In a preliminary experiment, a female, caught on a potato field near Baranovichi city, Zastarinjie village, has been used.

The laboratory observations of development stages have shown that laying eggs occurs on the upper and inner side of a leaf, presumably for an adaptation to fluctuations in temperature and humidity. For the development of larvae, a certain temperature regime has been set. According to our observations, the hatching of larvae is observed in about a month if the temperature is above 25° C, and a larvae exit is delayed if the temperature is below 20 °C.

In 2018, there has been appeared the information in Internet sources that the appearance of larvae has been observed in house conditions in April. The matter is that the large quantities of a plant Acacia silver (Acacia dealbata) are delivered on March 8 to Belarus. In cases if a plant is not thrown out within a month, there is enough time for appearing nymphs. Thus, it is natural to assume that clutches on the thrown acacia plants, having got in favorable conditions, do not die, and the hatched larvae extend across the territory of the Republic. This fact confirms one of the ways of mantis spreading.

An imago sexual structure is represented by three females and two males, with which an experiment has been conducted to reveal the feasibility of sacrificing a male for the appearance of a full-fledged offspring. It has consisted in three variants as follows:

in the first, a male has been eaten before mating, in the second, mating has been observed, and a male has remained alive, and in the third, a female being on an imago stage has not become in contact with a male. It should be noted that eggs have been laid by three females. However, offspring has been obtained only in the second variant. From literary sources, it is known that a female eats a male after mating. This contradiction can be explained by a sufficient amount of food (fly larvae, mosquito larvae).

Offspring is not numerous due to closely related crossing and the stress of being in captivity. To an imago stage, one male has been saved. The experiment continues at this stage. Mantis oothecaehave been placed for wintering in a natural environment.

ASSESSMENT OF OCCURRENCE OF TICKS IN THE PARK OF STONES

A. Savitskaya, E. Zhuk

Belarusian State University, ISEI BSU,
Minsk, Republic of Belarus
zhukelena@yandex.by

The work evaluated the occurrence of ticks in the Park of the stones of the city of Minsk.

Keywords: recreation, recreation area, ectoparasites, mites.

According to the General plan of Minsk with adjacent territories within the perspective city line the Park of stones is carried to LR-4. It is a type of landscape-recreational zone, which is defined as a specially protected natural area and objects. Recreational load is less than 30 people. / ha, and landscaping reaches 99%

The Park was founded in 1985, in a place that represented the swampy outskirts of the city. The swamp was drained, carried out land works on the formation of the terrain. In total, 2,134 boulders were collected, they were brought to Minsk and the creation of the Museum began. Under the open halls of the Museum, there are about 7 hectares, located between the campus and the Metropolitan district Uruchcha. In 1989, the stone Park in Minsk received the status of a natural monument of national importance.

For the parks of the city of Minsk is characterized by the presence of Ixodes ticks, carriers of dangerous diseases. We used the method of collecting ticks on the flag to assess the activity of Ixodes ticks in the Park of stones. A flag is a piece of white, better brushed, fabric size 40x80 cm or 60x100 One of the short sides has support for strong stiff stick with a length of about 1.5 m. the Flag of "sweep off" the bushes, the grass, the lower branches of small trees, exposed areas of soil. Located on them in the "waiting position" ticks cling to the matter, and then removed from it by the collector. Registration of ticks was carried out in the period from July to August 2018. every decade. A total of 24 tick specimens were registered during this period.

The activity of ticks was determined by a number of factors. High air temperature during July and early August caused the least activity of parasites (2–4 individuals per flago/km). For ticks influenced Vikas grass.

The greatest activity of ticks was observed at the end of August (20 individuals per flago/km). During this period, the optimal conditions for habitat (temperature +20–22, humidity up to 78%).

The activity of ticks was determined by the collection area. Studies have shown that the most common (62.5%) mites were found in the area with high grass vegetation. In areas of the Park, where birch and pine ticks were found less frequently (16.67%).

Thus, we have established that in the territory, which is a popular recreation area of the population of Minsk, the occurrence of ticks is high enough and it is necessary to carry out additional anti-acaricide measures.

DETERMINATION OF THE RADIATION BACKGROUND AND THE DEGREE OF RADIOACTIVE POLLUTION OF DIFFERENT OBJECTS

O. Slobodyan, A. Tymchuk

National University of Food Technology,
Kyiv, Ukraine
kvovsiienko@gmail.com

The article presents the sources of background radiation.

Keywords: radiation background, radioactive pollution, cosmic radiation, radon.

Background radiation comes from both natural and man-made sources.

The global average exposure of humans to ionizing radiation is about 3 mSv (0.3 rem) per year, 80% of which comes from nature. The remaining 20% results from exposure to man-made radiation sources, primarily from medical imaging. Average man-made exposure is much higher in developed countries, mostly due to CT scans and nuclear medicine.

Natural background radiation comes from five primary sources: cosmic radiation, solar radiation, external terrestrial sources, radiation in the human body, and radon.

The background rate for natural radiation varies considerably with location, being as low as 1.5 mSv/a (1.5 mSv per year) in some areas and over 100 mSv/a in others.

Cosmic radiation: the Earth, and all living things on it, are constantly bombarded by radiation from outside our solar system.

The cosmic-radiation dose rate on airplanes is so high that, airline flight crew workers receive more dose on average than any other worker, including those in nuclear power plants. Airline crews receive more cosmic rays if they routinely work flight routes that take them close to the North or South pole at high altitudes, where this type of radiation is maximal.

Cosmic rays also include high-energy gamma rays, which are far beyond the energies produced by solar or human sources.

External terrestrial sources: most materials on Earth contain some radioactive atoms, even if in small quantities. Most of the dose received from these sources is from gamma-ray emitters in building materials, or rocks and soil when outside. The major radionuclides of concern for terrestrial radiation are isotopes of potassium, uranium, and thorium.

Internal radiation sources: all earthly materials that are the building-blocks of life contain a radioactive component. As humans, plants, and animals consume food, air, and water, an inventory of radioisotopes builds up within the organism. Some radionuclides, like potassium-40, emit a high-energy gamma ray that can be measured by sensitive electronic radiation measurement systems.

Radon: an important source of natural radiation is radon gas, which seeps continuously from bedrock but can, because of its high density, accumulate in poorly ventilated houses.

Methods of indication of ionizing radiation: *photographic method* is based on the properties of ionizing radiation to affect the sensitive layer of photographic film like a visible light. According to the degree of blackening of the photographic film or paper it can be determined the intensity of ionizing radiation; *chemical method* is based on the properties of certain chemical substances to change its structure or color under the influence of radioactive radiation; *ionization method* is that under the influence of radioactive radiation gas molecules are ionized, as a result its electrical conductivity increases. If the volume of gas is locked between two electrodes , which is supplied with electrical voltage , than ionization current that occurs between them can be measured. The strength of this current will depend on the intensity of ionizing radiation; *scintillation method* is that under the influence of ionizing radiation some substances (zinc sulfide activated with silver , – ZnS (Ag), sodium iodide , thallium activated, – NaI (TI), and others) can shine. The energy of light flashes (scintillation) in the photoelectric tube is converted into the pulses of electric current due to the photoelectric effect.