

Status of the Herbarium of Agricultural University - Plovdiv (SOA)

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ABSTRACT

The Herbarium of Agricultural University – Plovdiv (SOA, according to Index Herbariorum) holds valued specimens. Some of them are collected about one century ago as presented by different authors. SOA consists of more than 120 000 specimens of Bulgarian vascular flora, which are collected from various floristic regions. The accessions hold information for the plant diversity in Bulgaria and the Balkan Peninsula. This article describes the reorganization of the collections and the databased information of the herbarium.

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Key words: *botanical collections, database*

Introduction

The herbarium of Agricultural University - Plovdiv - SOA by Index Herbariorum (Thiers 2012) is the second Bulgarian herbarium. It unites the collections of the former Higher Agricultural Institute – Sofia (moved to Plovdiv since 1975) and of Agricultural University - Plovdiv (starting from 1948). The stored specimens are more than 120 000, representing the flora of Bulgaria and the world. Some of them are more than a century old (Delipavlov et al. 1997). Exclusively important are the materials collected by eminent botanists in the first Bulgarian botanical investigations. The authentic specimens from the flora of Bulgaria define the world importance of the collections, in example the types of *Lilium rhodopeum* Delip., *Colchicum diampolis* Delip. et Cheschm, *Secale rhodopaeum* Delip., *Arenaria rhodopaea* Delip., *Thymelea bulgarica* Cheschm. SOA is cited in each PhD work in Bulgaria with elements of floristics and taxonomy. The herbar sheets of SOA are starting point for any botanical investigation in Bulgaria and the Balkan peninsula. The herbarium unites almost the whole species diversity in Bulgaria. It is used as major source for the compilation of Bulgarian “Floras” (Stojanov and Stefanov 1924-1925, 1944, 1948; Stojanov et al. 1966) and the popular “Determination keys” (Gramatikov 1992; Delipavlov and Ceschmedzhiev 2003). The materials are source for the Red Data Book (Velchev 1984) and the chorological atlas of medicinal plants (Bondev 1995). The herbarium is divided till 2010 in two collections by origin – before 1949 and after the relocation to Plovdiv. The samples are arranged in traditional style, according to “Genera Syphonogamarum ad Systema Englerianum” by Dalla Torre & Harms (1907), stored in wooden cases (Delipavlov et al. 1997). The herbarium is particularly databased by cardfiles and list of the types till 2003 r.

The artificial division between the collections and the lack of electronic documentation hamper the work and expose the materials to risk. In 2010 the collection of SOA was optimized.

Results And Discussion**Changes in the structure of the herbar collection**

The collections separated artificially as SOA and PAU (unregistered acronym) were united to the general collection SOA. This unification allowed to store the samples according to the accepted system and to find a storage place for the duplicates and work samples.

The new organization of the collection is:

Hall I: Collection Fungi (and lichens), work collection (stored by authors) and exchange collections (stored by corresponding herbarium). The same room is the place for the initial preparation of the herbar specimens (disinfection, montage, photographing, documentation).

Hall II: Collection Plantae: materials of higher plants, numbered by the system of Dalla-Torre with numbers between 5000 and 9999.

Hall III: Collection Plantae: materials of higher plants, numbered by the system of Dalla-Torre with numbers between 1 and 4999

Together with the reorganization of the herbar collections, the halls were reconstructed and equipped with mobile archive systems. This increased the storage volume 3 times and vacated place for disinfecting section and 4 work places.

Documentation of the herbar collections

The relational database is built using the computer program dSOA (Stoyanov 2003, 2009), which allows comparison of the herbar sheets and their mapping (Figure 2). The relational database till now has information about samples from 92 families, 372 genera, 1224 species. 93.5% of the samples are from Bulgaria. The inventory till now covers all floristic regions of the country. According to the MGRS grid, the data characterize 536 squares 10x10 km (53600 km²) of the country land (Figure 3). The authors with up than 100 databased samples are 42. Because of the more exact and easy stored information on the herbar sheets, the most databased materials are the collections of D. Delipavlov (3756), I. Cheschmedzhiev (3273) and S. Dimitrov (2893). The bigger part of the samples, stored before 1949, are without cardfiles and with labels written by hand. The reading of labels like them and the electronic storage are related to references by toponyms, taxonomical revisions, and historical references for the authors. The most represented collections of this period are the herbar sheets of V.Stribrny (334), N.Stojanov (281), B.Stefanov (209) and T.Georgiev (152).

The covered inventory period is between 1816 and 2011. The total count of documented records is 15218 (12% of all samples). The type specimens are 232 herbar sheets. The completely databased genera are: Lathraea, Fagus, Orobancha, Phelipanche, Quercus and Rumex; particularly Hyacinthaceae and Iridaceae. The families with highest count of records are Poaceae, followed by Fabaceae, Lamiaceae, Orobanchaceae and Caryophyllaceae. As a result of the work on CEBDER project is developed online database of SOA types (http://www.nmnh.com/enatura/types-bulgaria/type_list_institution_bg-SOA-p-1.html).

Acknowledgments

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Figure 1. Halls II and III (Plantae) before (a,b) and after (c, d) the reconstruction

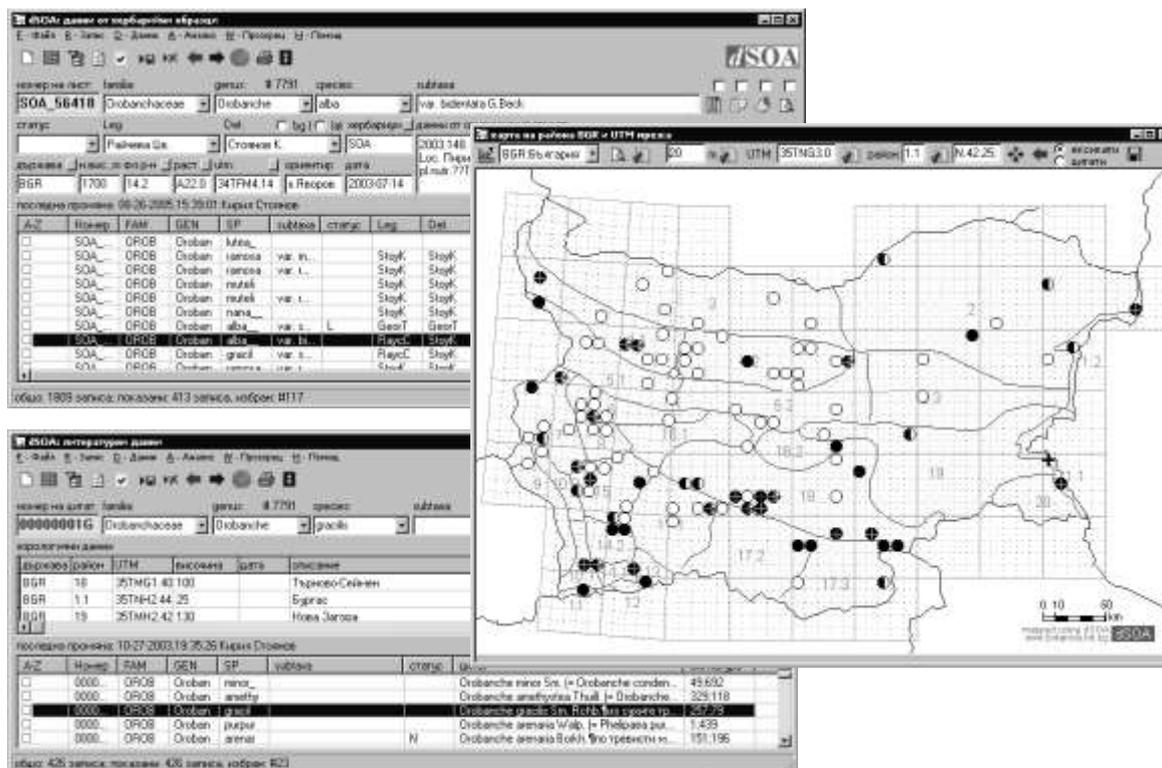


Figure 2. Documentation of the herbarium materials in SOA – herbar data (up), compared to the literature data (down), with as result map of unconfirmed, confirmed and new localities (in the middle).

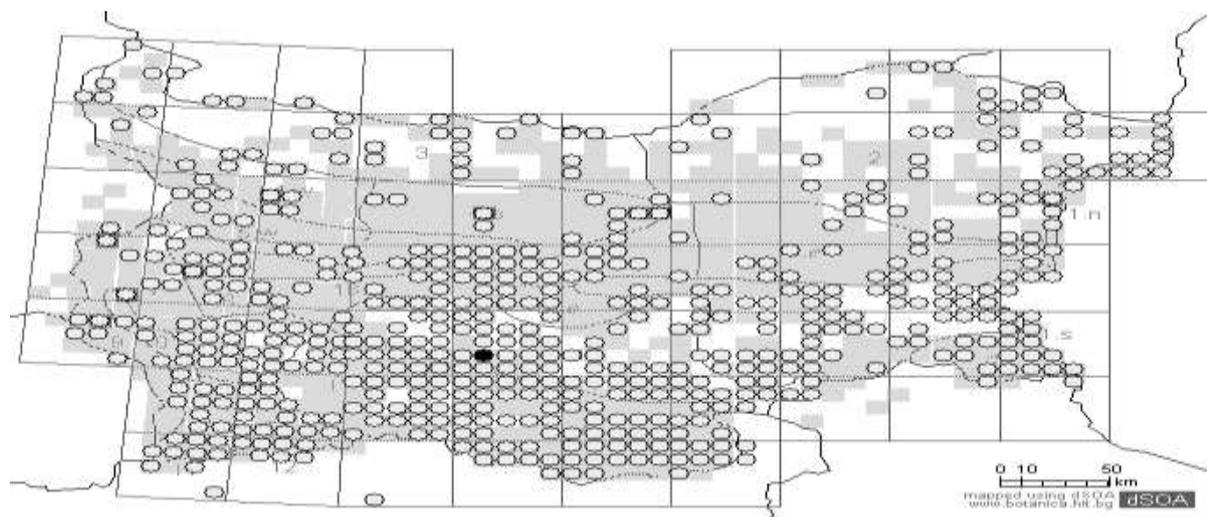


Figure 3. map of the coverage of SOA in Bulgaria: existing herbarium sheets (circles) and data from the literature (squares).

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