



<https://doi.org/10.15407/ukrbotj80.02.133>

RESEARCH ARTICLE

A new nomenclatural combination in *Reynoutria* (*Polygonaceae*)

Ihor G. OLSHANSKYI * , Svitlana I. ANTONENKO

M.G. Kholodny Institute of Botany, National Academy of Sciences of Ukraine,
2 Tereshchenkivska Str., Kyiv 01601, Ukraine

* Corresponding authors email: olshansky1982@ukr.net

Abstract. The genus *Reynoutria* includes ca. six species native to East Asia. Hybridization is rather common in this genus. The hybrid *Reynoutria* \times *bohemica* Chrtek & Chrtková is currently widespread in Europe, Asia, North and partly South America, Australia and New Zealand. A hybrid between *Fallopia compacta* (Hook. f.) G.H. Loos & P. Keil and *F. sachalinensis* (F. Schmidt) Nakai was described recently as *Fallopia* \times *moravica* Hodálová & Mereda. Since we accept the genus *Reynoutria* as separate from *Fallopia*, we propose a new combination for this hybrid: *Reynoutria* \times *moravica* (Hodálová & Mereda) Olshanskyi & Antonenko, comb. nov.

Keywords: *Reynoutria*, *Fallopia*, *Polygonaceae*, *Fallopia* \times *moravica*, *Reynoutria* \times *moravica*, hybrid, nomenclature

Introduction

The genus *Reynoutria* Houtt. includes ca. six currently recognized species native to East Asia (Mereda et al., 2019; Desjardins et al., 2023a, b; etc.). Also, hybridization is common in this genus. In particular, the hybrid *Reynoutria* \times *bohemica* Chrtek & Chrtková (*Reynoutria japonica* Houtt. \times *Reynoutria sachalinensis* (F. Schmidt) Nakai) is widespread in Europe, Asia, North and partly South America, Australia and New Zealand; in many regions it is completely naturalized and invasive, occurring more commonly than its parent species (Zika, Jacobson,

2003; Saldaña et al., 2009; Shevera, 2017; Tippery et al., 2021; Desjardins et al., 2023b; etc.). Traditionally researchers mainly considered species of the currently recognized genera *Fallopia* Adans. and *Reynoutria* as part of the genus *Polygonum* L. (e.g., Klokov, 1952; Ohwi, 1965; Zika, Jacobson, 2003; etc.). Later some researchers included *Reynoutria* in *Fallopia* (Ronse Decraene, Akeroyd, 1988; Bailey, Stace, 1992; Mereda et al., 2023; etc.), while others considered *Reynoutria* as a separate genus (Webb, 1964; Holub, 1970; Schuster et al., 2011b; Desjardins et al., 2023a; etc.). Species included in *Reynoutria* are closely related to taxa of *Muehlenbeckia* Meisn.,

ARTICLE HISTORY. Submitted 02 April 2023. Revised 25 April 2023. Published 14 June 2023

CITATION. Olshanskyi I.G., Antonenko S.I. 2023. A new nomenclatural combination in *Reynoutria* (*Polygonaceae*). *Ukrainian Botanical Journal*, 80(2): 133–135. <https://doi.org/10.15407/ukrbotj80.02.133>

This is an open access article under the CC BY license (<https://creativecommons.org/licenses/by/4.0/>)

Fallopia s. str., and the newly erected genus *Parogonium* (Haraldson) Desjardins & J.P. Bailey (formerly recognized as *Fallopia* sect. *Parogonium* Haraldson); however, results of the most recent molecular phylogenetic studies confirmed that *Reynoutria* form a well-supported monophyletic clade and is thus better treated as a taxon of generic rank (Schuster et al., 2011b; Desjardins et al., 2023a).

A new hybrid between *Fallopia compacta* (Hook.f.) G.H. Loos & P. Keil (*F. japonica* var. *compacta* (Hook. f.) J.P. Bailey) and *F. sachalinensis* (F. Schmidt) Nakai has been described recently as *Fallopia ×moravica* Hodálová & Meredá. It was named after Moravia, one of the historical regions of the Czech Republic, from where it has been described (Hodálová et al., 2022). Since we accept *Reynoutria* as a separate genus, we propose here the new nomenclatural combination for that hybrid.

Nomenclature

Reynoutria ×moravica (Hodálová & Meredá) Olshanskyi & Antonenko, comb. nov.

Basionym: *Fallopia ×moravica* Hodálová & Meredá, *Phytotaxa* 572(2): 130 (2022).

Type (Hodálová et al., 2022): CZECH REPUBLIC "Moravia, Olomouc-Černovír borough, left bank of the Morava River, alluvium, Lat. 49°36'24"N; Long. 17°15'26"E, elev. 208 m., 27 June 2022, Hodálová, I. & Meredá, P. Jr., population no. 495, ind. no. 1" (SAV0013900).

Hybrid formula (Hodálová et al., 2022): *Reynoutria compacta* (Hook. f.) Nakai (*R. japonica* var. *compacta* (Hook. f.) Moldenke) × *Reynoutria sachalinensis* (F. Schmidt) Nakai [in Hodálová et al. (2022): *Fallopia compacta* (Hook. f.) G.H. Loos & P. Keil × *Fallopia sachalinensis* (F. Schmidt) Ronse Decr.].

REFERENCES

- Bailey J.P., Stace C.A. 1992. Chromosome number, morphology, pairing, and DNA values of species and hybrids in the genus *Fallopia* (Polygonaceae). *Plant Systematics and Evolution*, 180(1–2): 29–52. <https://doi.org/10.1007/BF00940396>
- Desjardins S.D., Bailey J.P., Zhang B., Zhao K., Schwarzacher T. 2023a. New insights into the phylogenetic relationships of Japanese knotweed (*Reynoutria japonica*) and allied taxa in subtribe *Reynoutriinae* (Polygonaceae). *PhytoKeys*, 220: 83–108. <https://doi.org/10.3897/phytokeys.220.96922>
- Desjardins S.T., Pashley C.H., Bailey J.P. 2023b. A taxonomic, cytological and genetic survey of Japanese knotweeds s. l. in New Zealand indicates multiple secondary introductions from Europe and a direct introduction from Japan. *New Zealand Journal of Botany*, 61(1): 49–66. <https://doi.org/10.1080/0028825X.2022.2090848>
- Hodálová I., Mártonfióvá L., Skokanová K., Španiel S., Meredá P. Jr. 2022. *Fallopia ×moravica* (Polygonaceae), a new hybrid between *Fallopia compacta* and *F. sachalinensis*. *Phytotaxa*, 572(2): 123–143. <https://doi.org/10.11646/phytotaxa.572.2.1>

At present *Reynoutria ×moravica* (tetraploid, $2n = 44$) is known from the Czech Republic, Great Britain, and New Zealand (Bailey, Stace, 1992; Pashley, 2003; Hodálová et al., 2022; Desjardins et al., 2023b), but it may be expected in other regions where its parent species co-occur, or where this hybrid may occur as cultivated and escaped. One parent species of the newly revealed hybrid, *R. sachalinensis*, is rather widespread in cultivation and as escaped in Ukraine, while the second parent taxon is proposed for sale by several Ukrainian commercial horticultural web sites under the names *Fallopia japonica* var. *compacta* or *Reynoutria japonica* var. *compacta* and is thus already cultivated in our country (see, e.g., <https://novyjsad.com.ua/product/falopiia-iaponska-forma-kompaktna-rosea/>, etc.). Because of that in the future we may expect the spread of *Reynoutria ×moravica* in our country as well, and thus the new combination (see above) will be needed for an updated checklist of vascular plants of Ukraine and will be at least mentioned there as an alien potentially expected in our country.

Acknowledgments

The authors are grateful to Sergei L. Mosyakin (M.G. Kholodny Institute of Botany, National Academy of Sciences of Ukraine, Kyiv, Ukraine) and anonymous reviewers for their comments and editing.

Ethics Declaration

The authors declare no conflict of interest.

ORCID

I.G. Olshanskyi:  <https://orcid.org/0000-0002-8615-7054>

- Holub J. 1970. *Fallopia* Adans. 1763 instead of *Bilderdykia* Dum. 1827. *Folia Geobotanica et Phytotaxonomica*, 6(2): 171–177. <https://doi.org/10.1007/BF02851760>
- Klokov M.V. 1952. *Polygonum*. In: *Flora URSS*. Vol. 4. Ed. M.I. Kotov. Kyiv: Vydavnytstvo AN URSS, pp. 190–232. [Клоков М.В. 1952. Спориш, гірчак – *Polygonum*. В кн.: *Флора УРСР*. Т. 4. Ред. М.І. Котов. Київ: Видавництво Академії наук Української РСР, с. 190–232].
- Mereďa P. Jr., Koláriková Z., Hodálová I. 2019. Cytological and morphological variation of *Fallopia* sect. *Reynoutria* taxa (*Polygonaceae*) in the Krivánska Malá Fatra Mountains (Slovakia). *Biologia (Bratislava)*, 74: 215–236. <https://doi.org/10.2478/s11756-018-00168-w>
- Mereďa P.Jr., Mártonfiová L., Skokanová K., Španiel S., Hodálová I. 2023. Cytogeography of invasive knotweeds (*Fallopia* sect. *Reynoutria*) in central Europe: rare aneuploids and evidence for a climatically determined distribution. *Preslia*, 95(2): 241–266. <https://doi.org/10.23855/preslia.2023.241>
- Ohwi J. 1965. *Flora of Japan*. Washington: Smithsonian Institution, ix + 1067 pp. <https://doi.org/10.5962/bhl.title.43786>
- Pashley C.H. 2003. *The use of molecular markers in the study of the origin and evolution of Japanese knotweed sensu lato*. PhD Thesis. Leicester: University of Leicester. xiii + 344 pp. Available at: https://figshare.le.ac.uk/articles/thesis/The_use_of_molecular_markers_in_the_study_of_the_origin_and_evolution_of_Japanese_Knotweed_sensu_lato/10102994
- Ronse Decraene L.P., Akeroyd J.R. 1988. Generic limits in *Polygonum* and related genera (*Polygonaceae*) on the basis of floral characters. *Botanical Journal of the Linnean Society*, 98(4): 321–371. <https://doi.org/10.1111/j.1095-8339.1988.tb01706.x>
- Saldaña A., Fuentes N., Pfanzelt S. 2009. *Fallopia japonica* (Houtt.) Ronse Decr. (*Polygonaceae*): A new record for the alien flora of Chile. *Gayana Botánica*, 66(2): 283–285.
- Schuster T.M., Reveal J.L., Kron K.A. 2011a. Phylogeny of *Polygoneae* (*Polygonaceae: Polygonoideae*). *Taxon*, 60(6): 1653–1666. <https://doi.org/10.1002/tax.606010>
- Schuster T.M., Wilson K.L., Kron K.A. 2011b. Phylogenetic relationships of *Muehlenbeckia*, *Fallopia*, and *Reynoutria* (*Polygonaceae*) investigated with chloroplast and nuclear sequence data. *International Journal of Plant Sciences*, 172(8): 1053–1066. <https://doi.org/10.1086/661293>
- Shevera M.V. 2017. *Reynoutria xbohemica* (*Polygonaceae*), a potentially invasive species of the Ukrainian flora. *Ukrainian Botanical Journal*, 74(6): 548–555. [Шевера М.В. *Reynoutria xbohemica* (*Polygonaceae*) – потенційно інвазійний вид у флорі України. *Український ботанічний журнал*, 74(6): 548–555]. <https://doi.org/10.15407/ukrbotj74.06.548>
- Tippary N.P., Olson A.L., Wendtlandt J.L. 2021. Using the nuclear LEAFY gene to reconstruct phylogenetic relationships among invasive knotweed (*Reynoutria*, *Polygonaceae*) populations. *Invasive Plant Science and Management*, 14(2): 92–100. <https://doi.org/10.1017/inp.2021.14>
- Webb D.A. 1964. *Reynoutria* Houtt. In: *Flora Europaea*. Vol. 1. Eds. T.G. Tutin, V.H. Heywood, N.A. Burges, D.H. Valentine, S.M. Walters, D.A. Webb. Cambridge: Cambridge University Press, p. 81.
- Zika P.F., Jacobson A.L. 2003. An overlooked hybrid Japanese knotweed (*Polygonum cuspidatum* × *sachalinense*; *Polygonaceae*) in North America. *Rhodora*, 105(922): 143–152.

І.Г. ОЛЬШАНСЬКИЙ, С.І. АНТОНЕНКО

Інститут ботаніки ім. М.Г. Холодного НАН України,
вул. Терещенківська 2, Київ 01601, Україна

Нова номенклатурна комбінація в роді *Reynoutria* (*Polygonaceae*)

Реферат. Рід *Reynoutria* включає близько шести видів, що поширені у Східній Азії. Рослини цього роду часто гібридизують. Гібрид *Reynoutria xbohemica* Chrték & Chrtková нині є широко поширеним в Європі, Азії, Північній Америці, в окремих регіонах Південної Америки, в Австралії та Новій Зеландії. Традиційно дослідники розглядали види родів *Fallopia* та *Reynoutria* у складі роду *Polygonum*. Пізніше одні з них включали рід *Reynoutria* до роду *Fallopia*, тоді як інші розглядали рід *Reynoutria* самостійним. Хоча останній близький до родів *Muehlenbeckia*, *Fallopia* s. str. і нещодавно визнаного роду *Parogonium* (що раніше розглядався як секція *Parogonium* у роді *Fallopia*), та все ж результати молекулярно-філогенетичних досліджень свідчать, що *Reynoutria* є монофілетичним таксоном. Також, нещодавно був описаний гібрид між *Fallopia compacta* (Hook. f.) G.H. Loos & P. Keil і *F. sachalinensis* (F. Schmidt) Nakai під біномінальною назвою *Fallopia xmoravica* Hodálová & Mereďa. Оскільки ми приймаємо рід *Reynoutria* як самостійний, то за пропонували нову комбінацію для цього гібриду: *Reynoutria xmoravica* (Hodálová & Mereďa) Olshanskyi & Antonenko, comb. nov. На сьогодні *Reynoutria xmoravica* (тетраплоїд, 2n = 44) трапляється в Чехії, Великій Британії та Новій Зеландії. У майбутньому можна очікувати на появу *Reynoutria xmoravica* і в Україні.

Ключові слова: *Fallopia*, *Fallopia xmoravica*, *Polygonaceae*, *Reynoutria*, *Reynoutria xmoravica*, гібрид, номенклатура