

REVISION OF GENUS *VICIA* L. IN THE FLORA OF LATVIA

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This paper provides revised and detailed nomenclature as well as information on distribution of the *Vicia* L. species found in Latvia. Distribution maps of 4 species in Latvia are given. In Latvia there are eighteen *Vicia* species: *V. angustifolia* Reichard, *V. cassubica* L., *V. cracca* L., *V. dumetorum* L., *V. faba* L., *V. grandiflora* Scop., *V. hirsuta* (L.) Gray, *V. lathyroides* L., *V. lutea* L., *V. pannonica* Crantz, *V. pisiformis* L., *V. sativa* L., *V. sepium* L., *V. sylvatica* L., *V. tenuifolia* Roth, *V. tetrasperma* (L.) Schreb., *V. varia* Host, *V. villosa* Roth.

Key words: *Vicia*, taxonomy, habitat, distribution, Latvia.

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INTRODUCTION

Vicia L. occur mostly in the temperate zone of Europe and Asia (~110 species), but also are found in Africa (~15 species), North America (~20 species) and South America (~20 species).

The first records about genus *Vicia* L. in the flora of Latvia date back from the end of the 18th century (Fischer 1778, 1784, 1791). The main investigations on this genus have been carried out in the 20th century. A big contribution was made by J. Bickis (Bickis 1920, 1923, 1926, 1935). In "Flora of Latvian SSR" (Līvena 1957) 11 species have been mentioned of genus *Vicia* – *V. hirsuta* (L.) Gray, *V. tetrasperma* (L.) Schreb., *V. cassubica* L., *V. sylvatica* L., *V. cracca* L., *V. tenuifolia* Roth, *V. villosa* Roth, *V. sepium* L., *V. sativa* L., *V. angustifolia* Reichard, *V. faba* L. The view on genus amount has changed due to floristic investigations of the Latvian geobotanical districts in the 60-80-ties of the 20th century and due to critical investigation of herbarium. In the review of the flora of Latvia (Табака и др. 1988)

5 new species were added to genus: *V. grandiflora* Scop., *V. lathyroides* L., *V. lutea* L., *V. pannonica* Crantz, *V. varia* Host. In the latest list of taxa in „Flora of Latvian Vascular Plants” (Gavrilova & Šulcs 1999) one more species was added to genus – *V. cordata* Wulfen ex Hoppe.

The aim of the present study was the revision of genus *Vicia* in the flora of Latvia based on the local herbarium material. To accomplish this aim, the following tasks were defined:

1. To provide the scientific nomenclature of *Vicia* species;
2. To investigate the geographical distribution of *Vicia* species in Latvia.

MATERIAL AND METHODS

Herbarium material of the Institute of Biology of the University of Latvia (LATV), private collection of botanist A. Rasiņš (RAS) housed in Laboratory of Botany, Herbarium of the Museum of Botany of the University of Latvia (RIG),

Herbarium of Daugavpils University (DAU) and Herbarium of the Natural History Museum of Latvia (LDM) were studied.

Descriptions of species consist of nomenclature, habitats and information on distribution in Latvia. In nomenclature part authors of taxa are given in accordance with R.K. Brummitt and C.E. Powell (1992). Full names are given for authors, not included in this book. Title abbreviations used in nomenclature part are in accordance with R.R. Mill (1993) and O.N. Korovina (Коровина 1986). Literature sources considered to be necessarily cited in nomenclature part are:

- reference where the taxon was mentioned in the flora of Latvia for the first time;
- Latvijas PSR flora (Līvena 1957);
- Flora of the European part of USSR (Цвелев 1987);
- Flora Europaea (Ball 1968);
- Legumes of Northern Eurasia (Yakovlev et al. 1996)

The habitat entry comprises information about biotopes in which the taxon is found in Latvia. Habitats were determined from herbarium material. The species distribution in Latvia was classified using an evaluation scale accepted by the Institute of Biology, Laboratory of Botany (Fatare 1992): very rare, 1-10 findings; rare, 11-30; rather rare, 31-100; not rare, 101-250; rather frequent, 251-500; frequent, 501-750 and very frequent, >751 findings. Geographical distribution were described according to geographical regions of Latvia (Zelčs & Šteins 1989, Ramans & Zelčs 1995) Distribution of very rare species is specified with locality and square number, collector, year, Herbarium code in brackets.

Geographical distribution maps for 4 species were drawn using the square (~ 7.6 x 9.3 km²) method (Табака и др. 1980). Findings (localities) affirmed by herbarium were marked as ●, findings from species lists of floristic investigations – o.

RESULTS

List of *Vicia* species

1. *V. pisiformis* L.

Vicia pisiformis L. 1753, Sp. Pl.: 734; Б. Федч. 1948, Фл. СССР, **13**: 422; P.W. Ball, 1968, Fl. Europ. **2**: 131; Цвелев, 1987, Фл. европ. части СССР, **6**: 133; Yakovlev et al. 1996, Legumes north. Eurasia: 570.

Railway edge. Known one finding – Rīga (14/27, N. Priedītis, 2001, LATV), adventive.

2. *V. dumetorum* L.

Vicia dumetorum L. 1753, Sp. Pl.: 734; J. Fisch. 1784, Zusätze Vers. Naturg. Livl.: 130; Б. Федч. 1948, Фл. СССР, **13**: 422; P.W. Ball, 1968, Fl. Europ. **2**: 132; Цвелев, 1987, Фл. европ. части СССР, **6**: 133; Yakovlev et al. 1996, Legumes north. Eurasia: 560.

Railway embankment. Known one finding – Sērene parish (19/34, N. Priedītis, 2000, LATV), adventive.

3. *V. sylvatica* L.

Vicia sylvatica L. 1753, Sp. Pl.: 734; Grindel, 1803, Bot. Taschenb. Liv. Cur. Ehstl.: 223; Б. Федч. 1948, Фл. СССР, **13**: 429; Līvena, 1957, Latv. PSR Fl. **3**: 184; P.W. Ball, 1968, Fl. Europ. **2**: 132; Цвелев, 1987, Фл. европ. части СССР, **6**: 133; Yakovlev et al. 1996, Legumes north. Eurasia: 575.

Forests, glades, edges of forests, roadsides, shrubberies. Rather frequent, in all territory.

4. *V. cassubica* L.

Vicia cassubica L. 1753, Sp. Pl.: 735; J. Fleisch. und Em. Lindem. 1839, in J. Fleisch., Fl. Esth. Liv. Kurl.: 264; Б. Федч. 1948, Фл. СССР, **13**: 427; Līvena, 1957, Latv. PSR Fl. **3**: 183; P.W. Ball, 1968, Fl. Europ. **2**: 131; Цвелев, 1987, Фл. европ. части СССР, **6**: 133; Yakovlev et al. 1996, Legumes north. Eurasia: 556.

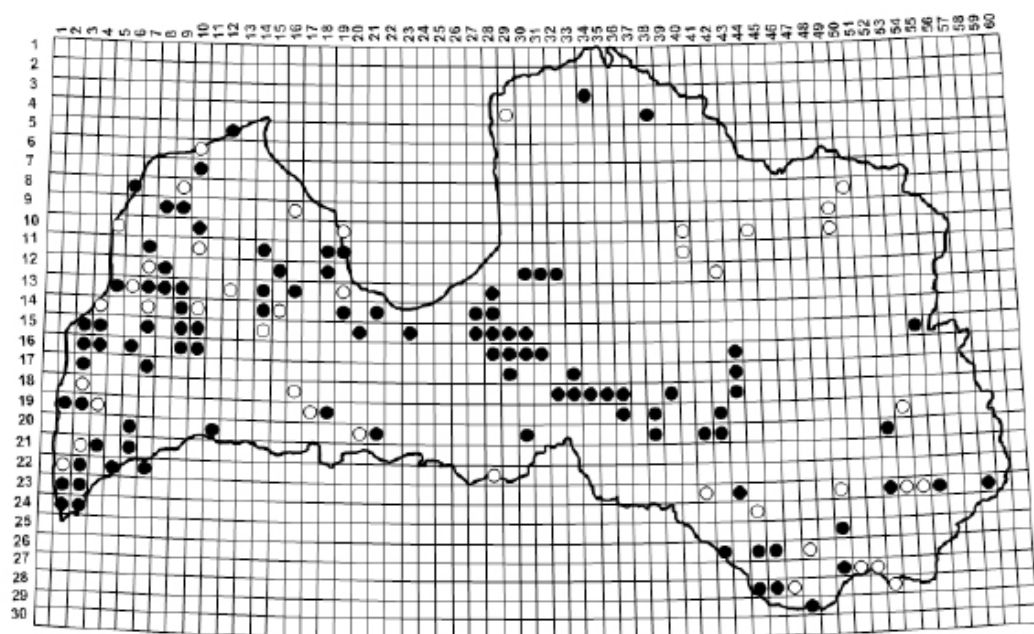


Fig. 1. Distribution of *Vicia cassubica*.

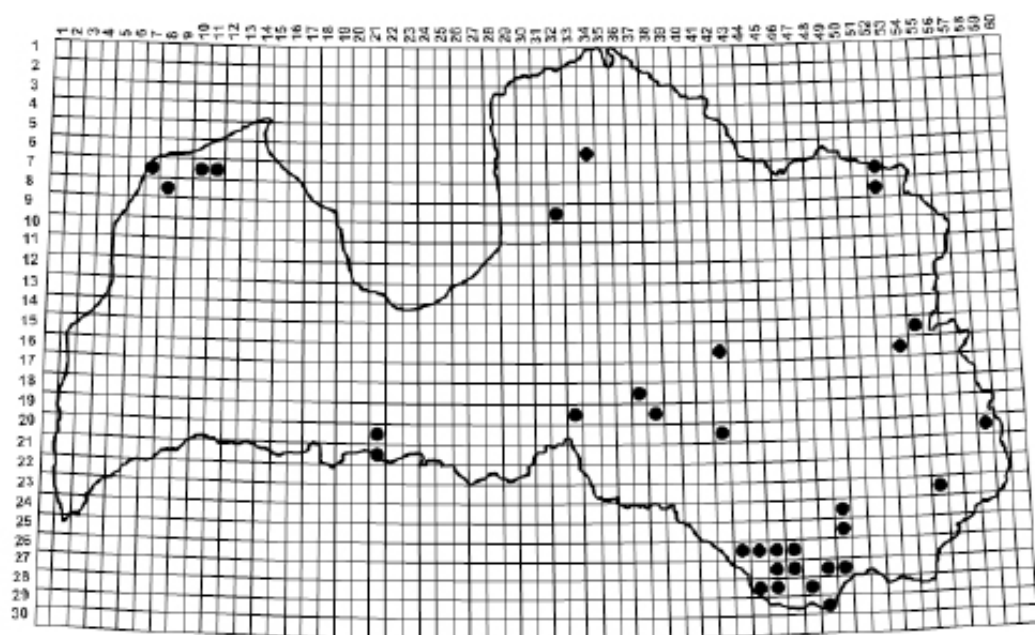


Fig. 2. Distribution of *Vicia tenuifolia*.

Forests, glades. Not rare, unevenly in all territory (Fig. 1).

5. *V. cracca* L.

Vicia cracca L. 1753, Sp. Pl.: 735; J. Fisch. 1778, Vers. Naturg. Livl.: 272; Б. Федч. 1948, Фл. СССР, **13**: 436; Līvena, 1957, Latv. PSR Fl. **3**: 184; P.W. Ball, 1968, Fl. Europ. **2**: 131; Цвелев, 1987, Фл. европ. части СССР, **6**: 135; Yakovlev et al. 1996, Legumes north. Eurasia: 558.

Meadows, shrubberies, glades, railway edges, roadsides. Very frequent, in all territory.

6. *V. tenuifolia* Roth

Vicia tenuifolia Roth, 1788, Tent. Fl. Germ. **1**: 309; E. Lehm. 1895, Fl. Poln.-Livl.: 426; Б. Федч. 1948, Фл. СССР, **13**: 440; Līvena, 1957, Latv. PSR Fl. **3**: 186; P.W. Ball, 1968, Fl. Europ. **2**: 131, p.p.; Цвелев, 1987, Фл. европ. части СССР, **6**: 136; Yakovlev et al. 1996, Legumes north. Eurasia: 575.

V. cracca L. subsp. *tenuifolia* (Roth) Gaudin, 1829, Fl. Helv. **4**: 507.

V. brachytropis Kar. et Kir. 1842, Bull. Soc. Nat. Moscou, **15**: 842.

Forests and glades. Rare, mostly in Central and Eastern Latvia (Fig. 2).

7. *V. villosa* Roth

Vicia villosa Roth, 1793, Tent. Fl. Germ. **2(2)**: 182; Klinge, 1885, Schulfl. Est. Liv. Curl.: 294; Б. Федч. 1948, Фл. СССР, **13**: 450; Līvena, 1957, Latv. PSR Fl. **3**: 187; Цвелев, 1987, Фл. европ. части СССР, **6**: 137; Yakovlev et al. 1996, Legumes north. Eurasia: 579.

V. villosa subsp. *villosa*: P.W. Ball, 1968, Fl. Europ. **2**: 132.

Meadows, fields, railway edges. Not rare, in all territory.

8. *V. varia* Host

Vicia varia Host, 1831, Fl. Austr. **2**: 332; Цвелев, 1987, Фл. европ. части СССР, **6**: 137; Табака, 1988, в Табака и др., Фл. сосуд. раст. Латв. ССР: 83; Yakovlev et al. 1996, Legumes north. Eurasia: 578.

V. villosa Roth var. *glabrescens* W.D.J. Koch, 1836, Syn. Fl. Germ.: 194.

V. pseudovillosa Schur, 1866, Enum. Pl. Transs.: 166, nom. illeg.

V. glabrescens (W.D.J. Koch) Heimerl, 1881, Verh. Zool.-Bot. Ges. Wien, **31**: 173.

V. villosa Roth subsp. *varia* (Host) Corb. 1893, Nouv. Fl. Normand.: 181; P.W. Ball, 1968, Fl. Europ. **2**: 132.

V. dasycarpa auct. non Ten.: Б. Федч. 1948, Фл. СССР, **13**: 451.

Railway edge. Known one finding – Koknese (18/38, Ģ. Kļaviņa, 1981, LATV), adventive.

9. *V. hirsuta* (L.) Gray

Vicia hirsuta (L.) Gray, 1821, Nat. Arr. Brit. Pl. **2**: 614; J. Fleisch. und Em. Lindem. 1839, in J. Fleisch., Fl. Esth. Liv. Curl.: 262; Б. Федч. 1948, Фл. СССР, **13**: 408; Līvena, 1957, Latv. PSR Fl. **3**: 181; P.W. Ball, 1968, Fl. Europ. **2**: 133; Цвелев, 1987, Фл. европ. части СССР, **6**: 138; Yakovlev et al. 1996, Legumes north. Eurasia: 562.

Ervum hirsutum L. 1753, Sp. Pl.: 738; Grindel, 1803, Bot. Taschenb. Liv. Cur. Ehstl.: 229.

Forests, meadows, fields, fallows, railway edges. Frequent, in all territory.

10. *V. tetrasperma* (L.) Schreb.

Vicia tetrasperma (L.) Schreb. 1771, Spicil. Fl. Lips.: 26; Klinge, 1882, Fl. Est. Liv. Curl.: 595; Б. Федч. 1948, Фл. СССР, **13**: 410; Līvena, 1957, Latv. PSR Fl. **3**: 182; P.W. Ball, 1968, Fl. Europ. **2**: 133; Цвелев, 1987, Фл. европ. части СССР, **6**: 138; Yakovlev et al. 1996, Legumes north. Eurasia: 576.

Ervum tetraspermum L. 1753, Sp. Pl.: 738; Ašmanis, 1923, Latv. Fl.: 101.

Forests, edges of forests, meadows, railway edges. Not rare, in all territory.

11. *V. sepium* L.

Vicia sepium L. 1753, Sp. Pl.: 737; J. Fisch. 1784, Zusätze Vers. Naturg. Livl.: 129; Б. Федч. 1948, Фл. СССР, **13**: 455, p.p.; Līvena, 1957, Latv. PSR Fl. **3**: 188, p.p.; P.W. Ball, 1968, Fl. Europ. **2**: 134,

p.p.; Цвелев, 1987, Фл. европ. части СССР, **6**: 140, p.p.; Yakovlev et al. 1996, Legumes north. Eurasia: 573, p.p.

Meadows, forests, roadsides, railway edges. Very frequent, in all territory.

a. subsp. **sepium**

Meadows, forests, railway edges. Very frequent, in all territory.

b. subsp. **montana** (W.D.J. Koch) Hämet-Ahti
V. sepium L. subsp. *montana* (W.D.J. Koch) Hämet-Ahti, 1970, Ann. Bot. Fenn. **7**, 2: 173; Tabaka, Leht and Jankevičienė, 1996, Fl. Balt. Countr. **2**: 157.

V. sepium var. *montana* W.D.J. Koch, 1835, Syn. Fl. Germ.: 196; Klinge, 1882, Fl. Est. Liv. Curl.: 596.

V. sepium β *montana*: J. Fleisch. und Em. Lindem. 1839, in J. Fleisch., Fl. Esth. Liv. Kurl.: 263.

V. sepium auct., non L.: Б. Федч. 1948, Фл. СССР, **13**: 455, p.p.; Līvena, 1957, Latv. PSR Fl. **3**: 188, p.p.; P.W. Ball, 1968, Fl. Europ. **2**: 134, p.p.; Цвелев, 1987, Фл. европ. части СССР, **6**: 140, p.p.; Yakovlev et al. 1996, Legumes north. Eurasia: 573, p.p.

Forests, shrubberies, roadsides. Rare, in all territory.

12. *V. sativa* L.

Vicia sativa L. 1753, Sp. Pl.: 736; J. Fisch. 1791, Vers. Naturg. Livl., 2. Aufl.: 574; Б. Федч. 1948, Фл. СССР, **13**: 460; Līvena, 1957, Latv. PSR Fl. **3**: 189; Цвелев, 1987, Фл. европ. части СССР, **6**: 144; Yakovlev et al. 1996, Legumes north. Eurasia: 571.

V. sativa subsp. *sativa*: P.W. Ball, 1968, Fl. Europ. **2**: 134.

Fields, cultivated meadows, roadsides. Rather rare, in all territory (Fig. 3).

13. *V. angustifolia* Reichard

Vicia angustifolia Reichard, 1778, Fl. Moeno-Francofurt. **2**: 44, p.p.; Б. Федч. 1948, Фл. СССР, **13**: 464, p.p.; Līvena, 1957, Latv. PSR Fl. **3**: 189,

p.p.; Цвелев, 1987, Фл. европ. части СССР, **6**: 145; Yakovlev et al. 1996, Legumes north. Eurasia: 553.

V. sativa L. var. *nigra* L. 1763, Sp. Pl., ed. 2: 1037.
V. sativa subsp. *nigra* (L.) Ehrh. 1780, Hannov. Mag. **15**: 229; P.W. Ball, 1968, Fl. Europ. **2**: 134, p.p.

V. sativa subsp. *angustifolia* (Reichard) Gaudin, 1829, Fl. Helv. **4**: 503; Rasiņš, 1946, in Bickis, Latv. augu noteic.: 201.

V. bobartii E. Forst. 1833, Trans. Linn. Soc. London, **16**: 442.

V. angustifolia Reichard β *bobartii*: J. Fleisch. und Em. Lindem. 1839, in J. Fleisch., Fl. Esth. Liv. Kurl.: 264.

V. angustifolia subsp. *bobartii* (E. Forst.) Arcang. 1882, Comp. Fl. Ital.: 202.

Meadows, fallows, fields, railway edges, roadsides. Not rare, in all territory.

a. subsp. **angustifolia**

Dry meadows, fallows, fields, railway edges. Not rare, in all territory.

b. subsp. **segetalis** (Thuill.) Arcang.

V. angustifolia Reichard subsp. *segetalis* (Thuill.) Arcang. 1882, Comp. Fl. Ital.: 202; Pētersone, 1980, in Pētersone un Birkmane, Latv. PSR augu noteic., 2. izd.: 240.

V. segetalis Thuill. 1799, Fl. Paris, ed. 2: 367; Цвелев, 1987, Фл. европ. части СССР, **6**: 145; Yakovlev et al. 1996, Legumes north. Eurasia: 572.

V. angustifolia Reichard, 1778, Fl. Moeno-Francofurt. **2**: 44, p.p.; Б. Федч. 1948, Фл. СССР, **13**: 464, p.p.; Līvena, 1957, Latv. PSR Fl. **3**: 189, p.p.

V. sativa L. var. *segetalis* (Thuill.) Ser. 1825, in DC. Prodr. **2**: 361.

V. angustifolia Reichard α *segetalis*: J. Fleisch. und Em. Lindem. 1839, in J. Fleisch., Fl. Esth. Liv. Kurl.: 264.

V. sativa L. subsp. *nigra* (L.) Ehrh.: P.W. Ball, 1968, Fl. Europ. **2**: 134, p.p.

Fields, fallows, railway edges, roadsides. Rare, in all territory.

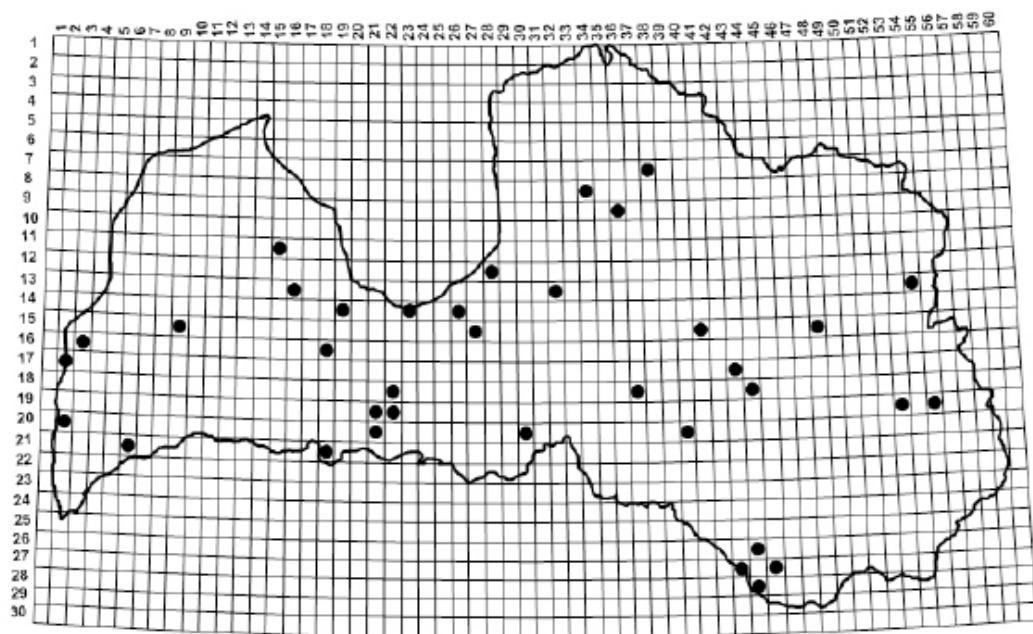


Fig. 3. Distribution of *Vicia sativa*.

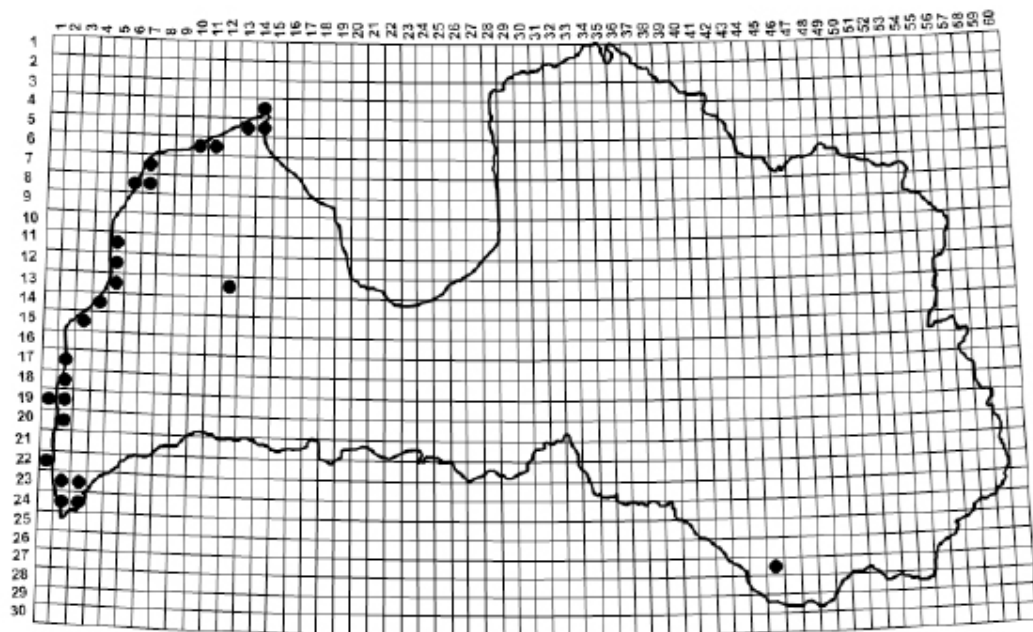


Fig. 4. Distribution of *Vicia lathyroides*.

14. *V. grandiflora* Scop.

Vicia grandiflora Scop. 1772, Fl. Carn., ed. 2, **2**: 65; Mühlenb. 1932, Acta Horti Bot. Univ. Latv. **7**: 102; Б. Федч. 1948, Фл. СССР, **13**: 459; P.W. Ball, 1968, Fl. Europ. **2**: 134; Цвелев, 1987, Фл. европ. части СССР, **6**: 143; Yakovlev et al. 1996, Legumes north. Eurasia: 561.

V. sordida Waldst. et Kit. 1802, in Willd. Sp. Pl. **3**, 2: 1108; Yakovlev et al. 1996, Legumes north. Eurasia: 574.

V. biebersteinii Besser ex M. Bieb. 1819, Fl. Taur.-Cauc. **3**: 472; Yakovlev et al. 1996, Legumes north. Eurasia: 555.

V. grandiflora Scop. var. *kitaibeliana* W.D.J. Koch, 1836, Syn. Fl. Germ.: 197.

V. grandiflora var. *biebersteinii* (Besser ex M. Bieb.) Griseb. 1843, Spicil. Fl. Rumel. **1**: 78.

V. kitaibeliana (W.D.J. Koch) Stank. 1949, в Станк. и Талиев, Опред. высш. раст. европ. части СССР: 462.

V. grandiflora Scop. subsp. *sordida* (Waldst. et Kit.) Dostál, 1949, Květena ČSR: 804.

V. grandiflora subsp. *biebersteinii* (Besser ex M. Bieb.) Dostál, 1949, Květena ČSR: 804.

Railway embankments. Very rare: in Coastal Lowland – Rīga (15/17, V. Mühlenbach, 1924, 1931, RIG); in Eastern Latvia – Daugavpils (27/45, N. Priedītis, 2001, LATV), adventive.

15. *V. lutea* L.

Vicia lutea L. 1753, Sp. Pl.: 736; Mühlenb. 1932, Acta Horti Bot. Univ. Latv. **7**: 102; Б. Федч. 1948, Фл. СССР, **13**: 468; P.W. Ball, 1968, Fl. Europ. **2**: 135; Цвелев, 1987, Фл. европ. части СССР, **6**: 143; Yakovlev et al. 1996, Legumes north. Eurasia: 566.

Railway embankments. Very rare: in Coastal Lowland – Rīga (15/27, V. Mühlenbach, 1924, 1925, RIG; A. Šulcs, 1962, LDM), adventive.

16. *V. pannonica* Crantz

Vicia pannonica Crantz, 1769, Stirp. Austr., ed. 2, **2**: 393; Mühlenb. 1932, Acta Horti Bot. Univ. Latv. **7**: 116; Б. Федч. 1948, Фл. СССР, **13**: 470, р.р.; Цвелев, 1987, Фл. европ. части СССР, **6**: 142; Yakovlev et al. 1996, Legumes north. Eurasia: 569.

V. pannonica subsp. *pannonica*: P.W. Ball, 1968, Fl. Europ. **2**: 134.

Railway embankments. Very rare: in Coastal Lowland – Rīga (14/27, N. Priedītis, 2001, 2002, LATV), adventive.

17. *V. lathyroides* L.

Vicia lathyroides L. 1753, Sp. Pl.: 736; Grindel, 1803, Bot. Taschenb. Liv. Cur. Ehstl.: 224; Б. Федч. 1948, Фл. СССР, **13**: 457; P.W. Ball, 1968, Fl. Europ. **2**: 135; Цвелев, 1987, Фл. европ. части СССР, **6**: 146; Yakovlev et al. 1996, Legumes north. Eurasia: 565.

Ervum lathyroides (L.) Stank. 1982, Тр. прикл. бот. ген. сел. **72**, 1: 25.

Mesophile and dry meadows, fallows. Rare, only in western part of Coastal Lowland and one finding both in Western and Eastern Latvia (Figure 4).

18. *V. faba* L.

Vicia faba L. 1753, Sp. Pl.: 737; Klinge, 1882, Fl. Est. Liv. Curl.: 598; Б. Федч. 1948, Фл. СССР, **13**: 474; Līvena, 1957, Latv. PSR Fl. **3**: 190; P.W. Ball, 1968, Fl. Europ. **2**: 135; Цвелев, 1987, Фл. европ. части СССР, **6**: 147.

Faba bona Medik. 1787, Vorl. Churpf. Phys.-Ökon. Ges. **2**: 360; Yakovlev et al. 1996, Legumes north. Eurasia: 527.

F. vulgaris Moench, 1794, Meth. Pl.: 150; Ašmanis, 1923, Latv. Fl.: 101.

Edges of gardens, weed-laden sites. Cultivated rather frequent in all territory, species escaped from cultivation.

CONCLUSIONS

1. There are 18 species of *Vicia* L. in flora of Latvia: 11 – native, 6 – adventive, 1 – escaped from cultivation.

2. Distribution of *Vicia* L. in Latvia: very rare – 6 species, rare – 2 species, rather rare – 1 species, not rare – 4 species, rather frequent – 2 species, frequent – 1 species, very frequent – 2 species.

3. List of *Vicia* L. was supplemented with 2 species: *V. dumetorum* L., *V. pisiformis* L.

4. Until now there is no evidence of *Vicia cordata* Wulfen ex Hoppe presence in the flora of Latvia.

REFERENCES

- Ball P.W. 1968. *Vicia* L. In: Tutin T.G., Heywood V.H., Burges N.A., Moore D.M., Valentine D.H., Walters S.M., Webb D.A. (eds.) *Flora Europaea*, 2. Cambridge, pp. 129-136.
- Bickis [Bitzky] J. 1920. Latvijas augu noteicējs [Key-book of plants of Latvia]. 1. daļa. Cēsis. 136 lpp. (in Latvian).
- Bickis J. 1923. Latvijas augu noteicējs [Key-book of plants of Latvia]. 2. izd. Cēsis. XXXI, 219. (in Latvian).
- Bickis J. 1926. Latvijas augu noteicējs [Key-book of plants of Latvia]. 3. izd. Cēsis, Rīga. XXXII, 230. (in Latvian).
- Bickis J. 1935. Latvijas augu noteicējs [Key-book of plants of Latvia]. 4. izd. Rīga. XLVIII, 267. (in Latvian).
- Brummitt R.K., Powell C.E. (eds.) 1992. Authors of Plant Names. Kew. pp. 732.
- Fatare I. 1992. Sugu kvantitatīvās izplatības analīze [Study of species quantity distribution]. Grām.: *Latvijas floras komponentu izplatības analīze un tās nozīme augu sugu aizsardzības koncepcijas izstrādāšanā*. Rīga. 17. (in Latvian).
- Fischer J.B. 1778. Versuch einer Naturgeschichte von Livland. Leipzig. 375 S.
- Fischer J.B. 1784. Zusätze zu sehnem Versuch einer naturgeschichte von Livland. Riga. XIV, 159 S.
- Fischer J.B. 1791. Versuch einer Naturgeschichte von Livland. 2. Aufl. Königsberg. XXIV, 826 S.
- Gavrilova Ģ., Šulcs V. 1999. Flora of Latvian vascular plants. Rīga. 136.
- Līvena Dz. 1957. Pākšaugi – *Leguminosae* Juss. [Legumes – *Leguminosae* Juss.]. Grām.: Galeniēks P. (red.) *Latvijas PSR flora*. 3. sēj. Rīga. 128.-204. (in Latvian).
- Mill R.R. (ed.) 1993. Appendix II: Key to the abbreviations of titles of books cited in Volume 1; Appendix III: Key to the abbreviations of titles of periodicals and anonymous works cited in Volume 1. In: Tutin T.G., Burges N.A., Chater A.O., Edmondson J.R., Heywood V.H., Moore D.M., Valentine D.H., Walters S.M., Webb D.A. (eds.) *Flora Europaea*. 1. (2): 480-503, 504-522.
- Ramans K., Zelčs V. 1995. Fiziogēogrāfiskā rajonēšana [Geographical deviation of regions]. Grām.: Kavacs G. (red.) *Latvijas daba. Enciklopēdija*. 2: 74.-76. (in Latvian).
- Yakovlev G.P., Sytin A.K., Roskov Yu.R. 1996. Legumes of Northern Eurasia. Kew. pp. 724.
- Zelčs V., Šteins V. 1989. Latvijas daba un fiziogēogrāfiskie rajoni [Nature of Latvia and geographic regions]. *Zinātne un tehnika*, 7, 2.-24. (in Latvian).
- Коровина О.Н. 1986. Сокращенные названия главнейших ботанических периодических изданий, используемые в цитатах. В кн.: Агаев М. Г. (ред.) *Методические указания к систематике растений*, 151-185 (in Russian).
- Табака Л., Гаврилова Г., Фатаре И. 1988. Флора сосудистых растений Латвийской ССР. Рига. 196.
- Табака Л.В., Клявина Г.Б., Фатаре И.Я. 1980. Метод картирования флоры Латвийской ССР и его использование при составлении "Атласа флоры Европы. В кн.: Тихомиров

В.Н. (ред.) *Картирование ареалов видов флоры европейской части СССР*. Москва. 21-24 (in Russian).

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Цвелев Н.Н. 1987. Горошек, вика – *Vicia* L. В кн.: Федоров А.А. (ред.) *Флора Европейской части СССР*. 6: 127-147 (in Russian).