

## PRELIMINARY OBSERVATIONS ADDRESSING HERPETOFAUNAL DIVERSITY IN SOUTHERN ROMANIA (AUGUST 1997)

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### INTRODUCTION

Among publications on the herpetofauna of Romania, early papers by Fuhn (1960), Fuhn and Vancea (1961) and Fuhn (1969) describe the amphibians and reptiles. Most records of Romanian species in Gasc et al (1997) were made before 1970. The number of amphibian records for the country have been increased from approximately 500 in Fuhn (1960) to 2800 as a result of recent work by Arntzen, Bugter, Cogalniceanu & Wallis (1997), Cogalniceanu (1991, 1997a, 1997b, 1997c), Cogalniceanu & Andrei (1992), Cogalniceanu & Tesio (1993) and Cogalniceanu & Venczel (1993). It is useful to document further records in order to provide an up-date on current species' distribution, and as a basis for stimulating further ecological studies now that Romania is fully open to outside visitors. Moreover, two species of land tortoise are known to be present in Romania near the northern ends of their Balkan distribution, but there is little known on their status, whether populations are potentially threatened by habitat changes due to agricultural and other development that may resulting from the country's political changes.

Following the 3rd World Congress of Herpetology in Prague, Czech Republic (2-10 August 1997), there was an opportunity to meet-up at Brasov in Transylvania (central Romania), and to travel by road from 17 to 21 August through the southern part of Romania, recording amphibians and reptiles in a range of habitats and at different localities.

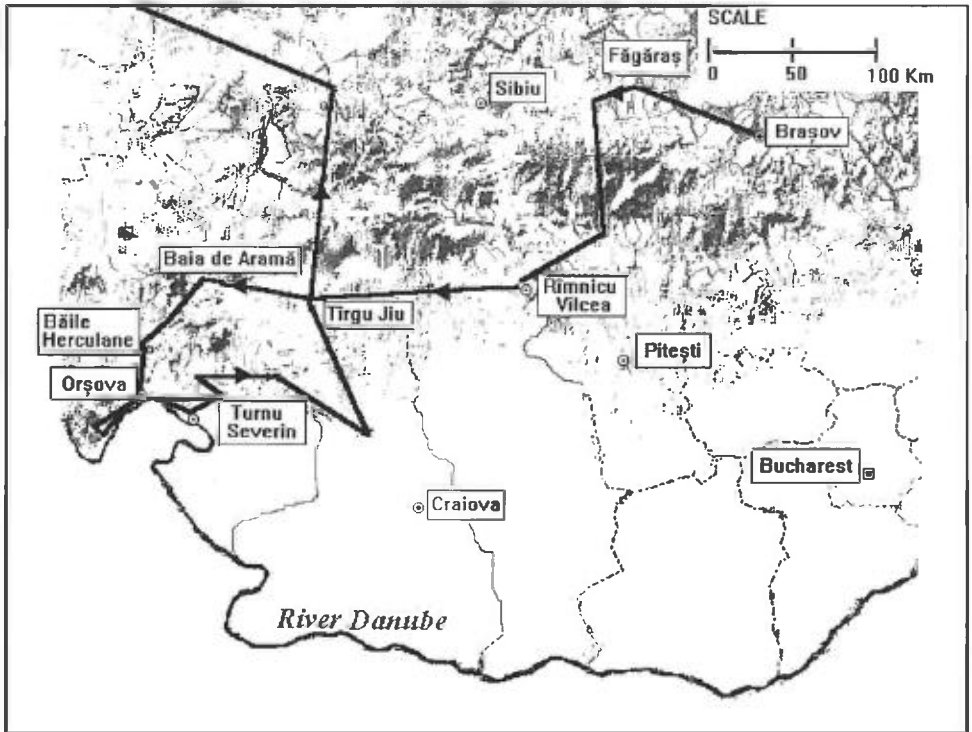
#### **Itinerary**

Names of places follow those used in the 1994 Romania Atlas Rutier scara 1:350,000, and the route taken was computer-traced onto the accompanying sketch map of the region.

*15 August:* From Hungary, enter Romania near Bors, proceed over the western Carpathians and arrive 19 km W. of Cluj-Japoca.

*16 August:* Continue through Cluj-Napoca, Targu Mures and Sighisoara, and arrive at Poiana Brasov, near Bran [the castle fabled to be that of Count Vlad Tepes – Vlad the Impaler – inspirer of Bram Stoker's Dracula tale].

*17 August:* Rendezvous at Brasov; proceed west through Fagaras, and then due south at Arpasu de Jos, over a pass of the southern Carpathian range (highest point 1690 m), across the dam at Lake Vidraru, past Poinari Castle [on a lofty peak – truly the home of Vlad Tepes] and arrive at Corbeni.



Sketch map of southern Romania, showing route taken during survey, 17-22 August 1997. Shading represents land over 1000 m.

*18 August:* Contine from Corbeni south to Curtea de Arges [visit monastery], west through Ramnicu Valcea, Baia de Fier [inspect Pestera Muierii – Women’s Cave], Targu Jiu, Frinesti village, Baia de Arama, and, in the Cerna valley, arrive at a site 20 km N.E. of Baile Herculane.

*19 August:* Depart site and visit another 12 km N.E. of Baile Herculane, and then the spa town itself. Continue south to Orsova on the River Danube [wide at this point, with Serbia on the opposite bank], and then 8 and 11 km S.W. of Orsova (southeast-facing sites by Ieselnita village), and arrive at the dam, in the Mraconia valley, some 13 km S.W. of Orsova.

*20 August:* Depart dam site and visit another 2 km S.W., then Dobova (Ponicova River valley), and return, back through Ieselnita, to Orsova. Continue along the north bank of the Danube, pass the dam construction of Portile de Fieri, Gura Vaih (above the dam), and proceed to Drobeta-Turnu Severin [an old town of Roman origin], then towards Motru, and arrive at the village of Schitul Topolnita [with wood-constructed Monastery] at a stream tributary of the Topolnita River.

*21 August:* [Beating of a simple wooden-drum instrument at ever increasing speed at sunrise was a call to monks to prayer at the Monastery; and, representing reveille, was also a cue to rise and break camp]. Depart village and visit a site near Izvoru Birzii. Continue to Filiasi [D.C. returns by train to Bucharest], and then to Targu Jiu, proceed over a low altitude pass through the southern Carpathians, stop at a site 3km N.W. of Bilteni, and arrive at the village of Ohaba-Ponor (between Petrosani and Hateg).

*22 August:* Depart village and proceed along the Mures valley in western Romania, and via Deva and Arad, cross the border at Badlac back to Hungary.

## Herpetofaunal richness and ecology

1. **19 km W. of Cluj-Napoca:** *Rana esculenta-ridibunda*, two adult males calling, in a pond.
2. **Baia de Fier (Pestera Muierii – Women’s Cave):** *Rana esculenta-ridibunda* and *Bombina variegata*, observed in small rainpools of an adjacent muddy track.
3. **Frincesti:** *Rana esculenta-ridibunda*, *Bombina variegata* and *Hyla arborea*, in a floodpool and small stream of a roadside field.
4. **20 km N.E. of Baile Herculane, Cerna valley:** *Anguis fragilis* (adult male and juvenile) and *Natrix tessellata* (juvenile) found by edge of a field adjacent to the Cerna river.
5. **12 km N.E. of Baile Herculane, Cerna valley:** *Bufo bufo* (one) and *Lacerta agilis* (two), observed at a hillside site in the morning.
6. **By the village of Ieselnita (8 and 11 km S.W. of Orsova):** *Lacerta agilis*, *L. viridis* and *Vipera berus*, on southeast-sloping site above the Danube, and *Vipera ammodytes* as a road kill, while searching for, but not finding *Testudo hermanni boettgeri* in the late afternoon (15h50-16h30) (19.viii). *Coluber caspius* was recorded as a fresh road-kill on tarmac surface (20.viii).
7. **Mraconia dam:** *Testudo hermanni boettgeri*, a male (carapace-over-the-curve length (CCL) 210 mm and midline plastron length, between gular and anal notches (PL), 165 mm), observed basking in morning sunshine at the end of a bramble clump making up hillside scrub. A further male (CCL 155 mm and PL 125 mm) was found at (09h51; 19°C) during a 35 min search by two people (1.7 per man-h of searching), together with the first (10h04; 19°C), not far from its release point the previous evening. *Lacerta viridis* (many), and *Bufo bufo*, *Bombina variegata* and *Rana esculenta-ridibunda*, and snakes *Natrix natrix* and *N. tessellata* were also recorded. An adult *Emys orbicularis* was floating in still water near where the Mraconia River entered the dam.
8. **2 km S.W. of Mraconia dam:** No *Testudo hermanni boettgeri* found (0.5 man-h search; 12h01; 26°C) on valley hillsides, partly cultivated.
9. **Dobova, Poncova River valley:** No *Testudo hermanni boettgeri* (1.5 man-h search; 12h26; 26°C), although recorded there previously. *L. agilis* (two recorded), *L. viridis*, and newly metamorphosed *Rana esculenta-ridibunda* complex (many).
10. **By the village of Schitul Topolnita, Topolnita River:** *Bombina variegata*, *Rana esculenta-ridibunda*, *Bufo viridis*, and a juvenile *Natrix natrix* were recorded by a stream tributary, a total of four species.
11. **1 km northwest Izvoru Birzii village:** A total of 20 *Testudo hermanni boettgeri* were found after a 4.5 man-h search (4.4 per man-h) in diffuse sunshine (09h55; 22.5°C) at a site adjacent to quarry workings, with patchy scrub-covered hillside. *Lacerta viridis* (many) and *L. agilis* (several). [with a fair total of tortoises recorded and measured, time at this site was a splendid finale to any herpetofaunal survey in the south of Romania].
12. **3 km N.W. of Bilteni:** *Rana esculenta-ridibunda*, many newly metamorphosed and young immature, one of which was collected (BMNH 1996.442), observed in a rainpool of a muddy track (during return journey from Filiasi).

## SPECIES LIST

### AMPHIBIA

#### Anura

*Bombina variegata*. Localities 2, 3, 7, 10.

*Bufo bufo*. Localities 5, 7.

*Bufo viridis*. Locality 10.

*Rana esculenta-ridibunda*. Localities 1, 2, 3, 7, 9, 6, 10, 12.

*Hyla arborea*. Locality 3.

## REPTILIA

### Chelonia

*Testudo hermanni boettgeri*. Localities 7, 11.

*Emys orbicularis*. Locality 7.

### Sauria

*Lacerta agilis*. Localities 5, 6, 9, 11.

*Lacerta viridis*. Localities 6, 9, 11.

*Anguis fragilis*. Locality 4.

### Serpentes

*Coluber caspius*. Locality 6.

*Natrix natrix*. Localities 7, 10.

*Natrix tessellata*. Localities 4, 7.

*Vipera ammodytes*. Locality 6.

*Vipera bersu*. Locality 6.

## CONCLUSIONS

A total of fifteen species was recorded (ten reptiles and five amphibians) during this short survey in southern Romania which exceeded the number of species in Britain. Observations were insufficiently systematic on this occasion to come to any specific conclusions concerning herpetofaunal diversity *per se*, nor was it possible to determine species composition (percentage frequency), or relative abundance at most sites. However, an indication of species richness at certain sites was obtained, and the relative abundance of tortoises *Testudo hermanni boettgeri* at the two sites where they were observed, notwithstanding differences in temperature and time of day, was 1.7 and 4.4 per search-hour. At sites with mixed habitat, a wide range of species was recorded, e.g.



Plate 1: *Testudo hermanni boettgeri*, adult female recorded in the Banat valley, 10 km W. of Drobeta-Turnu Severin, southern Romania. Carapace length ca. 20 cm. Observer: G. Praedicow. Photographer: Uwe Prahaph (Dresden, Germany).

Mraconia dam, with eight species: five reptiles and three amphibians. Only single individuals of *Bufo viridis*, *Hyla arborea*, *Emys orbicularis*, *Coluber caspius*, *Vipera ammodytes* and *V. berus* were observed. Except for *Testudo hermanni boettgeri* and *Coluber caspius* (both confined to the south), the majority of species are widespread in Romania (Gasc et al., 1997).

This short survey could be a prelude to a more systematic survey, which has the potential to provide valuable data on herpetofaunal diversity for conservation requirements by recording the number of individuals of different species during visual encounter surveys. This would enable species composition to be determined. For purposes of comparison in different areas, relative density as an expression of abundance may be established by additionally recording the time spent at sites to yield numbers per search-hour, taking into account time of day and air temperature. Further systematic surveys of this kind could provide additional information on variation of herpetofaunal diversity in different areas of Romania.

### ACKNOWLEDGEMENTS

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