

Project Update: November 2019

Thanks to the support of Rufford Foundation, our working group got the opportunity to expand our research on the following subject: "Assessment of the population status of the moth mixed red underwing *Catocala deducta* and the development of measures to preserve its habitats in the floodplain of the Irtysh River. "

We agreed with the Pavlodar regional territorial inspectorate of forestry and wildlife of the Republic of Kazakhstan, to receive official permission No. 2-13- / 313 of April 23, 2019 to conduct entomological research on the composition of the fauna of Lepidoptera insects (Lepidoptera, Heterocera) in the floodplain forest of the Irtysh River.

To develop our research in the project, we registered an NGO public organisation "Entomolife" which activities are aimed at preserving the biological diversity of insects in Kazakhstan.

Since July 2019, we have been conducting the research with the aim of collecting data referring the topic of the project in the poplar/willow forests of the Irtysh River Valley on the territory of the Irtysh River Floodplain State Nature Reserve in the Pavlodar region of Kazakhstan.

The first stage of our research was the reconnaissance expedition from 7th September to 7th October 2019 to search for probable habitats of the species and to select future research control sites. The research route covered forests on the right bank of the Irtysh River in the "middle reaches" and in the north of the region in the "lower reaches" of the river with thick undergrowth sections consisting various shrubs and the presence of old trees *Populus nigra*, *Populus alba* and *Salix* sp. (Figure 2,3,4,5,6).

For field work locations in the vicinity of the village of Pavlodar and the village of Zhelezinka were selected (Figure 1). The choice of control site No. 1 was postponed for the summer season of 2020 due to a change in the initial work plan.

Eleven field studies were carried out at the control site No. 2 (Pavlodarskoye village) from 9th July to 16th October 2019 and partially, three fieldworks at the control site No. 3 (Zhelezinka village) from 20th July to 23rd August.2019.

Our expedition was the first in the study of *Catocala deducta* in the territory of the Pavlodar region of Kazakhstan. All data on the detection and observation of this species in the Pavlodar region we received on our own, the authorship of these data belongs to the authors of the project.

We collected data by luring the moths with the light of mixed and ultraviolet spectrum, as well as wine-sugar baits (Figure 7.8) that we had hung in the forest on tree branches.

We were able to register and photograph many species of moths living together with *Catocala deducta*.

For the entire period of the field study in 2019 (from July 15th to October 20th 2019),

only on September 6th 2019 we were able to find one male *C. deducta* (Figure 9) at the control site No. 2 (village Pavlodarskoe), which came to the light and was observed together with other species of the genus *Catocala*, which, unlike *C. deducta*, were found in mass. These mass species include the super dominant *Catocala nupta* - more than 1000 individuals.

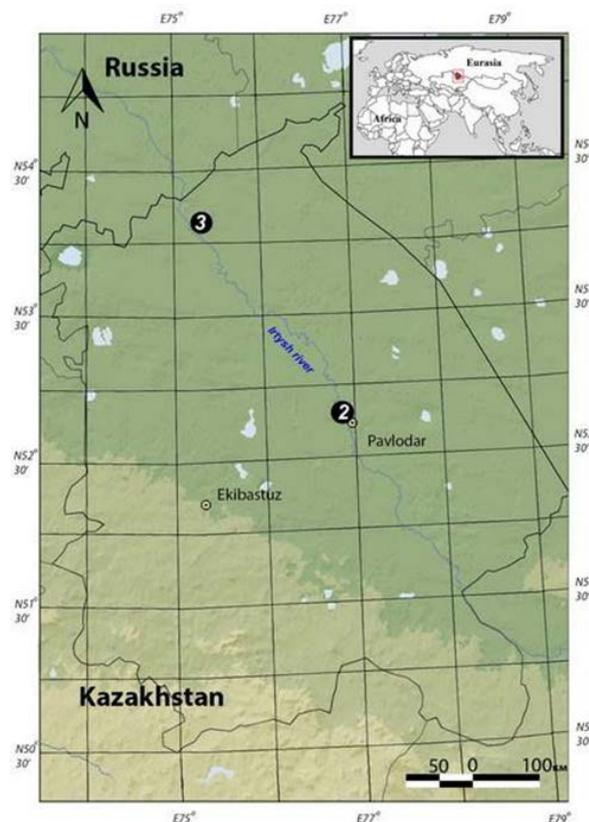
C. deducta, like most species of the genus *Catocala* found in control site No. 2, was not found in a control site No. 3 (Zhelezinka village).

A preliminary quantitative analysis and dynamics of the species of adult moth activity confirms our assumption about the rarity of *C. deducta* in the natural environment of the Pavlodar region.

Comparison of the data obtained from the studied sites shows the heterogeneity of the faunistic composition. A poorer composition of the moth's fauna is noted in the northern part of Pavlodar region at site No. 3 (Zhelezinka village). We suggest that this may be due to different values of the annual sum of positive temperatures in the central and northern parts of Pavlodar region. Thus, we form the primary idea of the distribution of *C. deducta* in the Pavlodar region and Kazakhstan as a whole.

During field studies in 2019, new Noctuoidea species were registered for the fauna of the Pavlodar region in the floodplain forest of the river Irtysh, thanks to the financing of the project from Rufford foundation ID 28371-1.

The work on our research team on the project continues in accordance with the approved plan of activities and deadlines.



(Figure 1). Locations of field studies in 2019.

(Pavlodarskoe village)
- 52°22'12.44"N 76°52'22.36"E

(Zhelezinka village)
- 53°33'27.28"N 75°16'56.4



(Figure 2). Natural habitats of *Catocala deducta*. The floodplain poplar-willow forest in the Irtysh river valley. Control site 2 (the vicinity of the Pavlodarskoe village) 12.08.2019.



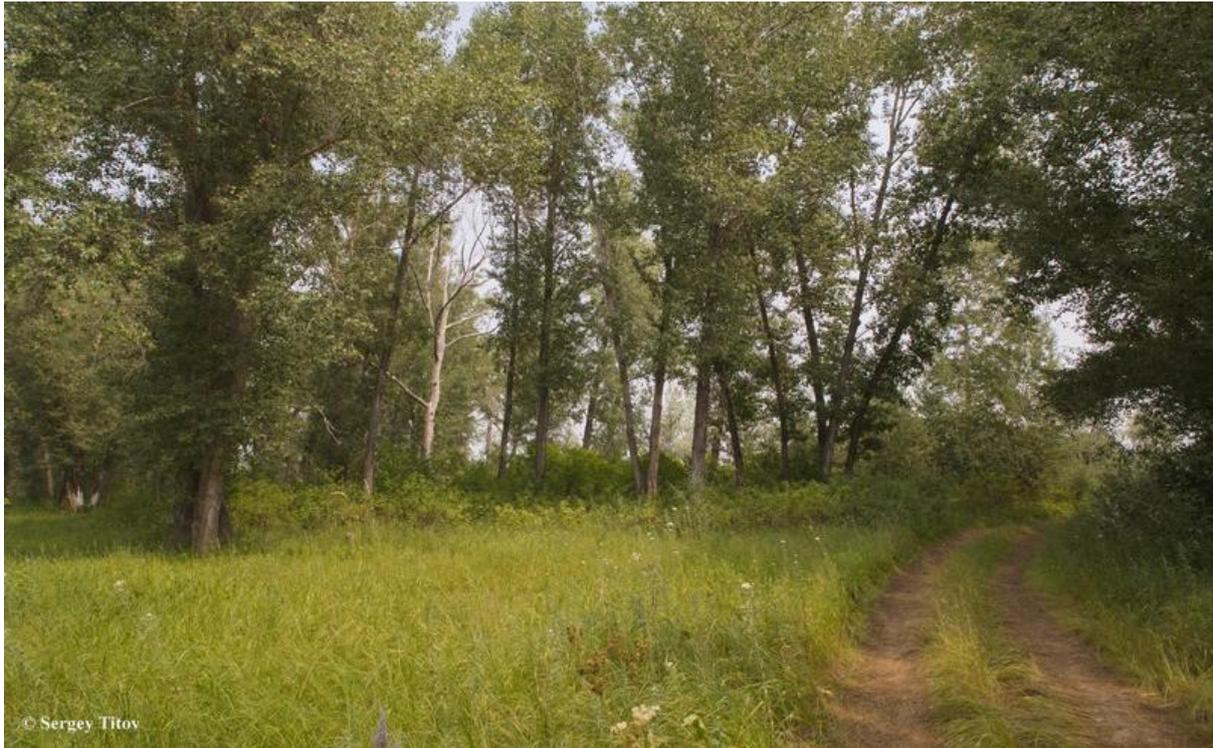
(Figure 3). Natural habitats of *Catocala deducta*. The floodplain poplar-willow forest in the Irtysh river valley. Control site 2 (the vicinity of the Pavlodarskoe village) 12.10.2019.



(Figure 4). Natural habitats of *Catocala deducta*. The floodplain poplar-willow forest in the Irtysch river valley. Control site 2 (the vicinity of the Pavlodarskoe village) 12.10.2019.



(Figure 5). Natural habitats of *Catocala deducta*. The floodplain poplar-willow forest in the Irtysch river valley. Control site 2 (the vicinity of the Pavlodarskoe village) 12.10.2019. The photo shows a floodplain forest, an oil refinery, hay meadows and the Pavlodar village.



(Figure 5). Natural habitats of *Catocala deducta*. The floodplain poplar-willow forest in the Irtysch river valley. Control site 3 (the vicinity of the Pavlodarskoe village) 27.07.2019.



(Figure 7). Luring moths into a mixed-light lamp.



(Figure 8). Attracting *Catocala* moths to wine-sugar lures, a piece of rope soaked in a solution of red wine and sugar.



(Figure 9). *Catocala deducta* on a tree trunk. The first photo of a living individual from Kazakhstan.