NATIVE AND ADVENTIVE STATUS OF SOME ROSES (*ROSA*) AND HAWTHORNS (*CRATAEGUS*) IN THE FLORA OF BELARUS

D. V. Dubovik
Institute of Experimental Botany, 27 Akademicheskaya Str., 220012, Minsk, Belarus
(*dvdubovik73@gmail.com*)

Introduction. In the modern flora of Belarus, the status of some species of the genus *Rosa* L. and *Crataegus* L. remains not quite obvious. They can be considered both wild and adventive, but some of them appeared here a long time ago and claim the status of archaeophytes. It is known, that rose and hawthorns are grown for a long period as valuable decorative, medicinal and melliferous plants. Some of them were planted on the site of ancient settlements and settlements in old parks, were used as protective plantings on the ramparts of fortresses and ancient settlements, were bred in monasteries and pharmaceutical gardens, and were used for rootstock of cultivated roses. This also applies to many species of the genera *Rosa* and *Crataegus* in Belarus. Analyzing the locations of these species, it is obvious that they are more often confined to the areas of ancient settlements, in varying degrees of disturbed habitats, in the vicinity of ancient parks, and they are practically absent in wooded and sparsely populated areas.

Materials and methods. The studies were carried out throughout the country using the traditional route-search method. Herbarium collections of the following Herbaria were studied – MSK, KW, LE, WI (their international acronyms are given).

Results. Among the representatives of the genus *Rosa*, the most common species and hybrids in Belarus include *R. canina* L., *R. caesia* Smith (*R. ciesielskii* Blocki), *R. cinnamomea* L., *R. rubiginosa* L., *R. sherardii* Davies, *R.* x s*ubcanina* (Christ.) Dalla Torre et Sarnth., *R. villosa* L., *R. vosagiaca* (N.H.F. Desp.) Déségl. (*R. dumalis* auct. non Bechst.). Of these, only *R. cinnamomea* is confined to natural or slightly disturbed habitats. The species is more common in river valleys, lake depressions and in adjacent areas, less often at a distance from them. Some forms of this species are cultivated, but rarely. The rest of the listed roses are usually associated with disturbed habitats and are more often recorded along roads, on forest edges, near settlements, old parks, estates, and more often disappear in natural habitats. However, their seeds can be carried long distances by birds and other animals. In this case, they appear along the edges of forests, in meadows, near water bodies, but then you need to look for parent plants in the nearest settlements. According to old herbarium and literary data of the 18th–19th centuries, these species were rare and limited in Belarus, but increased in numbers from the end of the 19th and in the 20th centuries. *R. canina*, *R.* x *subcanina*, *R. vosagiaca*, and *R. corymbifera* Borkh. were often used as a stock for cultivated roses, therefore they are more often registered near old estates and parks, settlements. In places of their joint growth, numerous hybrids with transitional morphological characters are often found. The fact, that *R. canina* is grown in nurseries and is used to inoculate the best varieties of roses is mentioned by K. Cholovsky (Cholovsky, 1882), and the first reliable collections of it are dated 1852 (LE). *R. caesia* has been reliably known from herbarium data since 1869 (SPBU), *R. mollis* since the 1820s. (WI), *R. rubiginosa* from the 1820s. (WI), *R. sherardii* from 1824 (WI), *R.* x *subcanina*, probably known until 1770, *R. villosa* from 1776–1781 (KW), *R. vosagiaca*, probably known before 1770 (for example, the ancient settlement of Drutsk, Tolochin region).

Therefore, all the species listed above in Belarus, except for *R. cinnamomea*, should be classified as an adventive element, but some of them may be archaeophytes, especially *R. vosagiaca, R. x subcanina, R. sherardii*, and *R. villosa*. The first two species were planted on ancient settlements and ramparts. Their thorny shoots prevented the attack of enemies, and the plants were used for medicinal and food purposes.

R. tomentosa Smith. is found very rarely and locally in Belarus; it was found only in the last decades, confined to disturbed habitats, therefore, it can also be considered an adventive species. Known earlier in the vicinity of the city Turov *R. marginata* Wallr. (*R. jundzillii* Bess.),

according to herbarium data (MSK), is a hybrid of *R.* x *subcanina* x *R. sherardii*, therefore this taxon is excluded from the flora of Belarus. In addition, the typical *R.* x *subcanina* is present on the same herbarium leaf as the hybrid. Complex rose hybrids – *R. zalana* Wiesb. (*R. agrestis* Savi x *R. rubiginosa*), *R.* x *lazarenkoi* Chrhan. (*R. caesia* x *R. rubiginosa*), *R.* x *inodora* Fries (*R. agrestis* x *R. elliptica* Tausch), *R.* x *andegavensis* Bast. (*R. canina* x *R.* x *stylosa* Desv.? *R. slobodjanii* (Chrshan.) Dubovik., nom. inval.) are distributed in Belarus to a limited extent and undoubtedly appeared here as adventive plants.

We have almost no doubts about the adventive status of some species of the genus *Crataegus*, which are sometimes considered native in the flora of Belarus – *C. x dunensis* Cinov. (*C. lindmanii* Hrab.-Uhr. x *C. rhipidophylla*), *C.* x *kyrtostyla* Fingerh. (*C. monogyna* x *C. rhipidophylla*), *C. monogyna* Jacg., *C. rhipidophylla* Gand., *C. ucrainica* Pojark. Most of their locations, with the exception of the last species, are confined to old parks and their environs, settlements, roadsides, ancient settlements (for example, islands among lakes, destroyed ramparts around former fortresses). From here, they are carried in the immediate vicinity by animals and humans, but are rare or absent in sparsely populated and wooded areas (for example, in the east of the country, some parts of Polesie). *C.* x *dunensis* is confined in Belarus to the immediate vicinity of the park in the village of Doroshevichi, Petrikov district (near the village of Turok), where a number of exotic plants were previously grown and from where it entered its natural habitats. In the vicinity of the village of Khlupinskaya Buda (Zhitkovichi district), here, in the only locality in the Pripyat reserve, *Rosa rubiginosa* is also known, which confirms the invasive nature of both species. In Ukraine, *C.* x *dunensis* is known from one isolated locality in the Zhytomyr region (Fitzailo & Orlov, 2009), which does not exclude its adventive status in the region. Doubtful status in Belarus has *C. ucrainica*, which occurs mainly in the Belarusian Polesie, more often on the Mozyr ridge and in the vicinity of Turov. It would seem that its location as natural on the northern border of the range, but it is almost always found in disturbed habitats, often in culture and settlements, in places of ancient settlements and foci of ancient agriculture.

These facts confirm that all representatives of the genus *Crataegus* in Belarus are adventive species. That *S. monogyna* s.l. in central Polesie it is very rare, and in the northern outskirts of Polesie, perhaps, only just ran wild from the gardens, mentions I.K. Pachosky (Pachosky, 1897). Judging by the herbarium data of the 18th – early 19th centuries *C. monogyna* s.l. was known near Grodno and Belovezhskaya Pushcha, so some of the species can be archaeophytes, especially *C. monogyna*, *C.* x *kyrtostyla* and *C. rhipidophylla*. The latter species is typical of ancient settlements. However, all of them began to be grown more often from the second half of the 19th century in parks and then successfully ran wild.

Conclusion. Many of the above listed species of the genera *Rosa* and *Crataegus* are currently actively expanding their positions in Belarus, especially *C. monogyma*, and can be considered as invasive or potentially invasive plant species. Only *Rosa cinnamomea* is a native species of roses in Belarus, the rest of the roses are adventive.

References

Cholovsky K. 1882. Physico-geographical sketch of the Mogilev province. Plants. *In*: **Dembovetskiy A.S.** (Eds.). *The experience of describing the Mogilev province*. Book. 1. Mogilev on the Dnieper. 266–452. (In Russian).

Fitzailo T.V. & Orlov A.A. 2009. *Crataegus* x *dunensis* Cin. (Rosaceae) – a new species for the flora of Ukraine. *Ukrainian Bot. Jour.*, **66** (3): 354–358. (In Ukraine).

Pachosky I.K. 1897. Flora of Polesye and adjacent areas. *Proceedings of the Imperial St. Petersburg. Soc. Natur. Department of Botany*, **27** (2): 1–260. (In Russian).