

INVERTEBRATE ZOOLOGY SCIENTIFIC-FIELD PRACTICE IN THE
CONDITIONS OF A PANDEMIC

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Due to the outbreak of COVID-19, most countries around the world completely closed higher education institutions and switched to distance education. Scientific fieldwork in all disciplines was under threat. The professors of natural sciences faced a new challenge - how to organize field research, how to collect insect collections and study their species composition. In this article, we shared the experience of organizing and realization of invertebrate zoology scientific-field practice in the conditions of a pandemic.

Keywords: invertebrate zoology, scientific-field practice, distance education, online practice

Summer practice in invertebrate zoology for first-year students is an important part of studying the course of zoology and occupies an important place in the system of professional training of future biology teachers.

The practice is conducted after studying the theoretical course and performing laboratory work and provides consolidation of theoretical knowledge. Previously, the initial practice in invertebrate zoology was conducted in the Gomilshansky Forests National Park, the Kharkiv Forest Park Zone, and the adjacent forests and reservoirs located within the city of Kharkiv and its environs.

The practice of invertebrate zoology took place through excursions to study aquatic fauna, soil fauna, and terrestrial fauna of invertebrates. Routes of thematic excursions were established by professors of the department, according to the program

approved at the department of Natural sciences of the Municipal Establishment "Kharkiv Humanitarian-Pedagogical Academy" of the Kharkiv Regional Council.

During the practice, the students got acquainted with the specifics of expeditionary work in natural conditions, had the opportunity to conduct a longer period of animal observation, as well as to gather collection material. Field trips alternated with laboratory classes, which allowed for the initial processing of the collected material.

Practice in invertebrate zoology included the study of species diversity of animals through the use of a full range of methods that can be used in the wild and did not violate the Law "On Protection of Fauna". Students were carrying out a special set of works provided by the program of research works of the department of Natural Sciences, mastering the elements of biogenocenological research.

Nevertheless, due to the outbreak of COVID-19, most countries around the world completely closed higher education institutions and switched to distance education. Scientific fieldwork in all disciplines was under threat. The professors faced a new challenge - how to organize field research, how to collect insect collections, and study their species composition? Therefore, the field practice was organized so that each student passes it individually at his place of living.

At the same time, students studied the theoretical part of online lectures using Zoom, Google Hangouts, Skype:

- invertebrates in the soil (soil as a habitat; conditions of movement, respiration, nutrition, and reproduction in the soil);
- invertebrates in terrestrial ecosystems (conditions of their existence in the air; studied methods of collection and accounting of invertebrates forests; collection, collection, and identification of dominant groups of invertebrates; place of invertebrates in forest ecosystems, acquainted with measures to control pests);
- invertebrates in meadows (conditions of existence of invertebrates in meadow ecosystems; methods of their collection and accounting; fauna and features of invertebrates adaptation, their connection with other components of biogeocenoses, the practical value of separate species; insects as pollinators of flowering plants);

- invertebrates in aquatic ecosystems (studied freshwater protozoa, sponges, hydra, ciliated and small-bristled worms, rotifers, mollusks, crustaceans, insects).

Sharing resources with students has become an integral part of online learning success. Groups in WhatsApp, Viber, Telegram were first created for coordination, became forums where students can support and help each other, and professors can give advice and share their knowledge. First-year students learned how to choose methods, ways to study specific animals and phenomena of their lives. They learned how to conduct observations that ensure the study of invertebrates both in the wild and when kept in the laboratory, learned to set soil traps, collect biological material, and fill in a practice diary. Independently, the first-year students learned the fauna and flora of their native places, learned to conduct their first research work, mastered the methods of collecting scientific material, and became real biologists.

The collection of insects was organized under the guidance of a professor. Each first-year student passed field practice individually at his place of residence, placing soil traps, collecting biological material, and fill in a diary of practice.

As a result of the online practice, students filled in diaries with field and laboratory notes, lists, and drawings of studied animals, their characteristics, and traces of activity. During the online field practice, students learned the necessary ways and methods of catching and collecting; fixing and labeling of material; how to make and store collection samples and visual aids, while ensuring the preservation of the scientific value of the collected material and the possibility of its quantitative processing.

After the practice, students also got the skills to maintain scientific documentation; are able to draw up research results in the form of a scientific report or scientific report; practically implement various forms of environmental activities. The first-year students proved themselves to be inquisitive and responsible students, capable of independently completing assignments on educational field practice during the pandemic time.