

NAMES OF PLANT TAXA INTRODUCED BY RAIMONDS CINOVSKIS (1930–1998)

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Communicated by Dainis Edgars Ruņģis

Raimonds Cinovskis (1930–1998) devoted his entire life to plants, especially to the research of dendroflora in Latvia, as well as in the Baltic states in general, and he also participated in botanical expeditions in several places in Asia. He introduced many new names of plant taxa, described new taxa, and made new name combinations. Although the plant names he created are widely used by Latvian botanists and can also be found in the seed exchange catalogues issued by local botanic gardens, these names have never been (with some exceptions) evaluated before. This paper summarises all of the names of plant taxa introduced by R. Cinovskis. It was established that R. Cinovskis introduced more than 200 new names of plant taxa or new name combinations for plants belonging to 11 plant families — Betulaceae, Caprifoliaceae, Cupressaceae, Grossulariaceae, Juglandaceae, Pinaceae, Ranunculaceae, Rosaceae, Salicaceae, Sapindaceae, and Ulmaceae. The majority of the names of plant taxa were for plants of the rose family (Rosaceae). Critically evaluating the compliance of the names introduced by R. Cinovskis with the International Code of Nomenclature for algae, fungi, and plants, it was concluded that the majority of the names were published illegitimately.

Keywords: Asia, Europe, Latvia, North America, name status.

INTRODUCTION

Raimonds Cinovskis was born in Liepāja (Latvia) in 1930. After graduating from the Latvian Agricultural Academy, Faculty of Forestry in 1954, he began working in the Department of Botany of the same faculty. From 1965 to the last year of his life (1998), he worked at the National Botanic Gardens of Latvia (formerly the Botanic Gardens of the Latvian SSR Academy of Sciences) (Knape, 2003).

Initially, the main research by R. Cinovskis, including the topic of his dissertation, was the hawthorn (*Crataegus*) flora in the Baltic (Estonia, Latvia, Lithuania, and the Kalinin-grad Region of the Russian Federation) (Cinovskis, 1968, 1971a, 1971d; Pūka and Cinovskis 1968), and he completed these studies with a monograph *Боярышники Прибалтики*, originally published in Russian, with the alternative title in Latin *Crataegi Baltici* (Cinovskis, 1971c). In this monograph, he described many hawthorn taxa, giving their de-

tailed descriptions in Latin, as well as vernacular names for the species in several languages (Estonian, Latvian, Lithuanian, and Russian). In parallel with this monograph, he also devoted several articles to his reflections on the taxonomy of hawthorns (Cinovskis, 1971f, 1971g, 1971h, 1971e). In 1974, he described two new hawthorn species from Tian-shan (Cinovskis, 1974a).

However, the first scientific publication by R. Cinovskis was dedicated to the pest of hawthorn seeds — *Torymus druparum* Boheman, and the article was published already in 1959 (Cinovskis, 1959). Raimonds Cinovskis' wide range of knowledge on various nature-related issues is confirmed by his many publications, dedicated not only to plants. For example, in 1966, he co-authored the book *Padomi sēņotājiem* [Guide for Mushroom Pickers], which was two separate bilingual books published in Latvian (Cinovskis and Šablis, 1966a) and Russian (Cinovskis and Šablis, 1966b). In 1979, he published a comprehensive cata-

logue of the woody ornamental plant assortment where he also listed the main pests of some woody plant genera as well, and discussed some terminological aspects regarding vernacular names of plants (Cinovskis, 1979). In general, R. Cinovskis mostly wrote in his publications about plants, mainly woody plants, and published many articles in popular local journals as well as thematic articles in various encyclopaedias. His almost entire bibliography was compiled by Knappe (2003).

Together with his colleagues R. Cinovskis carried out other research related to hawthorns, for example, evaluating the quality indicators of hawthorn seeds (Cinovskis and Knappe, 1968), studying the chemical composition and biologically active substances of hawthorn fruit and usage in medicine (Gūtmanis and Cinovskis, 1968; Egle *et al.*, 1975; Samylinā *et al.*, 1987), summarising information on hawthorn cultivars used in the Baltic (Cinovskis, 1971b), as well as studied the pre-sowing treatment and germination of hawthorn seeds in field conditions (Cinovskis and Knappe, 1971). In the late 1980s and early 1990s, he had changed his mind about the classification of some hawthorns and began to recombine several taxa (e.g., Kuusk *et al.*, 1996). He used to tell to us, his colleagues, that he believed that the species of hawthorn should be reviewed. Unfortunately, he was no longer able to do this work because he passed away in 1998 after a serious illness.

Raimonds Cinovskis devoted a great deal of his work to plant taxonomy and addressed questions related to the development of various plant classification systems, including the spelling of plant cultivar denominations and other names/words. He expressed his views about different systems in botanic gardens' catalogues. For example, an article entitled "Systema Novum Designationis Clonum Populorum Hybridarum Introductorum", devoted to the designation of *Populus* hybrid clones, was published in the 1983 seed exchange catalogue (Cinovskis, 1984), and other article entitled "De Translitteratione" and devoted to the transliteration of plant cultivar denominations and other names was published in the 1986 seed exchange catalogue (Cinovskis, 1987a). The latter was also published in the popular local horticultural journal (Cinovskis, 1987b), which received harsh criticism from the public (e.g., Anonymous, 1987; Baltvilks, 1987) because the proposed transliteration system intended to change the spelling of Latvian words. For example, he suggested that the toponym *Carnikava* should be written as *Tzarnikava*, and *Ķekava* as *Tjekava*. Given that the Latvian language already uses the Latin alphabet, the above recommendations for transliterating the words of this language were not well thought out. The article entitled "Taxa Nova", published in the 1975 seed exchange catalogue (printed in 1976) (Cinovskis, 1976), should also be mentioned. In this publication R. Cinovskis created a noticeable number of new names of plant taxa, mainly new combinations. Unfortunately, as concluded in this paper below, these names have been published violating the requirements of the International Code

of Nomenclature for algae, fungi, and plants (hereinafter — the Shenzhen Code) (Turland *et al.*, 2018); hence, all of them are considered to have been published illegitimately.

Raimonds Cinovskis introduced many other new plant names as well, both describing new species, varieties and forms, and changing the status of the previously described taxa. Many of the names he introduced are widely used in Latvian literature, but they are mostly disregarded by authors from other countries. Unfortunately, the plant names created by him have not yet been compiled, nor evaluated in relation to the requirements of the Shenzhen Code.

The author of this paper was fortunate enough to meet R. Cinovskis personally and to work in the Dendroflora Department headed by him at the National Botanic Gardens for almost two years before his death. Raimonds Cinovskis shared with his colleagues his thoughts on plant taxonomy. Of course, not all of them were relevant, but in several cases, he doubted the status of particular species and insisted on the correct use of names, both scientific and Latvian ones. After the death of R. Cinovskis, during the years of collecting information about the woody plants growing in Latvia, doing more work in the field of Latvian terminology research, the author of this paper has come across cases when some of Cinovskis' names appeared to be illegitimately published. As a result, out of respect for the former colleague and principal, the idea formed to compile the plant names published by R. Cinovskis, as well as to assess the compliance of these names with the Shenzhen Code.

RAIMONDS CINOVSKIS' AUTHOR'S NAME SPELLING

Since the first publications in which Cinovskis mentioned his plant names, he used his abbreviated surname. In the first publications he also used the initial of his name, by writing his name as "R. Cin." next to the plant names (Cinovskis, 1968; Cinovskis and Knappe, 1968). But since 1969, he omitted the initial of his name and used only "Cin.", by shortening his surname this way. The last abbreviation of the surname is widely used by Latvian authors in their works.

However, in literature, R. Cinovskis' surname is also used in other spellings. Farjon (Farjon, 1998) uses two types of writing: "Cinovskis" and "R. Tsinovskis". It is believed that the variant "R. Tsinovskis" is an incorrect Romanisation of Cinovskis' surname from his publication published in Russian. As Cinovskis published some of his publications in Russian, then in the original publications his surname may be difficult to transliterate (for those who do not know the original spelling in Latvian). This mistake can occur if different transliteration approaches are used.

However, in the taxonomic literature it is more common to use the full surname, without the initial (e.g., Farjon, 1998; Sennikov and Phipps, 2013), and this is how Cinovskis'

surname is used in the International Plant Name Index (IPNI) (<https://www.ipni.org/>). This procedure is also followed in this work.

LISTS OF PLANT NAMES

Raimonds Cinovskis introduced the names, both as new taxa and as new combinations, of more than 200 plant taxa belonging to 11 plant families — Betulaceae, Caprifoliaceae, Cupressaceae, Grossulariaceae, Juglandaceae, Pinaceae, Ranunculaceae, Rosaceae, Salicaceae, Sapindaceae and Ulmaceae. The majority of the names created are taxa of the rose family (Rosaceae). For the lists of names see the lists below.

A critical evaluation of the original publications revealed that the majority of the name combinations R. Cinovskis created were illegitimately published, and some of names even are illegitimate superfluous ones. Generally, illegitimately published names are the names published in seed exchange catalogues after 1 January 1973 (the Shenzhen Code, article 30.7) or published without a correct reference to the basionym (the Shenzhen Code, articles 38.13. and 41.5).

The lists below include those taxa for which the fact of new publication is clearly indicated in the original works. Such a fact of a new name or a new combination should be indicated by appropriate abbreviations, for example: ‘*f. nov.*’, ‘*comb. nov.*’ or ‘*nom. nov.*’ Other information has also been considered along with the comments made by R. Cinovskis himself in his original publications (e.g., remarks in the footnotes, etc.) on the creation of the new name or the new combination. Taxa names for which there were no clear indications that they were new names or combinations, but which were attributed to R. Cinovskis, are also reviewed. All plant taxon names are grouped into three lists for ease of review. The first list “**Validly published, accepted names**” (including two names whose status has not been verified at the moment), the second list “**Validly published names now regarded as synonyms**”, and the third list “**Invalidly published names not available for use**”. In each list, the plant taxa names are grouped alphabetically by appropriate family, which are also listed alphabetically. All accepted plant families are according to the APG IV system (APG IV, 2016). Homonymous (repeatedly published) plant taxa names are arranged in the order in which they were published, both by year and in each year. The name of some plant taxon is supplemented by additional information (remarks), if necessary.

VALIDLY PUBLISHED, ACCEPTED NAMES

Currently, the names of two plant species, as well as the names of two sections for *Crataegus* genus, are included in this list. The last two are not currently verified names, so they are left as accepted for now.

Rosaceae

Crataegus sect. *Calpodendra* (Kruschke) Cinovskis (1971c: 214) [**Remark**: Status not verified; type species — *Crataegus calpodendron* (Ehrh.) Medik. in *Gesch. Bot.*: 83, 1793]

Crataegus sect. *Jozanae* Cinovskis (1971c: 172) [**Remark**: Status not verified; type species—*Crataegus jozana* C. K. Schneid. in *Ill. Handb. Laubholz*. 1: 774, 1906]

Crataegus xariifolia Cinovskis (1971c: 67) (as ‘*ariaefolia*’) [**Remark**: Name replaced—*Crataegus xsorbifolia* Lange in *Bot. Tidskr.* 13: 24, 1882]

Crataegus rusanovii Cinovskis (1971c: 177)

VALIDLY PUBLISHED NAMES NOW REGARDED AS SYNONYMS

Unfortunately, most legitimately published names and new combinations are considered synonyms of previously published taxon names. Some Cinovskis’ plant names are dedicated to individual morphologically different individuals, the separation of which in a separate taxon is not sufficiently justified, for example, as separate forms based on the colour of the cones, or other minimal morphological shifts, etc.

Caprifoliaceae

Lonicera caerulea L. var. *pallasii* (Ledeb.) Cinovskis in Kuusk *et al.* (1996: 353) = *Lonicera caerulea* L. var. *caerulea*

Grossulariaceae

Ribes spicatum E. Robson var. *pubescens* (Hedl.) Cinovskis in Kuusk *et al.* (1996: 33) = *Ribes spicatum* E. Robson var. *spicatum*

Pinaceae

Abies concolor (Gordon) Lindl ex Hildebr. var. *concolor* f. *atroviolacea* Cinovskis (1974b: 48) = *Abies concolor* (Gordon & Glend.) Lindl. ex Hildebr. [**Remark**: There is no taxonomic significance for distinguishing separate forms based on a cone colour]

Abies veitchii Lindl. var. *veitchii* f. *olivacea* (Shiras.) Cinovskis (1974b: 33) = *Abies veitchii* Lindl. var. *veitchii* [**Remark**: There is no taxonomic significance for distinguishing separate forms based on a cone colour]

Rosaceae

Cerasus avium (L.) Moench var. *duracina* (L.) Cinovskis in Kuusk *et al.* (1996: 122) = *Prunus avium* (L.) L.

Cerasus avium (L.) Moench var. *juliana* (L.) Cinovskis in Kuusk *et al.* (1996: 122) = *Prunus avium* (L.) L.

Cerasus vulgaris Mill. var. *frutescens* (Neilr.) Cinovskis in Kuusk *et al.* (1996: 123) = *Prunus cerasus* L.

Crataegus alemanniensis Cinovskis (1971c: 111) (& var. *alemanniensis*) = *Crataegus monogyna* Jacq.

Crataegus alemanniensis Cinovskis var. *alemanniensis* f. *microalemanniensis* Cinovskis (1971c: 115) = *Crataegus monogyna* Jacq.

Crataegus alemanniensis Cinovskis var. *heterodonta* (Po-jark.) Cinovskis in Kuusk *et al.* (1996: 119) = *Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus alemanniensis Cinovskis var. *orientobaltica* (Cinovskis) Cinovskis in Kuusk *et al.* (1996: 119) = *Crataegus monogyna* Jacq.

Crataegus alemanniensis Cinovskis var. *subborealis* (Cinovskis) Cinovskis in Kuusk *et al.* (1996: 119) = *Crataegus monogyna* Jacq.

Crataegus xberolinensis Cinovskis (1971c: 209) = ?

Crataegus chlorosarca Maxim. var. *atrocarpa* (E. L. Wolf) Cinovskis (1971c: 192) = *Crataegus chlorosarca* Maxim.

Crataegus xcuronica Cinovskis (1971c: 76) = *Crataegus xmedia* Bechst.

Crataegus xdunensis Cinovskis (1971c: 143) = *Crataegus rhipidophylla* Gand. *sensu lato*

Crataegus xericalyx (Sanio) Cinovskis in Kuusk *et al.* (1996: 110) (& nothovar. *ericalyx*) = *Crataegus xmedia* Bechst.

Crataegus xericalyx (Sanio) Cinovskis nothovar. *villosa* (Sanio) Cinovskis in Kuusk *et al.* (1996: 110) = *Crataegus xmedia* Bechst.

Crataegus xestonica Cinovskis (1971c: 79) = *Crataegus xmedia* Bechst.

Crataegus xgracilis Cinovskis (1971c: 118) = *Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus insularis Cinovskis (1971c: 120) = *Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus xkupfferi Cinovskis (1971c: 89) = *Crataegus xmedia* Bechst.

Crataegus laevigata (Poir.) DC. var. *laevigata* f. *ellipticifolia* (Cinovskis) Cinovskis in Kuusk *et al.* (1996: 110) = *Crataegus laevigata* (Poir.) DC.

Crataegus xlangei Cinovskis (1971c: 202) = ?

Crataegus xlatvica Cinovskis (1971c: 108) = *Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus xlavallei Hérincq ex Lavallée var. *carrierei* (Vauvel ex Carrière) Cinovskis (1971c: 219) = *Crataegus xlavallei* 'Carrierei'

Crataegus xmaritima Cinovskis (1971c: 123) = *Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus xmedia Bechst. nothovar. *intermixta* (Wenz.) Cinovskis in Kuusk *et al.* (1996: 110) = *Crataegus xmedia* Bechst.

Crataegus monogyna Jacq. var. *poloniensis* (Cinovskis) Cinovskis in Kuusk *et al.* (1996: 117) = *Crataegus monogyna* Jacq.

Crataegus monticola Cinovskis (1974a: 51) = *Crataegus tianschanica* Pojark.

Crataegus orientobaltica Cinovskis (1971c: 116) [& var. *orientobaltica*] = *Crataegus monogyna* Jacq.

Crataegus orientobaltica Cinovskis var. *orientobaltica* f. *glabra* Cinovskis (1971c: 118) = *Crataegus monogyna* Jacq.

Crataegus orientobaltica Cinovskis var. *orientobaltica* f. *laciniata* Cinovskis (1971c: 118) = *Crataegus monogyna* 'Laciniata' [Remark: The cultivar 'Laciniata' under the name *Crataegus alemanniensis* 'Laciniata' is designated since 1979 (Bice *et al.*, 1979)

Crataegus osiliensis Cinovskis (1971c: 123) = *Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus oxyacantha L. *laevigata* (Poir.) Beck f. *ellipticifolia* Cinovskis (1971c: 65) = *Crataegus monogyna* Jacq.

Crataegus poloniensis Cinovskis (1971c: 102) = *Crataegus monogyna* Jacq.

Crataegus pontica C. Koch var. *pontica* f. *aurantiaca* Cinovskis (1971c: 164) = *Crataegus pontica* K. Koch

Crataegus xpseudooxyacantha Cinovskis (1971c: 70) = *Crataegus xmacrocarpa* Hegetschw. nothovar. *macrocarpa*

Crataegus xpseudooxyacantha Cinovskis var. *subcurvisepala* Cinovskis (1971c: 72) = *Crataegus xmacrocarpa* Hegetschw. nothovar. *macrocarpa*

Crataegus rubens Cinovskis (1974a: 53) = *Crataegus tianschanica* Pojark.

Crataegus rusanovii Cinovskis f. *latifolia* (M. Pop.) Cinovskis (1971c: 179) = *Crataegus rusanovii* Cinovskis (1971c: 177)

Crataegus rusanovii Cinovskis f. *rubella* (M. Pop.) Cinovskis (1971c: 179) = *Crataegus rusanovii* Cinovskis (1971c: 177)

Crataegus sanguinea Pall. var. *sanguinea* f. *chlorocarpa* (Lenné & K. Koch) Cinovskis (1971c: 184) = *Crataegus chlorocarpa* Lenné & K. Koch

Crataegus xschneideri Cinovskis (1971c: 199) = *Crataegus xlamertiana* Lange

Crataegus subborealis Cinovskis (1971c: 105) =***Crataegus monogyna*** Jacq.

Crataegus xuhrovae Soó nothovar. *subcurvisepala* (Cinovskis) Cinovskis in Kuusk *et al.* (1996: 112) =***Crataegus xmacrocarpa*** Hegetschw. nothovar. *macrocarpa*

Crataegus xviidumaegica Cinovskis (1971c: 130) =***Crataegus xkyrtostyla*** Fingerh. *sensu lato*

INVALIDLY PUBLISHED NAMES NOT AVAILABLE FOR USE

In this chapter, the names that are considered invalidly published according to the Shenzhen Code are listed. These names (including homonymous names or repeated combinations) are published without diagnosis (for new names) or without basionym reference (for new combinations), or published in seed exchange catalogues (for all names). Some other new names or their combinations made by Cinovskis are illegitimate because they are superfluous names. Generally, the Cinovskis' names listed in this list have been illegitimately published under both the Shenzhen Code and earlier versions of this Code. If in the publications of one year the name appears in the text of several publications, then the publication that was first handed over to the printing house is cited in this list. Number of plant name listed below is still used in recent publications by Latvian authors. Given that the following names are invalidly or illegitimately published, authors should use the correct names in their future publications. Analysing the following names, no cases were found when specific names should be validated according to the Shenzhen Code, especially since these names, even after validation, should be considered synonyms, following the modern taxonomic approach.

Betulaceae

Duschekia crispa (Aiton) Cinovskis (1983: 40) =***Alnus alnobetula*** (Ehrh.) K. Koch

Duschekia crispa (Aiton) Cinovskis var. *mollis* (Fern.) Cinovskis (1983: 40) =***Alnus alnobetula*** (Ehrh.) K. Koch subsp. *crispa* (Aiton) Raus

Duschekia firma (Siebold. & Zucc.) Pouzar var. *hirtella* (Franch. & Sav.) Cinovskis in Cinovskis *et al.* (1987: 62) =***Alnus firma*** Siebold & Zucc.

Duschekia viridis (Chaix) Opiz subsp. *crispa* (Aiton) Cinovskis var. *mollis* (Fern.) Cinovskis in Bice *et al.* (1989: 8) =***Alnus alnobetula*** (Ehrh.) K. Koch subsp. *crispa* (Aiton) Raus

Duschekia viridis (Chaix) Opiz subsp. *crispa* (Aiton) Cinovskis var. *sinuata* (Regel) Cinovskis Bice *et al.* (1989: 8) =***Alnus alnobetula*** (Ehrh.) K. Koch subsp. *sinuata* (Regel) Raus

Duschekia viridis (Chaix) Opiz subsp. *fruticosa* (Rupr.) Cinovskis in Bice *et al.* (1989: 8) =***Alnus alnobetula*** (Ehrh.) K. Koch subsp. *fruticosa* (Rupr.) Raus

Caprifoliaceae

Lonicera caerulea L. var. *pallasii* (Ledeb.) Cinovskis in Bice *et al.* (1988: 8)

Cupressaceae

Juniperus communis L. subsp. *canadensis* (Lodd. ex Burgsd.) Cinovskis in Bice *et al.* (1978: 9) =***Juniperus communis*** L. var. *depressa* Pursh

Juniperus communis L. subsp. *sibirica* (Burgsd.) Cinovskis (1983: 48) =***Juniperus communis*** L. var. *saxatilis* Pall.

Juniperus communis L. var. *sibirica* (Burgsd.) Cinovskis in Cinovskis *et al.* (1989a: 19) =***Juniperus communis*** L. var. *saxatilis* Pall.

Fabaceae

Chamaecytisus aggregatus (Schur) Cinovskis in Bice *et al.* (1977: 10) =***Chamaecytisus supinus*** (L.) Link subsp. *aggregatus* (Schur) Pifkó

Grossulariaceae

Ribes spicatum E. Robson var. *pubescens* (Hedl.) Cinovskis in Cinovskis *et al.* (1988a: 17) =***Ribes spicatum*** E. Robson var. *spicatum*

Juglandaceae

Juglans x Batesii (Rehder) Cinovskis in Cinovskis *et al.* (1974a: 322) =***Juglans xnotha*** Rehder nothovar. *Batesii* Rehder

Juglans xlancastrimensis (Rehder) Cinovskis in Cinovskis *et al.* (1974a: 323) =***Juglans xBixbyi*** Rehder

Malvaceae

Tilia platyphyllos Scop. var. *cordifolia* (Bess.) Cinovskis in Cinovskis *et al.* (1988a: 50) =***Tilia platyphyllos*** Scop. subsp. *cordifolia* (Besser) C. K. Schneid.

Tilia platyphyllos Scop. var. *grandifolia* (Ehrh. ex Hoffm.) Cinovskis in Cinovskis *et al.* (1988a: 50) =***Tilia platyphyllos*** Scop. subsp. *cordifolia* (Besser) C. K. Schneid.

Oleaceae

Syringa amurensis Rupr. subsp. *japonica* (Maxim.) Cinovskis in Cinovskis *et al.* (1988a: 49) =***Syringa reticulata*** (Blume) H. Hara subsp. *reticulata*

Pinaceae

Abies concolor (Gordon) Lindl ex Hildebr. f. *atroviolacea* Cinovskis in Cinovskis and Kalniņa (1973: 33) =***Abies concolor*** (Gordon & Glend.) Lindl. ex Hildebr.

Abies occidentalis Cinovskis (1974b: 46) = *Abies grandis* (Douglas ex D. Don) Lindl.

Larix kamtschatica (Rupr.) Carrière var. *japonica* (Maxim. ex Regel) Cinovskis in Bice *et al.* (1990: 6) = *Larix gmelinii* (Rupr.) Rupr. var. *japonica* (Maxim. ex Regel) Pilg. 1926

Larix kamtschatica (Rupr.) Carrière var. *kurilensis* (Mayr) Cinovskis (1983: 69) = *Larix gmelinii* (Rupr.) Rupr. var. *japonica* (Maxim. ex Regel) Pilg.

Larix ledebourii (Rupr.) Cinovskis (1976: 67) = *Larix sibirica* Ledeb. [Remark: This combination was created in 1976, not in 1977 (see the section “Notes on the views of Raimonds Cinovskis” below)]

Picea abies (L.) Karst. f. *pseudotuberculata* Cinovskis *et al.* (1988d: 13) = *Picea abies* (L.) H. Karst.

Pinus xpumilio Haenke var. *rotundata* (Link) Cinovskis in Cinovskis *et al.* (1974a: 330) = *Pinus mugo* Turra subsp. *rotundata* (Link) Janch. & H. Neumayer

Pseudotsuga menziesii (Mirb.) Franco var. *caesia* (Schwer.) Cinovskis in Cinovskis *et al.* (1988a: 24) = *Pseudotsuga menziesii* (Mirb.) Franco var. *glauca* (Beissn.) Franco

Ranunculaceae

Atragene koreana (Kom.) A. Zvirgzds, A. Mauriņš & Cinovskis (1972: 50) = *Clematis koreana* Kom.

Rosaceae

× *Amygdalo-persica hybrida* (Poit. & Turp.) Cinovskis (1976: 57) = *Prunus* L.

× *Amygdalo-persico-prunus* Cinovskis (1976: 57)] = *Prunus* L.

× *Amygdalo-persico-prunus gigantea* (Späth) Cinovskis (1976: 57) = ?

× *Armeniaco-prunus* Cinovskis (1976: 57) = *Prunus* L.

× *Armeniaco-prunus blireana* (André) Cinovskis (1976: 58) = *Prunus xblireana* André

× *Armeniaco-prunus dasycarpa* (Ehrh.) Cinovskis (1976: 58)] = *Prunus xdasycarpa* Ehrh.

× *Arsmeniaco-prunus boehmeri* (Koehne) Cinovskis (1976: 58) = *Prunus xboehmeri* Koehne

× *Ceraso-amygdalus* Cinovskis (1976: 58) = *Prunus* L.

× *Ceraso-amygdalus skinneri* (Rehder) Cinovskis (1976: 58) = *Prunus skinneri* Rehder

× *Ceraso-prunus* Cinovskis (1976: 58) = *Prunus* L.

× *Ceraso-prunus cistena* (N. E. Hansen) Cinovskis (1976: 58) = *Prunus xcistena* (N. E. Hansen) Koehne

× *Ceraso-prunus utahensis* (Dieck) Cinovskis (1976: 58) = *Prunus utahensis* Dieck

Cerasus apetala (Siebold & Zucc.) Cinovskis (1976: 59) = *Prunus apetala* (Siebold & Zucc.) Franch. & Sav.

Cerasus apetala (Siebold & Zucc.) Cinovskis (1976: 59) var. *pilosa* (Koidz.) Cinovskis (1983: 75) = *Prunus apetala* (Siebold & Zucc.) Franch. & Sav. var. *pilosa* (Koidz.) E. H. Wilson

Cerasus xchoreiana (Nakai) Cinovskis in Bice *et al.* (1989: 16) = *Prunus choreiana* Nakai ex Im [Remark: The name *Prunus choreiana* is validated by Hong *et al.* 2006]

Cerasus conadenia (Koehne) Cinovskis (1976: 59) = *Prunus conadenia* Koehne

Cerasus concinna (Koehne) Cinovskis (1976: 59) = *Prunus concinna* Koehne

Cerasus conradinae (Koehne) Cinovskis (1976: 59) = *Prunus conradinae* Koehne

Cerasus crataegifolia (Hand.-Mazz.) Cinovskis (1976: 59) = *Prunus crataegifolia* Hand.-Mazz.

Cerasus cyclamina (Koehne) Cinovskis (1976: 59) = *Prunus cyclamina* Koehne

Cerasus dawcyckensis (Koehne) Cinovskis (1976: 59) = *Prunus xdawcyckensis* Sealy

Cerasus dielsiana (C.K. Schneid.) Cinovskis (1976: 59) = *Prunus dielsiana* C. K. Schneid.

Cerasus discadenia (Koehne) Cinovskis (1976: 59) = *Prunus discadenia* Koehne

Cerasus emarginata Douglas var. *mollis* (Douglas) Cinovskis (1976: 59) = *Prunus emarginata* (Douglas) Eaton

Cerasus glyptocarya (Koehne) Cinovskis (1976: 60) = *Prunus trichostoma* Koehne

Cerasus helenae (Koehne) Cinovskis (1976: 60) = *Prunus conradinae* Koehne

Cerasus involucrata (Koehne) Cinovskis (1976: 60) = *Prunus pseudocerasus* Lindl.

Cerasus jamasakura (Siebold ex Koidz.) Cinovskis (1983: 76) = *Prunus serrulata* Lindl. var. *serrulata* f. *spontanea* (Maxim.) C. S. Chang

Cerasus xjuddii (E. S. Anderson) Cinovskis (1976: 60) [as ‘judii’] = *Prunus xjuddii* E. S. Anderson

Cerasus latidentata (Koehne) Cinovskis (1976: 60) = *Prunus trichostoma* Koehne

Cerasus litigiosa (C. K. Schneid.) Cinovskis (1976: 60) = *Prunus clarifolia* C. K. Schneid.

Cerasus lobulata (Koehne) Cinovskis (1976: 60) = ***Prunus trichostoma*** Koehne

Cerasus macradenia (Koehne) Cinovskis (1976: 60) = ***Prunus conadenia*** Koehne

Cerasus xmaureri (Zabel) Cinovskis (1976: 60) = ***Prunus xmaureri*** Zabel

Cerasus mugus (Hand.-Mazz.) Cinovskis (1976: 60) = ***Prunus mugus*** Hand.-Mazz.

Cerasus nipponica (Matsum.) Cinovskis (1976: 60) = ***Prunus nipponica*** Matsum.

Cerasus nipponica (Matsum.) Cinovskis var. *kurilensis* (Miyabe) Cinovskis ex Laiviņš *et al.* (2009: 20, 159) = ***Prunus nipponica*** Matsum. var. *kurilensis* (Miyabe) E. H. Wilson

Cerasus pensylvanica (L. f.) Lois. var. *saximontana* (Rehd.) Cinovskis (1976: 61) = ***Prunus pensylvanica*** L. f.

Cerasus pilosiuscula (C. K. Schneid.) Cinovskis (1976: 61) = ***Prunus clarofolia*** C. K. Schneid.

Cerasus pleiocerasus (Koehne) Cinovskis (1976: 61) = ***Prunus pleiocerasus*** Koehne

Cerasus pleuroptera (Koehne) Cinovskis (1976: 61) = ***Prunus trichostoma*** Koehne

Cerasus polytricha (Koehne) Cinovskis (1976: 61) = ***Prunus polytricha*** Koehne

Cerasus pumila (L.) Michx. var. *besseyi* (Bailey) Cinovskis in Cinovskis *et al.* (1988c: 28) = ***Prunus pumila*** L. var. *besseyi* (L.H. Bailey) Waugh

Cerasus pumila (L.) Mchx. var. *depressa* (Pursh) Cinovskis in Cinovskis *et al.* (1974b: 14) = ***Prunus pumila*** L. var. *depressa* (Pursh) Bean

Cerasus rufa (Hook. f.) Cinovskis (1976: 61) = ***Prunus rufa*** Hook. f.

Cerasus sargentii (Rehd.) Cinovskis in Zvirgzds *et al.* (1972: 104) = ***Prunus sargentii*** Rehder

Cerasus xschmittii (Rehd.) Cinovskis (1976: 62) = ***Prunus xschmittii*** Rehder

Cerasus serrula (Franch.) Cinovskis (1976: 62) = ***Prunus serrula*** Franch.

Cerasus serrulata (Lindl.) G. Don var. *hupehensis* (Ingram) Cinovskis (1976: 62) = ***Prunus serrulata*** Lindl. var. *serrulata* f. *spontanea* (Maxim.) C. S. Chang

Cerasus serrulata (Lindl.) G. Don var. *pubescens* (Makino) Cinovskis (1976: 62) = ***Prunus serrulata*** Lindl. var. *pubescens* (Makino) Nakai

Cerasus serrulata (Lindl.) G. Don var. *spontanea* (Maxim.) Cinovskis (1976: 62) = ***Prunus serrulata*** Lindl. var. *serrulata* f. *spontanea* (Maxim.) C. S. Chang

Cerasus setulosa (Batalin) Cinovskis (1976: 62) = ***Prunus setulosa*** Batalin

Cerasus sprengeri (Pamp.) Cinovskis (1976: 62) = ***Prunus clarofolia*** C. K. Schneid.

Cerasus stipulacea (Maxim.) Cinovskis (1976: 63) = ***Prunus stipulacea*** Maxim.

Cerasus subhirtella (Miq.) S.Y. Sokolov subsp. *changyanensis* (Ingram) Cinovskis (1976: 63) = ***Prunus xsubhirtella*** Miq.

Cerasus tatsienensis (Batal.) Cinovskis (1976: 63) = ***Prunus tatsienensis*** Batalin

Cerasus tomentosa (Thunb.) Wall. var. *endotricha* (Koehne) Cinovskis (1976: 63) = ***Prunus tomentosa*** Thunb.

Cerasus trichantha (Koehne) Cinovskis (1976: 63) = ***Prunus trichantha*** Koehne

Cotoneaster niger (Ehrh.) Fries var. *altaicus* (G. Klotz.) Cinovskis (1983: 78) = ?

Crataegus alemanniensis Cinovskis in Cinovskis and Knape (1968: 65) = ?

Crataegus alemanniensis Cinovskis (1968: 113) = ?

Crataegus alemanniensis Cinovskis (1971a: 110) [& var. *alemanniensis*] ? = *Crataegus alemanniensis* Cinovskis (1971c: 111) = ***Crataegus monogyna*** Jacq.

Crataegus alemanniensis Cinovskis var. *alemanniensis* f. *microalemanniensis* Cinovskis (1971a: 111) ? = *Crataegus alemanniensis* Cinovskis var. *alemanniensis* f. *microalemanniensis* Cinovskis (1971c: 115) = ***Crataegus monogyna*** Jacq.

Crataegus alemanniensis Cinovskis var. *heterodonta* (Pojark.) Cinovskis *et al.* (1988a: 14) ? = *Crataegus alemanniensis* Cinovskis var. *heterodonta* (Pojark.) Cinovskis in Kuusk *et al.* (1996: 119) = ***Crataegus xkyrtostyla*** Fingerh. nothovar. *kyrtostyla*

Crataegus alemanniensis Cinovskis var. *orientobaltica* (Cinovskis) Cinovskis in Bice *et al.* (1988: 17) ? = *Crataegus alemanniensis* Cinovskis var. *orientobaltica* (Cinovskis) Cinovskis in Kuusk *et al.* (1996: 119) = ***Crataegus monogyna*** Jacq.

Crataegus alemanniensis Cinovskis var. *orientobaltica* (Cinovskis) Cinovskis f. *laciniata* (Cinovskis) Cinovskis in Cinovskis *et al.* (1988a: 15) ? = *Crataegus orientobaltica* Cinovskis var. *orientobaltica* f. *laciniata* Cinovskis (1971c: 118) = ***Crataegus monogyna*** Jacq.

Crataegus altaica (Loudon) Lange f. *xanthocarpa* (Regel) Cinovskis in Avena and Cinovskis (1969: 40) =?

Crataegus xatrorubella Cinovskis in Cinovskis and Knappe (1968: 61) ?=*Crataegus xatrorubella* Cinovskis (1971c: 206) =*Crataegus xlambertiana* Lange

Crataegus atrorubella Cinovskis (1968: 119) ?=*Crataegus xatrorubella* Cinovskis (1971c: 206) =*Crataegus xlambertiana* Lange

Crataegus xatrorubella Cinovskis (1971c: 206) =*Crataegus xlambertiana* Lange

Crataegus xcalycina Peterm. var. *walokochiana* (Hrabetova) Cinovskis (1971f: 132) ?=*Crataegus xcalycina* Peterm. var. *walokochiana* (Hrabetova) Cinovskis (1971c: 87) =*Crataegus laevigata* (Poir.) DC.

Crataegus xcalycina Peterm. var. *walokochiana* (Hrabetova) Cinovskis (1971c: 87) =*Crataegus laevigata* (Poir.) DC.

Crataegus xcuronica Cinovskis in Cinovskis and Knappe (1968: 64) ?=*Crataegus xcuronica* Cinovskis (1971c: 76) =*Crataegus xmedia* Bechst.

Crataegus xcuronica Cinovskis (1968: 113) ?=*Crataegus xcuronica* Cinovskis (1971c: 76) =*Crataegus xmedia* Bechst.

Crataegus xcuronica Cinovskis (1971a: 102) ?=*Crataegus xcuronica* Cinovskis (1971c: 76) =*Crataegus xmedia* Bechst.

Crataegus xdunensis Cinovskis in Cinovskis and Knappe (1968: 63) ?=*Crataegus xdunensis* Cinovskis (1971c: 143) =*Crataegus rhipidophylla* Gand.

Crataegus xdunensis Cinovskis (1971a: 123) ?=*Crataegus xdunensis* Cinovskis (1971c: 143) =*Crataegus rhipidophylla* Gand.

Crataegus xericalyx (Sanio) Cinovskis in Cinovskis *et al.* (1988b: 17) (& nothovar. *ericalyx*) =*Crataegus xericalyx* (Sanio) Cinovskis in Kuusk *et al.* (1996: 110) =*Crataegus xmedia* Bechst.

Crataegus xestonica Cinovskis (1971a: 103) =*Crataegus xestonica* Cinovskis (1971c: 79) =*Crataegus xmedia* Bechst.

Crataegus xgracilis Cinovskis (1971a: 112) =*Crataegus xgracilis* Cinovskis (1971c: 118) =*Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus horrida Medik. ex Cinovskis (1971g: 138) =*Crataegus horrida* Medik. ex Cinovskis (1971c: 250) =*Crataegus chrysocarpa* Ashe

Crataegus horrida Medik. ex Cinovskis (1971c: 250) =*Crataegus chrysocarpa* Ashe [See also remarks by Sennikov and Phipps (2013)]

Crataegus horrida Medik. var. *aboriginum* (Britton) Cinovskis (1971g: 139) =*Crataegus horrida* Medik. var. *aboriginum* (Britton) Cinovskis (1971c: 257) =*Crataegus chrysocarpa* Ashe var. *chrysocarpa*

Crataegus horrida Medik. var. *aboriginum* (Britton) Cinovskis (1971c: 257) =*Crataegus chrysocarpa* Ashe var. *chrysocarpa*

Crataegus horrida Medik. var. *brunetiana* (Sarg.) Cinovskis in Bice *et al.* (1991a: 21) =*Crataegus brunetiana* Sarg.

Crataegus horrida Medik. var. *chrysocarpa* (Ashe) Cinovskis (1971g: 139) =*Crataegus horrida* Medik. var. *chrysocarpa* (Ashe) Cinovskis (1971c: 255) =*Crataegus chrysocarpa* Ashe var. *chrysocarpa*

Crataegus horrida Medik. var. *chrysocarpa* (Ashe) Cinovskis (1971c: 255) =*Crataegus chrysocarpa* Ashe var. *chrysocarpa*

Crataegus horrida Medik. var. *horrida* var. *rubescens* (Sarg.) Cinovskis (1971g: 139) =*Crataegus horrida* Medik. var. *horrida* var. *rubescens* (Sarg.) Cinovskis (1971c: 255) =*Crataegus chrysocarpa* Ashe var. *rotundifolia* (Ehrh.) J. B. Phipps & Sennikov

Crataegus horrida Medik. var. *horrida* var. *rubescens* (Sarg.) Cinovskis (1971c: 255) =*Crataegus chrysocarpa* Ashe var. *rotundifolia* (Ehrh.) J. B. Phipps & Sennikov

Crataegus horrida Medik. var. *longiacuminata* (Kruschke) Cinovskis (1971g: 139) =*Crataegus horrida* Medik. var. *longiacuminata* (Kruschke) Cinovskis (1971c: 259) =*Crataegus chrysocarpa* Ashe var. *chrysocarpa*

Crataegus horrida Medik. var. *longiacuminata* (Kruschke) Cinovskis (1971c: 259) =*Crataegus chrysocarpa* Ashe var. *chrysocarpa*

Crataegus horrida Medik. var. *piperi* (Britton) Cinovskis (1971g: 139) =*Crataegus horrida* Medik. var. *piperi* (Britton) Cinovskis (1971c: 257) =*Crataegus chrysocarpa* Ashe var. *piperi* (Britton) Kruschke

Crataegus horrida Medik. var. *piperi* (Britton) Cinovskis (1971c: 257) =*Crataegus chrysocarpa* Ashe var. *piperi* (Britton) Kruschke

Crataegus insularis Cinovskis (1971a: 112) =*Crataegus insularis* Cinovskis (1971c: 120) =*Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus xkupfferi Cinovskis (1971a: 105) =*Crataegus xkupfferi* Cinovskis (1971c: 89) =*Crataegus xmedia* Bechst.

Crataegus xlangei Cinovskis (1968: 120) =?

Crataegus xlangei Cinovskis in Cinovskis and Knappe (1968: 61) =?

Crataegus xlangei Cinovskis (1971h: 146) =?

Crataegus xlatvica Cinovskis in Cinovskis and Knappe (1968: 65) ?=*Crataegus xlatvica* Cinovskis (1971c: 108) =*Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus xlatvica Cinovskis (1971a: 109) =*Crataegus xlatvica* Cinovskis (1971c: 108) =*Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus xhindmanii Cinovskis (*non* Hrabitová) in Cinovskis and Knappe (1968: 63) =*Crataegus xestonica* Cinovskis (1971c: 79), =*Crataegus xmedia* Bechst.

Crataegus maritima Cinovskis (1971a: 114) =*Crataegus xmaritima* Cinovskis (1971c: 123) =*Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus orientobaltica Cinovskis in Cinovskis and Knappe (1968: 65) ?=*Crataegus orientobaltica* Cinovskis (1971c: 116) =*Crataegus monogyna* Jacq.

Crataegus orientobaltica Cinovskis (1968: 113) ?=*Crataegus orientobaltica* Cinovskis (1971c: 116) =*Crataegus monogyna* Jacq.

Crataegus orientobaltica Cinovskis (1971a: 112) (& var. *orientobaltica*) ?=*Crataegus orientobaltica* Cinovskis (1971c: 116) =*Crataegus monogyna* Jacq.

Crataegus orientobaltica Cinovskis var. *orientobaltica* f. *glabra* Cinovskis (1971a: 112) =*Crataegus orientobaltica* Cinovskis var. *orientobaltica* f. *glabra* Cinovskis (1971c: 118) =*Crataegus monogyna* Jacq.

Crataegus orientobaltica Cinovskis var. *orientobaltica* f. *laciniata* Cinovskis (1971a: 112) =*Crataegus orientobaltica* Cinovskis var. *orientobaltica* f. *laciniata* Cinovskis (1971c: 118) =*Crataegus monogyna* ‘*Laciniata*’

Crataegus osiliensis Cinovskis in Cinovskis and Knappe (1968: 63) ?=*Crataegus osiliensis* Cinovskis (1971c: 123) =*Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus osiliensis Cinovskis (1971a: 115) =*Crataegus osiliensis* Cinovskis (1971c: 123) =*Crataegus xkyrtostyla* Fingerh. nothovar. *kyrtostyla*

Crataegus oxyacantha L. *laevigata* (Poir.) Beck f. *berberifolia* Cinovskis in Cinovskis and Kalniņa (1973: 34) =*Crataegus monogyna* Jacq. [Remarks: This Cinovskis’ name, published in the seed exchange catalogue, originally is written as follows ‘664.* *Crataegus oxyacantha* L. var. *laevigata* (Poir.) Beck f. *berberifolia* Cin. (Medze)’. The asterisk * next to the seed sample number means that the seeds have been collected in the wild, “Medze” means the place of seed collection. There is no indication in the origi-

nal work that this is a new combination. Previously when creating a new form of the name *Crataegus oxyacantha* L. *laevigata* (Poir.) Beck f. *ellipticifolia* Cinovskis (1971c: 65), Cinovskis (1971c) used the following information as a synonym for his ‘f. *ellipticifolia*’: ‘Syn.: *Crataegus oxyacantha* var. *berberifolia* Lindm. (*in sched.*)’. It must therefore be concluded that Cinovskis’ ‘f. *ellipticifolia*’ is the same as ‘f. *berberifolia*’.

Crataegus oxyacantha L. var. *laevigata* (Poir.) Beck. f. *ellipticifolia* Cinovskis (1971a: 100) =*Crataegus oxyacantha* L. *laevigata* (Poir.) Beck f. *ellipticifolia* Cinovskis (1971c: 65) =*Crataegus monogyna* Jacq.

Crataegus poloniensis Cinovskis and D. Knappe (1968: 65) ?=*Crataegus poloniensis* Cinovskis (1971c: 102) =*Crataegus monogyna* Jacq.

Crataegus xpseudooxyacantha Cinovskis (1971a: 100) =*Crataegus xpseudooxyacantha* Cinovskis (1971c: 70) =*Crataegus xmacrocarpa* Hegetschw. nothovar. *macrocarpa*

Crataegus xpseudooxyacantha Cinovskis var. *subcurvisepala* Cinovskis (1971a: 100) =*Crataegus xpseudooxyacantha* Cinovskis var. *subcurvisepala* Cinovskis (1971c: 72) =*Crataegus xmacrocarpa* Hegetschw. nothovar. *macrocarpa*

Crataegus sanguinea Pall. f. *chlorocarpa* (Lenné & K. Koch) Cinovskis in Avena and Cinovskis (1969: 40) ?=*Crataegus sanguinea* Pall. var. *sanguinea* f. *chlorocarpa* (Lenné & K. Koch) Cinovskis (1971c: 184) =*Crataegus chlorocarpa* Lenné & K. Koch

Crataegus xschneideri Cinovskis in Cinovskis and Knappe (1968: 60) =*Crataegus xschneideri* Cinovskis (1971c: 199) =*Crataegus xlambertiana* Lange

Crataegus xschneideri Cinovskis (1968: 118) =*Crataegus xschneideri* Cinovskis (1971c: 199) =*Crataegus xlambertiana* Lange

Crataegus xschneideri Cinovskis (1971e: 149) =*Crataegus xschneideri* Cinovskis (1971c: 199) =*Crataegus xlambertiana* Lange

Crataegus sinuata Cinovskis in Bice *et al.* (1987: 22) =? [Remarks: Originally published as ‘*Crataegus sinuate* Cin. (*non edit.*)’ with the information of the plant origin as follows — ‘Oriens Extremus, prov. Primorskij, Vladivostok, Bogataja Griva*, 1967’, and the same also in Bice *et al.* (1988). The seed catalogue of the following year (Bice *et al.*, 1989) lists this species as a taxon of hybrid origin — ‘*Crataegus xsinuata* Cin. (*non edit.*)’, mentioning the previous and other information on the plant origin as follows—‘Oriens Extremus, prov. Primorskij, Okeanskaja, ad castra antecursores “Zenit”*, 1970’. In 1968, an undescribed *Crataegus* species collected from the same site (Bogataja Griva) was mentioned by Cinovskis and Knappe

(1968). The only difference is the information on the year of the seed collection — 1965 by Cinovskis and Knape (1968) and 1967 by Bice *et al.* (1988). It is possible that this name refers to plants mentioned by Cinovskis and Knape (1968). Cinovskis and Knape also assume that the plants are of hybrid origin. The origins of the plants (under the name *Crataegus sinuata*) planted in the collections of the National Botanic Gardens date back to 1967 in the registers. It is indicated in these registers and in the publication by Cinovskis and Knape (1968) that Andris Zvirgzds (1928–2014) found plants in nature in the Far East. These are probably the same plants, but there is some confusion about the year of their finding.

Crataegus subborealis Cinovskis and D. Knape (1968: 64 & 65) ?=*Crataegus subborealis* Cinovskis (1971c: 105) =*Crataegus monogyna* Jacq.

Crataegus subborealis Cinovskis (1971a: 107) =*Crataegus subborealis* Cinovskis (1971c: 105) =*Crataegus monogyna* Jacq.

Crataegus thymensis Cinovskis ex Bice *et al.* (2004: 65) =? *Crataegus chlorosarca* Maxim. [Remarks: It was impossible to find a publication with a correct description of the species. The name *Crataegus thymensis* was found in the published works issued only after Cinovskis' death (Bice *et al.*, 2004, 2006, 2007). In these publications the name *Crataegus thymensis* is used both individually, as a species (Bice *et al.*, 2004, 2006, 2007; Laiviņš *et al.*, 2009) and within the hybrid formula — '*Crataegus chlorosarca* × *Crataegus thymensis*' (Bice *et al.*, 2007). The author's name "Cinovskis" is indicated for *Crataegus thymensis* in the registers of the National Botanic Gardens of Latvia. It is therefore clear that it was Cinovskis who created the name for this taxon. This is also evidenced by the use of his surname in publications (Bice *et al.*, 2004, 2006, 2007; Laiviņš *et al.*, 2009). It is believed that Cinovskis did not manage to publish the description of his *Crataegus thymensis* either. Given that publications and registers refer to plants that are supposed to be of hybrid origin (*Crataegus chlorosarca* × *Crataegus thymensis*), there is a strong possibility that Cinovskis' *Crataegus thymensis* is synonymous with *Crataegus chlorosarca*. Anyhow, in that case more thorough research of plant material is required. Currently, the living plants growing in the collection of the National Botanic Gardens have the following information on their origin: '*Crataegus thymensis* — Oriens Extremus, ins. Sachalin, Timovsk, 2 km N (in wild), 1978' and '*Crataegus chlorosarca* × *Crataegus thymensis* — Oriens Extremus, ins. Sachalin, Timovskoe, 2 km N (in wild), 1978'. However, in older seed exchange catalogues with the same site information — 'Oriens Extremus, ins. Sachalin, Timovskoe (in wild), 1978', the name '*Crataegus chlorosarca* var. *chlorosarca*' is given (Bice *et al.*, 1991b). Laiviņš *et al.* (2009) points out that *C. thymensis* have been planted in six places in Latvia, and one of these places probably is the collection of the National Botanic Gardens (as can be under-

stood from the distribution map). However, each place is not described in detail.

Crataegus xuhrovae Soó nothovar. *subcurvisepala* (Cinovskis) Cinovskis in Cinovskis *et al.* (1988b: 18) =*Crataegus xuhrovae* Soó nothovar. *subcurvisepala* (Cinovskis) Cinovskis in Kuusk *et al.* (1996: 112) =*Crataegus xmacrocarpa* Hegetschw. nothovar. *macrocarpa*

Crataegus viidumaegica Cinovskis (1971a: 117) =*Crataegus xviidumaegica* Cinovskis (1971c: 130) =*Crataegus xkyrtostyla* Fingerh. *sensu lato*

Dasiphora xfriedrichsenii (Späth) Cinovskis & M. Avena in Avena and Cinovskis (1970: 11) =*Dasiphora fruticosa* 'Friedrichsenii'

Padus avium Mill. var. *commutata* (Dippel) Cinovskis (1976: 67) =*Prunus padus* L. var. *commutata* Dippel

Padus avium Mill. var. *pubescens* (Dippel) Cinovskis (1976: 67) =*Prunus padus* L. var. *pubescens* Regel & Tiling

Padus bicolor (Koehne) Cinovskis (1976: 67) =*Prunus obtusata* Koehne

Padus buergeriana (Miq.) Cinovskis (1976: 67) =*Prunus buergeriana* Miq.

Padus perulata (Koehne) Cinovskis (1976: 67) =*Prunus perulata* Koehne

Padus sericea (Batal.) Cinovskis (1976: 67) =*Prunus wilsonii* (Diels ex C. K. Schneid.) Koehne

Padus stellipila (Koehne) Cinovskis (1976: 67) =*Prunus stellipila* Koehne

Padus vaniotii (H. Lév.) Cinovskis (1976: 68) (& var. *vaniotii*) =*Prunus obtusata* Koehne

Padus vaniotii (H. Lév.) Cinovskis var. *potaninii* (Koehne) Cinovskis (1976: 68) =*Prunus obtusata* Koehne

Padus venosa (Koehne) Cinovskis (1976: 68) =*Prunus buergeriana* Miq.

Padus virginiana (L.) Mill. var. *melanocarpa* (A. Nelson) Cinovskis (1976: 68) =*Prunus virginiana* L. var. *melanocarpa* (A. Nelson) Sarg.

Pentaphylloides xfriedrichsenii (Späth) Cinovskis in Cinovskis *et al.* (1974a: 345) =*Dasiphora fruticosa* 'Friedrichsenii'

Prunus cerasifera Ehrh. var. *caspica* (Browicz) Cinovskis in Cinovskis *et al.* (1988c: 41) =*Prunus cerasifera* Ehrh.

Prunus cerasifera Ehrh. subsp. *sogdiana* (Vassilcz.) Cinovskis (1976: 69) =*Prunus cerasifera* Ehrh.

Pyrus pyraister (L.) Duroi var. *achras* (Wallr.) Cinovskis in Kuusk *et al.* (1996: 97) = *Pyrus communis* L. subsp. *pyraister* (L.) Ehrh.

Rosa ×involuta Sm. var. *subnuda* (Crép.) Cinovskis in Cinovskis *et al.* (1974a: 335) ?=*Rosa ×involuta* Sm.

Rosa kirghisorum (V. Tkatsch.) Cinovskis in Avena and Cinovskis (1969: 41) = *Rosa canina* L. f. *kirghisorum* Tkachenko (1986: 68) [Remarks: Saakov and Rieksta (1973) recognises this taxon and writes: 'In Central Asia, *R. canina* is represented by another species, *R. kirghisorum* (V. Tkatsch.) Cin. (*R. canina* var. *kirghisorum* V. Tkatsch.)'. Later, Šmite transfers this taxon back to *Rosa canina* as '*Rosa canina* L. var. *kirghisorum* (Tkacz.) Šmite, comb. nov.' (Bice *et al.*, 1987). However, also this combination has been used in the seed exchange catalogue, without reference to the basionym. Therefore, the name is not legitimately published. There is no doubt that the epithet '*kirghisorum*', introduced by Tkachenko before 1986, has not been published correctly, as in 1986 he described the form as new and gave a full diagnosis in Latin (Tkachenko, 1986). In this publication, he does not refer to a previous invalid publication of the name he introduced before 1986. Due to the fact that this taxon is morphologically distinct and occurs in a certain geographical area (Tkachenko, 1986), it can be considered a separate infra-specific taxon within *Rosa canina*, but not a separate species, as suggested by Cinovskis in 1969.

Rosa pimpinellifolia L. subsp. *spinosissima* (L.) Cinovskis (1976: 69) = *Rosa spinosissima* L.

Rosa subcollina (Christ) Dalla Torre & Sarnth. var. *froebelii* (P. Lamb.) Cinovskis (1976: 69) = *Rosa corymbifera* 'Froebeli'

Sibiraea laevigata (L.) Maxim. subsp. *croatica* (Degen) Cinovskis in Bice *et al.* (1989: 27) = *Sibiraea laevigata* (L.) Maxim.

Salicaceae

Populus ×elongata (Dipp.) Cinovskis Cinovskis *et al.* (1974a: 331) = *Populus balsamifera* 'Elongata'

Salix daphnoides Vill. subsp. *pomeranica* [...] Cinovskis in Cinovskis *et al.* (1988a: 18) = *Salix daphnoides* 'Pomeranica' [Remarks: Evarts-Bunders (2005) refers to this combination in the synonyms for *Salix pomeranica* Willd. as — '*Salix daphnoides* Vill. subsp. *pomeranica* Cin., in herb[arium]', and he does not cite references to the previous publications in which this combination was already mentioned. This taxon can be regarded both as a cultivar within the meaning of the International Code of Nomenclature for Cultivated Plants (Brickell *et al.*, 2016) and as a variety within the meaning of the International Code of Nomenclature for algae, fungi, and plants (Turland *et al.*, 2018), but definitely not as an independent species. In this

case, the taxon is considered a cultivar according to Kuzovkina (2015).

Sapindaceae

Acer campestre L. var. *campestre* f. *suberosum* Cinovskis in Cinovskis *et al.* (1974a: 308) = *Acer campestre* L.

Ulmaceae

Ulmus minor Mill. f. *suberosa* (Moench) Cinovskis in Cinovskis *et al.* (1974a: 342) = *Ulmus minor* Mill.

NOTES ON THE VIEWS OF RAIMONDS CINOVSIS

Raimonds Cinovskis was a respected scientist in Latvia remembered by his contemporaries as a person with encyclopaedic knowledge. As all great scientists often do, he formed his own school and introduced a certain system of plant classification. Raimonds Cinovskis tried to recognise a number of taxa that had no taxonomic significance or the taxa that would be endemic in the Baltic States, like *Ribes spicatum* var. *pubescens* (e.g., Kissling 2020). He also did not support a unified concept of the *Prunus* genus. This is evidenced by the large number of combinations of the names he introduced by including a number of species in certain genera in the narrower sense, such as *Cerasus* and *Padus* (e.g., Cinovskis, 1976). As he did not recognise a unified concept of this genus, names were needed for intergeneric hybrids, e.g., ×*Amygdalo-persico-prunus*, ×*Armeniaco-prunus*, ×*Ceraso-amygдалus* and ×*Ceraso-prunus*. As the majority of these names are published illegitimately, according to provisions of the Shenzhen Code there is no legal basis for the use of such names in Latvian or foreign botanical literature.

Unfortunately, these illegitimately published names of taxa are widely recognised and used by Latvian authors in their works to the present day. For example, the quite recently published most comprehensive work, the *Atlas of Latvian Woody Plants* (Laiviņš *et al.*, 2009) lists the names of the following taxa that not been published legitimately:

Cerasus ×choreiana (Nakai) Cinovskis, *Cerasus nipponica* (Matsum.) Cinovskis var. *kurilensis* (Miyabe) Cinovskis ex Laiviņš *et al.*, *Cerasus pumila* (L.) Mchx. var. *depressa* (Pursh) Cinovskis, *Cerasus pumila* (L.) Michx. var. *besseyi* (Bailey) Cinovskis, *Cerasus sargentii* (Rehd.) Cinovskis, *Crataegus horrida* Medik. ex Cinovskis (*nom. illeg. superfl.*), *Crataegus horrida* Medik. var. *chrysocarpa* (Ashe) Cinovskis, *Crataegus thymensis* Cinovskis ex Bice *et al.*, *Duschekia crispa* (Aiton) Cinovskis, *Duschekia crispa* (Aiton) Cinovskis var. *mollis* (Fern.) Cinovskis, *Duschekia viridis* (Chaix) Opiz subsp. *fruticosa* (Rupr.) Cinovskis, *Larix ledebourii* (Rupr.) Cinovskis, *Padus avium* Mill. var. *commutata* (Dippel) Cinovskis, *Padus avium* Mill. var. *pubescens* (Dippel) Cinovskis, *Padus virginiana* (L.) Mill. var. *melanocarpa* (A. Nelson) Cinovskis, *Pentaphylloides ×friedrichsenii* (Späth) Cinovskis, *Prunus cerasifera* Ehrh. var.

caspica (Browicz) Cinovskis, *Rosa kirghisorum* (V. Tkatsch.) Cinovskis, *Tilia platyphyllos* Scop. var. *cordifolia* (Bess.) Cinovskis, *Tilia platyphyllos* Scop. var. *grandifolia* (Ehrh. ex Hoffm.) Cinovskis and *Ulmus minor* Mill. f. *suberosa* (Moench) Cinovskis.

The last name, *Ulmus minor* Mill. f. *suberosa* (Moench) Cinovskis, has been accepted in an article published very recently in 2022 (Evarte-Bundere *et al.*, 2022). As can be seen from the examples, Latvian botanists closely follow the school of R. Cinovskis, which also includes support for the splitting of the genus *Prunus* into many genera (this classification has also been followed in the 2022 publication (Evarte-Bundere *et al.*, 2022)), which contradicts the recent molecular studies (e.g., Lee and Wen, 2001; Bortiri *et al.*, 2006; Yazbek and Oh, 2013; Chin *et al.*, 2014), which have concluded that this genus should be regarded as a single genus.

Raimonds Cinovskis believed that there was a separate species that could definitely be distinguished from *Larix sibirica* Ledeb. That is why he created the combination '*Larix ledebourii*'. Farjon (1998) did not understand Cinovskis' views of his '*Larix ledebourii*', and referred to Cinovskis' '*Larix ledebourii*' as a synonym for *Larix gmelinii* (Rupr.) Rupr. var. *gmelinii*. However, the information provided by Cinovskis, as well as the synonyms he cited for his '*Larix ledebourii*', clearly show that he meant *Larix sibirica* not *Larix gmelinii*. Farjon (1998) also considers that the publication in which Cinovskis made the new combination '*Larix ledebourii*' is the work of 1977 (Cinovskis *et al.*, 1977). However, in the latter publication Cinovskis made it very clear that the combination '*Larix ledebourii* (Rupr.) Cin.' was created in a 1976 publication (see Cinovskis, 1976). Cinovskis *et al.* (1977) also published comments in the footnote, some excerpts of which are translated here: "We do not share the opinion of E. G. Bobrov (...), who does not recognise the independence of the European race of the Siberian larch, which was so clearly proved by N. Dyls (...) ... Proceeding from the above, this species should bear the name of *Larix ledebourii* (Rupr.) Cin. A new combination was published by us in Cinovskis R. Taxa nova. — In book: Index seminum, 20, Rīga, Zinātne." Providing this information Cinovskis himself explained that the combination '*Larix ledebourii* (Rupr.) Cinovskis (1976)' was published in 1976 (not in 1977). In addition, the 1976 publication provides both references to the basionym and references to the synonyms. However, there is no reference to the basionym in the 1977 work. Considering the way in which the Cinovskis' combination '*Larix ledebourii* (Rupr.) Cinovskis (1976)' was published, this name can be seen as illegitimately published and also as superfluous name. If it were assumed that this combination was first published in 1977, as Farjon (1998) believed it had, then this combination would have been illegitimate in this case as well.

Larix sibirica under the name '*Larix ledebourii*' is very often mentioned in Latvian publications, including the most recent comprehensive lists of plant taxa for Latvia (e.g.,

Laiviņš *et al.*, 2009; Gavrilova and Šulcs, 1999). The name '*Larix ledebourii*' is also often used in official regulations. On the official portal of Latvian regulatory documents (<https://likumi.lv/>) on 15 July 2023, by entering the search phrase '*Larix ledebourii*', 261 search results were obtained. This demonstrates how widespread is the use of Cinovskis' illegitimate name '*Larix ledebourii*' in official regulatory documents in the area of nature protection in Latvia.

Given that Latvian botanists widely use the names of plant taxa established by R. Cinovskis, such names may be incomprehensible to foreign specialists. This review will definitely help other scientists understand the meaning of the names used in the works of Latvian authors. Unfortunately, the above emphasis on the problems arising from the very critical evaluation of the first publications shows that Cinovskis did not pay attention to the way in which the names of his plant taxa were published. However, even if some taxon names had been published correctly, their use would not be possible today, given the other views of plant classification expressed by Cinovskis. The example of splitting of *Larix sibirica* into two species, discussed earlier, already in 1977 contradicted two different views because Cinovskis made it clear in his 1977 publication that he did not support the concept of a unified *Larix sibirica*. The same is demonstrated by his views on the many taxa of *Crataegus* found in the Baltic Region, which, according to his works, are even endemic here. The author hopes that this review will be useful to many botanists and nature conservationists.

ACKNOWLEDGEMENTS

This study has been conducted within the framework of the project No. lzp-2020/1-0179 funded by the Latvian Council of Science.

The author thanks Inese Šinta (Institute of Horticulture, Latvia), Iveta Jakubāne (Daugavpils University, Latvia), Iveta Zuja, Linda Strode, and Romāns Strelčūns (National Botanic Gardens of Latvia), Gunta Trana and Ineta Poga (Fundamental Library, Latvia University of Life Sciences and Technologies) for their help with some older sources of literature or other useful information provided.

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Received 7 December 2023

Accepted in the final form 19 March 2024

RAIMONDA CINOVSKA (1930–1998) IEVIESTIE AUGU TAKSONU NOSAUKUMI

Raimonds Cinovskis (1930–1998) visu savu mūžu veltījis augiem, īpaši dendrofloras pētniecībai Latvijā, kā arī Baltijas valstīs kopumā, kā arī piedalījies botāniskajās ekspedīcijās vairākās vietās Āzijā. Viņš ieviesa daudzus jaunus augu taksonu nosaukumus, aprakstīja jaunus taksonus un izveidoja jaunas nosaukumu kombinācijas. Lai gan viņa radītos augu nosaukumus plaši izmanto Latvijas botāniķi un tie atrodami arī vietējo botānisko dārzu izdotajos sēklu apmaiņas katalogos, šie nosaukumi nekad iepriekš nav tikuši vērtēti (ar atsevišķiem izņēmumiem). Šajā rakstā ir apkopoti visi R. Cinovska ieviestie augu taksonu nosaukumi. Noskaidrots, ka R. Cinovskis ieviesis vairāk nekā 200 jaunus augu taksonu nosaukumus vai jaunas nosaukumu kombinācijas 11 augu dzimtu augiem, attiecīgi — Betulaceae, Caprifoliaceae, Cupressaceae, Grossulariaceae, Juglandaceae, Pinaceae, Ranunculaceae, Rosaceae, Salicaceae, Sapindaceae un Ulmaceae. Lielākā daļa augu nosaukumu ir rožu dzimtas (Rosaceae) augu taksoniem. Kritiski izvērtējot R. Cinovska ieviesto nosaukumu atbilstību Starptautiskajam alģu, sēņu un augu nomenklatūras kodeksam, secināts, ka lielākā daļa nosaukumu publicēti nelegitīmi.