

A nomenclatural treatment for *Veronica* subsect. *Pentasepalae* (Plantaginaceae sensu APG III) and typification of several names

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Abstract The large genus *Veronica* has a complex evolutionary history. Within it, *Veronica* subsect. *Pentasepalae* represents an ideal system to study important evolutionary processes, such as hybridization and polyploidization. Delimitation of species boundaries within the subsection is a difficult task and the highly complicated taxonomy of the group has led to an accumulation of approximately 230 names for 22 accepted taxa. Many names have been used in different taxonomic senses even in recent Floras, scientific works, catalogues, Red Lists and internet resources. The lack of an updated taxonomic and nomenclatural framework represents a significant problem to develop further studies in several fields such as ecology, conservation, plant and evolutionary biology. A complete nomenclatural treatment for the whole subsection is provided here, that relies on results derived from the first phylogenetic analysis of *V.* subsect. *Pentasepalae* based on DNA sequence data, morphology and ploidy-level information. Nomenclatural types for 22 validly published names are designated. In total 21 lectotypes, 2 epitypes and 1 neotype are chosen. A new combination, *Veronica linearis*, is proposed.

Keywords new combination; nomenclature; Plantaginaceae; taxonomy; typification; *Veronica linearis*

■ INTRODUCTION

Veronica subsect. *Pentasepalae* Benth. (Plantaginaceae, sensu APG III, 2009) is a monophyletic group of closely related perennial herbs distributed in Eurasia, with one species present in the North of Africa (Rojas-Andrés & al., 2015). This subsection is included in *V.* subg. *Pentasepalae* (Benth.) M.M.Mart. Ort. & al. (Albach & al., 2004a, 2008), together with other three subsections (i.e., *V.* subsect. *Armeno-Persicae* Strohm., *V.* subsect. *Orientalis* (E.Wulff) Strohm., *V.* subsect. *Petraea* Benth.). Some species of *V.* subsect. *Pentasepalae*, such as *V. teucrium* L. and *V. prostrata* L., are easy-to-grow plants frequently used in ornamental horticulture. Although a few species are registered in national Red Lists as vulnerable, endangered or critically endangered (e.g., Peñas de Giles & al., 2004; Petrova & Vladimirov, 2009), the absence of a modern taxonomic and nomenclatural framework has prevented the assessment of these and other narrow endemics (mainly from the Iberian and Balkan Peninsulas) at an international level and its inclusion in internet resources such as The IUCN Red List of Threatened Species (2015). Additionally, many species from this subsection grow in threatened habitats and/or singular ecological conditions in regions that display exceptionally rich floras of biogeographic interest frequently designated as Important Plant Areas (IPAs; IPA online database, 2015).

Veronica subsect. *Pentasepalae* has a complex evolutionary history (Rojas-Andrés & al., 2015) and constitutes an excellent system to study evolutionary processes that shape biodiversity,

such as hybridization and polyploidization. Over the last few years several studies have shown that parallel evolution of morphological characters is common in the genus (Albach & al., 2004a, b; Muñoz-Centeno & al., 2006). Particularly in *V.* subsect. *Pentasepalae* some traits traditionally used to characterize taxa seem to be affected by homoplasy and delimitation of species boundaries is therefore a difficult task (Martínez-Ortega & al., 2004). In this situation, different taxonomic treatments have been proposed throughout history and they can be found in partial monographs and Floras (e.g., Watzl, 1910; Walters & Webb, 1972; Fischer, 1982, 1991, 2011; Peev, 1995; Martínez-Ortega & al., 2009; Tison & Foucault, 2014). Many names have been applied in different senses and therefore they have doubtful applications. The taxonomy of the group is highly complicated, which has led to an accumulation of ca. 230 names for 22 taxa. The most complete modern taxonomic treatment of *V.* subsect. *Pentasepalae* is found in *Flora Europaea* (Walters & Webb, 1972), but it greatly differs from recent taxonomic treatments found in partial Floras (e.g., Peev, 1995; Martínez-Ortega & al., 2009; Fischer, 2011). Thus, many internet resources and floristic catalogues bear important mistakes derived from the absence of a unified taxonomic frame of reference.

During the last twenty years partial taxonomic and nomenclatural studies focused on *V.* subsect. *Pentasepalae* have been conducted (Martínez-Ortega, 1999; Martínez-Ortega & al., 2004; Andrés-Sánchez & al., 2009). Although these studies represented important steps towards a better understanding of the subsection, they included only species from the Western

Mediterranean. Though in a few particular cases we are still far from getting an accurate delimitation of evolutionary-relevant units, a first complete phylogenetic analysis of *V.* subsect. *Pentasepalae* based on DNA sequence data, ploidy level information (Rojas-Andrés & al., 2015) and morphology (Rojas-Andrés & al., in prep.) allowed the establishment of an updated taxonomic framework, which represents a robust basis for future genetic and ecological studies. In accordance with the data obtained in this study, we provide here a complete nomenclatural treatment for *V.* subsect. *Pentasepalae*.

To this aim, we performed a detailed study of those names that have been frequently cited in the literature to try to enhance their nomenclatural stability. Nomenclatural types for 22 validly published names were selected in order to fix their usage. Finally, one new combination is proposed.

■ MATERIALS AND METHODS

In the following classification we first listed the accepted name of *V.* subsect. *Pentasepalae*, its synonyms and types. Next, we listed all the species included in the subsection (i.e., most commonly used synonyms and their types), as well as the subspecies and some varieties and forms (only when we were able to check the protologue). The names accepted by us were written in bold characters. Nomina nuda and superfluous combinations were not included here. In total, 198 names from a total of ca. 230 were treated. Synonyms were ordered chronologically when they were homotypic (preceded by the symbol “≡”) and alphabetically when they were heterotypic (preceded by the symbol “=”). In some cases, the symbol “?” preceded the full citation of the name to indicate that it is a dubious synonym (i.e., we were not able to locate or examine directly original material), but which based on the indications given in the protologues are provisionally considered synonyms of a particular name. The dubious synonyms have their own alphabetical order. At the end were listed those synonyms that are an incorrect application or interpretation of a name (“sensu”; preceded by the symbol “–”). To this aim we carefully revised the names up to the subspecific and formal level included in the main European Floras and monographs on *Veronica* L. (Bentham, 1846; Watzl, 1910; Römpf, 1928; Hayek, 1929; Riek, 1935; Stroh, 1942; Borissova, 1955; Ghisa, 1960; Hartl, 1966; Walters & Webb, 1972; Elenevsky, 1977; Fischer, 1978, 1982, 1991, 1994, 2011; Hess & al., 1980; Peev, 1995; Peniašteková, 1997; Hrouda, 2000; Martínez-Ortega & al., 2009; Tison & Foucault, 2014), as well as in the International Plant Names Index (2015).

We cited or provided types for the accepted name of each taxon and for some of the synonyms of each accepted name (i.e., most used synonyms or those names for which we were able to reliably provide and select types). Whenever necessary, lectotypes (according to Art. 9.2 *ICN*; McNeill & al., 2012), epitypes (Art. 9.8) or neotypes (Art. 9.7) were selected. Isotypes and syntypes are mentioned only when they were directly checked by us. Barcodes or accession numbers of the types were provided, if available. Designation of the types was carefully done to be in accordance with the original descriptions and the current usage

of the names. For that purpose, all the relevant protologues and other taxonomic literature were examined. Decisions on typification were based on our taxonomic knowledge of *V.* subsect. *Pentasepalae*, which is founded on a careful study of material lodged at 63 herbaria (ALTB, ANG, ATH, *B*, *B-W*, *BC*, *BCF*, *BEOU*, BHU, *BIO*, *BM*, BP [only checked for original material of *V. crinita*], *C*, *CAME*, *CL*, *CLF*, *COA*, *COI*, *DR*, *E*, *FCO*, *FI*, *G*, *G-DC*, *GDA*, *GDAC*, *GE*, *GOET*, *GRM*, *JACA*, *JE*, *K*, *L*, *LAU*, *LD*, *LINN*, *LISU*, *MA*, *MGC*, *MPU*, *NAP*, *OLD*, *OXF*, *P*, *PAD*, *PR*, *PRC*, *RAB*, *RNG*, *RO*, *S-LINN*, *SALA*, *SESTAO*, *SEV*, *SOM*, *TL*, *TO*, *TR*, *TU*, *UPA*, *UPS*, *UPS-BURSER*, *VAB*, *VIT*, *W*, *WU*; herbaria completely revised for material of *V.* subsect. *Pentasepalae* are in italics), on the study of living populations on the field, as well as on the results of the phylogenetic study of the subsection based on DNA sequence data (Rojas-Andrés & al., 2015).

Finally, notes concerning taxonomic or nomenclatural aspects were added wherever it was considered appropriate.

■ NOMENCLATURE AND NEW TYPIFICATIONS

Veronica* subsect. *Pentasepalae Benth. in Candolle, Prodr. 10: 469. 1846 ≡ *Veronica* [unranked] *Pentasepalae* Römpf in Repert. Spec. Nov. Regni Veg. Beih. 50: 73. 1928 (“*Pentasepala*”) – Type (designated by Elenevsky in Byull. Moskovsk. Obshch. Isp. Prir., Otd. Biol. 82: 154. 1977): *V. teucrium* L. — 17 species.

= *V.* subsect. *Austriacae* (E.Wulff) Stroh in Beih. Bot. Centralbl., Abt. 2, 61: 407. 1942 ≡ *Veronica* [unranked] *Austriacae* E.Wulff in Trudy Tiflissk. Bot. Sada 15: 59. 1915 – Type: *V. austriaca* L.

= *V.* subsect. *Hispano-Africanae* Stroh in Beih. Bot. Centralbl., Abt. 2, 61: 385. 1942 ≡ *Veronica* [unranked] *Hispano-Africanae* Riek in Repert. Spec. Nov. Regni Veg. Beih. 79: 9. 1935 – Type (designated by Albach & al. in Taxon 53: 448. 2004): *V. rosea* Desf.

Veronica aragonensis Stroh in Beih. Bot. Centralbl., Abt. 2, 61: 398. 1942 ≡ *V. humifusa* Bubani, Fl. Pyren. 1: 294. 1897, nom. illeg. (Art. 53.1 *ICN*), non Dicks. in Trans. Linn. Soc. 2: 288. 1794 – Lectotype (designated by Martínez-Ortega & Rico in Taxon 50: 543. 2001): [Spain, Huesca] In Pyren. merid. Aragon [illegible word] alla Pegna Montagnesna ad verticem di Astiviegliia, 15 Jul 1845, *P. Bubani s.n.* (GE [photo!]; isolectotype: WU!).

= *V. repens* var. *macrocarpa* Porta in Atti Imp. Regia Accad. Roveretana, ser. 2, 9: 156. 1892.

Note. – As it was not possible to check directly the protologue of *V. repens* var. *macrocarpa* from the original publication (Porta, 1892a), the original diagnose was revised in Porta (1892b: 53). According to Stafleu & Cowan (1983) the latter publication was reprinted from the first one.

Veronica austriaca L., Syst. Nat., ed. 10, 2: 849. 1759 (“*austriac*”) ≡ *V. laciniata* Moench, Methodus: 435. 1794, nom.

- illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*), pro parte ≡ *V. pinnatifida* Pohl, Tent. Fl. Bohem. 1: 17. 1809, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*), pro parte ≡ *V. austriaca* var. *pinnatifida* W.D.J.Koch, Syn. Fl. Germ. Helv.: 526. 1837, nom. inval. (Art. 26.2 *ICN*), pro parte – Lectotype (designated by Fischer in Feddes Repert. 108: 115. 1997): Herb. Linn. No. 26.47 (LINN!).
- = ?*V. macrodonta* Borbás in Oesterr. Bot. Z. 34: 73. 1884, pro hybr. ≡ *V. austriaca* var. *macrodonta* (Borbás) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 60. 1910, pro hybr. ≡ *V. austriaca* subsp. *macrodonta* (Borbás) J.Keller in Bot. Közlem. 37: 144. 1940.
- = ?*V. pubicarpa* Simonk., Enum. Fl. Transsilv.: 422. 1886.
- *V. austriaca* subsp. *austriaca* sensu D.A.Webb in Bot. J. Linn. Soc. 65(2): 268. 1972, pro parte, non L., Syst. Nat., ed. 10, 2: 849. 1759.
- *V. multifida* & *austriaca* sensu Jacq. [names treated together simultaneously], Fl. Austriac. 4: 15, t. 329. 1776, et sensu auct. pl., pro parte, non L. ≡ *V. austriaca* sensu Jacq., Fl. Austriac. 4: 15, t. 329. 1776, et sensu auct. pl., non L., Syst. Nat., ed. 10, 2: 849. 1759.
- Veronica austriaca* subsp. *dentata*** (F.W.Schmidt) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 53. 1910 ≡ *V. dentata* F.W.Schmidt, Fl. Boëm. Cent. 1: 20. 1793 ≡ *V. schmidtii* Roem. & Schult., Syst. Veg. 1: 115. 1817, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*) ≡ *V. austriaca* var. *dentata* (F.W.Schmidt) W.D.J.Koch, Syn. Fl. Germ. Helv.: 526. 1837 ≡ *V. teucrium* var. *angustifolia* Benth. in Candolle, Prodr. 10: 470. 1846, nom. illeg. (Art. 53.1 *ICN*), non Vahl, Enum. Pl. 1: 76. 1804 ≡ *V. teucrium* var. *dentata* (F.W.Schmidt) Čelak., Prodr. Fl. Böhmen 2: 327. 1871 – Lectotype (designated by Martínez-Ortega & al. in Taxon 50: 189. 2001): [unpub. illustration] “*Veronica dentata*”, National Library Prague, cat. no. 14 AA 29 (intended for publication as t. 36 in Schmidt, Fl. Boëm. 1793) – Epitype (designated by Martínez-Ortega & al. in Taxon 50: 189. 2001): [Czech Republic] vom Berge Welikahora bei Karlstein [sub *Veronica teucrium* β *angustifolia*] (WU No. 0020360!).
- = *V. paniculata* Willd., Sp. Pl. 1: 71. 1797 – **Lectotype (designated here)**: “*Veronica paniculata* racemis lateralibus longissimis, foliis lanceolatis ternis caule adscendente crenatis, Habitat in Tataria Bohemica” [sub *V. paniculata* 1, handwritten by D.F.L. von Schlechtendal] (B-W barcode B-W00228-01!).
- = ?*V. austriaca* var. *praeterita* Beck, Fl. Nieder-Österreich: 1054. 1893 ≡ *V. austriaca* f. *praeterita* (Beck) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 58. 1910.
- *V. austriaca* sensu auct. pl., non L., Syst. Nat., ed. 10, 2: 849. 1759.
- Veronica austriaca* subsp. *jacquinii*** (Baumg.) Watzl in Abh. K. K. Bot.-Zool. Ges. Wien 5(5): 63. 1910 ≡ *V. laciniata* Moench, Methodus: 435. 1794, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*), pro parte ≡ *V. pinnatifida* Pohl, Tent. Fl. Bohem. 1: 17. 1809, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*), pro parte ≡ *V. jacquinii* Baumg., Enum. Stirp. Transsilv. 1: 26. 1816 ≡ *V. austriaca* var. *pinnatifida* W.D.J.Koch, Syn. Fl. Germ. Helv.: 526. 1837, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*), pro parte ≡ *V. teucrium* subsp. *austriaca* Schmalh., Fl. Ssredn. Jushn. Rossii 2: 277. 1897 ≡ *V. austriaca* [prol.] *jacquinii* (Baumg.) K.Malý in Magyar Bot. Lapok 7: 229. 1908 – Lectotype (designated by Martínez-Ortega & al. in Taxon 50: 188. 2001): [illustration in] Jacquin, Fl. Austriac. 4: t. 329, fig. 1. 1776 – Epitype (designated by Martínez-Ortega & al. in Taxon 50: 188. 2001): [Austria, Carinthia] “Jacqu. fl. austr. tab. 329. fig. 1” (BM!).
- = *V. austriaca* var. *bipinnatifida* W.D.J.Koch, Syn. Fl. Germ. Helv.: 526. 1837.
- = *V. austriaca* f. *cana* Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 76. 1910.
- = *V. austriaca* subvar. *platyphylla* Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 70. 1910 – Type: FI? (no original material found).
- = *V. austriaca* subsp. *tenuissima* Degen & Dren., Vfori Prinos Za Fl. Ali Botash.: 6. 1933.
- = *V. austriaca* f. *villosa* Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 71. 1910 – Type: RIG? (no original material found).
- = *V. bihariensis* A.Kern. in Oesterr. Bot. Z. 23: 371. 1873 ≡ *V. jacquinii* var. *bihariensis* (A.Kern.) Simonk., Enum. Fl. Transsilv.: 423. 1887 ≡ *V. multifida* var. *bihariensis* (A.Kern.) Murb. in Acta Univ. Lund. 27(5): 73. 1892 ≡ *V. austriaca* var. *bihariensis* (A.Kern.) Hayek in Denkschr. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 99: 160. 1924 – **Lectotype (designated here)**: [Romania] Ungarn, Bihar, Hollodu, *A. Kerner s.n.* (WU!; isolectotype: W!).
- Syntype*. – Ungarn, Bihar, „Ostseite“ der Pietra Muncelului bei Rézbánya, *A. Kerner s.n.* (WU!).
- = *V. diversifolia* Pant. in Verh. Vereins Natur-Heilk. Presburg 2: 70. 1874, nom. illeg. (Art. 53.1 *ICN*) – **Lectotype (designated here)**: Peručicadol Orlova Skala, 10 Jul 1872, *J. Pantocksek s.n.* (GOET barcode GOET011119 [photo!]; isolectotype: PAD [photo!]).
- = *V. jacquinii* var. *neiceffii* Degen in God. Sofiisk. Univ. 2: 142. 1906 ≡ *V. austriaca* f. *neiceffii* (Degen) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 74. 1910 ≡ *V. austriaca* var. *neiceffii* (Degen) Stoj. & Stef., Fl. Bulg. 2: 1010. 1925 ≡ *V. austriaca* subsp. *neiceffi* (Degen) Peev in Kozhukharov & Kuzmanov, Evolyutsiya Tsvet. Rast. i Florogen. 1: 90. 1978.
- = *V. multifida* var. *genuina* Velen. in Sitzungsber. Königl. Böhm. Ges. Wiss. Prag 37: 50. 1893, nom. inval. (Art. 24.3 *ICN*).
- = *V. multifida* var. *tenuis* Velen. in Sitzungsber. Königl. Böhm. Ges. Wiss. Prag 37: 51. 1893 ≡ *V. austriaca* subvar. *tenuis* (Velen.) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 75. 1910 ≡ *V. austriaca* var. *tenuis* (Velen.) Stoj. & Stef., Fl. Bulg. 2: 1009. 1925 – **Lectotype (designated here)**: In desertis ad Nova Mahala, May 1893, *J. Velenovský s.n.* (PRC!).
- = *V. multifida* var. *valida* Velen. in Sitzungsber. Königl. Böhm. Ges. Wiss. Prag 37: 51. 1893, nom. inval. (Art. 24.3 *ICN*).

= *V. multifida* var. *virescens* Velen. in Sitzungsber. Königl. Böhm. Ges. Wiss. Prag 27: 11. 1902 ≡ *V. jacquinii* var. *virescens* (Velen.) Peev in Dokl. Bulg. Akad. Nauk 25(6): 811. 1972 ≡ *V. austriaca* subsp. *virescens* (Velen.) Peev in Kozhukharov & Kuzmanov, Evolyutsiya Tsvet. Rast. i Florogen. 1: 90. 1978 – **Lectotype (designated here)**: Bulgaria, Ad Ruscuk, 1901, *I. Kovacev s.n.* (PRC!).

Note. – We have looked for the material mentioned in the protologue by Malý and only the material from Ruscuk mentioned in the protologue was found. We have not found the specimens from Trnovo. The sheet lodged at PRC was therefore chosen as lectotype.

= *V. orbiculata* var. *celakovskiyana* Aschers. ex K.Malý in Oesterr. Bot. Z. 57: 182. 1907 – **Lectotype (designated here)**: [Bosnia and Herzegovina] Wiesen ober dem Stadtteil Kastell in Sarajevo, 700 m, 30 Aug 1906, *K. Malý s.n.* (WU!).

Note. – We have looked for the material mentioned in the protologue by Malý and only one sheet lodged at WU was found. We have not found the specimens collected either by Blau, Janchen or Vidović mentioned in the protologue. The sheet lodged at WU has therefore been chosen as lectotype. In JSTOR Global Plants (2015) the sheets JE 00020534 and JE 00020533 are labelled as putative type material. However, they are not relevant for typification because they were collected in May 1907, after the publication of the name (January 1907) and the place of collection (Mrkovic) is not mentioned in the protologue.

= *V. pilocarpa* Link, Enum. Hort. Berol. Alt. 1: 25. 1821 ≡ *V. trichocarpa* Schult., Mant. 1: 106. 1822, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 ICN).

= *V. recta* Benth. in Candolle, Prodr. 10: 474. 1846.

= ?*V. brachystyla* Rehmann in Spraw. Komis. Fizjogr. 7: 87. 1874.

= ?*V. crispa* hort. ex Rehb., Fl. Germ. Excurs. 1(3): 368. 1831–32.

– *V. austriaca* subsp. *austriaca* sensu D.A.Webb in Bot. J. Linn. Soc. 65(2): 268. 1972, pro parte, non L., Syst. Nat., ed. 10, 2: 849. 1759.

– *V. multifida* & *austriaca* sensu Jacq., Fl. Austriac. 4: 15, t. 329. 1776, et sensu auct. pl., pro parte, non L. ≡ *V. multifida* sensu Jacq., Fl. Austriac. 4: 15, t. 329. 1776, et sensu auct. pl., non L., Sp. Pl.: 13. 1753.

Veronica crinita Kit. in Schultes, Oestr. Fl. ed. 2, 1: 26. 1814 ≡ *V. teucrium* subsp. *crinita* (Kit.) Velen., Fl. Bulg. Suppl.: 214. 1898 – **Lectotype (designated here)**: “*Veronica nova crinita*, racemis lateribus caulis apice brevioribus; bracteis linearibus flore longioribus”, Herbar. Kitaibel 104. Mus. nat. hung. fasc. I. N° 89 (BP!).

Note. – The protologue of *V. crinita* by Kitaibel (in Schultes, 1814: 26) reads: “In Ungern auf sonnigen Hügeln und Bergen, sehr selten.” We have found one sheet at Kitaibel’s herbarium in BP that bears the annotation “*Veronica nova crinita*”. This specimen has no indication about the place of collection nor the date, but it is the only original material that we were able to find among the

herbaria known to lodge Kitaibel’s material (B, BM, BP, G, P, PR). We therefore select it as lectotype for *V. crinita*.

= *V. crinita* f. *bosniaca* Fiala in Wiss. Mitt. Bosnien & Herzegovina 3: 619, t. XIV. 1895 ≡ *V. teucrium* var. *bosniaca* (Fiala) K.Malý in Magyar Bot. Lapok 7: 229. 1908 ≡ *V. teucrium* f. *bosniaca* (Fiala) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 39. 1910 – **Lectotype (designated here)**: Bosnia, Klek planina prope Foča, 10 Jun 1892, *F. Fiala s.n.* (PR!; isolectotype: PRC!).

Note. – Fiala (1895) gave the following indications: “Habitat in calcareis montis Klekplanina”. We have found two sheets of *V. crinita* f. *bosniaca* bearing the same text (ind. loc.) on their labels at PR and PRC, which serve as original material. We selected the sheet at PR because it bears the specimens that are morphologically more similar to those drawn on the plate XIV indicated in the protologue.

= *V. thracica* Velen. in Sitzungsber. Königl. Böhm. Ges. Wiss. Prag 37: 50. 1893 ≡ *V. teucrium* subsp. *thracica* (Velen.) Velen., Fl. Bulg. Suppl. 1: 214. 1898 ≡ *V. teucrium* var. *thracica* (Velen.) K.Malý in Magyar Bot. Lapok 7: 229. 1908 – **Lectotype (designated here)**: Flora bulgarica, in collibus ad Philippopolium, May 1893, *V. Strěbrný s.n.* (WU!; isolectotypes: BM barcode BM000068141!, W Nos. 15728! & 15489!, WU!).

Veronica kindlii Adamović in Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 74: 138. t. 4, fig. 7–10. 1904 – **Lectotype (designated here)**: [illustration in] Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 74: t. 4, fig. 7–10. 1904 – **Epitype (designated here)**: Republic of Macedonia, Gevgelija, hacia la estación de esquí de Kožuf, prados herbosos húmedos sobre sustrato ácido, 1629 m, 41.20006°N, 22.24369°E, 25 Jul 2010, *S. Andrés-Sánchez, X. Giráldez, M.M. Martínez-Ortega & B.M. Rojas-Andrés MO5569* (SALA No. 149278!).

Note. – The protologue of *V. kindlii* by Adamović (1904) reads: “In summis alpinis m. Nidže-Planina, unde junio exeunti florentem misit Dom. J. Kindl, cui hanc plantam dedico.” We revised the main herbaria that lodge material from Adamović (BEO, PRC, WU) but no original material was found. We have also checked the collections at other herbaria where Adamović’s material might be lodged (B, K, LAU, M, W) but we did not find any relevant specimens. The plate cited in the protologue seems to be the only extant original material relevant for the typification of this name. However, this illustration is slightly ambiguous in that some characters (mainly those concerning the calyx and capsule) which are important to identify the species and distinguishing it from *V. orsiniana* Ten., are not depicted with enough detail. In this situation, we designate the figures 7–10 in the Adamović’s plate 4 as the lectotype for this name with the support of an epitype for precise application of the name *V. kindlii*. The epitype has been selected from our own material collected in the Kožuf Mountain (Republic of Macedonia), which is ca. 50 km far from the type locality and was used for the first

- complete phylogenetic analysis of *V.* subsect. *Pentasepalae* based on DNA sequence data (Rojas-Andrés & al., 2015).
- = *V. prostrata* var. *filicaulis* Halácsy in Verh. K. K. Zool.-Bot. Ges. Wien 38: 761. 1888 ≡ *V. filicaulis* Halácsy in Verh. K. K. Zool.-Bot. Ges. Wien 38: 761. 1888, nom. inval., pro syn. (Art. 36.1(c) ICN) – **Lectotype (designated here):** [Greece] Doris: in saxosis cacuminis mt. Kionae [Gióna], alt. 7800', 12 Jul 1888, *E. von Halácsy s.n.* (WU!).
- *V. orsiniana* subsp. *orsiniana* sensu M.A. Fischer in Strid & Tan, Mountain Fl. Greece 2: 220. 1991, non Ten., Fl. Neapol. Prodr. App. 5: 4. 1826.
- *V. teucrium* subsp. *orsiniana* sensu Hayek in Repert. Spec. Nov. Regni Veg. Beih. 30(2): 167. 1927, non (Ten.) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 43. 1910.

Veronica krylovii Schischk. in Krylov, Fl. Zapadnoi Sibir. [Fl. Sibir. Occ.], ed. 2, 10: 2457. 1939 ≡ *V. teucrium* subsp. *altaica* Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 49. 1910 – **Lectotype (designated here):** [Kazakhstan and China (Xinjiang)] In apricis montium Tarbagatai, 1840, *G.S. Karelin & I.P. Kiriloff 378* (W No. 0020501!; isolecotype: WU No. 0043369 [photo!]).

Syntypes. – TU Nos. 265977!, 265978!, 265979!, 265980! & 265982!, W No. 0020502!, WU Nos. 0043366 [photo!], 0043367 [photo!] & 0043368 [photo!].

Note. – We looked for the original material mentioned by Watzl (1910) in the protologue of *V. teucrium* subsp. *altaica* and found several specimens relevant for this typification. We selected as lectotype one sheet that bears plants collected in west Siberia (Tarbagatai Mountains) deposited at W because these plants can unambiguously be determined as *V. krylovii*.

- = *V. teucrium* var. *minor* Trautv. in Bull. Soc. Imp. Naturalistes Moscou 39(3): 439. 1866.
- *V. teucrium* sensu Bunge in Ledebour, Fl. Altaic. 1: 40. 1829, pro parte, non L., Sp. Pl., ed. 2: 16. 1762.

Veronica linearis (Bornm.) Rojas-Andrés & M.M.Mart.Ort., **comb. & stat. nov.** ≡ *V. kindlii* var. *linearis* Bornm. in Repert. Spec. Nov. Regni Veg. 42: 139. 1937 – **Lectotype (designated here):** Flora von Mazedonien. Auf Marmor des Berges Sivec bei Prilep, 9 Jul 1937, *O. Behr & E. Behr s.n.* (W No. 26514!; isolecotypes: DR No. 041947!, W No. 14305!).

Note. – *Veronica kindlii* var. *linearis* was described by Bornmüller in 1937 for plants from the Macedonian locality of Sivec. This name has been overlooked since its publication and according to our experience it is not mentioned in Floras or monographs on *Veronica*. While working on the taxonomy and nomenclature of *V.* subsect. *Pentasepalae*, we found a few specimens (in B, DR and W) labelled as *V. kindlii* var. *linearis* which clearly called our attention. We visited the relevant locations to study living populations and collect material for morphological, karyological and molecular studies. According to the morphological characteristics of these plants (Rojas-Andrés & al., in prep.), we consider that this taxon merits the specific rank.

Veronica orbiculata A.Kern. in Oesterr. Bot. Z. 24: 19. 1874 ≡ *V. austriaca* subsp. *orbiculata* (A.Kern.) K.Malý in Oesterr. Bot. Z. 57: 181. 1907, nom. inval. (Art. 36.1(a) ICN) ≡ *V. orbiculata* var. *typica* K.Malý in Oesterr. Bot. Z. 57: 182. 1907, nom. inval. (Art. 24.3 ICN) ≡ *V. austriaca* subsp. *orbiculata* (A.Kern.) K.Malý ex Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 77. 1910 – Lectotype (designated by Martínez-Ortega & Rico in Taxon 50: 545. 2001): Flora Dalmatica, in saxosis apricis, *Visiani s.n.* (PAD [photo!]).

= *V. austriaca* var. *emarginata* K.Malý ex Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 80. 1910 – **Lectotype (designated here):** [Bosnia and Herzegovina] Wiesen im Kastell von Sarajevo, ca. 700 m.s.m., 30 Aug 1906, *K. Malý s.n.* (WU!).

Note. – We have looked for the material mentioned in the protologue, but we have been able to locate only one sheet at WU. We have therefore selected this material as lectotype.

= *V. austriaca* var. *prenja* Beck in Ann. K. K. Naturhist. Hofmus. 2: 137, t. VI, fig. 7. 1887 ≡ *V. orbiculata* var. *prenja* (Beck) K.Malý in Oesterr. Bot. Z. 57: 183. 1907 ≡ *V. austriaca* f. *prenja* (Beck) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 80. 1910 – **Lectotype (designated here):** Herceg. auf der Prenj Pl., alpenregion, 5 May 1885, *G. Beck s.n.* (PRC!; isolecotypes: W!, WU!).

= *V. orbiculata* var. *hercegovinica* K.Malý in Oesterr. Bot. Z. 57: 183. 1907 ≡ *V. austriaca* f. *hercegovinica* (K.Malý) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 79. 1910 – **Lectotype (designated here):** Steinige Abhänge des Hum bei Mostar, nächst dem schwarzen Turm, Kalk, ca. 80 m, 15 May 1906, *E. Janchen s.n.* (WU!).

Note. – We have found seven sheets from the locality “Hum bei Mostar” collected by Janchen that are relevant for the typification of *V. orbiculata* var. *hercegovinica*. We chose as lectotype the material that best corresponds to the morphological indications given in the protologue, which in addition, was labelled as “f. hercegovinica” by Watzl.

– *V. austriaca* subsp. *austriaca* sensu D.A.Webb in Bot. J. Linn. Soc. 65(2): 268. 1972, pro parte, non L., Syst. Nat., ed. 10, 2: 849. 1759.

Veronica orsiniana Ten., Fl. Neapol. Prodr. App. 5: 4. 1826 ≡ *V. teucrium* subsp. *orsiniana* (Ten.) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 43. 1910 – Lectotype (designated by Martínez-Ortega & Rico in Taxon 50: 546. 2001): [Italy, Abruzzo] M. dei Fiori, *Orsini s.n.* (NAP [photo!]).

= *V. catalaunica* Sennen & Pau ex Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 48. 16 Jul 1910, nom. inval., pro syn. (Art. 36.1(c) ICN) ≡ *V. teucrium* var. *catalaunica* Sennen & Pau ex Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 48. 16 Jul 1910 – Lectotype (designated by Andrés-Sánchez & al. in Bot. J. Linn. Soc. 159: 81. 2009): [Spain] Catalogne, Fortià et Cabanas, pelouses, May–Jun 1907 (W!; isolecotypes [see Martínez-Ortega, 1999 for further details on specimens]: BC Nos. 831933! & 45083!, BM!, LD No. 090140!, MA No. 425319!, RNG!, WU!).

= *V. teucrium* var. *normalis* Gren. in Grenier & Godron, Fl. France 2: 587. 1853, pro parte.

- = *V. teucrium* var. *pyrenaica* Willk. in Linnaea 30: 120. 1859–1860 ≡ *V. austriaca* var. *dentata* sensu Willk. in Flora 35: 262. 1852, non W.D.J.Koch, Syn. Fl. Germ. Helv.: 526. 1837 – Lectotype (designated by Andrés-Sánchez & al. in Bot. J. Linn. Soc. 159: 81. 2009): [Spain] Peña de Oroël in Aragonia, 22 Jun 1850, *H.M. Willkomm s.n.* (COI!).
- = *V. verdagueri* Sennen in Bol. Soc. Ibér. Ci. Nat. 29: 84. 1930 ≡ *V. orsiniana* var. *verdagueri* (Sennen) M.M.Mart.Ort. & E.Rico in Anales Jard. Bot. Madrid 57: 478. 2000 – Lectotype (designated by Martínez-Ortega & Rico in Anales Jard. Bot. Madrid 57: 478. 2000): (Plantes d'Espagne-F. Sennen) Barcelone: Massif du Tibidabo, región de Vallvidrera, 1913 et 1918 May & September, *F. Sennen 3491* (MA No. 112625!; isolectotypes: BC No. 832061!, RNG!, W!).
- = ? *V. brevicaulis* Tausch in Hornschuch, Syll. Pl. Nov. 2: 247. 1828.
- = ? *V. fuchsii* Bubani, Fl. Pyren. 1: 291. 1897 – Type: GE? TO? (no original material found).
- = ? *V. latifolia* var. *dubia* Chaix ex Lapeyr., Hist. Pl. Pyrénées: 9. 1813 ≡ *V. chaixii* Lapeyr., Hist. Pl. Pyrénées Suppl.: 6. 1818 ≡ *Veronica teucrium* subsp. *dubia* (Chaix ex Lapeyr.) Nyman, Consp. Fl. Eur. 3: 545. 1881 ≡ *V. austriaca* var. *dubia* (Chaix ex Lapeyr.) O.Bolòs & Vigo in Collect. Bot. (Barcelona) 14: 98. 1983 ≡ *V. austriaca* subsp. *dubia* (Chaix ex Lapeyr.) Kerguelen, Index Synonym. Fl. France: 16. 1993 – Type: GAP? GRM? (no original material found).
- = ? *V. praetutiana* Moretti in Bibliot. Ital. Giorn. Lett. 72: 217. 1833.
- *V. austriaca* subsp. *vahlilii* sensu Walters & D.A.Webb in Tutin & al., Fl. Eur. 3: 245. 1972, pro parte, non (Gaudin) D.A.Webb in Bot. J. Linn. Soc. 65(2): 267. 1972.
- *V. teucrium* sensu auct. pl., non L., Sp. Pl., ed. 2: 16. 1762.
- *V. teucrium* var. *pyrenaica* sensu Willk., Suppl. Prodr. Fl. Hispan.: 182. 1893, pro parte, non Willk. in Linnaea 30: 120. 1859–1860.

Veronica prostrata L., Sp. Pl., ed. 2: 17. 1762 ≡ *V. austriaca* var. *prostrata* (L.) Kauffm., Moskovskaya Fl.: 351. 1866 – Lectotype (designated by Fischer in Feddes Repert. 108: 116. 1997): Herb. Linn. 26.39 (LINN!).

= *V. pilosa* L., Sp. Pl., ed. 2: 1663. 1763 – Lectotype (designated by Martínez-Ortega & al. in Taxon 50: 553. 2001): Herb. Burser XIV(1): 55 (UPS [photo!]).

= *V. prostrata* var. *sibirica* Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 24. 1910, non *V. sibirica* L., Sp. Pl., ed. 2: 12. 1762 – **Lectotype (designated here)**: [Russia] Daurien, 1825, *C.B. von Trinius 267* (W No. 0049262!).

Syntype. – TU No. 265983!

= ? *V. prostrata* var. *kajmakcalanica* Adamović in Denkschr. Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 74: 139. 1904.

Veronica rhodopea (Velen.) Degen. ex Stoj. & Stef., Fl. Bulg. 5: 1010. 1925 (“*rhodopaea*”, Art. 60.1 *ICN*) ≡ *V. surculosa* var. *rhodopea* Velen. in Sitzungsber. Königl. Böhm. Ges. Wiss. Prag, Math.-Naturwiss. Cl. 37: 51. 1893 – **Neotype (designated here)**: Bulgaria, Pazardzhik, Belmeken, junto

a la presa, 42.17653°N, 23.80769°E, 1956 m, prados alpinos, 13 Jun 2009, *X. Giráldez, M.M. Martínez-Ortega, B.M. Rojas-Andrés & M. Santos-Vicente BR12* (SALA No. 149321!).

Note. – The protologue of *V. surculosa* var. *rhodopea* by Velenovsky (1893: 50) reads: “In alpinis m. Rhodope ad Bala-bandza detexit amicus Reiser a. 1893.” We first revised PRC, where the type material is supposed to be lodged according to Peev (1995), but no original material was found there. We additionally revised all the herbaria that lodge Velenovsky’s collections (B, E, JE, PR, PRC, W) but no original material was found. In this situation we decided to select a neotype from our own material collected in the Rhodope Mountains that can unequivocally be identified as *V. rhodopea* according to the description provided in the protologue by Velenovsky.

Veronica rosea Desf., Fl. Atlant. 1: 13. 1798 ≡ *V. atlantica* Pers., Syn. Pl. 1: 12. 1805, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*) ≡ *V. rosea* var. *typica* Maire in Mém. Soc. Sci. Nat. Maroc 7: 198. 1924, nom. inval. (Art. 24.3 *ICN*) – Lectotype (designated by Martínez-Ortega & Rico in Taxon 50: 547. 2001): [Algeria] Habitat in Atlante prope Tlemsen, *Desfontaines s.n.* (P-DESFI!).

= *V. chartonii* Litard. & Maire in Mém. Soc. Sci. Nat. Maroc 26: 31. 1930 ≡ *V. rosea* subsp. *chartonii* (Litard. & Maire) Dobignard, Index Syn. Fl. Afrique N. 5: 117. 2013 – “Typus in Herb. Univers. Algeriensis, in Herb. Inst. Imp. Scient. Rabatensis, et in Herb. R. de Litardière” – Lectotype (designated by Andrés-Sánchez & al. in Bot. J. Linn. Soc. 159: 83. 2009): In Atlantis majoris prope Anremer: inter lapides calcareous labentes, 3200–3500 m, 27 Jul 1926, *R.V. de Litardière & R.C. Maire s.n.* (MPU barcode MPU002409!; isolectotype: RAB No. 32125 [photo!], P barcode P00083128 [photo!], S No. 10-21973 [photo!]).

= *V. cuneifolia* subsp. *atlantica* Ball in J. Bot. 13: 174. 1875 ≡ *V. cuneifolia* var. *atlantica* (Ball) Ball in J. Linn. Soc., Bot. 16: 599. 1878 ≡ *V. rosea* var. *atlantica* (Ball) Murb. in Acta Univ. Lund., ser. 2, 19(1): 46. 1923 ≡ *V. rosea* subvar. *eriacarpa* Maire in Bull. Soc. Hist. Nat. Afrique N. 20: 31. 1929, nom. inval. (Art. 26.2 *ICN*) ≡ *V. rosea* subsp. *atlantica* (Ball) I.Soriano in Lagasalia 18: 299. 1996, comb. inval. [Arts. 41.5 and 41.8(a) *ICN*].

= *V. rosea* subvar. *atrichocarpa* Maire in Bull. Soc. Hist. Nat. Afrique N. 20: 31. 1929.

= *V. rosea* f. *ciliatisepala* Maire in Bull. Soc. Hist. Nat. Afrique N. 31: 33. 1940 – **Lectotype (designated here)**: Gd. atlas oriental: Falaises calc. des les gorges de l’Akka-n-Ouayad, á 2000 m, 19 Jun 1936, *L. Emberger s.n.* (RAB No. 32331 [photo!]; isolectotypes: RAB Nos. 32333 [photo!] 32334 [photo!], 32335 [photo!] & 32336 [photo!]).

Syntypes. – RAB Nos. 32330 [photo!] & 32332 [photo!].

= *V. rosea* var. *glabrescens* Emb. & Maire in Bull. Soc. Hist. Nat. Afrique N. 28: 372. 1937 – Lectotype (designated by Andrés-Sánchez & al. in Bot. J. Linn. Soc. 159: 83. 2009): In rupibus calcareis Atlantis Majoris Orientalis: secus amnem Ansegmir in faucibus Ksiret, 1950 m, 19 Jun 1936, *R.C. Maire s.n.* (MPU barcode MPU002732!;

- isolectotypes: P barcode P00083131!, RAB No. 32327 [photo!]).
- Syntypes*. – MPU barcodes MPU002728!, MPU002729!, MPU002730! & MPU002731!, RAB Nos. 032326 [photo!] & 032338 [photo!].
- = *V. rosea* var. *lacera* Alleiz. in Bull. Soc. Hist. Nat. Afrique N. 12: 126. 1921.
- Note*. – According to JSTOR Global Plants (2015) the sheet P 00541518 is the type of *V. rosea* var. *lacera*. However, this material is not representative of the original material because it is from Terni near Tlemcen (Terni près Tlemcen) and not from Bedeau, which is the type locality indicated in the protologue.
- = *V. rosea* var. *leiocarpa* Maire in Mém. Soc. Sci. Nat. Maroc 7: 198. 1924 ≡ *V. rosea* subvar. *leiocarpa* (Maire) Maire in Bull. Soc. Hist. Nat. Afrique N. 20: 31. 1929 – Lectotype (designated by Andrés-Sánchez & al. in Bot. J. Linn. Soc. 159: 83. 2009): Sud Oranais, Djebel Mzi, Jun 1889, *J.A. Battandier s.n.* (MPU!).
- = *V. rosea* var. *macrantha* Pau ex I. Soriano in Lagasalia 18: 300. 1996 – Holotype: In saxosis calc. montis Lexhab (Gomara), 1750 m, *P. Font Quer 603* (BC No. 98439 [photo!]; isotype: MA No. 112414 [photo!], S No. 10-24976 [photo!]).
- Note*. – The voucher number corresponding to the holotype given in the original publication has been here corrected (see below, Note under *V. rosea* var. *maroccana*).
- = *V. rosea* var. *maroccana* (Pau & Font Quer) Maire in Jahandiez & Maire, Cat. Pl. Maroc 3: 687. 1934 – Lectotype (designated by Andrés-Sánchez & al. in Bot. J. Linn. Soc. 159: 83. 2009): In cistetis supra emporium Sok-et-Tnin (Beni Hadifa), 1200 m, *Font Quer s.n.* (MA No. 112523!; isolectotypes: BC No. 45039!, BM!, G!, GDA No. 027834!, MA No. 112522!, MPU barcodes MPU006925! & MPU006926!, S No. 10-22056 [photo!]).
- Note*. – When Soriano (1996) indicated the holotype for *V. rosea* var. *macrantha* he gave the voucher reference BC 45039. However, this material corresponds to *V. austriaca* var. *maroccana* (synonym of *V. rosea* var. *maroccana*) and even a revision label by Soriano confirms this identification. The lectotype of *V. rosea* var. *macrantha* is the sheet BC 98439 and this is correctly reflected in JSTOR Global Plants (2015).
- = *V. rosea* var. *pallida* Maire in Bull. Soc. Hist. Nat. Afrique N. 20: 30. 1929 – Lectotype (designated by Andrés-Sánchez & al. in Bot. J. Linn. Soc. 159: 83. 2009): Grand Atlas, Midelt, rocailles calcaires, 1500 m, 8 May 1927, *R.C. Maire s.n.* (MPU barcode MPU002082!; isolectotypes: MPU barcode MPU002159 [photo!], P barcode P00083130!).
- = *V. rosea* f. *subglabra* Maire & Weiller in Bull. Soc. Hist. Nat. Afrique N. 31: 33. 1940 – Holotype: In stipetis inter Tounfit et Midelt, solo calcareo, 1600 m, 29 Jun 1939, *R. Maire & M. Weiller, 815 bis* (MPU barcode MPU004301 [photo!]).
- = *V. rosea* subvar. *trichocarpa* Maire in Bull. Soc. Hist. Nat. Afrique N. 20: 31. 1929.
- = *V. rosea* var. *virgata* Emb. & Maire in Mém. Soc. Sci. Nat. Maroc 21–22: 44. 1929 ≡ *V. rosea* subsp. *virgata* (Emb. & Maire) Dobignard & D. Jord. in Saussurea 18: 93. 1987

– **Lectotype (designated here)**: In Atlantis Medii montibus: in quercetis infra castellum Aourirt, solo calcareo, 1250 m, 18 Jun 1927, *R.C. Maire s.n.* (MPU barcode MPU006151 [photo!]).

Syntype. – RAB No. 32343 [photo!].

- Veronica satureiifolia*** Poit. & Turpin, Fl. Paris.: 18, t. 17. 1809 (“*satureiaefolia*”, Art. 60.8 *ICN*) ≡ *V. prostrata* var. *satureiifolia* (Poit. & Turpin) Rechb., Fl. Germ. Excurs.: 368. 1831–1832 (“*saturejaefolia*”) ≡ *V. prostrata* f. *satureiifolia* (Poit. & Turpin) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 22. 1910 (“*saturejaefolia*”) – **Lectotype (designated here)**: [illustration in] Poiteau & Turpin, Fl. Paris.: 18, t. 17. 1809 – **Epitype (designated here)**: Francia, Seine-et-Marne, Forêt de Fontainebleau. Champ Minette en la carretera de Orleans (N152) entre Fontainebleau y Ury, prados sobre sustrato calcáreo en borde de pinar, 89 m, 48.38936°N, 02.68382°E, 21 May 2014, *N. Padilla-García & N. Machon NPG2* (SALA No. 154213!).
- = *V. prostrata* subsp. *scheereri* J.-P. Brandt in Bull. Soc. Neuchâtel. Sci. Nat. 84: 80. 1961 ≡ *V. scheereri* (J.-P. Brandt) Holub in Folia Geobot. Phytotax. 8: 177. 1973 ≡ *V. austriaca* subsp. *scheereri* (J.-P. Brandt) Jauzein, Fl. Île-de-France: 31. 2013 – Holotype: (NEU) [no further information available].
- *V. prostrata* sensu auct. pl., non L., Sp. Pl., ed. 2: 17. 1762.

Note. – In the protologue of *V. satureiifolia* Poiteau & Turpin (1809) gave the following indications: “M. Thuillier a découvert cette espèce en 1802 à Rony, dans le parc du duc de Gèvres. Il paroît qu’elle étoit parfaitement inconnue avant cette époque, et que l’échantillon sans nom qu’en possède M. de Jussieu, et sur lequel ce célèbre botaniste n’a aucun renseignement, lui a été communiqué par une personne à qui M. Thuillier avoit indiqué le lieu où elle croissoit.” We revised the main herbaria that lodge material from Poiteau and Turpin, but did not find relevant material for typification purposes. There is one sheet at Jussieu’s herbarium in P that can be determined as *V. satureiifolia*. However, this specimen has no indication on the date, nor the place of collection. Moreover, although Poiteau & Turpin (1809) cited a sheet from Jussieu, they did not clearly state that they examined this material before the publication of the name. A revision label by these authors is also not found on the sheet. Therefore the sheet from Jussieu cannot be considered original material with certainty.

Hence, the illustration in Poiteau & Turpin (1809) seems to be the only extant original material relevant for the typification of *V. satureiifolia*. This illustration is, however, not drawn with much precision and details concerning the indumentum (mainly that of the leaves, calyx and capsule), which are important to identify the species and distinguishing it from *V. prostrata*, are not well depicted. The choice of this illustration does not provide an unambiguous lectotype. In this situation, we designate an epitype for purposes of precise application of the name *V. satureiifolia*. Since the Fontainebleau forest is one of the localities where this plant has traditionally been collected, we have selected an epitype from our own material collected in the Fontainebleau forest.

The epithet “*satureiifolia*”, published in 1809 (corrected from “*satureiaefolia*”, Art. 60.8 *ICN*), was later combined under *V. prostrata* by some authors and it was used by botanists during the 19th and the beginning of the 20th century, either as a variety (e.g., Desvaux, 1809; Roemer & Schultes, 1817; Dobel, 1835; Hooker, 1839; Douin, 1926) as a form (e.g., Watzl, 1910; Heimerl, 1911), or as a separate species (e.g., Dumortier, 1827; Haussknecht, 1894), but never as a subspecies.

Veronica prostrata subsp. *scheereri* was described by J.-P. Brandt in 1961 to name those tetraploid plants from western Europe, which are morphologically similar to the diploid *V. prostrata*. Holub (1973) based on differences in morphology, distribution and ploidy level proposed the specific rank for this taxon. The epithet “*scheereri*” (as *V. scheereri* (J.-P.Brandt) Holub, *V. prostrata* subsp. *scheereri* J.-P.Brandt or *V. austriaca* subsp. *scheereri* (J.-P.Brandt) Jauzein) has been widely used since then in modern Floras, Red Lists and internet resources (e.g., Hartl, 1966; Walters & Webb, 1972; Hess & al., 1980; Haeupler & Muer, 2000; Martínez-Ortega & al., 2009; Tison & Foucault, 2014; Marhold, 2011; National Red List, 2015). Martínez-Ortega & al. (2009) pointed out already the possibility that *V. scheereri* and *V. satureiifolia* are the same species. This taxonomic identity remained unclear for many years, as illustrated, for instance, by the fact that The Plant List (2015) considers *V. satureiifolia* as an unresolved name (<http://www.theplantlist.org/tpl1.1/record/kew-2462131>). In spite of this uncertainty, in Fischer (2011) *V. satureiifolia* appears already as the correct name for *V. scheereri*.

A cytotypic survey of *V.* subsect. *Pentasepalae* associated with the present nomenclatural study (Rojas-Andrés & al., in prep.) has recently revealed that those populations traditionally identified as *V. satureiifolia* occurring near Paris are tetraploid. In our opinion *V. satureiifolia* and *V. scheereri* should be considered the same species and according to the principle of priority, *V. satureiifolia* prevails at the specific level.

- Veronica sennenii*** (Pau) M.M.Mart.Ort. & E.Rico in *Anales Jard. Bot. Madrid* 57: 477. 2000 ≡ *V. prostrata* var. *sennenii* Pau in *Bol. Soc. Aragonesa Ci. Nat.* 6: 28. 1907 ≡ *V. teucrium* var. *sennenii* (Pau) Pau in *Butl. Inst. Catalana Hist. Nat.* 7(2): 29. Mar–Apr 1910 (“*sennenii*”, Art. 60.1 *ICN*) ≡ *V. sennenii* Pau ex Watzl in *Abh. K. K. Zool.-Bot. Ges. Wien* 5(5): 47. 16 Jul 1910, nom. inval., pro syn. (Art. 36.1(c) *ICN*) ≡ *V. sennenii* Pau ex Uribe-Ech. in Aizpuru & al., *Claves Fl. País Vasco*: 470. 1999, nom. inval. (Art. 41.1 *ICN*) – Lectotype (designated by Martínez-Ortega & Rico in *Anales Jard. Bot. Madrid* 57: 477. 2000): (Plantes d’Espagne) [Spain] Castille: Obarenes, prairie, 30 May 1906, *F. Sennen s.n.* (BC No. 829724!; isolectotype: BC No. 829723!).
- *V. austriaca* subsp. *vahlilii* sensu Walters & D.A.Webb in Tutin & al., *Fl. Eur.* 3: 245. 1972, pro parte, non (Gaudin) D.A.Webb in *Bot. J. Linn. Soc.* 65(2): 267. 1972.
 - *V. teucrium* sensu auct. pl., non L., *Sp. Pl.*, ed. 2: 16. 1762.

- Veronica tenuifolia*** Asso, *Syn. Stirp. Aragon.*: 2, t. 1 fig. 1. 1779 ≡ *V. austriaca* var. *tenuifolia* (Asso) Vahl, *Enum. Pl.* 1: 73.

- 1804 ≡ *V. austriaca* var. *assoana* Boiss., *Diagn. Pl. Orient.*, ser. 2, 3: 168. 1856, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*) ≡ *V. assoana* Boiss. ex Willk. in *Linnaea* 30: 120. 1859–1860, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 *ICN*) ≡ *V. austriaca* subsp. *tenuifolia* (Asso) O.Bolòs & Vigo in *Collect. Bot. (Barcelona)* 14: 98. 1983 – Lectotype (designated by Martínez-Ortega & Rico in *Taxon* 50: 548. 2001): [illustration in] Asso, *Syn. Stirp. Aragon.*: t. 1, fig. 1. 1779 – Epitype (designated by Martínez-Ortega & Rico in *Taxon* 50: 548. 2001): [Spain, Teruel] Venta del Regatillo, infra Bordón, 2 Jul 1876, *F. Loscos s.n.* [sub *Veronica assoana* Willk.] (BC No. 47405!; isoepitype: W!).
- = *V. hispanica* Pourr. ex Lange in Willkomm & Lange, *Prodr. Fl. Hispan.* 2: 601. 1870, nom. inval., pro syn. (Art. 36.1(c) *ICN*).
 - = *V. tenuifolia* var. *cadevallii* Pau in *Actas Soc. Esp. Hist. Nat.* 25: 127. 1896 [“cadevallii”].
 - = *V. tenuifolia* var. *oscensis* D.Gómez in *Folia Bot. Misc.* 3: 57. 1982 – Holotype: [Spain] Huesca, El Pueyo de Araguás, 31TBH6602, 600 m, 12 May 1981, *M. Arbellá & D. Gómez DG-350* (JACA No. 735081!).
 - *V. austriaca* var. *bipinnatifida* sensu Kunze in *Flora* 29: 638. 1846, non W.D.J.Koch, *Syn. Fl. Germ. Helv.*: 526. 1837.
 - *V. austriaca* var. *pinnatifida* sensu auct. pl., non W.D.J.Koch, *Syn. Fl. Germ. Helv.*: 526. 1837.
 - *V. multifida* sensu auct. pl., non L., *Sp. Pl.*: 13. 1753.

- Veronica tenuifolia*** subsp. *fontqueri* (Pau) M.M.Mart.Ort. & E.Rico in *Anales Jard. Bot. Madrid* 57: 477. 2000 ≡ *V. fontqueri* Pau in *Butl. Inst. Catalana Hist. Nat.* 22: 33. 1922 (“*fontquerii*”) – Lectotype (designated by Martínez-Ortega & Rico in *Anales Jard. Bot. Madrid* 57: 478. 2000): [Spain] Sierra de Gádor (Almería), 1900 m, 26 May 1921, *G. Gros s.n.* (MA No. 112416!; isolectotype: BCF No. 45080!).
- *V. austriaca* var. *polymorpha* sensu Sagredo in *Anales Jard. Bot. Madrid* 32(2): 314. 1975, non (Willd.) Sagredo in *Anales Jard. Bot. Madrid* 32(2): 314. 1975, comb. inval.
 - *V. rosea* auct. pl., non Desf., *Fl. Atlant.* 1: 13. 1798.
 - *V. teucrium* var. *pyrenaica* sensu Willk., *Suppl. Prodr. Fl. Hispan.*: 182. 1893, pro parte, non Willk. in *Linnaea* 30: 120. 1859–1860.

- Veronica tenuifolia*** subsp. *javalambrensis* (Pau) Molero & J.Pujadas in *Folia Bot. Misc.* 2: 46. 1981 ≡ *V. javalambrensis* Pau, *Not. Bot. Fl. Españ.* 1: 22. 1887 ≡ *V. teucrium* subsp. *javalambrensis* (Pau) Rivas Goday & Borja in *Anales Inst. Bot. Cavanilles* 19: 447. 1961 – Lectotype (designated by Izco & al. in *Lazaroa* 5: 178. 1983): [Spain] Jabalambre, 2000 m, 10 Jul 1887 (MA No. 112496!).
- = *V. commutata* Willk. in *Oesterr. Bot. Z.* 41: 82. 1891, nom. illeg. (Art. 53.1 *ICN*), non Seidl in Berchtold, *Oekon.-Techn. Fl. Böhm.* 1: 31. 1836.

- Veronica teucrioides*** Boiss. & Heldr. in Boissier, *Diagn. Pl. Orient.*, ser. 2, 3(3): 169. 1856 ≡ *V. austriaca* var. *teucrioides* (Boiss. & Heldr.) Halácsy, *Consp. Fl. Graec.* 2: 427. 1902 ≡ *V. orsiniana* subsp. *teucrioides* (Boiss. & Heldr.)

M.A.Fischer in Strid & Tan, Mountain Fl. Greece 2: 220. 1991 – Lectotype (designated by Martínez-Ortega & Rico in Taxon 50: 548. 2001): [Greece, Thessalia] In pratis alpinis m. Olympi Thessaliae, ad nives rara, 24 Jul 1851, *T. von Heldreich 2505* (WU No. 0072633!; isolectotypes: FI barcode FI009718 [photo!], W No. 0020483!).

- Veronica teucrium* L., Sp. Pl., ed. 2: 16. 1762 ≡ *V. florida* Salisb., Prodr. Stirp. Chap. Allerton: 92. 1796, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 ICN) ≡ *V. austriaca* subsp. *teucrium* (L.) D.A.Webb in Bot. J. Linn. Soc. 65(2): 267. 1972 ≡ *V. latifolia* var. *minor* Schrad., Fl. Germ. 1: 36. 1806, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 ICN) ≡ *V. austriaca* var. *teucrium* (L.) O.Bolòs & Vigo, Collect. Bot. (Barcelona) 14: 98. 1983 – Lectotype (designated by Fischer in Feddes Repert. 108: 117. 1997): In Misnia, Bohemia & c., Herb. Burser XIV (1): 52 (UPS-BURSER [photo!]).
- = *V. latifolia* L., Sp. Pl.: 13. 1753, nom. rej. (Martínez-Ortega & al., 2006; Brummitt, 2007) ≡ *V. maxima* Mill., Gard. Dict., ed. 8, No. 11. 1768, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 ICN) ≡ *V. teucrium* var. *latifolia* (L.) Spenn., Fl. Friburg 1: 356. 1826 ≡ *V. teucrium* subsp. *latifolia* (L.) Schmalh., Fl. Ssredn. Jushn. Rossi 2: 277. 1897 – Lectotype (designated by Webb in Bot. J. Linn. Soc. 65: 266. 1972; see also Martínez-Ortega & al., 2006): Herb. Linn. No. 26.52 (LINN!).
- = *V. pratensis* Garsault, Descr. Vertus Pl. 4: 358, pl. 617. 1767, nom. inval., opus utique oppresum (Art. 34.1 ICN).
- = *V. pseudochamaedrys* Jacq., Fl. Austriac. 1: 37, t. 60. 1773 ≡ *V. latifolia* var. *major* Schrad., Fl. Germ. 1: 35. 1806, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2 ICN) ≡ *V. teucrium* subsp. *pseudochamaedrys* (Jacq.) Nyman, Consp. Fl. Eur. 3: 545. 1881 ≡ *V. austriaca* subsp. *pseudochamaedrys* (Jacq.) Kerguelen, Index Synonym. Fl. France: 16. 1993 – Lectotype (designated by Martínez-Ortega & al. in Taxon 50: 553. 2001): Herb. Linn: 26.54 (LINN!).
- = *V. teucrium* f. *incisa* Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 35. 1910 – Type: FI? GE?
- = *V. teucrium* var. *normalis* Gren. in Grenier & Godron, Fl. France 2: 587. 1853, pro parte.
- = *V. teucrium* var. *subfloccoso-tomentosa* Bornm. ex Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 37. 1910 – **Lectotype (designated here):** Serbia borealis, Belgrad, Apr 1888, *J. Bornmüller s.n.* (WU!; isolectotype: B!).
- = ? *V. anisophylla* K.Koch in Linnaea 17: 287. 1844 ≡ *V. teucrium* var. *anisophylla* (K.Koch) Trautv. in Trudy Imp. S.-Peterburgsk. Bot. Sada 2: 574. 1873.
- = ? *V. brachysepala* F.W.Schultz in Jahresber. Pollichia 16–17: 43, fig. p. 351. 1859 ≡ *V. teucrium* f. *brachysepala* (F.W. Schultz) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 36. 1910.
- = ? *V. nitida* hort. ex Poir., Encycl. Suppl. 5: 467. 1817 ≡ *V. luteitiana* Schult., Mant. 1: 109. 1822, nom. illeg., nom. superfl. (Arts. 52.1 and 52.2, ICN).
- = ? *V. teucrium* var. *integerrima* Trautv. in Trudy Imp. S.-Peterburgsk. Bot. Sada 4: 173. 1876.

- = ? *V. teucrium* var. *lasiocalyx* Beck, Fl. Nieder-Österreich: 1054. 1893 ≡ *V. teucrium* f. *lasiocalyx* (Beck) Watzl in Abh. K. K. Zool.-Bot. Ges. Wien 5(5): 37. 1910.
- = ? *V. teucrium* var. *minor* Trautv. in Byull. Moskovsk. Obshch. Isp. Prir., Otd. Biol. 39(2): 439. 1866.
- = ? *V. teucrium* var. *oxypetala* Beck, Fl. Nieder-Österreich: 1054. 1893.

- Veronica teucrium* var. *angustifolia* Vahl, Enum. Pl. 1: 76. 1804 ≡ *V. angustifolia* (Vahl) Bernh., Ehrenpreisart. Südl. Deutschl.: 35. 1806 ≡ *V. teucrium* [II] *vahlilii* Gaudin, Fl. Helv. 1: 22. 1828 ≡ *V. austriaca* subsp. *vahlilii* (Gaudin) Hartl in Hegi, Ill. Fl. Mittel-Eur. 6(1): 210. 1966, nom. inval. (art. 36.1 ICN) ≡ *V. austriaca* subsp. *vahlilii* (Gaudin) D.A.Webb in Bot. J. Linn. Soc. 65(2): 267. 1972 – Lectotype (designated by Martínez-Ortega & Rico in Anales Jard. Bot. Madrid 57: 479. 2000): [illustration] “*Teucrium* IV tertia species” in Clusius, Rar. Pl. Hist.: 349, fig. 2. 1601 – Epitype (designated by Martínez-Ortega & Rico in Anales Jard. Bot. Madrid 57: 479. 2000): [Switzerland] Bonmont, 1817, *J. Gaudin s.n.* [sub *V. teucrium* II *Vahlilii* b *angustifolia*] (LAU Herb. Gaudin!).
- = *V. canescens* Bastard, Suppl. Fl. Maine-et-Loire: 21. 1812, nom. illeg. (Art. 53.1 ICN), non Schrad., Comm. Veron. Spic.: 19. 1803 ≡ *V. teucrium* var. *vestita* Gren. & Godr., Fl. France 2: 587. 1852 ≡ *V. bastardii* Boreau, Fl. Centre France, ed. 3, 2: 487. 1857 (“*Bastardi*”, Art. 60.1 ICN) – Lectotype (designated by Martínez-Ortega & Rico in Anales Jard. Bot. Madrid 57: 479. 2000): Pelouses calcaires de Baugé, de Chaudefonds, de Chalones (illegible word), *T. Bastard s.n.* (BM barcode BM000069011!).
- = *V. austriaca* subsp. *vahlilii* sensu Walters & D.A.Webb in Tutin & al., Fl. Eur. 3: 245. 1972, pro parte, non (Gaudin) D.A.Webb in Bot. J. Linn. Soc. 65(2): 267. 1972.
- = *V. orsiniana* sensu Fischer in Jäger, Exkursionsflora Deutschl. Gefäßpflanzen: Grundband: 650. 2011, non Ten., Fl. Neapol. Prodr. App. 5: 4. 1826.
- = *V. orsiniana* sensu Tison & Foucault, Fl. Gallica: 900. 2014, non Ten., Fl. Neapol. Prodr. App. 5: 4. 1826.

Veronica turrilliana Stoj. & Stef. in J. Bot. 61: 220. 1923 – Lectotype (designated by Peev in Kozuharov & Kuzmanov, Fl. Reipubl. Bulgaricae: 152. 1995): In dry calcareous rocks, north of Malko Tarnovo, 6 May 1921, *N. Stojanov & B. Stefanov s.n.* (SOA No. 10187).

Syntype. – K barcode K000606781!

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