

THE HERPETOFAUNA OF THE SOUTH-EAST PELIGNA REGION (ABRUZZO, ITALY)

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FOREWORD

The present paper is a first, concise, contribution to the knowledge of the SE Peligna Region herpetofauna. The information is part of a general work about reptiles and amphibians of the Marsica, the Peligna and the Caraceno Regions (Abruzzo, mid east Italy) (see also Bruno 1973, 1984, 1988) actually in evolution and upgrading.

Some authors believe the boundaries of the ancient Peligna Region were (Fig. 1), in the north, the Aterno River and the Morrone Mountains; in the south, the Serra of Bocca Chiarano, Mount Greco, and the Sangro River (between Castel di Sangro and Pizzoferrato); in the west

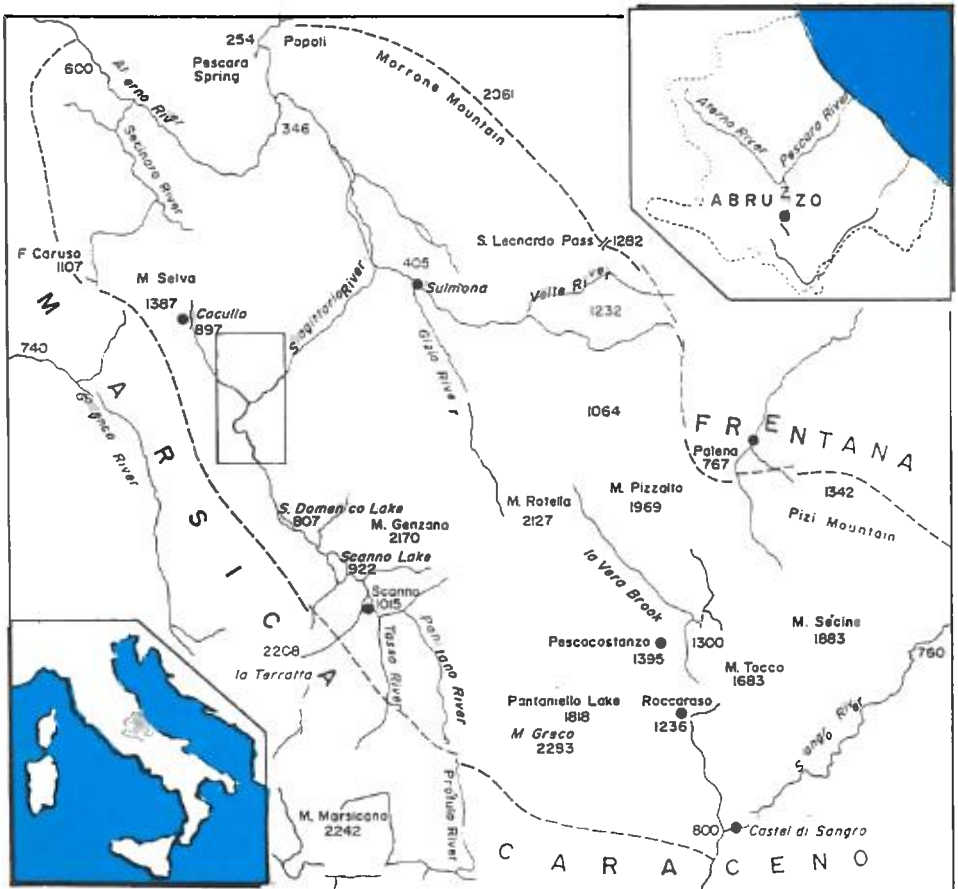


Fig. 1 - Map of the old Peligna Region. The study area is shown by the full grey rectangle.

the Profluo-Tasso-Sagittario-Pezzana Valleys and the Forca Caruso Pass; in the north-east the Secinaro River, and in the east the San Leonardo Pass (Mount Maiella), Palena and the Pizzi Mountains. Other experts, instead, believe the old northern boundaries went from Sepino to Popoli and, along the Pescara River, up to its confluence with the Nora River. The NE boundary was extended from that confluence to Lanciano Pass and to the western slope of the Maiella Mountain (see for example Cramer, 1826; Bosnier, 1902; Abbate, 1903).

This region was inhabited in antiquity by Superequani, Corfiniesi and Sulmonesi peoples, gathered in the Peligna Confederation (see also Devoto, 1931, 1971; Pace and Scarascia, 1977; Sgattoni 1979). It was considered by some latin writers (see also Q.F. Oratius 65-8 A.C., P.N. Ovidius 43 A.C. - about 17 D.C.) to be the coldest region in Central Italy. The Conca Peligna, a plain located between Pettorano and Popoli and between the Pacentro and Cocollo hills, was an exception to this; for that reason, and for its fertility, it was called by Torcia (1793) "la vera Tempe d'Italia" (the true Tempe of Italy).

Among Italic Regions the Peligna is probably the best known among european naturalists and humanists for its being the most important area for snake hunters and for the celebration, at Cocollo, of the San Domenico festival. This is a popular tradition with a famous Snake Procession which takes place every first Thursday of May (see for example Alicandri-Ciuffelli, 1971; Angelucci w.d., Anonymus 1932, 1949; Bruno 1971, 1983, Bruno and Maugeri 1990, Bucella 1962, Canziani 1928, Chiari 1975, Chiochio w.d., Cianfarani 1950, Clarcke Smith 1928, D'Antonio 1976, De Angelis 1961, De Nino 1889, De Lisio 1895, D'Ignazio 1971, Finamore 1890, Giancrisofaro 1978, Harrison 1907, Letta 1972, Nola 1974, 1976, 1986, Pansa 1938, 1957, Plensio 1982, Profeta 1968, 1976, 1984, Simboli 1991, Torcia 1793).

Some authors believe Hercules was the main divinity among the Peligna Region peoples (see for example Bruno and Maugeri 1990, Mattiocco 1973, w.d., Nola 1976, 1986, Profeta 1976, 1984, Wonerghen 1973) but this is open to debate.

In fact from palaeolithic times the Peligna Region was subject to the migration of peoples coming from different territories and belonging to different civilizations (see for example Abbate 1903, Balzano 1927, Besnier 1902, Chierici *et al* 1963, Cramer 1826, De Magistris 1902, Devoto 1931, 1971, Fondi 1970, Furrer 1924, Pace and Scarascia 1977, Ricci 1984, Sgattoni 1979). The Peligna Region seems to have been colonized in the second millennium B.C. by Minoican-Cretan peoples who introduced the religion of Rhea (or Magna Mater). About 1000-800 B.C. the Peligni Region was occupied by Pheonicians (many geographical names come from the Phoenician language) which introduced the cult of Mitra and Astarte. During Roman times the more popular divinity was Hercules. This cult was introduced from Magna Graecia. The snake cult seems not to be connected with that of Hercules, because it is closer to the african and asiatic cults. That means the snake cult existed before that of Hercules, and continued to be practised with it. Once, the snake cult was more widespread than today in central and south Italy. When the Catholic Church took the place of paganism the snake cult was maintained and the pagan divinities were replaced with San Domenico in Central Italy, and San Paolo in the South.

For further information on the Natural History of this part of Abruzzo see also Bruno (1984, 1985), Colantonio (1978), D'Antonio (1976), Del Re (1835), Di Carlo (1972), Furrer (1924), Ilg (1940), Montelucci *et al* (1973), Naviglio (1984), Piccirilli (1911), Pratesi and Tassi (1972), Scacchi (1899), Tanturri (1853) and Zuffardi (1913).

Herpetological reports on the Peligni Region can be found in, for example, Altobello (1930 a,b), Bruno (1973, 1984), Bruno and Maugeri (1990), Mangili (1985) and Naviglio (1984).

INTRODUCTION

The study area (fig. 2) covers the Anversa degli Abruzzi municipal territory and the very eastern part of the Cocullo municipal one, total area 22 km² (see the military maps 1: 25.000 scale, IGM, Tab. 146 II SW and SE and 152 I NW and NE).

All the mountains considered in this study are formed by calcareous rocks (Parotto and Praturion 1975).

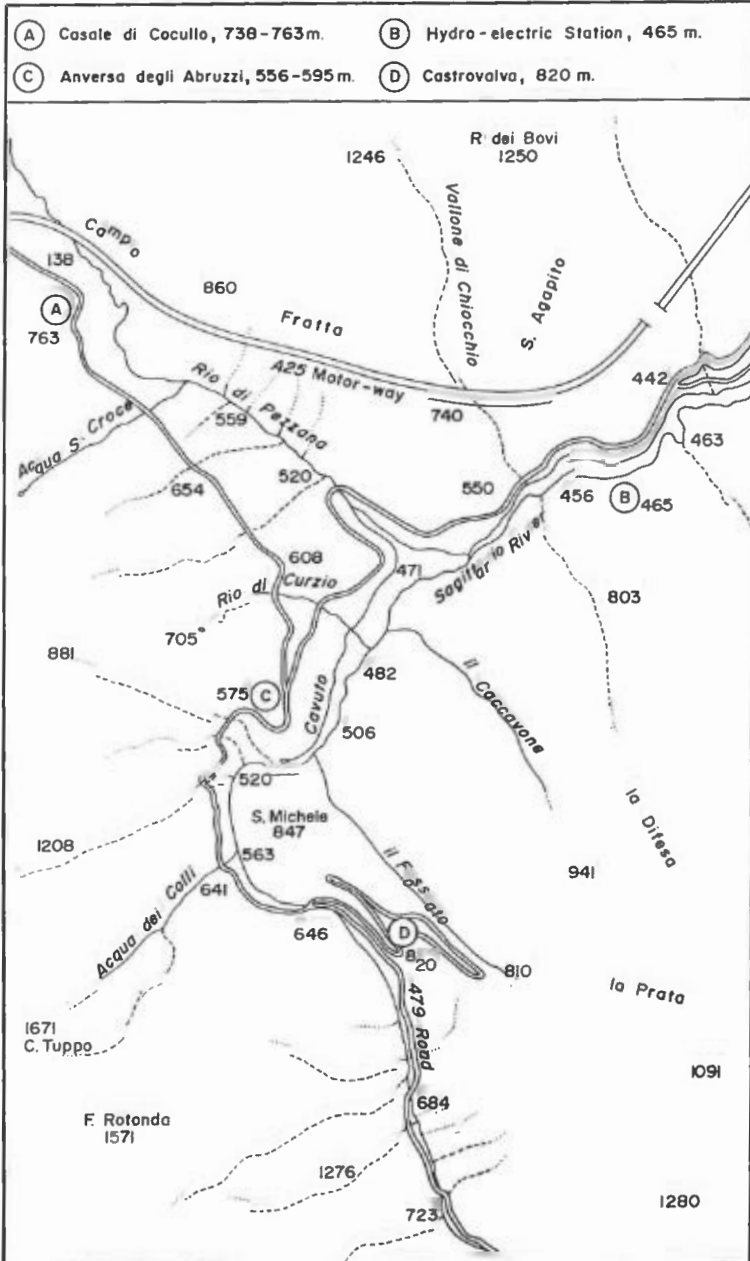


Fig. 2 - Map of the study territory

The hydrographic network is not very well developed; besides the Sagittario River, which flows in the bottom of the valley, very few other rivers with an approximately constant flow all through the year, such as Rio di Pezzana, Caccavone, il Fossato, l'Acqua dei Colli, and the Curzio and Acqua Croce springs are present.

Once (see Perrone 1990) the river flows were more abundant than today because of the changes due to the San Domenico dam, built in 1929 by the Italian Rail Company (FFSS). It has a depth of 24 m and 1.300.000 m³ capacity (D'Antonio 1976).

Because of this injury to the landscape the natural features of the Sagittario Valley, especially the botanical and zoological ones, have changed considerably, mostly downstream of the dam. The disappearance or rarity of a great part of the local aquatic or partially aquatic fauna is probably due to this big human impact.

The territory examined, because of its morphology, doesn't have a uniform climate; it is possible to consider two very different zones (Pogliani and Di Gregorio 1979). The Sirente (2012-2349 m.) and Marsica (1712-2242 m.) Mountains, on the NW and S sides, have a cold and often moist climate. The Sulmona Plain (at NE and E) has subcontinental climatic characteristics with strong thermal seasonal fluctuations, high temperatures, and rare summer rains.

As a result of this the W and S areas have a 10°C annual mean temperature and 1150 mm mean rains and the E and N areas have a 12°C annual mean temperature and 662 mm mean rains.

The vegetation belongs to the samnitic belt (hills, broadleaved mixed woods with dominant oaks) and to the subatlantic belt (mountains, broadleaved forest with dominant beech) of the mediterranean zone (after Pignatti 1979).

Until 40-50 years ago this territory was utilized for agriculture, forestry and pastures, as typical for the mountain Abruzzo economy (see also Almagia 1929, Bolzano 1927, Cecchettani 1909, Chierici et alii 1963, De Magistris 1902, Fondi 1970, Furrer 1924, 1931, Giuseppetti 1934, Milone 1955, Ortolani and Dagradi 1964).



Plate I – Typical landscape of the study area

photo. S. Bruno.

Overgrazing and intense wood cutting caused much more environmental damage than urbanization and agriculture (Arpea 1958, Biondi 1989, Cederna 1975, Franciosa 1951, Parente 1956, Pratesi and Tassi 1972, Rivera 1960).

In recent years a strong human impact was caused by the Roma-Pescara highway which upset the slope continuity and a great extent of the valley landscape (see Aa.Vv. 1970), by the presence of quarries (now dis-used), of country roads which go up to the mountains (Cassola 1978, Cederna 1975) and of reafforestation projects.

The reafforestation projects are mostly on the NW and SW mountain slopes with trees (like *Pinus* and *Thuja*) completely foreign to local flora and able to destroy the original vegetation (Allavena 1972, Biondi 1989, Cappuccini 1951, Pavari 1952, Vecchio 1974, Zangheri 1968).



Plate 2 - A beautiful group of Four-lined Snake shown by a "serparo" at Cocullo during the 1st May Thursday holiday. Every year on average 40 specimens of Four-lined Snakes are used in the procession photo. F. Grimaldi.



Plate 3 - Some people still believe a child brought in procession with a Four-lined Snake is protected in the future from viper bites
phot. V. Di Valerio.



Plate 4 - Grass Snake female about 160 cm long. The name "cervone" given from italian language to the Four-lined Snake in the regional speech is given to the Grass Snake, and particularly to the old females. In the dialect the Four-lined Snake is called "capitone", like the big-headed eels, that means, "big snake good to eat"
photo. S. Bruno.

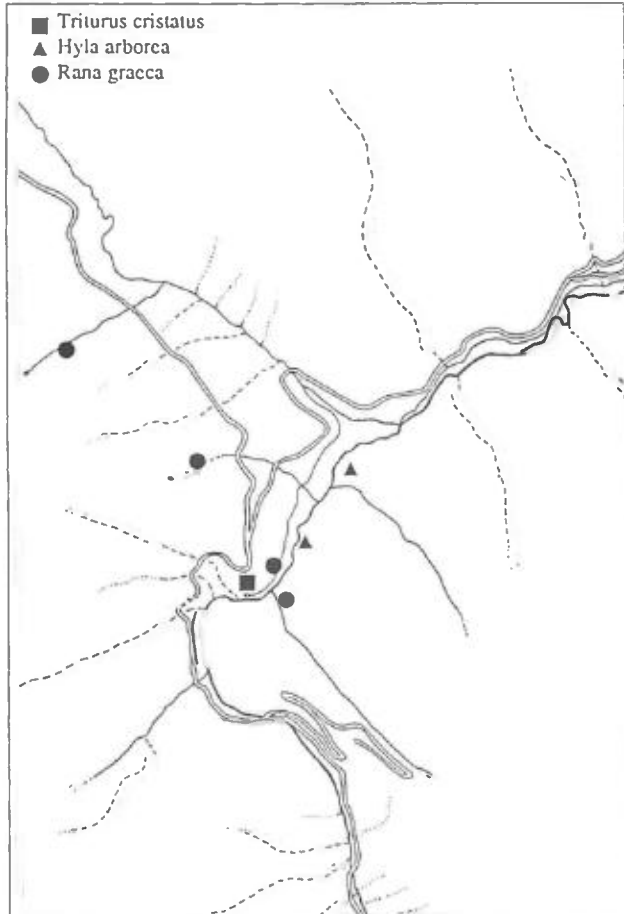


Fig. 3 – Localities where specimens of Warty Newt, Common Tree Frog and Stream Frog were collected.

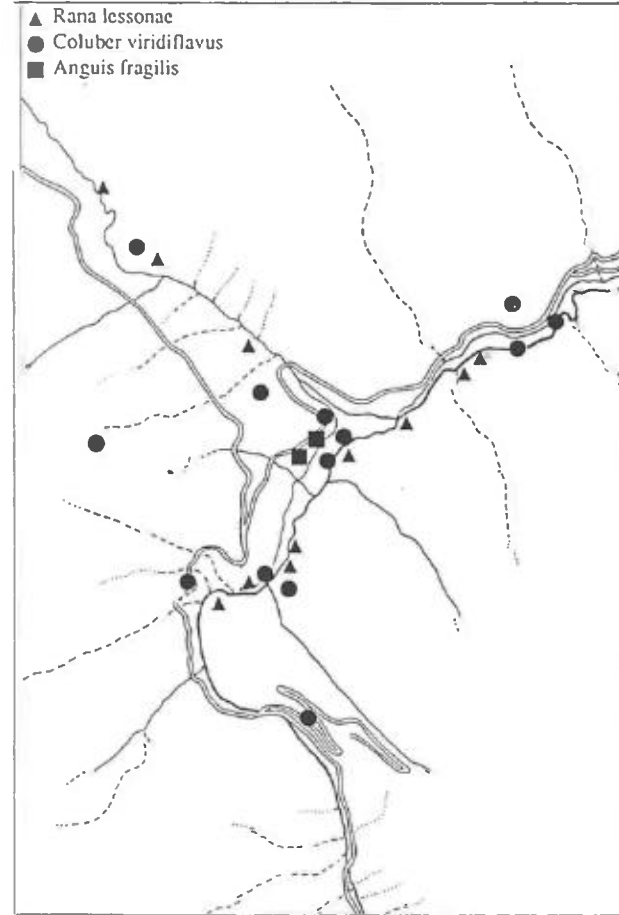


Fig. 4 – Localities where specimens of Pool Frog, Slow Worm and Western Whip Snake were collected.

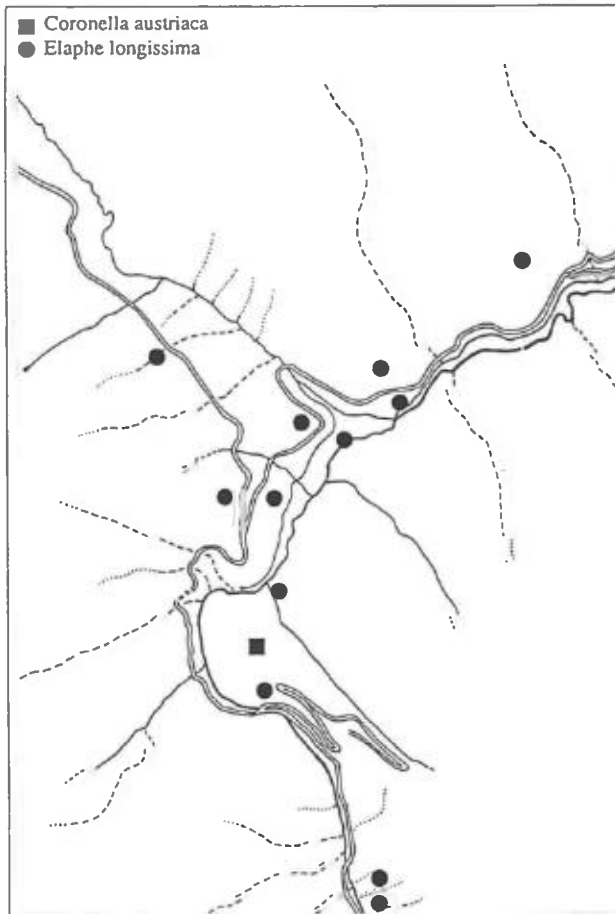


Fig. 5 – Localities where specimens of Smooth Snake and Aesculapian Snake were collected.

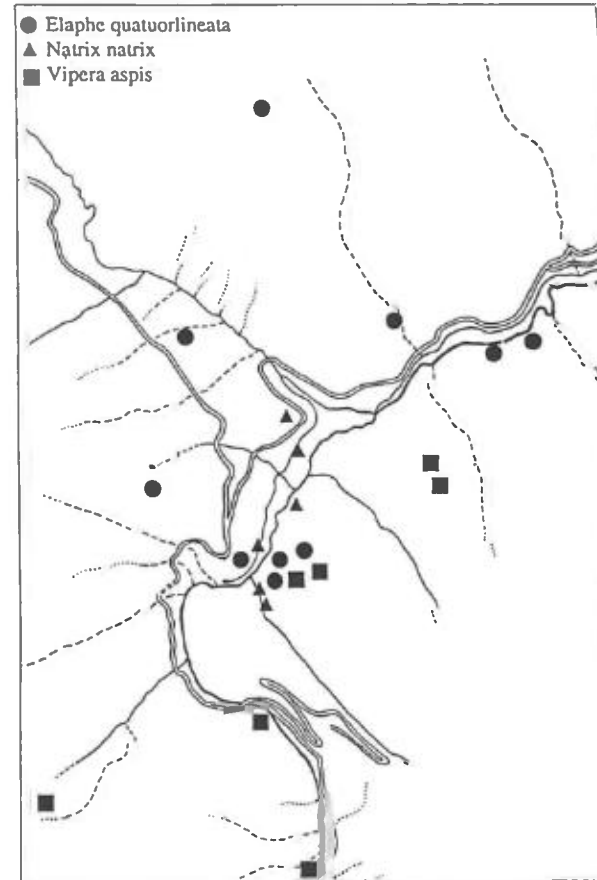


Fig. 6 – Localities where specimens of Four-lined Snake, Grass Snake and Asp Viper were collected.

AMPHIBIA

CAUDATA

Salamandridae

Salamandra salamandra (Linné, 1758) Schrank, 1786.

Fire Salamander.

Mr. Vittorio Di Cesare (from Anversa degli Abruzzi) found one specimen of this species before 1974 near the hydro-electric power plant drainage canal.

According to the classic taxonomy the abruzzian populations belong to the ssp. *gigliolii* Eiselt and Lanza, 1956.

Triturus cristatus carnifex (= *T. carnifex*) (Laurenti, 1768) Dunn, 1918.

Warty Newt.

Mr. Claudio D'Angelo (from Anversa degli Abruzzi) found one specimen of this species in the locality Cavuto Spring in February 1981.

In the Giuseppe Altobello amphibian collection one adult female specimen coming from "Anversa" with the number 19 was present (Altobello 1930a).

According to the classic taxonomy the abruzzian populations belong to the ssp. *carnifex* (Laurenti, 1768).

Triturus italicus (Peracca, 1898) Mertens and L. Muller, 1928. Italian Newt.

In the Abruzzo and Molise amphibian and reptile Giuseppe Altobello collection, bottle n. 77, numerous specimens coming from the Sulmona area were present (Altobello 1930a).

This species is no longer found in our study area.

SALIENTIA

Bufo

Bufo bufo (Linné, 1758) Cuvier, 1817.

Common Toad (rusp).

Common and widespread in all vegetation types from 520 up to 1570 m.

According to the classic taxonomy the Apennine populations belong to the sep. *spinosus* Daudin, 1803. We believe this matter requires further study.

Hylidae

Hyla arborea (Linné, 1758) Laurenti, 1768.

Common Tree Frog (raganell).

It lives mostly in the riverine woods with *Populus* and *Salix*; it is possible to find it, with less frequency, in the mesophilous woods with *Quercus robur* and *Ulmus minor*. From 520 up to around 800 m.

According to the classic taxonomy the abruzzian populations belong to the ssp. *arborea* (Linné, 1758).

Ranidae

Rana graeca Boulenger, 1891.

Stream Frog (ranocch).

It lives in the *Populetalia* and in the mesophilous woods with *Quercus robur* and *Ulmus minor*.

It is not very common and it is localized in the bottoms of the valleys where vegetation is rich and water is permanently present. From 520 up to about 700 m.

The Italian populations are considered to belong to the ssp. *italica* Dubois, 1985.

Rana lessonae Camerano, 1882.

Pool Frog (ranocch).

It lives in the riverine woods with *Populus* and *Salix* of the valley bottoms. Common but localized; from 520 up to 600 m.

We found *maculata* Camerano, 1883 and *punctata* Camerano, 1883 varieties.

Until 10 years ago they were much more common than today.

REPTILIA

TESTUDINES

Testudinidae

Testudo hermanni Gmelin, 1789.

Hermann's Tortoise.

Until 1960 some specimens were bred in the power plant surroundings by the plant warden. Nobody found any specimens after that time.

SAURIA

Anguidae

Anguis fragilis Linné, 1758.

Slow Worm.

Only three specimens of this species were certainly recorded: 1 young specimen was collected at Madonna della Neve during May 1974 by John Needham and 2 specimens were collected during October 1985 at Sant 'Antonio.

From 465 up to 480 m. Rare, it lives in the riverine hygrophilous wood with *Populus* and *Salix*. It could live in other environments too.

The specimens studied belong to the var. "*typica*".

Lacertidae

Lacerta viridis (Laurenti, 1768) Daudin, 1802.

Green Lizard (u rag'nj).

It lives in the same environments as the Italian Wall Lizard. In the moist and shady valleys with thermophilous woods (*Quercetalia pubescentis*) it can reach about 1300 m.

Abruzzian populations are considered to belong to the ssp. *viridis* (Laurenti, 1768) but the taxonomic positions of the central and southern Apennine populations have to be studied better.

We observed *maculata* Bonaparte, 1836, *mentocoerulea* Bonaparte, 1836 and *variegata* Massalongo, 1854 varieties.

Podarcis muralis (Laurenti, 1768) Bonaparte, 1836.

Common Wall Lizard (r'scertl).

It lives everywhere from 520 up to 1600 m. It is common.

One specimen of the "ssp. *typica*" was collected on July 8, 1812 at Anversa (Altobello 1930b).

The taxonomic position of the populations living in the Apennine subatlantic vegetation is discussed.

We observed, among the others; the *appenninica* (Taddei, 1949), *porphyrea* (Dehne, 1856) and *rubriventris* Bonaparte, 1836 varieties.

Podarcis sicula (Rafinesque Schmaltz, 1810) Bonaparte, 1835.

Italian Wall Lizard (r'scertl).

It lives mostly in the valley bottoms up to 600-700 m. It is more common southwards in the hills of "ai Contra and Caccavone" on clay soils.

According to the classic taxonomy the abruzzian populations belong to the ssp. *campestris* De Betta, 1857.

Scincidae

Chalcides chalcides (Linné, 1758) Laurenti, 1768.

Three-toed Skink.

We never found this species in our considered territory, but we recorded one specimen in the Monte della Selva area, at 1235 m., immediately westwards of the study area.

SERPENTES

Colubridae

Coluber viridiflavus Lacépède, 1789.

Western Whip Snake (nera = var. *carbonarius*; penta = var. *connectens*).

We found this species in the thermophilous woods (*Quercetalia pubescentis*), in the mesophilous ones (*Quercus-Ulmetum-Carpinion*), in the riverine hygrophilous woods (*Populetalia*), in the xerophilous grasslands of the hills (*Brometalia*), in the abandoned fields and rural houses.

It is common and widespread, up to around 800 m.

In our studied territory adults belonging to the *connectens* Bruno and Maugeri, 1990 and *carbonarius* Bonaparte, 1833 varieties are present.

Coronella austriaca Laurenti, 1768.

Smooth Snake.

Only one specimen (var. *pallida* Fatio, 1872) of this species was found on the Colle San Michele, at about 850 m.

The potential vegetation of this area belongs to the *Quercetalia pubescentis*.

Elaphe longissima (Laurenti, 1768) Mertens, 1925.

Aesculapian Snake (lattarina).

It lives in the localities with a vegetation like *Populetalia*, *Quercus-Ulmetum*, *Carpinion* and *Quercetalia pubescentis*, in the xerophilous grasslands of the hills (*Brometalia*) and in abandoned fields.

It is common and widespread; up to 700 m.

The specimens of this area belong to the var. "*typica*". One specimen of the var. *nigrescens* (Massalongo, 1854) was found during August 1986.

Elaphe quatuorlineata (Lacépède, 1789) Nikolskij, 1916.

Four-lined Snake (capitone).

It lives normally in the thermophilous woods with *Quercus pubescens* and *Ostrya carpinifolia*, in uncultivated areas, in the xerophilous grassland on the hills and mountains, and in the mesophilous woods with *Quercus robur* and *Ulmus minor*, but also in country houses.

Occasionally it can reach the upper limit of thermophilous woods (1200 m. between the Intesa and Chiocchio Valleys).

It is common, but localized.

The specimens belong to the ssp. *quatuorlineata* (= *Elaphis cervone* Schreiber, 1875).

The longest specimen we observed was 165 cm in length and was captured in June 1986 in the locality Vignale along the Sagittario River.

Natrix natrix (Linné, 1758) Stejneger, 1907.

Grass Snake (cervone).

It lives both in the mesophilous woods with *Quercus robur* and *Ulmus minor* and in the hygrophilous woods along rivers with *Populus* and *Salix*.

It is possible that adults, but mostly old females, live also in the *Fagion sylvaticae* and *Quercetalia pubescentis*.

It is common, but localized; up to around 600 m.

The specimens belong to the var. *lanzai* Kramer, 1971 of the ssp. *helvetica* (Lacépède, 1789).

Natrix tesellata (Laurenti, 1768) Bonaparte, 1834.

Dice Snake.

We never found the species in this study area but it is present nearby in the S. Domenico artificial Lake (about 800 m., higher in the Sagittario Valley), and Lake Scanno.

Viperidae

Vipera aspis (Linné, 1758) Merrem, 1820.

Asp Viper (vipera).

It lives in all the vegetation types on the southward facing slopes.

It is localized and not very common; up to 1570 m.

The specimens belong to the ssp. *francisciredi* Laurenti, 1768. The commonest varieties are: *fusca* Bonaparte, 1834, *nigra* Massalongo, 1854 and *rufa* Bonaparte, 1834.

Mangili (1985) drew a specimen with a livery we never found in any animal either coming from the territory we considered or from Abruzzo or from any other Italian Regions where sp. *francisciredi* lives (cf. for example Bruno 1976). We believe this drawing was not of a specimen collected in the territory under study but of a *Vipera aspis aspis* or *Vipera aspis atra* photograph (cf. for example Phisalix 1968).

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