all'entomofauna the territory is typically Apennine species, such as the locust and acridide among the Orthoptera. Were also surveyed 11 species of amphibians, 14 of reptiles, no less than 106 species of birds including 70 nesting species and 33 mammal species that flock, unfortunately in poor condition.

A number of interesting amphibians and reptiles in the area: the spotted salamander, quite rare but present in various areas in the vicinity of small collections of water, the Greek frog, common toad and now rare, the toad. Amphibians significant as the 'Yellow-bellied toad, the spectacled salamander.

Among the reptiles, very common is the three-toed skink, the emidattilo warty, green lizard. For snakes, the grass snake, like Aesculapius, the four-lined snake, the smooth snake, rat snake, the asp, are all quite common, minus the cervone.

A first, summary list of the most common birds of the complex of the Monti-Avella feverfew, and in particular of its higher elevations, including the raven, sparrow hawks, buzzards the great spotted woodpecker and the black redstart, the tawny pipit, the nuthatch, the biking, the great tit, blackcap, etc..

Good potential nature of 'area is also a witness to the presence of the Wildcat, together with many other species of mammals, hedgehog, one or two species of shrews some species of bats (so far established eight), dormice, dormouse, dormice, the country mouse, the wild mouse, vole along the rivers of the plains, the fox, badger, weasel, polecat, wild boar and hare. Species in danger of extinction are four: badger, polecat, marten and sable, while just passing the wolf.

### Historical Background



# AVELLA

## NATURA E PAESAGGIO

May 15, 1976: closing with a hike on the feverfew, the XI National Congress of Entomology.

1946 birth year of research biospeleologica in Campania, the Cave of Sportiglioni in Avella was one of the first three natural caves in the region to be explored by La Greca, Lazzari and Moncharmont, well-known scholars of the Society of Naturalists in Naples.

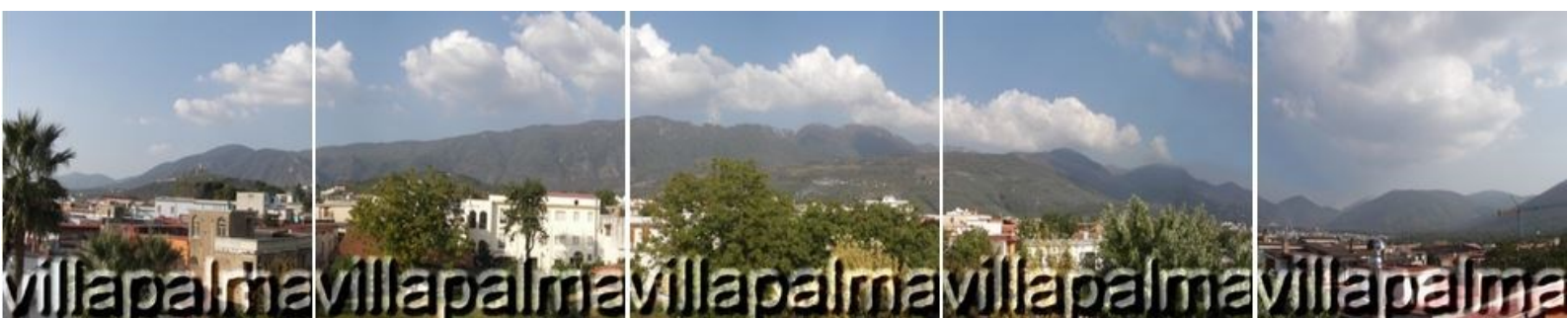
From 1946 onwards the Cave of Sportiglioni were published less than 17 works by 10 French and Italian researchers 4. In particular, all four bodies were found endemic: *Rhizoglyphus sportilionensis* (mite), *Haplophthalmus mengei lagrecai* brian (isopodo), *Disparrhopalites patricians* (springtail) and *Bathisciola partenii* (beetle).

### Botany

The ridge of the mountains Avella-feverfew, rises a short distance from the sea, a situation which allows considerable Lateral ventilation of rainfall. An average rainfall at high altitude (1270 m Montevergine) of more than 1600 mm per year and downstream is around 900 mm. This availability of water, accompanied by a remarkable morphological articulation, determines the realization of particular microclimatic conditions, and thus the formation of numerous environments conservative. In fact, survive phytocoenoses and entities now rarefied or, in many cases, disappeared from the rest of the territory.

Starting with the description of the flora on the lower elevations of the mountains Avella-feverfew, the culture that predominates is that of hazel (*Corylus avellana*), which in some areas (especially on the slopes of Baianese) form yet spontaneous populations of considerable size. A special mention deserves the hazel (*Corylus avellana*), entity characterizing the territory. Indeed, Pliny appointment Avella for its hazelnuts "Nucae Abellanae"; Diocletian, instead, it recalls in his edict, always for the same fruits "Nucium Abellanorum".

Immediately upstream of the cultivated land, with whom he often mingle, take over, before the olive tree, and then, up to 1000 meters or so, extensive forests of chestnut. In the dense undergrowth dominated by grasses, which are flanked by a few ranunculaceae and orchids. Among the plants of higher size, always rather sporadic, *Pteridium aquilinum* and *Daphne laureola* prefer shady stations, which are often present in the ivy and clematis *Clematis*, along with *Vinca maior*. In the most enlightened are frequent *Helleborus foetidus*, *ulmifolius* *Rubus*, *Crataegus monogyna* and *Cytiscus scoparius*. In drier areas, a deeper substrate, excel in the tree layer the flowering ash, hop hornbeam, hornbeam, with many maples. In stations edaficamente poor and degraded forms can be detected here and there in the forest oaks. Individuals of the oak shrubs cling between roc-



# AVELLA

## NATURA E PAESAGGIO

ky crevices on rocky inhospitable and there, on the sunnier slopes thick oak forest zones. Once you reach the altitude of 1000 meters you enter the domain of the beech, whose forest is never very many rich entities in the different levels of vegetation.

Even the region above the beech is rich in vegetation, almost always low and herbaceous. In areas of rocky outcrops at the summit, often beaten by the winds is the characteristic flora of brometi and mesobrometi Apennines, where entities of interest are frequent, often endemic, such as the violet (*Viola aetnensis* subsp. Gorgeous, and *V. pseudogracilis*), *Rhamnus* Alpine, to name just a few. Also exist *Brunnus erectus*, *Thymus striatus*, ambiguius timothy, fescue, *Saxifraga porophylla*, *S. aizoon*, *Sedum acre*, *S. album*, *S. rock*, *Allium flavum*, etc.. The remarkable presence of *Sesleria apennina* and *Hedraeanthus graminifolium*.

In the valleys and gorges are frequent jumps of water, even decent height, and cliffs stillicidiose elements that allow the survival of mesophilic and microthermic right in these environments. In rock sites and subrupestri exposed to the south are frequent elements of pseudomacchia.

Finally, the vegetation of the mountain pastures, Campo Maggiore range Summerhill to mention the most extensive, where the dense meadows are covered in the summer of white daffodils, cerasti and sparse and lush verbaschi.

Despite pressure from human remain, however, in the 'area of a valuable natural habitats, there are also botanical species microthermic and strips of vegetation and wetland planiziaria. L 's business man is centered in the practice of forestry-pastoral type, in' quality agriculture in viticulture, dairy, horticulture and fruit (remember, for example, the production of hazelnuts).

### Historical Background

The first botanist who left news flora on the eastern side of the massif of feverfew, was the botanist John Gussone. The latter performed in 1811, along with Vincenzo Casale, a "journey botanical" in the Province of Avellino (Casale and Gussone 1812) as a correspondent of the "Flora Napoletana" that M. Content was organized at the University of Naples. They stopped at the Sanctuary of Montevergine from 29 June to 6 July 1811.

Many years later the tenor performed a brief excursion to Montevergine July 7, 1841, with his nephew Vincenzo content, also botanist, gardener and R. A. Botanical Garden Jordan.

On the western side of the first visit was made in 1872 by Nicola Terracciano that erborizzò near Avella and then headed for the Ciesco Alto, crossing the floor of the Castellone and woods of the eyelashes. A second visit was made in 1874 and interested in the highest part of the territory of Forchia, where the Terracciano arrived at Camp Plan.

In 1988 in our country, not only were surveyed in 1162 floristic entities but also the discovery of some species ever reported for the region of Campania and of an entity belonging to the genus *Iris*



# AVELLA

## NATURA E PAESAGGIO

on whose exact taxonomic status are still being researched. Very interesting is the presence of two adventitious: *Gamochaeta purpurea* (L.) Cabrera, nova entity for the Italian territory and *Galinsoga ciliata* (Rafin.) S. F. Blake, new to southern Italy.

There are numerous Finally, the rare entities or phytogeographical interest, only sporadically reported on the territory of Campania.

### Climatic characterization

According to the Köppen climate classification it may be said that the climate that characterizes the ridge of the mountains Avella-Feverfew is temperate with dry summers.

The area, therefore, falls in those with climate "Mediterranean" characterized by the presence dell'anticiclone summer, and thus distributed mainly by rainfall in winter. The summers are hot but dry autumns and winters follow them warm and moist. In mountainous areas can not occur during particularly dry because even the summer months are characterized by phenomena rainy. The situation is different in the lower areas, where in summer there is, instead, an almost total absence of precipitation.

The rainfall recorded by the Observatory of Montevergine to 1270 m above sea level in the period 1921-1950 was one of the highest nationwide (2200 mm annually distributed in 121 days). However, from the data collected in 'last thirty years the rainfall fell to an average of about 1600 mm per year. In areas of the valley floor (Avella) the recorded values are passed in the thirty years from 1921 to 1950 from 1130 mm to about 900 mm for the period 1976-2005. The rainiest months are still November and December. For the entire group of mountains Avella-Feverfew snow occurs frequently on the reliefs (about 40 snowy days between October and April), where, often, can reach up to three meters thick. The duration of snow cover on the ground is very unstable, due to the continuous changing of the warm currents of the Mediterranean and cold currents of Tramontana. The month in which precipitation is on average be more abundant than in February.

The average annual temperature fluctuates between 8.7 ° C and 17 ° C, depending on the altitude, the annual variation is very regular: a min in the winter season (January-February with daily average value around 0 ° C in the mountains ) and a maximum in summer (July-August with average value of about 17.5 ° C).

The winds of higher intensity are those that blow from the NE, while the richest of rain are those of the Tyrrhenian SW.





# AVELLA

## NATURA E PAESAGGIO

