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THE ACER COLLECTION FROM MACEA BOTANICAL GARDEN

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Abstract: Situated in the Macea village, Arad County, the Western University “Vasile Goldiș” Botanical Garden is located in plain area, with a surface of 21.5 ha. Here can be found 2100 woody taxa which are spontaneous or cultivated.

The authors analyse the *Acer* collection, presenting its situation in three different moments, the year 1968 (the year when the Dendrological Park was declared, later transformed in Botanical Garden), the year 1987 (when the first Macea dendro-taxa index was published), and

the year 2008, respectively. The collection was represented by 7 taxa in 1968, 56 taxa in 1987 and presently comprises 79 taxa. The 79 taxa belong to 45 species, 27 subspecies, 2 varieties, 2 forms and 14 cultivars. The origin, the year of introduction, the provenience and the number of specimens are mentioned.

Among the rarities cultivated in the Macea Botanical Garden we mention: *Acer carpinifolium* Siebold & Zucc., *A. elegantulum* Fang. & P. L. Chiu, *A. pectinatum* Wall. ex G. Nicholson subsp. *laxiflorum* (Pax) A. E. Murray, *A. saccharum* Marsh. subsp. *leucoderme* (Small) Desmarais, *A. paxii* Franch., *A. pseudosieboldianum* (Pax) Kom., *A. x zoeschense* Pax.

For the ornamental value we could remark: *Acer palmatum* Thunb. ex A. E. Murray ‘Atropurpureum’, *A. japonicum* Thunb. ex A. E. Murray, *A. pseudoplatanus* L. ‘Leopoldii’, *A. griseum* (Franch.) Pax, *A. davidii* Franch. subsp. *davidii*, etc.

Through the permanent exchange of biological material the wooden plant collections are enriched year after year.

Key words: *Acer*, collection, botanical garden, Macea-Arad-Romania.

Introduction

This paper presents the result of the observations made in the last two years by the authors regarding the *Acer* collection of Macea Botanical Garden, correlated with the bibliographic study regarding this subject.

Starting with some spontaneous *Aceraceae* existing in the former aristocratic park (established around 1724), this collection had a progressive evolution, presently reaching the number of 79 taxa.

This development is due to the exchange of seeds with other similar institutions and to the permanent interest and work of the garden’s staff.

Material and Methods

All of the taxa belonging to the *Acer* genus, spontaneous or cultivated, were inventoried. Their authenticity was verified with the help of specialized literature [4, 9, 11, 13, 15, 16]. The nomenclature was actualized [10, 11, 13]. Different authors’ papers were consulted, regarding the mentions of the Macea’s *Acer* genus representatives. It was observed that some representatives are not found in the garden’s collection any longer.

For each taxon the origin, the year of introduction in the Macea collection, the biological material provenience, the number of specimens and the bibliography are mentioned.

Results and Discussions

In 1968 the *Acer* genus representatives was the following: *A. campestre* L. [7], *A. campestre* L. subsp. *campestre* var. *austriacum* (Tratt.) DC. f. *bedöi* (Borbas) Beldie [12], *A. negundo* L. [7], *A. platanoides* L. [7], *A. platanoides* L. 'Schwedleri' [8], *A. pseudoplatanus* L. [7], *A. saccharinum* L. [9].

The first catalogue with living woody plants of Macea collections was published in 1987 [8], when *Acer* collection had 56 taxa.

The *Acer* collection of the Macea Botanical Garden in 2008 comprises the following taxa:

1. *A. buergerianum* Miq. subsp. *buergerianum*; E. China, Japan, Korea; introduced in 1975 from Hort. Bot. Taschkent – 2 specimens and in 1979 from Hort. Bot. Nanking – one specimen; [1,2,5,6,7,8,13].

A. buergerianum Miq. subsp. *ningpoense* (Hance) Rehder; introduced in 2007 from Hort. Bot. Vácrátót – one specimen.

2. *A. campestre* L.; Europe, W. Asia; native; [1,2,5,7,8].

A. campestre L. subsp. *campestre* var. *austriacum* (Tratt.) DC. f. *bedöi* (Borbas) Beldie; native; [12].

A. campestre L. subsp. *leiocarpon* (Wallr.) Pax; introduced in 1984 from Hort. Bot. Caen – 2 specimens; [2].

3. *A. capillipes* Maxim.; Japan; introduced in 1983 from Hort. Bot. Mainz – one specimen; [1,8,13].

4. *A. cappadocicum* Gled. subsp. *cappadocicum*; Caucasus and W. Asia to Himalaya; introduced in 1983 from Hort. Bot. Mainz – one specimen; [1,7,8,13].

A. cappadocicum Gled. subsp. *divergens* (K. Koch ex Pax) A. E. Murray; Transcaucasus; introduced in 1984 from Hort. Bot. Tbilissi – 2 specimens; [1,13].

A. cappadocicum Gled. subsp. *lobelii* (Ten.) A. E. Murray; S. Italy; introduced in 1995 from Arboretum Kalmthout – one specimen.

5. *A. carpinifolium* Siebold & Zucc.; Japan; introduced in 2005 from Späth-Arboretum Berlin – 12 specimens; [1,5,6,7,8,13].

6. *A. circinatum* Pursh; W. North America; introduced in 1981 from Arboretum Kórník – one specimen; [1,5,6,8,13].

7. *A. cissifolium* (Siebold & Zucc.) K. Koch; Japan; introduced in 1978 from Arboretum Kórník – one specimen; [1,5,8,13].

8. *A. crataegifolium* Siebold & Zucc.; Japan; introduced in 1995 from Arboretum SGGW Rogow – 2 specimens; [1,5,7,8,13].

9. *A. davidii* Franch. subsp. *davidii*; C. China; introduced in 1976 from Arboretum Nat. des Barres, Nogent – 2 specimens; [1,5,6,7,8,13].

A. davidii Franch. subsp. *grosseri* (Pax) P. C. de Jong; China; introduced in 1979 from Arboretum Nat. des Barres, Nogent – one specimen; [1,2,5,7,8,13].

10. *A. elegantulum* Fang. & P. L. Chiu; China; introduced in 1987 from Hort. Bot. Hangzhou – one specimen; [1,8,13].

11. *A. griseum* (Franch.) Pax; C. China; introduced in 1983 from Hort. Bot. Mainz – 2 specimens; [1,2].

12. *A. heldreichii* Orph. ex Boiss. subsp. *heldreichii*; S. E. Europe; introduced in 1996 from Hort. Bot. Cambridge – one specimen and in 2004 from Späth-Arboretum Berlin – 3 specimens.

13. *A. henryi* Pax; C. China, introduced in 1983 from Hort. Bot. Taschkent – one specimen and 1983 from Hort. Bot. Vácrátót – one specimen; [1,2,8,13].

14. *A. hyrcanum* Fisch. & C. A. Mey. subsp. *hyrcanum*; S. E. Europe, Asia Minor; introduced in 1978 from Hort. Bot. Ljubljana – one specimen; [1,8,13].

A. hyrcanum Fisch. & C. A. Mey. subsp. *cordissectum* (Borbas) Hay.; introduced in 1978 – 2 specimens; [5].

A. hyrcanum Fisch. & C. A. Mey. subsp. *stevenii* (Pojark.) A. E. Murray; Crimea; introduced in 1978 from Arboretum Kórník – one specimen; [1,5,8,13].

15. *A. japonicum* Thunb. ex A. E. Murray; N. Japan; introduced in 1977 from Arboretum Hemeiüşi – one specimen; [1,5,8,13].

A. japonicum Thunb. ex A. E. Murray ‘*Aconitifolium*’; introduced in 1993 from Arboretum SGGW Rogow – one specimen; [1,2].

A. japonicum Thunb. ex A. E. Murray ‘*Vitifolium*’; introduced in 1989 from Arboretum SGGW Rogow – one specimen; [1].

16. *A. macrophyllum* Pursh; W. North America; introduced in 1975 from Hort. Bot. Wageningen – one specimen; [1,2,5,6,8,13].

17. *A. mandshuricum* Maxim.; S. E. Manchuria, Korea; introduced in 1994 from Hort. Bot. Princ. Mosqua – 2 specimens.

18. *A. maximowiczianum* Miq.; C. China; introduced in 1995 from Hort. Bot. Wageningen – one specimen.

19. *A. microsiboldianum* Nakai; introduced in 2006 from Hort. Bot. Vácrátót – 2 specimens.

20. *A. miyabei* Maxim.; N. Japan; introduced in 1980 from Arboretum Kórník – one specimen; [1,5,8,13].

21. *A. monspessulanum* L. subsp. *monspessulanum*; S. Europe along the Mediterranean coast, extending locally northwards to c. 50° N. in W. Germany; introduced in 1976 from Arboretum Bazoş – 3 specimens; [1,5,7,8,13].

A. monspessulanum L. f. *iberica* (M. Bieb.) K. Koch; Spain; introduced in 1979 from Hort. Bot. Taschkent – one specimen; [5,13].

A. monspessulanum L. subsp. *turcomanicum* (Pojark.) A. E. Murray; Iran, C. Asia; introduced in 1989 from Hort. Bot. Taschkent – one specimen; [8,13].

22. *A. negundo* L.; E. North America; naturalized; [1,2,5,6,7,8].

A. negundo L. ‘*Auratum*’; introduced in 1980 from Alba Iulia nurseries – 2 specimens; [1,2,5,8,13].

A. negundo L. ‘*Aureovariegatum*’; introduced in 1980 from Arad – 3 specimens; [13].

A. negundo L. subsp. *californicum* (Torr. & A. Gray) Sarg.; California; introduced in 1978 from Hort. Bot. Leningrad – 2 specimens; [1,2,5,6,8,13].

A. negundo L. ‘*Odessanum*’; introduced in 1982 from Arboretum Mlyňany, Slepčany – one specimen; [1,8].

A. negundo L. ‘*Variegatum*’; introduced in 1980 from Alba Iulia nurseries – one specimen; [1,2,5,8].

A. negundo L. ‘*Violaceum*’; introduced in 1982 from Hort. Bot. Tartu – one specimen; [1,8,13].

23. *A. oblongum* Wall.; Himalaya, C. W. China; introduced in 1988 from Hort. Bot. Frunze – one specimen.

24. *A. oliverianum* Pax; C. China; introduced in 1988 from Hort. Bot. Nikitensis, Jalta – one specimen; [1,13].

25. *A. opalus* Mill. subsp. *obtusatum* (Waldst. & Kit. ex Willd.) Gams; S. E. Europe, Italy; introduced in 1976 from Hort. Bot. Ljubljana – one specimen; [1,5,8,13].

A. opalus Mill. var. *tomentosum* (Tausch) Rehder; introduced in 1975 from Hort. Bot. Ljubljana – 3 specimens; [7,8].

26. *A. palmatum* Thunb. ex A. E. Murray; Japan, Korea; introduced in 1978 from Arboretum SGGW Rogow – one specimen, in 1982 – 5 specimens and in 1983 from Hort. Bot. Mainz – 2 specimens; [1,2,5,8,13].

A. palmatum Thunb. ex A. E. Murray 'Atropurpureum'; introduced in 1987 from Arboretum SGGW Rogow – 2 specimens; [1,2,13].

27. *A. paxii* Franch.; C. China; introduced in 1981 from Hort. Bot. Taschkent – one specimen; [1,8,13].

28. *A. pectinatum* Wall. ex G. Nicholson subsp. *laxiflorum* (Pax) A. E. Murray; W. China; introduced in 1984 from Hort. Inst. Bot. Průhonice – one specimen; [1,2,13].

29. *A. pennsylvanicum* L.; E. North America; introduced in 1997 from Arboretum Nový Dvůr, Stěbořice-Opava – one specimen; [1,5,7,8,13].

30. *A. pictum* Thunb. subsp. *mono* (Maxim.) H. Ohashi; Japan, China, Manchuria, Korea; introduced in 1978 from Hort. Bot. Tashkent – one specimen; [1,5,7,8,13].

31. *A. platanoides* L.; Europe, Caucasus; native; [1,2,5,7,8].

A. platanoides L. 'Globosum'; introduced in 1980 from Arboretum Gurahonț – one specimen; [1,5,8,13].

A. platanoides L. 'Laciniatum'; introduced in 1980 from Macea – one specimen; [1,5].

A. platanoides L. 'Reitenbachii'; introduced in 1984 from Hort. Inst. Bot. Průhonice – one specimen; [1,2].

A. platanoides L. 'Schwedleri'; introduced in 1910 ? from unknown source – one specimen; [1,2,5,8].

32. *A. pseudoplatanus* L.; Europe and W. Asia; native; [1,2,5,7,8].

A. pseudoplatanus L. 'Atropurpureum'; a lot of specimens; [1,2,5,8].

A. pseudoplatanus L. 'Leopoldii'; introduced in 1974 from Arboretum Gurahonț – one specimen; [1,2,5,8,13].

33. *A. pseudosieboldianum* (Pax) Kom.; Manchuria, Korea; introduced in 1987 from Arboretum SGGW Rogow – one specimen; [1,5,13].

34. *A. rubrum* L.; E. North America; introduced in 1975 from Hort. Bot. Taschkent – one specimen; [1,5,6,8,13].

35. *A. rufinerve* Siebold & Zucc.; Japan; introduced in 1996 from Arboretum SGGW Rogow – one specimen; [1,5,6,8,13].

36. *A. saccharinum* L.; C. and E. United States; reintroduced in 1975 from Arboretum Bazoş – 4 specimens; [1,2,5,6,8,9,13].

37. *A. saccharum* Marsh. subsp. *grandidentatum* (Nutt. ex Torr. & A. Gray) Desmarais; W. North America, N. Mexico; introduced in 1988 from Hort. Bot. Arosiensis, Århus – one specimen; [1].

A. saccharum Marsh. subsp. *leucoderme* (Small) Desmarais; S. E. United States; introduced in 1991 from Arboretum Mlyňany, Slepčany – 2 specimens; [1,2,13].

A. saccharum Marsh. subsp. *nigrum* (F. Michx) Desmarais; E. North America; introduced in 1985 from Hort. Bot. Giessen – 2 specimens; [1,8,13].

A. saccharum Marsh. subsp. *saccharum*; C. and E. North America; introduced in 1975 from Arboretum Bazoş – one specimen; [1,5,6,8,13].

38. *A. stachyophyllum* Hiern in Hook.; E. Himalaya, W. China; introduced in 2007 from Hort. Forstbot. Eberswalde – 3 specimens; [5,13].

A. stachyophyllum Hiern in Hook. subsp. *betulifolium* (= *A. tetramerum* Pax var. *betulifolium* (Maxim.) Rehder); introduced in 1977 from Hort. Bot. Kharkov – one specimen; [1,6,8].

39. *A. stenlobum* Rehder; introduced in 2006 from Hort. Bot. Pekinensis, Beijing – one specimen.

40. *A. subintegrum* Pojark.; Japan; introduced in 1979 from Arboretum SGGW Rogow – one specimen; [1,5,6,8].

41. *A. tataricum* L. subsp. *aidzuense* (Franch.) P. C. de Jong; introduced in 1979 from Arboretum Kórník – one specimen; [1,2,5].

A. tataricum L. subsp. *ginnala* (Maxim.)Wesm.; China, Manchuria, Japan; introduced in 1978 from Dendrological Park Belaja Tserkov – one specimen; [1,5,6,8,13].

A. tataricum L. subsp. *semenovii* (Regel & Herder) A. E. Murray; introduced in 1976 from Hort. Bot. Taschkent – one specimen; [1,5,6,8,13].

A. tataricum L. subsp. *tataricum*; C. Europe, from Austria to the Balcans and East to the Ukraine; native; [1,2,5,8].

A. tataricum L. subsp. *tataricum* f. *purpurea* L.; introduced in 1993 from Hort. Bot. Taschkent – 2 specimens.

42. *A. truncatum* Bunge; N. China, Manchuria, Korea, Japan; introduced in 1996 from Hort. Bot. Leipzig – 2 specimens; [2].

43. *A. turkestanicum* Pojark.; W. Asia; introduced in 1987 from Hort. Bot. Rostock – 2 specimens; [1,2,13].

44. *A. velutinum* Boiss. var. *glabrescens* (Boiss. & Buhse) Rehder; introduced 2005 from Späth-Arboretum Berlin – 5 specimens.

45. *A. x zoeschense* Pax (= *A. campestre* x *A. cappadocicum* subsp. *lobelii*); Garden origin; introduced in 1983 from Arboretum SGGW Rogow – 2 specimens; [1,2,8,13].

In 2008 the *Acer* collection of Macea Botanical Garden comprises 79 taxa belonging to 45 species, 27 subspecies, 2 varieties, 3 forms and 14 cultivars.

The taxa mentioned in the specialized literature which are no longer present in the Macea collection, due to diverse causes, are the following: *Acer barbinerve* Maxim. [1,5,6,8,13], *A. caudatum* Wall. var. *ukurunduense* (Tratv. & C. A. Mey.) Rehder [1,5,8,13], *A. franchetii* Pax [1,13], *A. glabrum* Torr. [1,5,8,13], *A. nikoense* Maxim. [1,5,8,13], *A. olivaceum* Fang. & P. L. Chiu. [8,13], *A. platanoides* L. ‘Palmatifidum’ [1,8], *A. regelii* Pax [1,8], *A. sempervirens* L. [13], *A. shirasawanum* Koidz. [13], *A. spicatum* Lam. [1,5,8,13], *A. tegmentosum* Maxim. [5] and *A. tschonokii* Maxim. [5]. Their reintroduction in botanical garden represents a priority for its’ administrators.

Conclusions

Among other well represented genera (*Crataegus*, *Lonicera*, *Betula*, *Cotoneaster*, *Quercus*, etc.), the *Acer* genus collection, through its 79 taxa, emphasizes the diversity of wooden plants cultivated in the Macea Botanical Garden.

The areas’ pedo-climatic conditions allow a good vegetation status even to the sensitive Asian taxa specimens (*Acer carpinifolium* Siebold & Zucc., *A. elegantulum* Fang. & P. L. Chiu, *A. truncatum* Bunge).

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COLECȚIA GENULUI ACER DIN GRĂDINA BOTANICĂ MACEA

(Rezumat)

Situată în comuna Macea, județul Arad, Grădina Botanică a Universității de Vest "Vasile Goldiș", se află în plină câmpie, se întinde pe o suprafață de 21,5 ha și vegetează aici circa 2100 de taxoni lemnoși spontani sau cultivați.

Autorii analizează colecția de *Acer*, prezentând situația acesteia în trei momente diferite, respectiv 1968 (anul declarării Parcului dendrologic, transformat ulterior în Grădina Botanică), 1987 (când a fost publicat primul index al dendrotaxonilor de la Macea) și 2008. Aceasta era reprezentată de 7 taxoni în 1968, 56 în 1987 și cuprinde în prezent 79 de taxoni. Cei 79 taxoni aparțin la 45 de specii, 27 subspecii, 3 varietăți, 2 forme și 14 cultivaruri. De asemenea se indică anul introducerii în colecție, proveniența și numărul de exemplare.

Dintre raritățile cultivate la Macea amintim: *Acer carpiniifolium* Siebold & Zucc., *A. elegantulum* Fang. & P.L. Chiu, *A. pectinatum* Wall. subsp. *laxiflorum* (Pax) A. E. Murray, *A. saccharum* Marsh. subsp. *leucoderme* (Small) Desmarais, *A. paxii* Franch., *A. pseudosieboldianum* (Pax) Kom., *A. x zoeschense* Pax.

Se remarcă prin valoarea lor ornamentală, *Acer palmatum* Thunb. ex A. E. Murray 'Atropurpureum', *A. japonicum* Thunb. ex A. E. Murray, *A. pseudoplatanus* L. 'Leopoldii', *A. griseum* (Franch.) Pax, *A. davidii* Franch. subsp. *davidii*, etc.

Prin schimbul permanent de material biologic colecțiile de plante lemnoase de la Macea se îmbogățesc an de an.