

acid increases 3.5 times, and у Pl. corneus 2.2 times compared with the control (table 2).

Таблица 2 – Влияние фенола на содержание мочевой кислоты в гемолимфе *Lymnaea stagnalis* и *Planorbarius corneus* ($M \pm m$)

Group	<i>Lymnaea stagnalis</i>	<i>Planorbarius corneus</i>
Control, (n = 9)	44,81 ± 2,061	82,56 ± 1,58
Phenol, 50 mg / l, (n = 9)	134,22 ± 3,037 ¹	138,33 ± 3,568 ¹
Phenol, 100 mg / l, (n = 9)	149,48 ± 2,363 ¹	169,43 ± 2,009 ¹
Phenol, 150 mg / l, (n = 9)	158,67 ± 2,489 ¹	181,22 ± 3,348 ¹

Note: ¹ p < 0,05 compared to the control

With the action of phenol at a concentration of 150 mg / l, the level of uric acid in the hemolymph of the users increases by 1.2 times, and the coils when the action of phenol in the concentrations of 100 and 150 mg / l is 1.2 and 1.3 times higher group phenol, 50 mg / l. Under the influence of phenol with a concentration of 150 mg / l, a significant increase in the level of uric acid in the hemolymph of two species of gastropod hydrobionts compared with group phenol, 100 mg / l has not been established (table 3.).

Conclusion. Thus, using the experimental action of phenol solutions on mollusks, it was established that the fall of phenol in water causes changes in the nitrogen metabolism in mollusk tissues. The horn coil appeared to be more resistant to the toxic effect of phenol.

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ABOUT DISTRIBUTION OF ALIEN SPECIES OF THE GENUS *OTIORHYNCHUS* GERMAR, 1822 (COLEOPTERA, CURCULIONIDAE: ENTIMINAE) IN VITEBSK AND ITS VICINITIES

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Invasions of alien species – representatives of various groups of live organisms – out of limits of their primary areas have global character. Invasive species often act as biological pollutants and can threaten environmental safety of the country. Their justification and further distribution often involves undesirable global ecological, economic, and sometimes, social consequences.

(<http://www.sevin.ru/invasive/index.html>). In the last decades in connection with strengthening of economic activity of the person and climate change a number of the species uncharacteristic for fauna of Belarus got on its territory. Many of these species cause essential economic, ecological and social damage. Therefore, it became necessary to create a republican list of invasive animal species, some of which can be extremely dangerous [2].

Alien beetles are the most mass group of alien arthropods of Europe. In recent years expansion of a number of species of beetles weevils to new regions is observed [1, 3-5]. From this flowed the following tasks: 1. To specify distribution of a weevil of an alien species of *Otiorhynchus (Proremus) smreczynskii* Cmoluch, 1968 in the region. 2. To reveal and study distribution of a weevil of an alien species of *Otiorhynchus (Proremus) rotundus* (Marseul, 1872) in the region. 3. To try to find new species of alien weevils of the genus of *Otiorhynchus* on a lilac and to lay the foundation for monitoring further observations of injuriousness of these species.

The first step for development of measure to reduce the potential economic damage in Belarus is to detect these new wreckers. Also we started researches on studying and stimulation of reproduction of local predators which can limit the number of these invasive species were begun and methods of physical processing of the soil at roots of fodder plants proceeding from biology of species of invaders beetles are approved.

The purpose of our work – specification of specific structure of alien species of weevils of the genus of *Otiorhynchus* Germar, 1822 in the north of Belarus.

Material and methods. The material was collected using the standard entomological method – Barber's traps with modifications. Were used for account in a radical zone geological a sieve through which the laying was sifted in the afternoon. The basic duties became a cutting on the lower part of branches of fodder plants (lilac (*Syringa*), privet (*Ligustrum*) and snowberry (*Symphoricarpos*)) in evening and night time when imago of weevils leave for active food. Moreover the individual inspection of foliage and branches of bushes was performed at that time.

For identification of these species determinants and private revisions of this complex of species were used [1, 4]. Constant spermatheca and spicula preparation in the Canadian balm – for reliable determination of these species using the standard methods were made. All species are confirmed by the leading expert on weevils of Russia I.A. Zabaluev (Russia, Samara-Moscow) for what the author expresses him gratitude.

Findings and their discussion. As a result of research more 3550 specimens (among them: *Otiorhynchus rotundus* – 1200 specimens [6], *Otiorhynchus smreczynskii* – 2350 specimens) in work is confirmed presence of *Ot. rotundus* are also given in the territory Republic of Belarus new data on distribution of 3 alien species of weevils of *Ot. rotundus*, *Ot. smreczynskii* and *Ot. albidus*. Weevil of *Ot. smreczynskii* is for the first time found in the metropolitan area of

Vitebsk in 2001 [6], and species of *Ot. rotundus* in 2005 [6]. In the north of the republic of a find of joint dwelling of *Ot. rotundus* with *Ot. smreczynskii* are quite rare and distribution of these species of weevils in the Vitebsk attracts interest. In a left-bank part of the city and suburbs only *Ot. smreczynskii* is noted. And only in the fall of this year it was found on a small area of *Ot. rotundus*. In a right-bank part both views are noted, and clear split of their territories of dwelling by railways tracks and railway station Vitebsk is visible. The revealed territory of dwelling of *Ot. rotundus* is much less and more compactly, than at *Ot. smreczynskii*. *Ot. rotundus* is noted by us together with *Otiorhynchus albidus*. Species *Ot. rotundus* is found in 2 regions: Vitebsk, Gomel; *Ot. smreczynskii* in 4 regions: Vitebsk, Grodno, Minsk, Mogilev and also in the adjacent region of Russia – the Bryansk region [7].

Conclusion. The weevil of *Otiorhynchus (Proremus) smreczynskii* Cmoluch, 1968 eats generally leaves of lilacs (*S. vulgaris*, *S. josikaea*) and privets (*Ligustrum vulgare*). To a lesser extent damages also other wood and shrubby plants. Imago eat in evening and night time, and hide in a sheet laying or a top soil in the afternoon. In the north of the republic of a find of joint dwelling of *Ot. rotundus* with *Ot. smreczynskii* are quite rare. In a left-bank part of Vitebsk and suburbs only *Ot. smreczynskii* is noted. And only in the autumn of this year it was found on a small area of *Ot. rotundus*. In a right-bank part both views are noted, and clear split of their territories of dwelling by railway tracks and railway station Vitebsk is visible. A weevil of *Otiorhynchus (Proremus) rotundus* (Marseul, 1872) imago eat on leaves of lilac (*Syringa*), privet (*Ligustrum*) and snowberry (*Symphoricarpos*). Beetles are active at night, eat away sheet kidneys and leaves, leaving at the edges characteristic cuts. In May and June of a female lay eggs to the soil near roots. Larvae eat at first on small backs, and then pass to the main root. Imago are active till late autumn. The revealed territory of dwelling of *Ot. rotundus* is much less and more compactly, than at *Ot. smreczynskii*. *Ot. rotundus* is noted by us together with *Otiorhynchus albidus*, a new species for fauna of Belarus.

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THE AFTER-EFFECTS OF THE DESTRUCTIVE HUMAN ACTIVITIES ON THE AMAZON RAINFOREST EXAMPLE

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The actuality of the work lies in the fact that in our wide and emerging world the population is increasing more and more rapidly and this aspect is connected directly with the topic of my research. Amazon rainforest is the most striking example of human actions being disastrous towards our planet. The link between the health of the Amazon and the health of the planet is obvious. The rain forests help stabilize local and global climate [1]. Deforestation may release significant amounts of this carbon, which could have catastrophic consequences around the world [3].

Nevertheless, the issue of my research concerns not only Amazon rainforest in particular, but also the ecological situation in the world in general.

The aim of the research is to show the impact of people's actions on our planet and raise awareness among human beings.

Material and methods. The Amazon rainforest also known in English as Amazonia or the Amazon Jungle is a moist broadleaf forest in the Amazon biome that covers most of the Amazon basin of South America. More than 30 million people, including 350 indigenous and ethnic groups, live in the Amazon and depend on nature for agriculture, clothing and traditional medicines [2].

The materials used during my research work are scientific magazines and books, such as "National Geographic", "BBC knowledge" and others. The