

*Lamium album* L. "Mariupol. Najdenova roshcha. Leg., Det. J.K.Boyko. (-).04-05.1905." Eurasian species. Distribution in Ukraine: all regions except the South Steppe and Crimea. Archaeophyte, epoekophyte.

*Kickxia caucasica* (Muss.-Puschk. ex Spreng.) Kuprian.: "Between Nogajsk and Berdiansk. Leg., Det. J.K.Boyko. 25.07.1920". Det. J.K.Boyko as *Linaria elatine* Mill. Notae criticae A.V.Shumilova. 26.03.2008. *Kickxia caucasica* (Muss.-Puschk. ex Spreng. Kuprian." Crimean-Caucasian species. For the first time collected on territory of the North Azov Sea Lowland. Distribution in Ukraine: Crimea. Probably an apophyte.

*Rinanthus minor* L.: "Novaja Alexandria. Meadow.Leg., Det.. J.K.Boyko 27.06.1905". European-Siberian species. Distribution in Ukraine: anywhere, except the South Steppe . Hemiapophyte.

*Bellis perennis* L. Two specimens: 1). "Nogajsk. Preslavskaya farm. Leg., Det. J.K. Boyko. 1905. 2) Rasumovskoye. Leg., Det. J.K. Boyko 1906." European-Caucasian-Mediterranean-Asian species. Distribution in Ukraine: in forest and forest-steppe zones. Apophyte.

## ERGASIOPHYTES IN THE URBAN FLORA OF BELGOROD (RUSSIA)

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Having been reinforced recently economic links between regions create conditions for the emerging of the role of the adventive element of the synanthropic flora. Active introduction of different species of plants made by city residents in the yards, garden-plots, garden patches and grave yards contributes to it as well as the activities of various municipal forestry firms and botanic garden, which is situated in Belgorod.

In 60-s some collective farms of the Belgorod region tried to cultivate *Heracleum sosnowskyi* Manden. as a silage plant. Soon it was noticed wild. In Belgorod area this species can be often met in forest parks, on the slopes and along road sides. It has an obvious tendency for spreading. A source of the alien flora is still city flower beds. Urbanoflora of Belgorod has been enriched with such decorative "refugees", which have grown wild, as *Pyrethrum corymbosum* (L.) Willd., *Aquilegia vulgaris* L., *Calendula officinalis* L., *Cosmos bipinnatus* L., *Rudbeckia laciniata* L., *Symphytum caucasicum* M.Bieb., *Aster salignus* Willd., *Solidago canadensis* L., *Saponaria officinalis* L., *Asclepias syriaca* L., *Portulaca oleracea* L., *Reynoutria sachalinensis* Fr. Schmidt and so on. Among them is also *Lupinus polyphyllus* Lindl. – perennial root plant, which spreads easily with seeds. *Avena sativa* L., *Hordeum distichon* L., *Triticum aestivum* L. grow wild along railways and motorways, in weedy places and near milling and bakery works in Belgorod. Feeding and honeyed plants *Phacelia tanacetifolia* Benth., *Medicago sativa* L., *Onobrychis arenaria* (Kit.) DC. can be often met along transport routs. Many species such as *Helianthus tuberosus* L., *Symphytum caucasicum* Bieb., *Reynoutria sachalinensis* Fr. Schmidt, *Aster salignus* Willd., *Solidago canadensis* L., *Armoracia rusticana* Gaertn., Mey. et Scherb., *Saponaria officinalis* L., *Asclepias syriaca* L., spread only in vegetative way because regeneration by seeds of many of them is rather difficult in our climate.

At present many of above-mentioned species can be considered fully naturalized because they demonstrate high competitiveness in natural phytocenosis. Their spread continues almost without any man's help. Mainly the plants are met in places, where they were planted or nearby – in deserted front gardens, forest belts, grave yards and places where

houses have been pulled down. However the representatives of such species can often be noticed in secondary habitat – along motorways, on railway banks, dumps – and even penetrate natural phytocenosis. Increased scales of introduction activities and developing commercial and economical relations of different world regions require essential observation of the dynamics of ergasiofits spreading and changes of the contents and structure of phytocenosis which were caused by ergasiofits.

## **DIRECTIONS OF ANTROPOGENIC TRANSFORMATION OF BRYOFLORA AND MOSS COVER OF FOREST-STEPPE ZONE OF UKRAINE**

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The directions of antropogenic transformation of bryoflora and moss cover of forest-steppe zone of Ukraine were given.

The forest-steppe zone of Ukraine refers to the regions with significant antropogenic transformation. That is why flora and vegetation of this zone are characterized by significant, often irreversible changes. It is concerned of moss-likes too. The research of flora and moss cover of forest-steppe zone of Ukraine enables to clarify the main directions of their transformation. The most important from them is general impoverishment of bryoflora species, probably disappearance of some species (for example, *Scapania nemorea*, *Trichocolea tomentella*, *Sphagnum majus*, *S. inundatum*, *Fissidens adianthoides* and others). There is a narrowing of spread area for a number of species within the region (*Homalia trichomanoides*, *Neckera complanata*, *Sciuro-hypnum populeum*, *Pterigynandrum filiforme*, *Isothecium alopecuroides* – in connection with the cutting of indigenous broadleaf forests; *Acaulon triguetrum*, *Weissia controversa*, *W. condensata* – with the plowing of steppe areas). There is a violation of structure in the moss cover (loss of vulnerable species from associations, for example *Neckera complanata* from association *Anomodonto viticulosi-Leucodontetum sciuroidis* Marst. 1998). There is a general impoverishment of associations and transforming them into associations without ranks (for example, *Eurhynchietum swartzii* Waldh. ex Wilm. 1966 into associations *Eurhynchium hians* – *Comm.*). As opposed to negative antropogenic changes there is observed the increasing of frequency occurred of synantropic species and expansion of moss cover by its development in urban ecosystems, rural social ecosystem, artificial ecosystem (on favorable for this newly human ecotopes). There is also formation of new stable bryophyte communities in such ecosystems from synantropic species (for example, *Syntrichia ruralis* – *Comm.*, *Bryum argenteum* – *Comm.*, *Ceratodon purpureus* – *Comm.* and others). The general processes of antropogenic impact on flora and vegetation of the region lead on the one hand to the impoverishment of variety of mosses, significant changes in structure of moss cover and on the other hand they contribute to the emergence and spread of synantropic, cosmopolitic, ruderal species of bryophytes and formation of synantropic bryophyte communities.