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THE VOLCANIC CARPATHIANS IN THE KHUST AND VYNOHRADIV AREA AS A PROMISING REGION FOR CONDUCTING COMPREHENSIVE FIELD PRACTICE

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The study analyzes the potential and justifies the feasibility of conducting comprehensive field practice for geography students in the region of the Volcanic Carpathians (Khust – Vynohradiv). The region is distinguished by a unique combination of geological and geomorphological objects and socio-geographic sites. Based on personal experience, a prospective route has been developed and proposed, which ensures students acquire skills in field observation, analysis of primary materials, and the expansion of professional competencies in physical and social geography.

Keywords: Comprehensive field practice, Volcanic Carpathians, river terrace, volcano.

Comprehensive field practice is an integral part of the training of geography students. It allows combining theoretical knowledge with practical skills in field research. The goal of comprehensive field practice is for students to acquire skills in conducting stationary and route-based geographical research and observations; to learn methodological techniques for collecting, processing, analyzing, and generalizing primary materials; to be able to compare their own observations with academic and scientific literature; to broaden the geographical outlook of future geography teachers and enhance their professional culture; and to consolidate and deepen knowledge gained primarily from physical geography disciplines («Geomorphology», «Hydrology», «Physical Geography of Ukraine»), as well as «Fundamentals of Social Geography Theory», «Population Geography», and others.

The region of the Volcanic Carpathians is perfectly suited for achieving the goals of the practice. Along the way, students can become acquainted with a number of natural complexes. In Zakarpattia, there is an opportunity to study specific trades and cultural traditions, such as winemaking, buffalo farming, wicker weaving, etc. The region, located between the cities of Khust and Vynohradiv, is distinguished by an exceptional geological history associated with Neogene volcanic activity. Relict

formations of extinct volcanoes, lava, tuffs, and craters are preserved here, serving as natural laboratories for the study of endogenous processes.

Our report is based on our own experience conducting such a practice in September 2025 for a group of 4th-year students of the Secondary Education (Geography) program at Ternopil National Pedagogical University. The practice route covered both the Carpathian foothills near Vyhoda and the high-mountain Lake Synevyr, but the main focus was on studying the Tysa terraces and volcanic structures in the section from Khust to Vynohradiv, encompassing geological and geomorphological, as well as historical, cultural, and economic sites. This experience not only deepened the understanding of the tectonic evolution of the Carpathians but also emphasized the importance of preserving geoheritage and the unique economic traditions of the population.

The Volcanic Carpathians are part of the Transcarpathian Inner Trough – a tectonic structure formed as a result of the Alpine orogeny. The geological structure of the region is defined by Neogene volcanogenic rocks: andesites, basalts, dacites, and rhyolites, which formed as a result of volcanic eruptions. These formations contrast with the flysch deposits of the Folded Carpathians, making the region interesting for comprehensive study.

A number of geographers, geologists, and geomorphologists have studied the Vygorlat-Hutynskyi Ridge region. In organizing and conducting the practice, we relied on the work carried out by S. Rudnytskyi, K. Herenchuk, P. Tsys, I. Hofshstein, S. Kruhlov, Ya. Kravchuk, Ya. Khomyn, Yu. Zinko, I. Rozhko, A. Melnyk, B. Merlych, and many others. The most thorough geological and geomorphological characterization of the Vygorlat-Hutynskyi Ridge was provided by S. Rudnytskyi in his generalizing work «Fundamentals of Morphology and Geology of Subcarpathian Rus and Transcarpathia in General» [7]. Among contemporary studies, we highlight the works of: M. Prykhodko, N. Zhabina, and M. Bohdanova [5], in which the authors presented the «Scheme of Neogene volcanism in the western part of the Vygorlat-Hutynskyi Ridge (Transcarpathian Inner Trough)», based on a detailed study of the structure and evolution of magmatism of six central-type volcanoes out of the nine known in Ukrainian Transcarpathia – Poprichnyi, Antalivskyi, Makovytsia, Trostianytsia, Syniak, and Dekhmanov. They established that the Vygorlat-Hutynskyi Ridge was formed during the Late Sarmatian – Pannonian period as a result of the third and fourth volcanic stages; and the work of Ya. Kravchuk and Ya. Khomyn [3], in which the authors described in detail the relief of the Volcanic Ridge of the Ukrainian Carpathians, where dome, ring, and dome-ring morphostructures of various orders, typical for volcanic regions, are relatively well preserved, including Chorna Hora (Black Mountain) and extinct volcanoes in the Khust and Vynohradiv area.

Within the Volcanic Ridge, there are many unique nature conservation sites. The problems of their protection and preservation (mainly geological and geomorphological, including volcanic formations between Khust and Vynohradiv) are addressed in the works of Ya. Kravchuk, Yu. Zinko [2], and other scholars.

The comprehensive practice combined various aspects: physical geography, social geography, ecology, and ethnography. The region between Khust and

Vynohradiv was the base for the practice, and here we tried to demonstrate to students all aspects of geographical research. We started with a theoretical briefing: discussion of the lithology of volcanic rocks and tectonic schemes of the Zakarpattia region, the influence of relief on vegetation cover and on the sphere of economic activity of the population. Then, we moved from theory to more practical issues [1].

During the trip, we had the opportunity to examine the valleys of the Tysa, Rika, and Khustets rivers. We became acquainted with the so-called Khust Gates (Khustski Vorota) – the narrowest part of the Tysa valley, where it breaks through to the plain. We learned about ways to reduce flood damage in the region's rivers (Fig. 1).



Fig. 1. On Castle Hill in Khust

Between the villages of Velyka and Mala Kopania, an outcrop of the upper (sixth) alluvial terrace of the Tysa River was examined (Fig. 1), and rock samples were collected.

In the practice area, we recorded classical volcanic forms – conical hills with tuff deposits; in Khust, we climbed an extinct volcano with the ruins of Khust Castle. Along the way, we had the opportunity to examine and describe both natural outcrops of volcanic rocks and imported magmatic rocks used to pave the road. We found interesting samples of porphyrites and andesites in the remnants of the castle's defensive walls. A picturesque panorama of the central part of Khust, with its architectural dominants – the Calvinist and Roman Catholic cathedrals – opens up from the summit of the extinct volcano. Landscape contrasts between the Flysch Carpathians, river valleys, and the Vygortat-Hutynskyi Ridge are clearly visible on the horizon.

In performing the practice tasks, students learned about the technological process at the Khust Felt Factory «Khust-Filts» – the only factory of its kind in Ukraine. In the company store, a leading specialist kindly demonstrated fabric samples and described the rather complex and lengthy technological process of making felt hats.



Fig. 2. Outcrop of the upper (sixth) alluvial terrace of the Tysa River

In Khust, they visited a functioning synagogue, as well as the Calvinist and Roman Catholic churches. This allowed students to form an understanding of the architectural features of religious buildings and the confessional diversity of the region. In Iza, the trainees had the opportunity to become acquainted with the traditional folk craft of wicker weaving. Here they also visited a spotted deer farm, where deer are raised to obtain the medicinal substance pantocrine (the farm has been operating since the 1980s).



Fig. 3. Vineyard on the terraced slopes of Chorna Hora

Next, the route headed south through the Vynohradiv Highlands, focusing on Chorna Hora (Black Mountain, 570 m) near Vynohradiv. This is a relict volcanic cone, isolated from the main ridge, with distinct craters. On Chorna Hora, students had the opportunity to visit vineyards planted on a terraced slope (Fig. 3). The vineyards here grow on volcanic soils formed on tuffs and andesite gravel, enriched with potassium and phosphorus, which makes them particularly favorable for viticulture. This creates a unique terroir for indigenous grape varieties. At the local renowned winemaker Fedir Pavlyshynets', students became acquainted with the technology of grapevine wine production and visited the wine cellars.

During the practice, ecological problems typical of the Zakarpattia region were also noted. One of them is deforestation, which leads to soil degradation and erosional processes on slopes, which students observed at a number of locations.

The experience of conducting comprehensive field practice in the Volcanic Carpathians between Khust and Vynohradiv suggests that conducting such practices in the defined region sufficiently ensures the formation of competencies specified by the practice curriculum. Students not only acquired practical skills and abilities but also felt a connection to living geographical science. For students, natives of the Podillia Upland, this route not only broadened and deepened their professional competencies but also left vivid and unforgettable impressions.

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