– РОЗДІЛ 5 ЕКОЗООЛОГІЧНІ ТА МЕДИКО-ЕКОЛОГІЧНІ ДОСЛІДЖЕННЯ –

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CONTRIBUTION TO MAMMALS FAUNA OF FEOFANIYA PARK

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Исследовано видовой состав млекопитающих фауны парка «Феофания». Достоверно отмечено наличие 22 видов, принадлежащих к пяти систематическим группам: насекомоядные, рукокрылые, зайцеобразные, грызуны и хищные. Проанализированно численность и распространение на территории парка представителей некоторых систематических групп млекопитающих.

Млекопитающие, относительное обилие, парк, насекомоядные, рукокрылые, зайцеобразные, грызуны, хищные.

In our time, the biodiversity is evaluated as one of most important ecological instruments of functioning of natural ecosystems. All changes that occur are built on complex biotic connections. It causes the existence of both: individual ecosystems and biosphere in general. One of the most dominant and functional components of ground ecosystems is animal population. Mammals are one of the most organized and developed systematic groups among vertebrates. They play their role in ecosystems and are the important component of the whole biodiversity. Under the pressure of anthropogenic influence, mammals fauna changes gradually. That is why, determining of species is an important phase on the way to biodiversity conservation. Human activities make huge impact on species. The reduction of territories, important to mammals life – forests, meadows and steppes is taking place. Because of that, protected areas play key role in conservation of biodiversity of mammals fauna. Feofaniya park is located at the southern part of Kiev. It`s area is 118 hectares. Today, it plays cultural and recreation role.

That park derivates from hornbeam, which was formed on the place of oakwood.

Targets of our work are analysis and inventorying of modern mammals species of Feofaniya park.

Materials and methods

Route surveys, which captured all of the territory of the park are the background of our research. The echolocation calls of bats were monitored by the ultrasonic detector Pettersson D200. We used nylon mist nets for catching on fixed plots. For quantitative assessment, the index of relative abundance was used as the percentage ratio of numbers obtained and individuals of recorded species to total number obtained and individuals recorded (as for *Insectivore* and *Chiroptera*) [6].

During the winter period, carnivore mammals were counted (to *Mustelidae*) by footprints discovered on snow and their measurements [4, 5].

We conducted phonological observations and interviews with the workers of the park. More, than 50 records were performed in total. Due to the research of findings, 22 species of mammals were found on the territory of the park.

Results and discussion

Based on the researched findings on the territory of the park, 22 species of mammals were found, which are related to five systematic groups (fig.1).

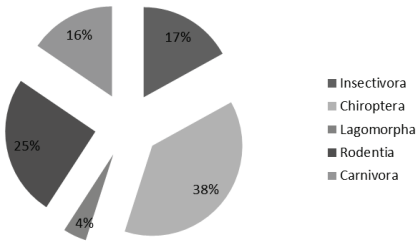

Figure 1 – The structure of mammals fauna of the Feofaniya Park

Four species, that where found on the territory of the park are insect-eaters (*Insectivora*). Moles (*Talpa europaea*) were found all over the territory of the park. The average weight of researched animals (June, 2015) was 87,7 g. The relative abundance between others Insect-eaters was 48 %. Red-toothed shrew (*Sorex araneus*) are fairly common species, whose relative abundance is 17 %. Small white-toothed shrew (*Crocidura suavolens*) was found in the building of the Institute on the territory of the park and is the sinantrophus specie. The relative abundance of this specie is 5,9 %. European hedgehog (*Erinaceus europaeus concolor = E. concolor*) is a numerous specie and on the territory of the park was found in all habitats. Its relative abundance is 29,1 %.

Nine species of bats (*Chiroptera*) were found in the park. They belong to one family – *Vepertilionidae*. The dominant among investigated and registered animals is a noctule bat (*Nyctalus noctula*) (fig. 2).

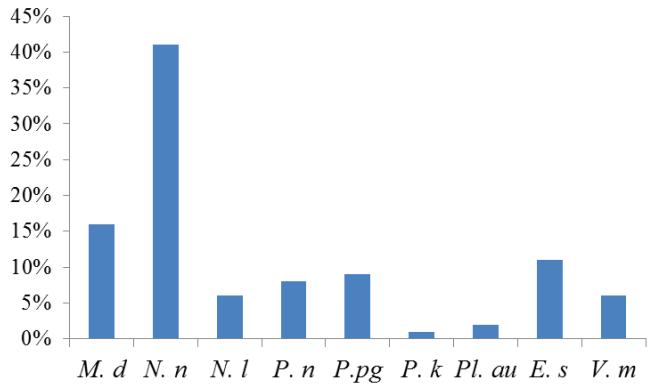

Figure 2 – Relative abundance of bat species in Feofaniya Park

According to species registered, the subdominant is Daubenton`s bat (*Myotis daubentonii*). Nathusius` pipistrelle (*Pipistrellus nathusii*) and Pigmis` pipistrelle bat (*P. pygmaeus*) are in sufficient quantities. Rare specie is Kuhl`s pipistrelle

(*P. kuhlii*). Its relative abundance is 1 % of total number of registrated and investigated bats species. Other species are: long-ear bat (*Plecotus auritus*), leisler`s bat (*N. leisleri*), serotine bat (*Eptesicus serotinus*) and paticoloured bat (*Vespertilio murinus*) – they are 25 %. All these bats are included to the Red book of Ukraine.

Lagomorphs (*Lagomorpha*) at the park is represented by only one specie – european brown hare (*Lepus europaeus*). Regulars are five individuals of the park, and where registered in nearly all habitats. They were most commonly found over the park territory of the garden and meadow landscape, between garden plants, where we detected the regular injury of crust shrub of willow (*Salix interga*) by these animals. The density of individuals of *L. europaeus* in park on 2015 is 0,01 ind./hectar. Probably, breedings are taking place outside of the park, since no nests with joeys were found in the park. Although, three young individuals of spring birth (March – April) were seen on 13.05.2015 on grassplot in the building of the Institute.

Gnawing animals (*Rodentia*) of park`s fauna are five species. Squirrels (*Sciurus vulgaris*) are one of the most common species between mammals in wood (forest) landscapes of Eurasia. According to some data in Kiev region the population of squirrels is not more than 2 thousands, and is considered as the minority specie [7]. In 2015 the population of S. vulgaris in the Feofaniya Park is more than 15 individuals, with density of 0,1 ind./ hectar. In some years this bat population may change. Most authors admit the possibility to distinguish four subspecies on the territory of Ukraine [7]. We can assume, that subspecie S. v.kessleri lives in the park, which is usual for the Right bank of Ukraine.

Beaver (*Castor fiber*) is one of mammal representatives, which belongs to the group of herbivores. Only one individual is represented in the Park. Traces of its life can be tracked from creek Vitoviy in quarter 4 and continues to pond N 3. We know, that the different species of herbivores mammals in autumn eat the bark of trees and shrubs. This is because in autumn the grass dries out and looses nutrition values, while bark, till that time, keeps necessary nutritious substances. It`s proved that the

transition to bark nutrition of herbivore mammals are correlated with the time, when the bark nutrients start growing [8–10]. Nutrition of *C. fiber* with bark and wood in the park was observed all year long. Beaver`s shelters we not found in the park. Although, according to the staff, in 2005 to 2012 beaver`s holes on the territory of the pond number five were found. Now, no traces of beaver`s life are found. We know that the beaver`s families fall apart during migration periods, and as a result , the number of beavers-singleton increase [1]. From this point of view, we can explain the existence of one individual of this specie in the Feofaniya park.

Between other gnawing species in the park, a wood mice is common (*Apodemus silvaticus*) and prones to synanthropy. Was caught twice (27 and 28.11.2014) in the park in the building of Institute. The activity of field mice (*A. agrarius*) was observed during the year. Red-backed mice was (*Clethrionomys glareolus*) most often found in the forest part of the park (quarters 4 and 5). House mice (*Mus musculus*) is a typical sinantropus, but in the park, was found in natural environment.

Almost no information about carnivores mammals (*Carnivora*) was found in the park .The existence of stone marten (*Martes foina*) was determined. We know, that this spice has semi sinantropic way of life [3], that fully satisfied by conditions in the park. The footprints on the snow were found in the woodland part of the park – quarters 4 and 5. Population of this spice was not determined. The footprints of American mink (*Mustella vison*) were found on 26.11.2014 in quarter 4 at the Vitoyiy creek.

Cloven-hoofed mammals (*Artiodactyla*) are represented only by two species – european roe deer (*Capreolus capreolus*) and european wild boar (*Sus scrofa*), that were mainly found outside the park. Sometime European *S. scrofa* walks on the park territory. This fact is confirmed by ruts on the soil quarters 4 and 5.

Except the above listed species of mammals on the territory of the park, along Feofaniya area, the following species are common [2]: northern birch mouse (*Sicista betulina*), norway rat (*Rattus norvegicus*), *Mus minutus*, yellow-neeked mouse

(*Apudemus flavocollis*), water shrew (*Neomys fodiens*), least shrew (*Sorex minutus*).

CONCLUSION

1. In the Feofaniya park, 22 species of mammals were found, which belong to five systematic groups: insect-eaters (*Insectivora*) – four species, bats (*Chiroptera*) – nine species, gnawing animals (*Rodentia*) – six species, lagomorphs (*Lagomorpha*) – one specie, and carnivores mammals (*Carnivora*) – two species.

2. Exceptions are species of even-hoofed mammals (*Artiodactila*), which live, mainly, outside the park.

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