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A new record of the parasitic beaver beetle (Platypsyllus Castoris) (Coleoptera: Leiodidae) from Stavropol Territory (Russia)

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ABSTRACT

Platypsyllus castoris Ritsema, 1869 previously noted only in Voronezh Region is found in Stavropol area (Russia) for the first time. This species was collected not on beaver, for which it was cited earlier, but on river otter ((*Lutra lutra meridionalis* (Ognev 1931)) – rare species of the North Caucasian region.

Key words: Coleoptera, Leiodidae, *Platypsyllus castoris*, Stavropol area Russia.

INTRODUCTION

In 2013, the hairline Caucasian otter ((*Lutra lutra meridionalis* (Ognev, 1931)) collected near Budennovska, Pyatigorsk; Stavropol Krai (Kuban river) were collected 2 female beaver beetles *Platypsyllus castoris* Ritsema, 1869. This is the third discovery of this interesting parasitic insect with the European part of the former USSR, distant to the south for 300 km from the first [12] and about 100 from the second [1]. Particular interest is the fact that this is the second in the European part of the finding of this species parasitic on the otter, and not on traditional host – beaver.

MATERIALS AND METHODS

The material gathered the standard zoological methods. In total 2 females of a species are collected. 5 otters are examined. During researches any animal has not suffered. The account of number of an otter in territory of Stavropol territory is in passing spent. The micro preparation photo is made by means of a microscope: Levengyk DTX 90.

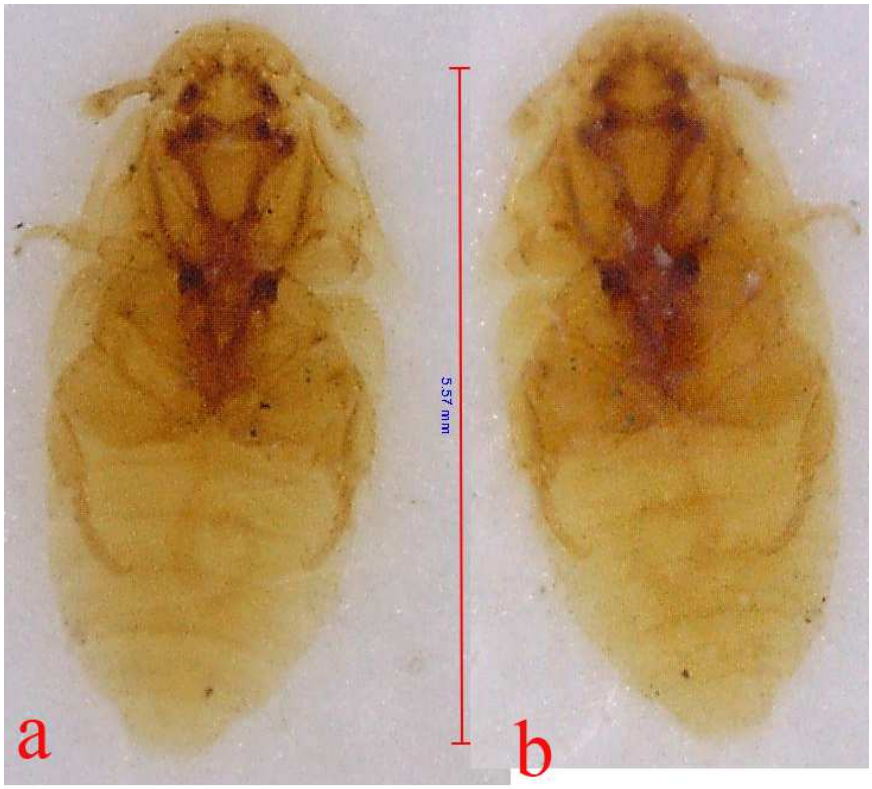
RESULTS AND DISCUSSION

Platypsyllus castoris belongs to the family Leiodidae, subfamily Platypsyllinae. The largest number of species of the subfamily Platypsyllinae common in the Nearctic, where dwells 4 genera and about 20 species. In the Palearctic know of only one monotypic genus Platypsyllus Ritsema, 1869. There is no doubt that the genus *Platypsyllus* Nearctic origin. His appearance in the Palearctic associated with the appearance in the region of its owner - the beaver, which in the Pliocene through the periodically appearing land - Beringia - has spread from North America to Eurasia [11]. It is known that in the steppes of Eastern Europe at the end of X - the middle of the XIX century there were few places suitable for life beaver, with its habitat were easily detected and beavers themselves ruthlessly exterminated [3]. Not surprisingly, the latest news about living in the steppe beaver Black Sea region date from the mid 30-ies of the XIX century. By the middle of the XIX century, beavers disappeared from the territory of the Russian Plain. In the Stavropol region beavers are not recorded since 1780's. In the 70-ies of XX century, the beaver was resettled in the Russian Plain and taken under protection. At the moment the beaver in distributed quite widely, penetrating to the south up to the delta of the Don [9].

Otter, unlike the beaver, was widespread in the south of the European part of Russia [3], which is explained by the fact that it settles in hard to reach places and fishing it is laborious. In the Rostov region, according [2,6] and the rally [4,5] Stavropol area, at the beginning of the XX century the number of otters was low, as in the present, but it has expanded range and comes in almost all rivers region.

Currently *Platypsyllus castoris* distributed almost throughout the range of the beaver in Europe (Belarus, Latvia, Poland, Norway, Sweden, Germany, Czech Republic, Switzerland), it is possible his dwelling in the Ukraine and the Far East [12]. In Russia, beaver flea until recently was known only for the charges A.I. Fomicheva and Budaeva with beaver pelts from the Voronezh region [12].

Finding beaver flea farther south the previously noted findings on the territory of Russia said that the view is not only connected with the forest area, but it is mastered and the steppe zone, which is also confined to the semi-aquatic habitats. Beaver flea from Stavropol met on Caucasian otter, which is also characteristic of Nearctic populations of beaver fleas, celebrated not only in its main host, but also sometimes on the American otter (*Lutra canadensis*), which can settle in burrows beavers [10].



CONCLUSION

Platypsyllus castoris, like most parasitic insects, is small (up to 2 mm in length), the body dorsoventrally flattened, with broad flat limbs and a large number of strongly thickened and pointed hat on the body surface. We collect the female has large dimensions (about 5 mm) (fig.1). The head lacks eyes. The body color is light brown.

For an accurate diagnosis of the type needed males that have not been found. However, as impressive length beetle suggest the finding of a new form of *Platypsyllus castoris*.

Beetles live in dry undercoat host (beaver or otter). Feed on epidermal secretions of the host, but can also feed and discharge ichors' and lymph from the wounds on the skin of animals. Usually biology species is closely related to the life of the host and the outside of his hair bugs do not occur. At the same time noted that the females lay eggs on the surface of the skin is not the owner, and at the bottom of the nest – in construction debris, leaves and twigs. Eggs develop in the course of the year. Mature larvae move to pupate in the upper part of the beaver lodge, where after 10-12 days; adults emerge and migrate to the host undercoat. It was observed that with the hosts of the dead beetles

leave only when the proximity of another victim. Move freely within the socket or go beyond it, they are not capable.

This latter fact gave rise to the opinion that the beetles can occur in many types of aquatic animals that live near the beaver lodges [11]. However, reliable information on the subject is not known. At the same time, being in the Stavropol region beaver fleas on otter (not previously noted on this host) seems to confirm this assumption, and therefore the process of speciation is not finished at the moment.

REFERENCES

[1] Yu. G. Arzanov, G.V. Valov, G.B. Bakhtadze, *Caucasian entomological bull* **2013**, 9 (1), 47-49.
[2] E.V. Zverozomb-Zubovskij, To knowledge of fauna of mammals of the Don area. Materials on is natural-historical studying of edge, Rostov-on-Don: Printing house of Staff SKFO, **1923** – 30 pp.
[3] S.V. Kirikov, The person and the nature of a steppe zone. Moscow: Science, **1983** – 123 pp.
[4] A.N. Khokhlov, Redkie crests and disappearing animals of Stavropol Territory. Mammals, birds, insects, Stavropol, **1998** – 126 pp.
[5] A.N. Khokhlov, Fauna of Stavropol Territory, Stavropol, **2000** – 200 p.
[6] A.V. Lerhe, Animals (except rodents), the Nature of the Rostov area: Rostov-on-Don, **1940**, 311-325.
[7] J.M. Rall, Mammal and the lowest land vertebratae the Rostov area, Scientific notes of biology-soil faculty Rostov-on-Don state university, **1953**, Rostov-on-Don, 19 3, 115-126.
[8] P. A. Sviridenko, Rodents the Nature of the Rostov area, Rostov-on-Don, **1940**, 299-311.
[9] V.V. Staheev, About changes in structure Rodents the Rostov area, *Steppes of Northern Eurasia: Materials of V International symposium* (Orenburg, on May, 17-21th, **2009**), Orenburg: IPK, 628-631.
[10] N.M. Belfiore, *Coleopterists Bulletin*, **2006**, 60 (4): 312-313.
[11] St. B. Peck, *Insecta Mundi*, **2006**, 20, 1-2: 85-94.
[12] A.A. Prokin, A.G. Kirejtshuk, On *Platypsyllus castoris* Ristema, 1869 (Coleoptera, Leiodidae, Platypsyllinae) in Voronezh Province and notes on other leiodid beetles connected with mammals, problems and prospects of the general entomology, *Theses of reports of XIII congress Russian entomology societies*, Krasnodar, **2007**, 296-297.