

## Project Update: May 2017

### Starting the project

Current project is a logical extension of my previous investigations of aconites in Chornohora Mts. These studies showed that genus *Aconitum* there is subdivided into three subgenera and four main biomorphological groups delimited. It also helped to delimit important ecological features and describe preferred habitats for these plants. The results of these investigations will be stressed and completed during field expeditions in Gorgany Mts., known as one of the wildest regions of Ukrainian Carpathians.

Basing on analysis of herbarium material and my preliminary studies in 2011, there are nine *Aconitum* species sparsely distributed in Gorgany Mts. (Table 1). S. Zyman also mentioned *A. variegatum* from region of Synevyr Lake, and special expedition will be realised to find this species. *A. variegatum* is widely distributed in Poland and Slovakia, however recently there no confirmed locations of this species in Ukrainian Carpathians (just one herbarium confirmed vouches was collected in 1888) and its refining is an important task.

Taxon	Threat Category	Protection Status	Endemic Status
<b>Subg. Aconitum</b>			
<b>Sect. Aconitum</b>			
A. xczarnohorensse (Zapał.) Mitka	VU	none	Eastern Carpathian endemic
A. xnanum (Baumg.) Simonk.	VU	none	South-Eastern Carpathian endemic
A. bucovinense Zapał.	EN	none	South-Eastern Carpathian endemic
A. firmum Rchb.	VU	none	Pan-Carpathian endemic
<b>Sect. Cammarum DC.</b>			
A. lasiocarpum (Rchb.) Gáyer	VU	Bern Convention, Red Book of Ukraine	Eastern Carpathian endemic
A. xgayeri Starmühl.	LC	none	Eastern Carpathian endemic
A. degenii Gáyer	LC	none	Pan-Carpathian endemic
(?) <i>A. variegatum</i> L.	DD	none	none
<b>Sect. Acomarum Starmühl.</b>			
A. xcammarum L. em. Fries	LC	none	none
<b>Subg. Lycoctonum (DC.) Peterm.</b>			
<b>Sect Lycoctonum DC.</b>			
A. moldavicum Hacq.	LC	none	Pan-Carpathian subendemic

Table 1. Taxonomic structure and threat categories of the genus *Aconitum* in Gorgany Mts.

To better realise my investigations, I developed the new map with geomorphological division of Ukrainian Carpathians up to the level of mesoregions. Accordingly to this comprehensive division (unpublished data), Gorgany Mts. represents eight mesoregions (Fig. 1) sometimes subdivided on low-altitude outer, high-altitude central and middle altitude (water divided) inner mountains. The special interest for my investigations represents central and inner Gorgany with subalpine and alpine vegetation belts, where the highest biodiversity of

aconites is expected (especially from subgen. *Aconitum*). Taking into account new geomorphological division I have developed 9 main tracks covering all mesoregions (<https://www.gpsies.com/mapFolder.do?id=87464>) with the base points in Bystrytsia, Osmoloda, and Kolochava towns.

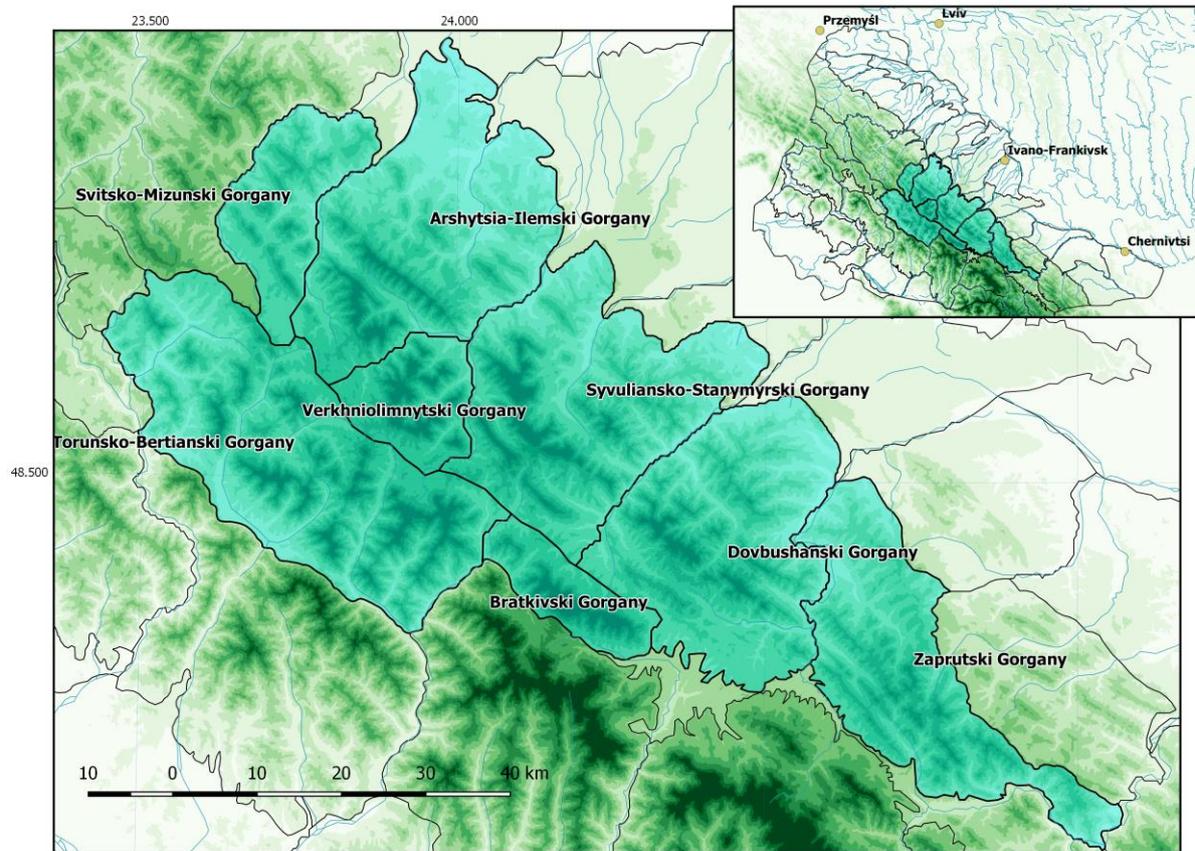


Fig. 1. Subdivision of Gorgany Mts. Torunsko-Bertianski and Bratkiivski Gorgany represent inner (waterdivided) region. Verkhniolimnytski Gorgany is an isolated mesoregion in central part, while other 5 OGU's include both central (darkest mountain ranges) and outer (light colored outer parts) parts.

The protocol for field expeditions was extrapolated from my previous project, developed and adapted for new conditions. This will allow comparing data and merging the existing datasets in one database. This protocol includes next parts: a) site selection; b) sampling of herbarium material; c) vegetation description by Braun-Blanquet; d) population studies; e) environment conditions studies. Environment conditions will be analysed with technical equipment bought from previous grant, i.e. a) soil moisture meter Rixen M-700S (1 pcs.); b) soil pH and temperature meter Ezodo MP-103S (1 pcs.); c) environment multimeter Flus ET-965 (1 pcs.). For expedition purposes other equipment (including Canon EF 100mm macro photo lens with accessories, Tatonka Yukon Ultra EXP backpack, Pinguin Rain cover, and two Terra Incognita cape bags) were purchased