

EDGG research expedition in Ukraine, July 2010

General information and application

The Southeast European Dry Grassland Group (SEEDGG) within EDGG plans an **international research expedition to Central Podilia from 10–25 July 2010**. This event is mainly organised by Anna Kuzemko (National Dendrological Park Sofievka' NAS of Ukraine) and Jürgen Dengler (University of Hamburg, Germany).

Apart from the two organisers and a bus driver, there are 15 places for EDGG members to join this expedition. We would like to assign approximately half of these places to members from Ukraine and half of them to members from other countries. Please send your applications as soon as possible, but **not later than 15 April 2010**, to the two organisers:

- Applicants from Ukraine, Russia and Belarus: Anna Kuzemko: anya_meadow@mail.ru
- Applicants from all other countries: Jürgen Dengler: dengler@botanik.uni-hamburg.de

Should there be more interested colleagues than available places, we will give prevalence to persons who actively collaborate in establishing the supranational vegetation database of SEEDGG, who contribute specific knowledge to our field and subsequent analytical work (e.g. good knowledge in bryophytes, lichens, or critical vascular plants, experience in handling large Turboveg databases, in high-quality field sampling or advanced analytical methods of biodiversity patterns or large-scale classification), or who broaden the geographic diversity among the participants.

Information about the study area

Podilia is the historical and geographical region of Ukraine that is situated between the rivers Pivdenny Bug and Dniester. According to the political division of Ukraine, it occupies the regions Khmel'nitski, Ternopol, and Vinnitsa as well as small parts of the regions Cherkassy, Kirovograd, and Odessa. Geomorphologically, the area corresponds to the Podilia Upland. Central Podilia is the central part of the Upland in the borders of Vinnitsa region, with altitudes about 200–300 m a.s.l. The climate is temperate, moderately continental with a mean annual temperature of 7–9 °C and a mean annual precipitation of 550–650 mm. Typical soil types are chernozem and podzol. In the geobotanical zonation of Ukraine, the territory corresponds to the Central-Podilian geobotanical district of the oak and hornbeam-oak forests as well as steppe-meadows.



Fig. 1: Central Podilia at the physiographic map of Ukraine.

Central Podilia is characterized by great diversity of dry grasslands, including vegetation of stony outcrops, particularly the granite outcrops of the Ukrainian Crystalline Shield in the Pivdenny Bug River valley (order *Trifolio arvensis-Festucetalia ovinae*, class *Koelerio-Corynepherea*) and the limestone outcrops in the Dniester River valley (order *Alyso-Sedetalia*, class *Koelerio-Corynepherea*). At the slopes of the both valleys, various types of steppe vegetation are widely distributed (alliances *Festucion valesiaca* and *Cirsio-Brachypodium pinnati*, class *Festuco-Brometea*), with the dominance of *Stipa capillata*, *S. lessingiana*, *S. pulcherrima*, *Botriochloa ischaemum*, and *Carex humilis*. There are also small patches of forest-edge vegetation (class *Trifolio-Geranietea*).



Fig. 2: Pivdenny Bug River valley.



Fig. 4: *Carlina onopordifolia*.



Fig. 3: Dniester River valley.



Fig. 5: *Chamaecytisus blockianus*.

Idea of the joint expedition

Despite the fact that Ukraine belongs to the countries with the most diverse and extensive dry grasslands on the continent, available data and analyses are generally still rather limited (see Kuzemko 2009), and this is particularly true for the study region of this year's EDGG expedition. Based on the originality and high geomorphological diversity of the region combined with very limited vegetation data available from there, we assume that our expedition will yield important new baseline data for large-scale classification, analyses of diversity patterns and conservation issues. There is a good chance that we will have to describe new syntaxa based on the data sampled.

We have developed a sampling approach that provides high-quality data that are useful both for consistent large-scale classification and analyses of diversity patterns at multiple spatial scales. A very similar approach has previously been applied for example during the first EDGG field expedition 2009 in Transylvania, Romania (for a first report, see Dengler et al. 2009b), and by

Steffen Boch in Estonia (e.g. Boch & Dengler 2006, Dengler & Boch 2009). For more detailed arguments on individual aspects of the sampling strategy, see e.g. Dengler (2009), Dengler et al. (2009a), Berg & Dengler (2005).

Our aim is to sample the full variety of dry grassland types in Central Podilia, both in geographical and in ecological terms. For this purpose, our expedition will visit different dry grassland areas every day, which are spread in the study region and which will be identified by the Ukrainian colleagues beforehand based on available data (local publications, species distribution information from floras, aerial photographs, maps, etc.). Within each of these dry grassland areas, we will aim to cover the range of occurring types that are distinguishable in the field (in terms of physiognomy and site conditions). They will be sampled with two complementary approaches:

- **Nested-plot sampling for biodiversity analyses** on plots sized 0.0001 m²; 0.001 m²; 0.01 m²; 0.1 m²; 1 m²; 10 m²; 100 m², with all areas below 100 m² being replicated twice within the largest plot. Here we will sample complete species lists of vascular plants, bryophytes and lichens.
- **Vegetation relevés on 10 m²** (10-m² subplots of the nested design + additional individual relevés): percentage cover value of all species (vascular plants, bryophytes, lichens); structural data (height and cover of layers); GPS coordinates (latitude, longitude, altitude); relief (inclination, aspect, relief position, microtopography); land use; soil depth, stone cover. Further, a mixed soil sample of the uppermost 15 cm will be drawn for subsequent lab analyses of basic chemico-physical parameters (pH; carbonate, conductivity, loss on ignition, soil texture class, skeleton content).

For this sampling, we will divide our expedition in several multinational subgroups, each of which should comprise specialists for the various plant taxa. At the start of the expedition, we will have a short training course to introduce all participants to the sampling approach, in order to achieve data of high and consistent quality. One fundamental idea of these EDGG field expeditions, apart from gathering valuable new data from underrepresented regions of Europe, is the transfer of knowledge among EDGG members, both regarding species determination and methodological approaches of sampling, databasing and analysing the data.

All the data sampled jointly, will be integrated into the supranational database of SEEDGG (see announcement by Iva Apostolova in this Bulletin). We intend to prepare various publications from the data for international journals (e.g. *Applied Vegetation Science*, *Ecography*,...), in which all participants for the field expedition will be invited to help with the analyses and serve as co-authors. As the data sampled jointly certainly offers much more analytical options than we have in mind presently, we encourage all participants to develop own ideas of publications and propose them to the team.

If you have questions or suggestions regarding the sampling approach, you are invited to discuss them with Jürgen Dengler. When there are good ideas, we are very open to incorporate them into our sampling. While our general focus is on sampling baseline data on vegetation composition for classification and analyses of biodiversity patterns, there is the option that some participants sample different data on the same dry grassland patches (e.g. zoological data; tissue samples from plant species for phylogeographical analyses; diaspores and other traits for trait databases; etc.). If you wish to do so, please send your proposal to Anna and Jürgen as soon as possible.

Programme and costs

The expedition will start in Uman', 200 km from Kiev, on 10 July and end in Kiev on 25 July, respectively. The participants should arrange their voyage to Kiev via plane or train themselves. To get from Kiev to Uman', it is best to take a minibus (fixed-run taxi) – the bus station is located near the entrance of the central train station in Kiev.

For the expedition, Anna has hired a 18-seat bus including a driver. According to present plans, our accommodation will be in the following towns (see Fig. 6):

- Uman' (1 night before expedition)
- Nemirov (3 nights)
- Kryzhopol' (1 night)
- Chechil'nyk (3 nights)
- Yampil' (2 nights)
- Mohyliv-Podil'skyy (4 nights)

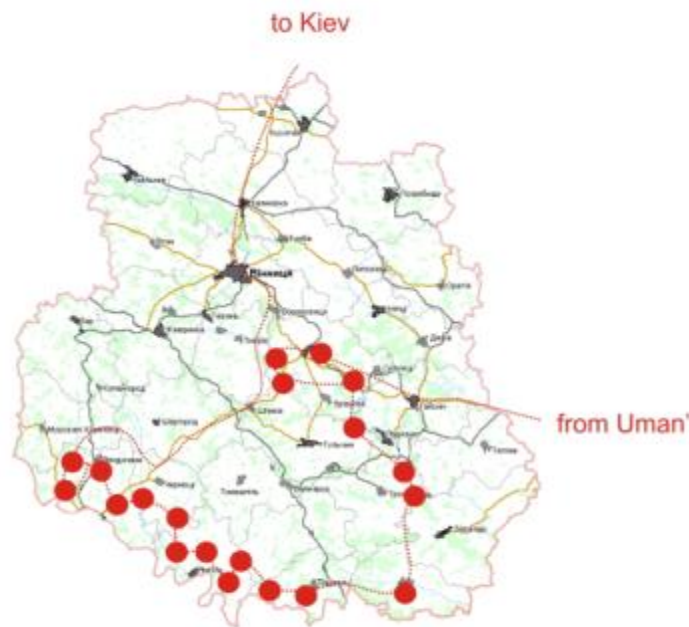


Fig. 6: Probable excursion route in the Vinnitsa region.

We will stay either in cheap hotels, sanatoria or similar places. The overall costs (travelling during expedition [bus rent, driver, petrol], accommodation, meals) will be approximately 250 Euros per person. Jürgen has applied for a grant by FAN (B) (= *Förderkreis für allgemeine Naturkunde (Biologie)*), and we are optimistic that they will cover a significant proportion of the expedition costs in Ukraine and potentially also part of the costs for foreign participants to get to Kiev. We will know more after mid-April. Accordingly, when you apply, you need to take into account that you possibly have to cover the full costs or part of them yourself.

If you have any ideas where to apply for additional support, please let us (Anna and Jürgen) know. Similarly, you should inform us if you don't need financial support for your part because your costs are covered by a different source. We would like to assign the financial support that we receive with priority to those who need it most, i.e. the participants from low-income countries who otherwise might not be able to participate.

As soon as the list of participants has been fixed (around 20 April), we will involve all of them into the further discussion about the details of the expedition.

References

- Berg, C., Dengler, J. (2005): Moose und Flechten als diagnostische Arten von Pflanzengesellschaften – eine Übersicht aus Mecklenburg-Vorpommern. – *Herzogia* 18: 145–161, Halle (Saale).
- Boch, S., Dengler, J. (2006): Floristische und ökologische Charakterisierung sowie Phytodiversität der Trockenrasen auf der Insel Saaremaa (Estland). – In: Bültmann, H., Fartmann, T., Hasse, T. [Eds.]: Trockenrasen auf unterschiedlichen Betrachtungsebenen – Berichte einer Tagung vom 26.–28. August in Münster. – *Arb. Inst. Landschaftsökol. Münster* 15: 55–71, Münster.
- Dengler, J. (2009): A flexible multi-scale approach for standardised recording of plant species richness patterns. – *Ecol. Indic.* 9: 1169–1178, Amsterdam.
- Dengler, J., Boch, S. (2008): Sampling-design effects on properties of species-area curves – a case study from Estonian dry grassland communities. – *Folia Geobot.* 43: 289–304, Průhonice.
- Dengler, J., Löbel, S., Dolnik, C. (2009a): Species constancy depends on plot size – a problem for vegetation classification and how it can be solved. – *J. Veg. Sci.* 20: 754–766, Oxford.
- Dengler, J., Ruprecht, E., Szabó, A., Turtureanu, D., Beldean, M., Uğurlu, E., Pedashenko, H., Dolnik, C., Jones, A. (2009b): EDGG cooperation on syntaxonomy and biodiversity of *Festuco-Brometea* communities in Transylvania (Romania): report and preliminary results. – *Bull. Eur. Dry Grassl. Group* 4: 13–19, Hamburg.
- Kuzemko, A. (2009): Dry grasslands on sandy soils in the forest and forest-steppe zones of the plains part of Ukraine: present state of syntaxonomy. – *Tuexenia* 29: 369–390, 1 table, Göttingen.

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