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A MALPRACTICE CASE IN THE STUDY OF CHIROPTERANS (MAMMALIA)

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Abstract. It is presented a case of a wrong ringing of a male specimen of *Miniopterus schreibersii*, collected from Bat Cave – Gura Dobrogei in South-East part of Romania. The using of a ring made of hard metal and making it tighter on the bat forearm caused a severe infection of the soft tissues and of the radius. The wrong ringing and the infection chronicity had a lethal effect on the animal.

Résumé. On présente un cas de baguage raté, sur un mâle de *Miniopterus schreibersii*, collecté dans la Grotte Liliecilor – à Gura Dobrogei, située dans le sud-est de la Roumanie. L'utilisation d'une bague confectionnée d'un métal dur et qui a été serrée avec trop de force sur l'avant-bras de la chauve-souris a eu pour effet une infection sévère des tissus mous et du radius. L'erreur de baguage et l'infection chronique ont eu dans ce cas un effet létal pour l'animal.

Key words: ringing, infection, death of animal.

INTRODUCTION

As for some decades a camera is used for the bird studies and less the special nets for catching birds, and lesser hunting, for the bats ultrasound detectors are used (e.g. USA S-25; Petersson D 940 and D 980; QMC Mini Bat Detector; Petersson Ultrasound Detector D 200). With a frequency between 20 – 120 kHz, these detectors establish the presence of the bats in a certain place, on the one hand, and on the other one permit even the species identification.

As regards the bats it is important to know the seasonal leavings of the individuals of a certain species, as it happens in spring when they leave the hibernation places and look for other roosts for making nursery colonies or separated colonies of males. In addition, both in birds and in bat cases there are some migratory species, their individuals leaving on hundreds or thousands of kilometres distances. As these leavings are not only along the latitude (North-South and reverse) but the longitude, the individuals of the certain species can be marked in order to find out the migration ways. Among the multitudes of marking methods there is the ringing, too.

The ringing was used later in bats than in birds. As a matter of fact, making an analogy with the bird ringing, only in 1916 the bats were ringed. The method extended in 1932 and it was implemented in important projects on bat studies from USA and Europe in 1950 – 1960.

Bat ringing presumes a special responsibility, because it has to be made carefully, not to injure the bats. More in bats than in birds there is the risk to put the ring tight around the forearm or rear leg, when palgioptagium and uropatagium don't reach the base of the tarsi.

The rings must be marked with a serial number, the name and the address of the institution or NGOs which made the ringing. After the easy attaching of the ring

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and before the bat is released the data of the bat (species, sex, age, physiological stage, collecting place and date, releasing place and date, weight, etc.) are noted in a copy-book. For having better results in the study of the bat leavings and for increasing the chances to recapture them it is necessary that the ringing to be applied to a very large number of individuals, as those of the species which form colonies of hundreds or even thousands of specimens in the same roost. Because there are less chances for re-capturing the solitary individuals or of those which live in small groups (2 – 5) it is not recommended to ring them.

As soon as a ringed bat is recaptured we can get information on its age, longevity, distances covered in time, migration ways, etc. The information quantity and value increase the greater is the number of the re-captured individual. So, we can establish how large the species population is; comments on the sex ratio can be made; the dynamics of the populations can be better understood, etc.

Ringing presumes the risk of not putting the ring correctly, to make it too tight around the forearm or the ankle, to penetrate the patagium and plagiopatagium, to generate irritations, infections, affections with lethal results.

The theme of the bat protection is old, but it is more and more of present interest within the conditions of the drastic decreasing of the number of individuals in some populations which formed very large colonies before. Marcu (1955), Dumitrescu (1961), Barbu (1974), Noblet (1994), Mitchell-Jones and col. (1999) mentioned the consequences of the habitat destructions, the use of insecticides and fungicides, even man's unfriendly attitude towards the bats and the alarming situation of some species which are almost vanished.

The purpose of this paper is to point out an unfortunate situation, a wrong ringing of a male specimen of *Miniopterus schreibersii*, found in the Bat Cave from Gura Dobrogei – South-East of Romania.

MATERIAL AND METHOD

The male of *Miniopterus schreibersii*, wrongly ringed is from Gura Dobrogei from Constanța county (Fig. 1), Bat Cave (Fig. 2). It was collected on 22nd of August 2005, in the clearoscuro area from the cave entrance, at about 1 m high. Victor Gheorghiu was surprised seeing the bat at very low height. He remarked that it fell down the floor and then it climbed the wall.

When it was taken from the wall it did not put up resistance but when it was examined and its forearm was touched it reacted and uttered ultrasounds. On the forearm it had a ring improperly mounted (Fig. 5), which caused an inflammation and an infection of the tegument, deep tissues and of radius. Detachment of the ring has no success because it was made of a very hard metal. When the bat was kept in the palm and let free it did not try to fly. In laboratory it died after two days. The detached ring (Fig. 3) was of 12.73 mm long, 5.79 mm wide and of 0.41 mm thick, made of rustproof sheet.

RESULTS AND DISCUSSION

Bat Cave from Gura Dobrogei is a karstic formation of Quaternary age, dug in the lime stones of Jurassic age of Dobrogea. In these lime stones, fossils of sponges, bryozoans, brachiopods, annelids, lamellibranches, cephalopods, crinoids, and also of vertebrates were occurred. For its palaeontological and archaeological importance (Palaeolithic silex tools, fragments of Neolithic ceramics, metal objects

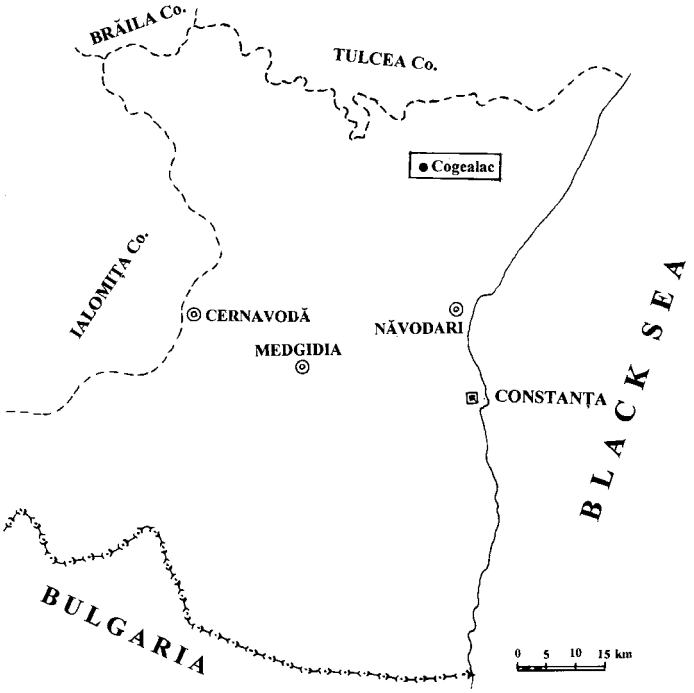

Fig. 1 – Constanța county and surrounding counties from South-East part of Romania. Black rectangle indicates the area with Bat Cave from Gura Dobrogei village in Cogealac locality.

Fig. 2 – Location and landscape of Bat Cave (left) and detail with the entrance in the Bat Cave (right)

Fig. 3 – The ring found on the right forearm of the male specimen of *Miniopterus schreibersii*, collected with a chronic infection from the Bat Cave.

from the Iron Age, etc.) the cave got the statute of speleological reservation by the Law No 5/2000. Its galleries are 480 m long and the exterior side covers 5 ha. In the East-West direction there is the gallery with ceramics, and in the South-North direction the gallery with fossils. As it results from figure 1, the cave belongs to the locality Cogealac, in the North-East of locality Târguşor and to South-East of Cetatea Istria.

At present, three entrances were identified for Bat Cave of Gura Dobrogei: - the main one (Fig. 2 right, 4), northwards oriented and with an opening of 2 x 1.5 m; the second one is a small aven (Fig. 4), east-westwards directed; the third one, west-northwards directed, with a small entrance (Fig. 4). Between entrances A and C there is an unstudied gallery, yet, ant we do not know if it ends with a sac-like bottom or it had a link outside.

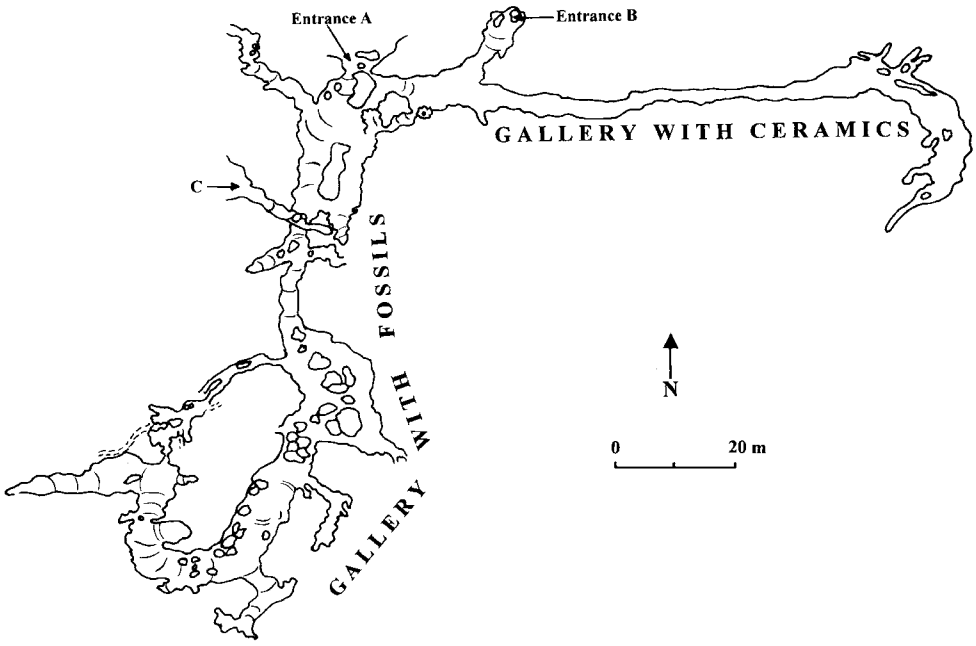

Fig. 4 – The sketch of Bat Cave from Gura Dobrogei, with entrances A, B and C, and two main galleries.

Fig. 5 – Forearm of a *Miniopterus schreibersii* male from Bat Cave - Dobrogea. An infection of the tegument, deep tissues and of radius, because of wrong ringed.

Miniopterus schreibersii was reported by Dumitrescu and col. (1958) together with *Rhinolophus ferrumequinum, R. hipposideros* and *R. mehelyi* – from rhinolophids, and *Myotis myotis, M. bechsteini, M. blythii, M. daubentonii, M. emarginatus, M. mystacinus, M. nattereri, Eptesicus serotinus, Pipistrellus nathusii, Plecotus auritus* – from vespertilionids. More than 40 years ago, in Bat Cave of Gura Dobrogei, the species *Rhinolophus mehelyi* was prevalent, with a colony which counted about 5,000 individuals. Today, the largest colony of this species does not exceed 500 individuals.

The species of interest in this paper, *Miniopterus schreibersii,* was also well represented in this cave, in 2005, by a colony of about 200 individuals. It is known that *Minioptreus schreibersii* flies on distances of over 100 km far from the roost. Referring to its colony from the Bat Cave of Gura Dobrogei, it is obvious that the individuals reach easily the neighbouring countries: Republic of Moldavia, Ukraine, Bulgaria.

Body measurements made on the specimen found with infection at its forearm were: head and body = 49.81 mm; tail = 46.00 mm; hind leg = 10.00 mm; forearm = 45.32 mm; ear = 11.00 mm; sex = ♂.

Beginning from the basic principle according to which ringing is made on a large number of individuals and knowing that the 150 – 200 individuals from the Bat Cave of Gura Dobrogei spread on latitude and longitude up to 100 km, it is sure that the place where the specimen with infection was ringed did not shelter numerous

specimens of *Miniopterus schreibersii*. Probably, it is the first unrespected condition, not to mention the regulation of the ringing agreed by the EUROBATS Secretary Office. It can approve ringings, only according to a written motivation, for scientifical purposes, with the obligation of using proper material (light plastic rings) in order to avoid the injuring of the marked individuals. We do not know if the ringing was made in Romania or outside it, by a Romanian specialist who got the ring from figure 3 or by a foreign one. Considering that it is obvious the acronym of the institution and the locality name, the National Museum of Natural History from Sofia, it exists an evidence of rings used by different specialists.

Conclusions

1. Wrong ringing reported in this paper seems to be made without a statistic and communication between specialists and maybe without the approval of EUROBATS Secretary Office.

2. The rings used could be made of aluminium or of different plastic light materials which preserve the serial number, the name and address of the institution or organisation which made the ringing, at least as well as they were preserved on the hard metal, discussed in this paper.

3. The provisions of the national and international laws in the field of biodiversity conservation were not respected as well as the minimal ones of bio-ethics and professional deontology.

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UN CAZ DE MAL PRAXIS ÎN STUDIUL CHIPOPTERELOR (MAMMALIA)

REZUMAT

Metoda marcării animalelor pentru studiul deplasărilor obișnuite și a migrației, a dinamicii populațiilor și longevității etc. include, între altele și inelarea. Utilizată mai întâi pentru marcarea păsărilor și ținând seama de deplasările liliecilor, uneori pe distanțe foarte mari, inelarea s-a aplicat și în cazul studierii chiropterelor. Astăzi, cu rigoarea conservării biodiversității nu mai este încurajată utilizarea acestei metode, deoarece, cel puțin în cazul liliecilor poate cauza răniri și infecții. Totuși, pentru scopuri științifice există posibilitatea avizărilor de utilizare a inelelor, de către Secretariatul Convenției Europene de Ocrotire a Liliecilor – EUROBATS.

Găsirea unui exemplar mascul de *Miniopterus schreibersii* în Peștera Liliecilor de la Gura Dobrogei – nordul județului Constanța, cu un inel greșit aplicat și confecționat din metal foarte dur, care a cauzat infecția țesuturilor moi și a radiusului pe de o parte, iar pe de altă parte cunoscând rigorile în avizarea inelărilor pentru lilieci am considerat folositor de semnalat cazul și de tras învățămintele necesare. Învățămintele sunt binevenite în condițiile creșterii interesului speologilor amatori și a cercetătorilor tineri de a explora peșterile, precum și în condițiile sporirii ONG-urilor care, între altele își pot propune în programele lor, utilizarea metodei inelărilor.

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