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THE STATE OF THE MAMMALS (MAMMALIA) ALONG THE DANUBE, BETWEEN GÂRLA MARE AND CĂLĂRAȘI (ROMANIA)

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Abstract. Faunistic study along the Danube River (on the left bank and the Romanian islets between km 838 – 383) revealed 46 species of 32 genera, 17 families and 6 orders of mammals. Their role in the local ecological equilibrium justify their consideration as bioindicators of the habitat quality. Their statute of conservation on one side, the complex documentation for declaring some protected areas (e.g. Cama-Dinu islands) as well as the Danube Green Corridor on the other side, points out the importance of the mammals in any kind of habitat.

Résumé. L'étude de la faune le long du fleuve de Danube (sur la rive gauche et les îlots roumains entre les kilomètres 838 - 383) a indiqué 46 espèces de 32 genres, de 17 familles et de 6 ordres des mammifères. Leur rôle dans l'équilibre écologique local justifient leur considération comme bioindicateurs de la qualité du habitat. Les mammifères ont un rôle très important dans tout genre des habitats et le statut de conservation qu'ils ont reçu est utile pour la complexe documentation afin de déclarer quelques secteurs protégés (ex. Îles de Cama-Dinu), ainsi que le Couloir Vert de Danube.

Key words: Mammals, Danube River, habitats, bioindicators, protected areas, Green Corridor.

INTRODUCTION

Geographical position of Romania, as a Carpathian-Danubian-Pontic country, allowed the development of a complex mammal fauna, with West and Central European influences, with Arctic and Mediterranean, Caucasian and Siberian ones, etc. For the surveyed sector of the Danube (km 838 – 401) I had to do with an alluvial substratum (sand, clay, gravel) of a Holocene age, on which a complex grassy and arboreal vegetation developed.

Generally, the Danube Floodplain was a flooding region of almost 900,000 ha, on which Antipa (1910) wrote papers on its state and the means which might have turned it to account. „Prin frumusețile ei naturale cu totul aparte, prin condițiile speciale de viață pentru organismele ce trăiesc și se dezvoltă pe ea precum și prin puterea ei de producțiune, această zonă este de natură de a ne atrage și a ne interesa tot mai mult atât din punctul de vedere curat științific și estetic cât și din punctul de vedere economic”, Antipa wrote (op. cit.). (“By its unique natural beauties, by the special life conditions for the organisms which live and develop here, as well as by its production power, this area draws our attention both from scientific and esthetical point of view and from the economical one.”)

Indeed, the fluctuations of the water level and, especially, the floods from the Danube Floodplain offer different landscapes and, of course, different structures and faunistic and vegetal associations. At the end of the 19th century and the beginning of the 20th one, the entire Danube Floodplain became a real large sea, with strong waves, in the years with great floods.

English translation by Mihaela Barcan Achim.

Today, the Danube Floodplain is dammed up and, in addition, from the upper flow to the Iron Gates area the river is dammed for the hydro-electric power plants, with large basins, where the water flow can be controlled by man. Therefore, the left bank of the Danube is seldom flooded, and the mammal fauna finds good life conditions, both the burrowing species (moles, mole rats, water rats) which dig easily their tunnels through the clayey and sandy soil and the terrestrial ones, which have sufficient shelters in the floodplain forest. Linden, elm, ash, oak, willow, locust trees and the large poplar plantations, among which a high thick grassy vegetation develops, at least in the summer, and together with blackberry bushes, Virginia creepers, ivies and lianas create habitats comparable with those from the jungle, where the access of man is difficult, to the silence and salvation of animals.

But the good shelters are not only on the left bank of the Danube, only in the floodplain forest, but also in the afforested islands. Some mammal species (e. g. as shrews and rodents) are along the Danube River, as Spitzenberger (2001) mentioned. Popescu and col. (1975) reported mammals from Iron Gates – upstream from Gârla Mare. In the collection of “Fauna of Romania”, Murariu (2000 and 2004) reported insectivores, hares and artiodactyls from Romania, mentioning the Danube Plain, too. Also, Popescu & Murariu (2001) referred to some rodent species along the Danube River.

During our study in the mentioned section I visited only the islands which belong to the Romanian territory (Fig. 1). Totally, the observations and collectings were made in the following sites: Gârla Mare and Vrața (km 838 – 831); Chichinețe (km 828 – 826); Salcia (km 825 – 820); Cetate (km 816 – 810); Maglavit (km 810 – 803); Ostrovul Mare and Calafatul Mic (km 794 – 786); Ciuperceni-Desa (km 785 – 745); Acalia (km 767 – 765); Pietriș (km 760 – 757); Nebunu (km 752 – 750), Vană (km 738 – 730); Gitanului (km 727 – 721); Copănița (km 698 – 691); Carabulea (km 689 – 685); Ostroveni (km 684 – 681); Păpădiei (km 670 – 661); Grădiștea (km 647 – 644); Orlea-Sucidava (km 642 – 635); Băloiu (km 629 – 624); Calinovăț (km 627 – 605); mouth of the Sâi river; Cioroiul/Cioara (km 586 – 585); Seaca (km 584 – 583); Belina (km 583 – 579); Berzina Mică (km 574 – 570); Suhaia (km 570 – 567); Cinghineaua (km 564 – 557); Bujorescu-Zimnicea (km 555 – 551); Bujorul-Pietroșani (km 553 – 540); Gâștei – mouth of the Vedea river (km 540 – 539); Pietrișu-Vedea-Malu (km 529 – 510); Păsărica (km 518); Cama-Dinu (km 511 – 505); Slobozia (km 498 – 495); Mocanului (km 490 – 482); Penciu (km 482 – 280); Gostinu-Cioranu (km 476 – 470); Lung Island (km 470 – 463); Ostrovelu (km 455 – 445); Privalul Dunărica – flowing mouth of the Argeș in the Danube (km 434 – 433); Albina Island – Scoiceni forest (km 412 – 401); Vărăști Island – Mostiștea (km 400 – 398); Ciocănești Island – Duduitul forest (km 394 – 390); basins from Ciocănești (km 392); Rasa Island (km 385 – 383). Each site was visited once, at least, during the period April – June 2004, either by the author or other members of the team implied in the PHARE RO 0103.03-02 Cross Border Co-operation Programme Romania-Bulgaria. But, in Cama-Dinu Island I was three times, 2 – 3 days, remaining there through the night, during the same period, April – June 2004.

A special mention I make for the grassy field, out of the flooding periods, placed between the major bed of the Danube and the dam which marks the extension of the agricultural crops. Under these circumstances it is easily to understand the complexity of the natural and cultivated habitats from the left bank of the Danube and from the studied islands. The agricultural is not

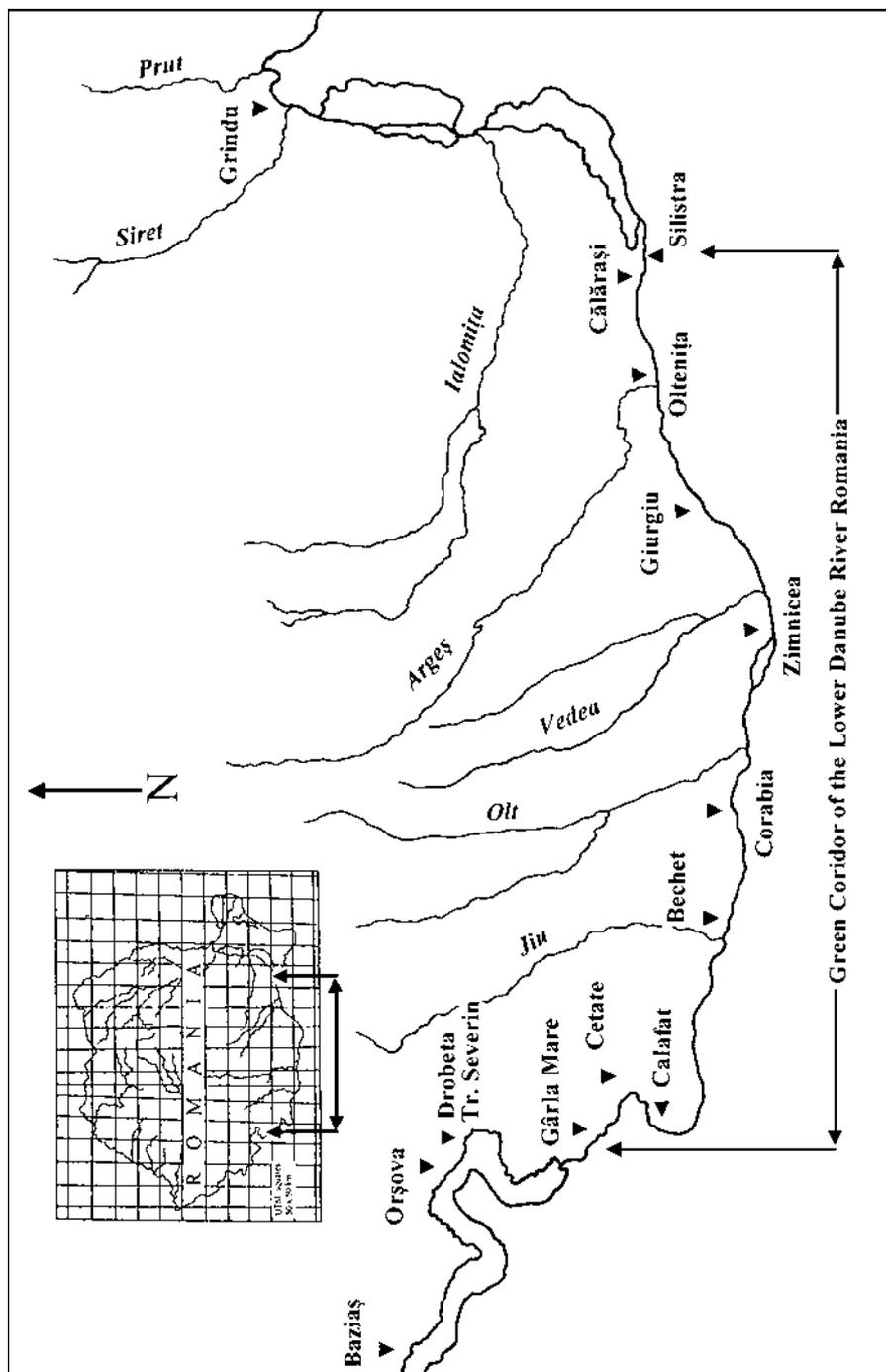


Fig. 1 – Sketch of the Danube Romanian sector between km 838 – 383.

implemented on the islands, yet, but the extension of the total forest clearings is alarming.

Just this threat on the biodiversity from the section between the Danube, the Timok river mouth (from Bulgaria) and the Silistra/Ostrov – Călărași (Romania) was the reason for which the Project PHARE RO 0103-02 (Romanian-Bulgarian co-operation programme) was approved. Within this programme the complex study on the flora and fauna was carried on, during the period February – November 2004.

The project aimed at the creation of a documentation, which, from biological point of view, has to point out the plant and animal species with international conservation statute (rare, vulnerable or threatened) from the studied section, the Cama Dinu Island, in order to be included within Natura 2000 net, and the above-mentioned section for being declared “Green Corridor”.

This paper underlines the results of the collecting and observations on the mammal fauna from the Danube sector, between km 838 (Gârla Mare – Vrața Forest) and km 383 (Rasa Island).

MATERIAL AND METHOD

The 16 days of the trips in the Danube sector km 838 - 401, when 100 traps for small mammals (*Sorex araneus*, *S. minutus*, *Microtus arvalis*, *M. rossiaemeridionalis*, *Pitymys subterraneus*, *Apodemus sylvaticus*, *A. flavicollis*, *A. uralensis*, *A. agrarius* and *Mus musculus*) were put during the night, were divided as it follows: 26th – 28th of April 2004; 10th – 14th of May 2004; 8th – 10th of June 2004 and 21st – 25th of June 2004. Using the snap trap, 136 small mammal specimens of 10 species were collected.

Using the bat detector, 14 species of the families Rhinolophidae and Vespertilionidae were identified. Other 22 mammal species were reported both after the direct observations (*Vulpes vulpes*, *Meles meles*, *Lutra lutra*, *Sus scrofa*, *Capreolus capreolus*), and after the hills, the tunnels under the grass, the tracks on the ground, food remains, burrows, excrements, hair and shelters under trunks, brushwood and grassy vegetation. Totally, 46 mammal species are reported from the Danube surveyed sector.

RESULTS AND DISCUSSIONS

In order to have a general view on the mammal state from the Danube sector, from km 838 to km 401, I present the following list. The scientific names are after Murariu (1984).

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| Order Insectivora Bowdich, 1821 | Order Chiroptera Blumenbach, 1779 |
| Family Erinaceidae Bonaparte, 1838 | Family Rhinolophidae Bell, 1836 |
| <i>Erinaceus concolor</i> Martin, 1838 | <i>R. hipposideros</i> (Bechstein, 1800) |
| Family Talpidae Gray, 1825 | <i>R. mehelyi</i> Matschie, 1901 |
| <i>Talpa europaea</i> Linnaeus, 1858 | Family Vespertilionidae Gray, 1821 |
| Family Soricidae Gray, 1821 | <i>Myotis myotis</i> (Borkhausen, 1797) |
| <i>Sorex araneus</i> Linnaeus, 1858 | <i>M. daubentonii</i> (Kuhl, 1819) |
| <i>S. minutus</i> Linnaeus, 1766 | <i>M. emarginatus</i> (E. Geoffroy, 1806) |

- Plecotus auritus* (Linnaeus, 1758)
Vespertilio murinus (Linnaeus, 1758)
Nyctalus noctula (Schreber, 1774)
N. lasiopterus (Schreber, 1780)
Pipistrellus pipistrellus (Schreber, 1774)
P. pygmaeus Leach, 1825
P. nathusii (Keyserling and Blasius, 1839)
P. kuhlii (Kuhl, 1817)
Miniopterus schreibersii (Kuhl, 1817)
 Order Lagomorpha Brandt, 1855
 Family Leporidae Gray, 1821
Lepus europaeus Pallas, 1778
 Order Rodentia Bowdich, 1821
 Family Sciuridae Gray, 1821
Sciurus vulgaris Linnaeus, 1758
Spermophilus citellus (Linnaeus, 1766)
 Family Myoxidae Gray, 1821
Muscardinus avellanarius (Linnaeus, 1758)
 Family Arvicolidae Gray, 1821
Arvicola terrestris (Linnaeus, 1758)
Microtus arvalis (Pallas, 1779)
M. rossiaemeridionalis Ognev, 1924
M. (= Pitymys) subterraneus (de Selys-Longschamps, 1836)
Ondatra zibethicus (Linnaeus, 1766)
 Family Muridae Gray, 1821
Rattus norvegicus (Berkenhout, 1769)
- Mus musculus* Linnaeus, 1758
Apodemus agrarius (Pallas, 1777)
Apodemus sylvaticus (Linnaeus, 1758)
A. flavicollis (Melchior, 1824)
A. uralensis (Pallas, 1811)
Micromys minutus (Pallas, 1771)
 Family Spalacidae Gray, 1821
Spalax leucodon Nordmann, 1840
 Family Myocastoridae Ameghino, 1904
Myocastor coypus (Molina, 1782)
 Order Carnivora Bowdich, 1821
 Family Canidae Gray, 1821
Canis aureus Linnaeus, 1758
Vulpes vulpes (Linnaeus, 1758)
 Family Mustelidae Swainson, 1835
Meles meles (Linnaeus, 1758)
Lutra lutra (Linnaeus, 1758)
Mustela nivalis Linnaeus, 1766
M. erminea Linnaeus, 1758
M. putorius (Linnaeus, 1758)
 Family Felidae Gray, 1821
Felis silvestris Schreber, 1777
 Order Artiodactyla Owen, 1848
 Family Suidae Gray, 1821
Sus scrofa Linnaeus, 1758
 Family Cervidae Gray, 1821
Capreolus capreolus (Linnaeus, 1758)

From this list it results that in the Danube surveyed sector there are 6 orders (Insectivora, Chiroptera, Lagomorpha, Rodentia, Carnivora and Artiodactyla), with 17 families and 32 genera. From the 17 families, 9 are represented by a single genus, with a single species: Erinaceidae, Talpidae, Leporidae, Myoxidae, Spalacidae, Myocastoridae, Felidae, Suidae and Cervidae.

For completing the subject of this list, I added short characterizations from biological ecological distributional point of view and, especially, the protection statute of each of the 46 mammal species.

Some of them are small mammals and have their importance in the trophic relations from the complex net of habitats present in this sector of the Danube. Others are middle- and large-sized mammals (herbivorous or carnivorous), of a great faunal, economical and sport-hunting interest.

Order INSECTIVORA Linnaeus, 1758

Family Erinaceidae Bonaparte, 1838

Erinaceus concolor Martin, 1838 – East European hedgehog finds enough shelters, both in the cultivated lands and in the deciduous forests from the Danube Floodplain and along the streams, tributaries of the Danube, from North. Within the period 10th – 14th of May 2004 I observed it directly near the localities Maglavit, Calafat and Ciuperceni. Kiss and Marinov observed it in Penciu forest, on 22nd of June 2004.

For hibernation it shelters under the leaf layer, roots and trunks or even under the furrow and field ways. It used to mark its territory individually, covering a surface of 200 – 300 m from its shelter, doing this by the secretion of some specialized tegumentary glands.

Hibernation is the state which acquits it from looking for food during the unfavourable season. First of all it feeds on insects (carabids, weevils, earwigs), myriapods, earthworms, snails, slugs, frogs, lizards, snakes, chickens and the eggs of the birds which nestle on the ground, mice and leverets, and occasionally, fruits and seeds.

In comparison with other mammals species of the area, this species has a low frequency (of only 0.5% - 1%) and a density of 1-2 individuals/5 ha. Its spine armour protects it from the attacks of the birds of prey and of the carnivorous mammals.

The natural enemies of the hedgehog, from the studied area, are the foxes, badgers, polecats, weasels, wild boars and some birds of prey. Although it is useful to man, by consuming larvae and adult insects, it is driven out by him, sometimes because of the wrong beliefs, according to which the hedgehog attacks the chickens and the eggs of the fowls.

Sex ratio is about 1:1, at birth, but it remains favourable to the females after they reach the sexual maturity, when males become more vulnerable in front of the predators and man, because of the long distance trips they make. Because of the spring floods, a part of the hedgehogs are surrounded by water and, they being a very bad swimmers, drown themselves.

For the entire Romanian Plain and, especially, for the surveyed sector of the Danube, the East European hedgehog is a rare species and it must be protected, both by preserving the natural state of the floodplains and by avoiding the small compact forest and plantation clearings, with sufficient shelters in the leaf layers, under furrows and fallen trunks.

Family Talpidae Gray, 1825

Talpa europaea Linnaeus, 1758 – Common mole is easily recognised in the field because of its characteristic hills and, especially, of the bifurcation of the gallery right immediately after its opening.

It prefers the soils rich in humus from deciduous forests along the water flows and from the areas with high humidity. It also shelter in the cultivated lands and in the fallow ones. In some areas of the surveyed sector there is a sandy soil. But this is poorer in its favourite food (earthworms, myriapods, nematodes, etc.). Therefore, the facility of digging galleries in alluvial sandy soils is “paid” by a more complex net of tunnels which it has to dig or to visit. Local people know that the fresh hills belong to the moles and watch them for taking them out from the galleries. The presence of the moles especially in the vegetable gardens can endanger the cultures.

Old hills are often occurred, invaded by weeds and with an insignificant height. They distinguish from the hills of the ants where the ground is crumbled and continuously higher, including also the plants from the respective place.

The food of the moles consists of earthworms (about 90%), insects (mainly coleopterans and dipterans), insect larvae, snails, myriapods and nematodes, all representing only 5% - 10% from the stomach content.

The importance of the moles in the surveyed sector of the Danube is to ventilate the soil, to favour the soil exchange at different horizons, water infiltrating easily. If we add also the consuming of an important quantity of larvae and adult insects, the damages made by the digging of the galleries in the commons, making more difficult the mowing of the grass, become less important. So, the moles are still useful locally for the complex trophic relations and the evolution of the soil, although they are not faunal rarities.

Practically, I saw mole hills in all studied places, from Gârla Mare to Albina Island and Scoiceni Forest.

Kiss and Marinov remarked the mole hills during the periods 16th – 26th of May and 21st – 29th of June 2004, near the Satului, Coica, Călugăreni and Rupturi marshes, on the Mocanu, Lung, Albina and Vărăști islets, in Zăval, Scoiceni, Dudului and Penciu forests, on the bank of the Deznățui River, near Bechet, along the canal to Altitude Cota 0, near the bridge over the Olt River, in front of Orlea locality, along the canal from Olt to Turnu Măgurele, near the Suhaia Lake and Gostinu River. For the period 16th – 20th of December 2004, they reported their observations on the mole hills from Vrața and Zăval forests, in front of Bistreț locality, at the confluence of the Sâi River in the Danube and near the basins from Ciocănești and Iezerul Călărași.

Family Soricidae Gray, 1821

Sorex araneus Linnaeus, 1758 – Common shrew lives in all types of biotopes (forests, opened and dry places, floodplains and wet places). It is extremely active, some authors describing 10 activity periods within 24 hours. It does not hibernate. The individual territory of 200 – 600 sq m is continuously controlled, both for defending it against intruders and for foraging for food. It feeds on insects, snails, myriapods, spiders, corps and even small vertebrates, when it succeeds to catch them alive.

In spite of its name, common shrew, and of its wide distribution, its populations are small and isolated. Sometimes no individual is caught with 100 traps/night. Murariu (1989 a) reported *S. araneus* also from the Danubian Plain, from the Ialomîța River Valley.

It is a useful species in the ecosystems of the Danube Floodplain, both by the daily consumption of many injurious insects and larvae and by its place within the trophic relations of the consumers of an upper order (carnivorous mammals and birds of prey). Some carnivorous mammals abandon it because of its repellent smell and of the unpleasant taste of the secretion of the lateral and anal documentary glands. They are important for the communication between individuals and also for protection.

On 28th of June 2004, Kiss and Marinov found a specimen of *Sorex* sp. (maybe *S. araneus*), dead on a path from Scoiceni Forest – on the Danube bank, at Km 403. After our previous experience, it might be about the abandon of the shrew caught by the fox, weasel or by the wild cat.

Sorex minutus Linnaeus, 1766 – Lesser shrew has the same behaviour and the same food as the previous species, sometimes being confounded. It is useful and it must be protected in all types of natural or artificial habitats from the entire Floodplain of the Danube, and especially from the sector between Gârla Mare and Ostrov – Călărași.

Order CHIROPTERA Blumenbach, 1779
Suborder MICROCHIROPTERA Dobson, 1875
Family Rhinolophidae Bell, 1836

Rhinolophus hipposideros (Bechstein, 1800) – Lesser horseshoe bat, the smallest European rhinolophid, prefers afforested areas, roosting mainly in the caves and in the rock cracks. Murariu (2002) reported the species in south-west of Romania – a region with limestone mountains and many caves as preferred roosts for many other species of bats. Probably, the record of this species on the left bank of the Danube was made during the feeding flights, its roosts rather being on the mountainous right bank. Such kind of flight I remarked at the skirt of the floodplain forest, in clearings and above the bushes. It does not fly higher than 5 – 6 m. The constant frequency of the uttered ultrasounds is of 105 – 112 kHz.

It is considered a sedentary species because it does not fly on long distances. But, the above-mentioned feeding flights exceed 500 m from the possible roosts. If we take into consideration only this aspect, the natural habitats from the Cama Dinu Island offer good conditions for feeding for all bat species and therefore its declaring as a protected area would be an additional chance for the preserving of this part (the bats) of biodiversity.

Rhinolophus mehelyi Matschie, 1901 – Mehely's horseshoe bat is also known as a cave species but whose holotype was described after a specimen originating in Bucharest. It was also reported from the caves from Dobrogea, and recently, from Gura Ponicovei, Gaura cu Muscă and Gaura Ungurului caves. I consider that the record of this species in the Danube Floodplain is also due to the same explanation, according to which the roosts are on the right bank of the Danube and only the feeding habitats are on the Danube islands or even on the left bank of the river. The spring aspersions with solutions over the forest of the Danube islands (as I remarked on 26th – 28th of April 2004) against the invasion of the *Lymantria dispar* and *Tortrix viridana* caterpillars as well as the using of the pesticides in agriculture are great risks in the species existence. I add that southern Romania is the northern limit of its range.

Family Vespertilionidae Gray, 1821

Myotis myotis (Borkhausen, 1797) – Brown common bat, prefers the caves in winter, and in summer also roosts in the tree hollows (mainly the males), garrets of the chalets, houses, the church steeples. It is considered a synanthropic species. Excepting the seasonal roost exchanges, it can migrate till 200 km far from the winter roosts. Its feeding flight is slow, showing like a researching flight on the places where there are numerous insects. In forests it chooses the open areas (clearings) because, besides the insects which it catches on the fly, it also picks up the beetles from the ground.

The frequency of the uttered ultrasounds is correlated with the place where they are present, for catching food: 27 kHz – in clearings or in opened habitats, 30 kHz – at a bulb light, 33 kHz – under the canopy.

Although it is a common species in the Romanian fauna and of the surveyed sector of the Danube, its habitats must be protected in order to maintain the species as a faunal element of the complex biodiversity of the area.

Myotis daubentonii (Kuhl, 1819) – Daubenton's bat is typical for the pools surrounded by forests from a low altitude areas. It also was identified along the Danube or hunting insects on the fly, above the flooded areas from the left bank of river, in April and May. Its feeding flights are continuous, rather slow, almost skimming the water surface, for catching the insects it feeds on, mainly adult chironomids.

The frequency of the uttered ultrasounds is of 42 – 43 kHz – above the water, in the forest. It is a rare species in the surveyed sector and it must be protected.

Myotis emarginatus (E. Geoffroy, 1806) – Geoffroy's bat is cavernicolous, at the northern limit of its range (Germany, Czech Republic, Poland, Ukraine) and synantropic in South, sheltering in the house garrets or any other shelter offered by the house and forest range annexes. In Cama Dinu Island, a single specimen was recorded, at the end of April, by the frequency 45 – 55 kHz, near the chalets placed almost at the middle of the island, close to the major bed of the Danube. As *Rhinolophus hipposideros*, *R. mehelyi* and *Myotis myotis*, the species *M. emarginatus* is included in the Annex I of H.D.92/43EEC – Natural habitat types of Community interest whose conservation requires the designation of special areas of conservation.

Plecotus auritus (Linnaeus, 1758) – Common long-eared bat occurs in the semi-afforested areas of the Danube Floodplain. It cannot be confounded because of the size of its ears but also because of its fast flight, at a height of only 2 – 7 m, alternating with a very slow flight, at the same height, when it looks for the insects, mainly Tortricidae.

The frequency of the uttered ultrasounds of *P. auritus* is of 25 kHz, in forest skirts, near canopy, and of 40 kHz, at 20 – 30 m far from the canopy. It is a species which also depends on the man's understanding, for tolerating it in the basements and garrets and for keeping the hollow trees for shelter.

Vespertilio murinus – Parti-coloured bat prefers the thick forests but outside the hollows and caves where they have their nests. It also goes in localities, roosting in the house garrets and annexes, among ruins and even in the fire wood-piles. In its roosts, it can be easily recognized because it withdraws alone in the deep rock cracks, under woods and bricks, and it doesn't stay hanged up-side-down, by the claws of the posterior limbs, as the other bats do. Feeding flight is fast, straight and at a height of 10 – 20 m. On the fly it is recognized more easily, when it hunts insects at the bulb light.

Constant frequency of the uttered ultrasounds is of 26 kHz at the edge of the forest and 24 kHz above the lawns, in localities, at artificial light sources.

From literature it is known as a migratory species but, in Romania rings were not made and there is no report on the distances the bat can fly. The population of *Vespertilio murinus* from the Danube Floodplain was more numerous in April 2004 (three records in two nights) and with less individuals in June 2004 (a single record in two nights). The preserving of the habitats will permit the preserving of the species in the fauna of the studied area.

Nyctalus noctula (Schreber, 1774) – Noctule bat is one of the most frequent bats occurred in Romania and also in the region I deal with. Decu and col. (2003) marked the Danube Plain on the map of distribution of this species. It prefers the

forests but also goes in localities. Tree hollows are its main roosts but it also lives in house garrets, under eaves, in wall crackers. Feeding flights are fast, in open places. It is also a migratory species but the distances and directions where it flies are still unknown in Romania.

The constant frequency of the uttered ultrasounds is of 20 kHz, when it hunts insects in clearings and near constructions from the forests and of 25 kHz near an artificial light source. On the fly it can utter social sounds (of communication between individuals), with the frequency of 15 kHz.

In the Danube Floodplain it is an important species in maintaining the balance of the insect populations (butterflies, beetles, hymenopterans, dipterans, heteropterans, trichopterans, etc.).

Nyctalus lasiopterus (Schreber, 1780) – Greater noctule prefers the forests from the Danube Floodplain, the old and hollow trees from there offering good roosts both for nursery colonies and for hibernation. It is about small colonies of 5 – 10 individuals from the Cama Dinu Island, occurred in spring (in April), mixed with individuals of *Pipistrellus pipistrellus*. They were detected on the feeding flight, on the bank of the Danube, in front of two forest range constructions. The frequency of the ultrasounds was of 22 – 24 kHz. It is a rare species, with only two reports, only in southern Romania, the Cama Dinu Island being the third reported place.

Pipistrellus pipistrellus (Schreber, 1774) – Common pygmy bat does not avoid the caves, but it prefers the hollows and crackers of the barks and any kind of shelter from the level of the roofs and bridges, in any construction, till pantries and cellars; the wall crackers of only 2-3 cm diameter, and even the cages made by man for passeriformes are also occupied, even for hibernation. On Gârla Mare, Cama-Dinu, Mocanului and Albina islands the species was identified using the bat detector, with the wavelength of 45 kHz.

Pipistrellus pygmaeus (Leach, 1825) – Pygmy bat is less known in the Romanian fauna, the reports on it being made after 2000, and the identifications were made in April 2004, using the bat detector with the frequency of 55 kHz. It seems to be less present in the human settlements but more in the roosts (mainly in the hollows) offered by forests, parks, trees from the banks of the rivers, pools and lakes. From the surveyed sector of the Danube, the Cama-Dinu Island offers the best conditions for the roosts both of nursery colonies and for hibernation. There the feeding habitats are at hand. From this point of view, the pygmy bat does not need to fly on distances longer than 2 – 3 km from their roosts. It used to live together with individuals of *P. pipistrellus* and therefore some scientists who make numerical estimations of the populations prefer to report *P. pipistrellus/P. pygmaeus*.

Pipistrellus nathusii (Keyserling and Blasius, 1839) - Nathusius' pipistrelle distinguishes the other species of the genus by the triangular shaped ears and by the presence of 4-5 horizontal ridges on their outer margin. It is a rare species in the Romanian fauna. The uttered ultrasounds were checked for a frequency of 34 – 39 kHz, on Gârla Mare Island. The feeding flights were done along the forest road between the northern part of the island and the Danube. It prefers the afforested habitats from the Danube Floodplain, tree hollows being the roosts of the nursery colonies. For hibernation it chooses the rock or wall cracks and even the caves. Deep hollows are also good roosts for winter time.

Miniopterus schreibersii (Kuhl, 1817) – Long-winged bat has an interesting distribution in the Romanian territory, being reported wherever there are caves, from Dobrogea to Banat (longitudinally) and from the level of the Danube to Bihor and

southern Maramureș. It was not reported from Moldavia, yet, neither from the banks of the Danube, from the surveyed sector (Gârla Mare – Ostrov, Călărași). The identification of the species using the bat detector (with frequencies of 53 – 55 kHz), can be accidental on Cama-Dinu Island (maybe for feeding). It comes there from the right bank of the Danube where there are karstic formations which it enjoys.

Order LAGOMORPHA Brandt, 1855

Family Leporidae Gray, 1821

Lepus europaeus Pallas, 1778 – European brown hare prefers the open places, with enough shelters, but it also goes in the forest. It makes its nest only for protection against strong winds. The density of the hares per ha is more reduced within the studied area of the Danube, it being more important on the left bank, after the dam which separates the cultivated fields be those flooded be the Danube. It is a nocturnal animal, which becomes active after the sunset. But it was also observed searching for food during the day. Usually, it hides in its superficial nests, the hare being a bad digger.

Kiss and Marinov observed it on 19th and on 26th of May and on 27th of June in the neighbourhood of the Level 0 Canal and of the Suhaia Lake, respectively in the Scoicei Forest. On 16th of December 2004, they observed it near the Golentți Lake, and on the 18th and 19th of December 2004, near the flowing mouth of the Sâi River in the Danube, and respectively near the basins from Ciocânești.

Order RODENTIA Bowdich, 1821

Family Sciuridae Gray, 1821

Sciurus vulgaris Linnaeus, 1758 – Red squirrel, was observed only the right bank of the Danube, between Gârla Mare and Ostrov – Călărași, namely in front of the locality Maglavit and in the forest from Penciu. After 1976, since it has been protected by law, it enlarged its distribution in the Danube Floodplain, and in localities it was observed in orchards and using as shelter the garrets of the houses, stables and forest ranges.

It feeds on seeds, nuts, acorns, berries, mushrooms, but also on the eggs, chickens, and insects. In its turn, it is hunted by the wild cat, frequent in the Danube Floodplain and by the large birds of prey.

Spermophilus citellus (Linnaeus, 1766) – European souslik, was observed only on the right bank of the Danube, as the Red squirrel, an important population in the field near the Maglavit commune. The Density of the galleries was of 70-80/ha in May 2004. As each individual has 2-4 emergency openings in each shelter it means that the density of the individuals was of about 25 individuals/ha. Some other time I considered that the populations of the European souslik from the Romanian Plain were decreasing, on the one hand because of the commons, and on the other one because of the complex anthropic pressure and of the species vulnerability, the individuals being taken out easily from their galleries by flooding their shelters. The density mentioned for the field from the left bank of the Danube is still an optimistic sign on the preservation of the species in the Romanian fauna.

Kiss and Marinov observed and heard it during the period 17th – 27th of May 2004, near the marsh of the Rupturi village, south to Bistret, on the shore of the Călugăreni Marsh, along the canal towards Level 0 and to the Pasărea River, near some venerable oak trees, at the flowing mouth of the Olt River in the Danube and

near the bridge over Olt River, near the precipice Gura Padina, and on the shore of the Suhaia Lake, and on the 16th of December 2004, they observed souslik galleries on the shore of Gârla Mare Lake.

Family Myoxidae Gray, 1821

Muscardinus avellanarius (Linnaeus, 1758) – Common dormouse is the most occurred dormouse species in the surveyed sector of the Danube: in the forests from the Cama-Dinu, Mocanu and Albina islands, as well in the forests Zăval, Gostinu and Ochiul Boului. In the same sector *Dryomys nitedula* and *Myoxus glis* might be occurred, but I haven't observed them.

For the common dormouse the floodplain forests in which a thick grassy vegetation develops, as well as bushes, are very favourable. Here it makes its globulous shelters, made of soft grass, even lined with moss, but also with feathers and woollen threads. In such kind of habitats it finds enough food consisting in leaves, buds, flowers and seeds of spontaneous plants. As all dormouse species, the common dormouse hibernates.

Family Arvicolidae Cope, 1891

Arvicola terrestris (Linnaeus, 1758) – Water vole is in competition with the common rat (*Rattus norvegicus*) more and more, preferring the same type of habitats, with high grassy vegetation near river flows, beside the anthropic environment. During the field trips I was surprised to see in the traps only specimens of *Rattus norvegicus* instead of the water vole.

In the Danube sector between Gârla Mare and Călărași, the water vole occurs along the channels detached from the Danube, where the water flow is slow or even absent – in the case of the “sack bottom” channels. Even the lower studied islands, where the water penetrates during floods and forms marshes create good conditions for the developing of the Water vole. The reed and especially the club rush, and other high grassy plants offer it protection, mainly against the quick eyes of the birds of prey.

As in the study on the mammals of other regions of Romania, I remarked the importance of *Arvicola terrestris* within the food chains. That is why it has to be preserved in the surveyed sector of the Danube, both by preserving the conditions of its natural habitats.

Microtus arvalis (Pallas, 1779) – Common vole – the most occurred Microtidae species, surprisingly even in the forest skirts of the studied islands. In literature, the cyclic invasions are mentioned (once in four years), fluctuations which are linked to the dynamics of the populations of the birds of prey (*Asio otus*, *Athene noctua*, *Strix uralensis*, *S. aluca*, *Buteo buteo*, *B. lagopus*), as well as of the carnivores (mustelids, wild cats, foxes). In the poplar forests and plantations from the islands and on the left bank of the Danube, between Gârla Mare and Călărași, the individual territory of the common vole is of 1.000 – 1.500 sq. m., at least in the Romanian Plain. A higher density of the species was found by Torcea & Murariu (1985) as well as by Murariu (1989 b). Today, invasions of *M. arvalis* are not recorded anymore and the problem of its protection in some certain habitats becomes topical.

On 16th of December 2004, Kiss and Marinov observed a common vole colony near the Gârla Mare Lake.

Microtus rossiaemeridionalis Ognev, 1924 – for the first time southern vole was mentioned west to Hârșova. I collected 12 specimens from the Cama-Dinu

Island and it is possible to be present in other places along the Danube, too. It also is included in the trophic relations, even on the Cama-Dinu Island being 5 individuals of *Meles meles*, at least, and a rather large population of *Mustela nivalis*. This place is also visited by several species of nocturnal and diurnal birds of prey.

Pitymys subterraneus (De Selys-Longschamps, 1836) – European pine mole, a small arvicolid/microtin, with more and more rarer populations and with a few individuals. Within the surveyed sector of the Danube its presence in the traps is accidental, this because it is a rare species. This is an additional reason for which I support the necessity of its protection in the Romanian fauna, generally, and in the fauna of the surveyed sector, particularly.

Ondatra zibethicus (Linnaeus, 1766) – Muskrat prefers the habitats similar to those of the water vole, avoiding the main riverbed of the Danube. It shelters along the channels and on the shores of the lakes invaded by the high grassy vegetation. Local people hunt it for its fur. Because it penetrated the Romanian territory in the 20th century and quickly spread, the farmers from the fish ponds do not agree its presence, especially because it digs its galleries in the fish pond dams.

Family Muridae Gray, 1821

Rattus norvegicus (Berkenhout, 1769) – Common rat being a commensal species with man, it adapted to all natural habitats, as well in most of the cultivated ones. Although in literature it is described as a species fond of dry places, I identified and trapped it, many times, in places characteristic to *Arvicola terrestris*.

It feeds both on vegetal and animal food, and when it has not enough food, the cannibalism phenomenon appear, feeding especially on its own youngsters. Having an important biomass (300 – 500 g) it is hunted by foxes, badgers, polecats, weasels, from the carnivorous mammals, and by owls, from the night birds of prey.

Being very prolific and competitive, and also because it is the bearer of several microbial and viral pathogenic agents, it has to be controlled, at all costs.

Mus musculus Linnaeus, 1758 – House mouse is also a prolific and competitive species which does not need protection.

Apodemus agrarius (Pallas, 1778) – Striped field mouse is a species fond of humid biotopes and high grassy vegetation. In the surveyed sector of the Danube there are good conditions for the species. That explains that there are 2 – 3 individuals, at least, trapped in most of the islands where I could stay over night.

It feeds both on vegetal and animal food (lepidopterans, dipterans, hymenopterans, etc.). It is hunted by the night birds of prey and by the small and middle-sized carnivorous mammals.

Apodemus sylvaticus (Linnaeus, 1758) – Common field mouse is a prevalent species in our collecting of small mammals. It is less occurred in compact forests, but it is frequent in all Danube Floodplain, in the clearings and in the cultures from the dam along the Danube.

The analysis of the stomach content of 25 individuals of *A. sylvaticus* permitted the identification of over 40 grassy and woody plants. Occasionally, it feeds on the lepidopteran, hymenopteran, dipteran, orthopteran adults and larvae, as well as on myriapods, gastropods, spiders, oligochaetes, etc. As I mentioned before, it is an important species within the food chain from the islands and from the entire Danube Floodplain, without raising protection problems.

Kiss and Marinov reported a specimen of *Apodemus* (I assume the conclusion that it was about *A. sylvaticus*), in Vrața forest, on 16th of December 2004, hooked up in the *Prunus spinosa* spines, as a food stock, by *Lanius excubitor*.

Apodemus flavicollis (Melchior, 1834) – Yellow-necked field mouse prefers the compact forests, but with a high humidity degree. Finding an important population of this species on the Albina Island (23rd/24th of June 2004) made me to consider that here there are good living conditions, also taking into consideration that total clearings are not made on this island.

It feeds on grass, fruits and seeds, occasionally with insects. It does not need special protection, but I consider that the yellow-necked field mouse is important for the food of the birds of prey and carnivorous mammals from the entire studied sector of the Danube, as the previous species, *A. sylvaticus*.

Apodemus uralensis (Pallas, 1811) – Ural field mouse is characteristic to the floodplain forests, but I collected it from the studied islands, from Gârla Mare to Albina. The forests with bushes, but also the outside areas, even the cultivated fields offer good living conditions for it. It is not an important faunistic element. It was rarely found in the studied pellets. That means that unlike *A. sylvaticus* and *A. flavicollis*, *A. uralensis* is represented by small populations, with discontinuous distribution.

Micromys minutus (Pallas, 1771) – Harvest mouse, the smallest Muridae species. It was not trapped but I report its presence after a nest, built in the *Prunus spinosa*, at the forest skirt, in front of Maglavit locality. It is important as a faunistic presence. Its biomass is small and with a secondary importance in the food of the carnivorous mammals and of the birds of prey. As a matter of fact, the populations of this species has a small number of individuals and have a discontinuous distribution.

Kiss and Marinov found a nest of a harvest mouse in Vrața forest, on 16th of December 2004.

Family Spalacidae Gray, 1821

Spalax leucodon Nordmann, 1840 – Lesser mole rat was observed by me on the basis of the characteristic hills, higher than those of the mole, with thick ground plugs, with a long diameter (as its size), with unramified galleries. It uses the ground plugs for stopping the snakes and the small carnivorous mammals to enter its galleries. Such galleries were occurred on the left bank of the Danube, near Gârla Mare Lake, in front of the Maglavit and Ciupereni localities.

Kiss and Marinov observed in the surveyed sector of the Danube on 19th of May 2004, with the geographical co-ordinates: 43°47'42'' N, 23°53'44'' E.

Family Myocastoridae Ameghino, 1904

Myocastor coypus (Molina, 1782) is all along the Green Corridor, with individuals escaped from fur farms and adapted as free and stable small populations.

Order CARNIVORA Bowdich, 1821

Family Canidae Gray, 1821

Canis aureus Linnaeus, 1758 – Common jackal, a relatively recent species (after 1980), with permanent populations in the Romanian fauna. It was accidentally occurred, near Ghidicidin commune, Dolj County, since 1929. Those occurrences were possible especially during the heavy winters, when jackals could cross the frozen Danube, from Bulgaria to Romania. Local people recognise it easily by the

position of the hind side of the body, lower than in the wolf. Today, there are stable jackal populations in all Danube Floodplain and in the islands from the surveyed sector of the Danube. Most of the reports (Gârla Mare, Cama-Dinu, Maglavit, Ciupereni, Mocanu, Albina) are made after the tracks left on the wet soil, from 26th of April till 21st of June 2004. During the nights spent in Cama-Dinu Island (26th of April, 11th of May and 21st of June 2004) I heard its characteristic bark.

Kiss and Marinov took information (during 16th – 20th of May and 21st – 30th of June 2004) from local people, saw tracks on the ground, and even occurred two adults with two young (on 27th of June 2004), in the Albina Island. The other reported sites were: Vana and Slobozia islets, Zaval Forest, Gurii Padinei precipice, Gârla Gostinu, Ciocănești Island. On 18th of December 2004 I observed jackal tracks on the bank of the Danube, at the Olt River mouth.

Vulpes vulpes (Linnaeus, 1758) – Fox prefers the young woods, as well the open places with reed plots. The floodplain forest from the entire surveyed sector of the Danube offers enough conditions for digging shelters. After Murariu (1996 a, b), these preferred conditions are found by the fox in the Danube Delta, too.

It can be considered a sedentary species, its longest trips measuring 6 – 7 km at the most. It feeds on all kind of animals, which it can catch, mainly on mice. Besides its importance as a game and for its fur, the fox has to be preserved in the fauna of the Danube Floodplain for the control of the rodent populations, most of them injurious for man's economy.

Because during some years there are a few foxes, their numerical fluctuations are correlated with the fluctuations of the rodent populations, especially of the Muridae species, prevalent elements of the food of the foxes.

Kiss and Marinov occurred fox tracks or shelters, between the 17th – 26th of May 2004 and on 22nd of June 2004, at Negoii-Bistreț, Gura Padinii precipice, on the channel bank towards Gâsca Islet, near Gârlei Gostinu. Between 18th – 20th of December 2004 they saw track of the Olt River confluence with the Danube and in the neighbourhood of the small basins from Iezerul Călărași.

Family Mustelidae Swainson, 1835

Meles meles (Linnaeus, 1758) – Badger prefers sandy and alluvial soils, because they are easier to be digged. On Cama-Dinu Island I identified 3 badger shelters. Inside two of them (from the back side of the forest ranges) I could hear specific digging, widening and consolidating noises, on 26th – 28th of April 2004. I also identified badger tracks on the soft soil of the island and of the left bank of the Danube, along the route between km 838 – 401.

During 16th – 21st of May 2004 and 21st – 30th of June 2004, Kiss and Marinov remarked both a badger shelter (at Rupturi) and tracks on the ground, along the channel from Olt River towards Turnu Măgurele, on the Slobozia Islet, in Scoiceni forest and on Ciocănești Island.

Lutra lutra (Linnaeus, 1758) – Common otter prefers the fish as food. It finds enough food and shelters in the Danube Floodplain. Canals, marshes, even forests on the Danubian Islands offer optimum conditions this species needs. I found otter tracks on the bank of the Danube towards Cetate Lake (km 812) and on the Cama-Dinu and Slobozia islands, at the end of April 2004, and on the bank of the Prival Dunăricea I saw it submerging, maybe for finding food.

Kiss and Marinov observed otter tracks on the shores of the Cama and Slobozia islets, between the confluence of the Argeș River with the Danube and the

Albina Island, as well at the edge of the Scoiceni Forest, on 27th – 28th of May 2004 and 27th of June 2004. Between 16th – 20th of December 2004 I saw otter tracks at Gârla Mare, then at the mouth of the Olt and Sâi rivers, at Călărași mountain lake and near Gălțui Lake.

Mustela nivalis Linnaeus, 1766 – Weasel occurs rarely than I have expected, taking into consideration the favourable conditions from the Danube Floodplain. The presence of numerous rodents, the base food of the weasels, presumes a higher density of the last ones. I haven't found any track and any specimen was trapped in the studied islands. They are present only on the left bank of the Danube. Besides rodents, there it catches little birds, as well as their eggs and chickens from the nests built on the ground. It participates to the control of the rodent populations from the entire Danube Floodplain.

Mustela erminea Linnaeus, 1758 – Common ermine prefers the same habitats as the weasel and feeds on the same animals, small rodents being prevalent, too. But, in comparison with the weasel, the ermine is much more hunted by hunters and poachers, especially for their wonderful fur. Besides the other mustelids, it is very important for the control of the rodent populations from the Danube Floodplain.

Mustela putorius (Linnaeus, 1758) – European polecat seems to be a common species in southern Romania, especially along the Danube, from Gârla Mare to Ostrov – Călărași. Besides mice, it feeds on domestic birds, producing great damages in the farms where it succeeds to penetrate.

The polecat is an European endemic species of a large faunistic importance and it is included in the Annex III of the Bern Convention, as well as in the Annex V of the Directive of the Habitats. That means that it is an important faunistic element in addition to its importance in the control of the rodent populations.

Kiss and Marinov observed a shelter at Călugăreni Marsh, on 17th of May 2004.

Family Felidae Gray, 1821

Felis silvestris Schreber, 1777 – Wild cat prefers more the field and floodplain forests. It is solitary and severely protects its own territory which can reach 20 ha. Mice are its main food, to which the hares, birds, eggs, reptiles and even insects can be added. I remarked it on 10th of May 2004, in the poplar plantation from Cetate, and Kiss and Marinov identified its tracks along the channel Olt – Turnu Măgurele, on 21st of May 2004.

Order ARTIODACTYLA Owen, 1848

Family Suidae Gray, 1821

Sus scrofa Linnaeus, 1758 – Wild boar is considered different from that from the plain (with a more elongated body, lower shoulders and a lighter colour than those from the hills or the mountains). Being omnivorous, it gives itself away its presence by the roots from the clearings left after it looked for the bulbs and rhizomes, the insect larvae, snakes, lizards, and mice. It also feeds on the young of the hares and deers.

It is frequently occurred in the islands from the surveyed sector of the Danube. I saw it in the Cama-Dinu Island in the night and I found its tracks the following day, after rain, in April, May and June 2004.

Kiss and Marinov observed wild boar roots and tracks, in Vana, Slobozia and Vărăști islets, in Zăval, Gostinu and Dudului forests, in Gostinu and Ochiul Boului,

Scoiceni and Penciu, at Suhaia or in the channel towards the Gâsca Islet and in the Ciocănești, Mocanu and Rasa islands, in May and June. On 16th and 17th of December 2004 I remarked it near the Golenți and Dăbuleni Lakes and in Zăval forest.

Family Cervidae Gray, 1821

Capreolus capreolus (Linnaeus, 1758) – Roe deer can be considered the gazelle of Romania, because of its beauty and delicate body. I observed its presence (during April – June 2004) in all visited islands from the left bank of the Danube, in the surveyed sector: Gârla Mare, Chichinețe, Cetate, Maglavit, Ostrovul Mare, Ciuperceni, Gitanului and Dăbuleni forests, Cama-Dinu, Slobozia, Mocanului, Lung and Lunguleț islets.

It is a sedentary species, its trips for searching for food are not longer than 1 – 3 km. It picks with pleasure leaves and flowers, grass and clover, blackberry leaves, wild pear and wood apple stems. It is an appreciated hair game, man gaining both the trophy of the male deer and the tasty meat.

Kiss and Marinov reported it from Vana, Lung and Lunguleț islets, along the channel Olt towards Turnu Măgurele and from Gârla Gostinu, on 16th and 21st of May, and on 22nd – 27th of June 2004. These reports were made either on the basis of the information given by local people and by border police, or on the basis of the tracks from the ground. On 18th of December 2004, they observed it at the confluence of the Olt River with the Danube.

Conclusions

The left bank of the Danube and the islands which belong to the Romanian territory, from the confluence of Tomok River with the Danube (km 838 – Gârla Mare and Vrața Forest) to Ostrov – Călărași, are interesting both from the ecological point of view, as a wet area – first of all a shelter for the aquatic birds – and from the faunal and floral point of view. I have underlined the importance of the 46 mammal species (according to the list from the text).

A part of them occur in the studied islands and justify our steps in declaring them protected areas, and others occur only on the left bank of the Danube (*Spalax leucodon*, *Sciurus vulgaris*, etc.). Finally, some species has an economical importance (*Sus scrofa*, *Capreolus capreolus* – for their meat or *Myocastor coypus*, *Vulpes vulpes*, *Lutra lutra*, *Felis silvestris* - for their fur) and they are distributed both on the left bank of the Danube and on the Romanian islands from the surveyed sector.

The large number of the mammal species and their importance within the local intra- and interspecific relationships lead to the necessity of their protection by avoiding the destruction of their habitats, mainly the total clearing. Also it is necessary to declare the “Green Corridor” of the Danube and to give it the statute of a protected area for a part of the islands: Ostrovul Mare, Cama, Dinu, Mocanu, Albina, etc.

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SITUAȚIA MAMIFERELOR (MAMMALIA) DE-A LUNGUL DUNĂRII, ÎNTRE GÂRLA MARE ȘI CĂLĂRAȘI (ROMÂNIA)

REZUMAT

Sectorul de Dunăre între Gârla Mare – pădurea Vrața și Ostrov – Călărași (km 838 – 383) a fost studiat complex în anul 2004 (topografic, pedologic, geomorfologic și biologic) în cadrul programului PHARE RO 0103.03-02 de cooperare transfrontieră România – Bulgaria. Scopul programului a fost de protejare a zonelor umede ale Dunării, pe baza monitorizării și inventarierii florei și faunei, pentru declararea respectivului sector “Coridor Verde”. Un proiect-pilot al programului a fost întocmirea documentației biologice pentru declararea insulelor Cama și Dinu ca arii protejate.

În acest context au fost cercetate și mamiferele, fie prin colectări cu ajutorul capcanelor, fie prin observații directe asupra prezenței lor în teren sau prin notarea locurilor cu urme lăsate pe solul umed, a resturilor de hrană consumată, apoi s-au notat locurile în care s-au găsit culcușuri și cuiburi (în cazul micilor rozătoare), galerii și vizuine, mușuroaie, poteci, fecale. În cazul liliieclor s-a utilizat un detector de ultrasunete, de tip “Pettersson D 200”, cu ajutorul căruia au fost identificate 14 specii (vezi lista).

Din cele 50 de puncte atinse personal sau de alți membri ai echipei programului (toate situate în sectorul de Dunăre amintit) au fost inventariate 46 specii de mamifere, aparținând la 32 genuri din 17 familii și 6 ordine (cf. lista de la rezultate și discuții).

Fiecare specie raportată este importantă în relațiile trofice locale, în menținerea echilibrului ecologic (mamiferele insectivore și chiropterele hrănindu-se în principal cu insecte), unele sunt relativ recent instalate în zonă (ex. nutria și șacalul), iar altele prezintă o deosebită valoare economică (pentru blănuri și carne), precum și un mare interes sportiv-recreativ-cinegetic. Importanța speciilor de mamifere și constatarea degradării unor habitate se înscriu (alături de situația întregii flore și faune a zonei) în demersurile și documentația pentru declararea unor arii protejate.

Deoarece sectorul de Dunăre cercetat n-a mai fost abordat într-un astfel de studiu, datele raportate se înscriu cu valoare de referință.

LITERATURE CITED

- ANTIPA, GR., 1910 - Regiunea inundabilă a Dunării. Starea ei actuală și mijloacele de a o pune în valoare. Institutul de Arte Grafice CAROL GÖBL S-sor I. St. Rasidescu, București: I-XII + 1-318. (in Romanian)
- DECU, V., D. MURARIU, V. GHEORGHIU, 2003 - Chiroptere din România. Ghid instructiv și educativ. S. C. Art Group, București: I-XXII + 1-521. (in Romanian)
- MURARIU, D., 1984 - La liste des Mammifères actuels de Roumanie; noms scientifiques et roumains. Travaux du Muséum d'Histoire Naturelle “Grigore Antipa”, 26: 251-261.
- MURARIU, D., 1989 a - Les mammifères de la zone du cours inférieur de la rivière Ialomița (Roumanie). Travaux du Muséum d'Histoire Naturelle “Grigore Antipa”, 30: 247-256.
- MURARIU, D., 1989 b - L'influence des facteurs anthropiques sur les mammifères sauvages de l'île Ostrovul Mare – Danube, Roumanie. Travaux du Muséum d'Histoire Naturelle “Grigore Antipa”, 30: 307-315.
- MURARIU, D., 1996 a - Mammalian biodiversity in the Danube Delta Biosphere Reserve. Global Biodiversity research in Europe. International Senckenberg Conference. Frankfurt am Main. December 9-13, 1996. Abstract vol.: 55.
- MURARIU, D., 1996 b - Mammals of the Danube Delta (Romania). Travaux du Muséum National d'Histoire Naturelle “Grigore Antipa”, 36: 361-371.
- MURARIU, D., 2000 - Insectivora. In: Fauna României. Mammalia. Edit. Academiei Române, București, 16 (1): 1-142. (in Romanian)
- MURARIU, D., 2002 - Contributions to the knowledge of mammal fauna (Mammalia) from south west Romania. Travaux du Muséum National d'Histoire Naturelle “Grigore Antipa”, 44: 431-441.

- MURARIU, D., 2004 - Lagomorpha. Cetacea. Artiodactyla. Perissoadactyla (fără specii actuale). *In: Fauna României. Mammalia*. Edit. Academiei Române, București, 16 (4): 1-209. (in Romanian)
- POPESCU, A., D. MURARIU, 2001 - Rodentia. *In: Fauna României. Mammalia*. Edit. Academiei Române, București, 16 (2): 1-214. (in Romanian)
- POPESCU, A., P. BARBU, M. HAMAR, M. ȘUTOVA, 1975 - Mammalia. Pp. 312-314. *In: Fauna. Grupul de cercetări complexe "Porțile de Fier"*. Edit. Academiei R.S.R. (in Romanian)
- SPITZENBERGER, FR., 2001 - Die Säugetierfauna Österreichs. Grüne Reihe des Bundesministeriums für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, 13: 1-895.
- TORCEA, ȘT., D. MURARIU, 1985 - Contribuții la cunoașterea faunei de mamifere din Ostrovul Mare. Mehedinți. Muzeul Regiunii Porțile de Fier, Drobeta, 6: 347-353. (in Romanian)

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