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Boreocarya and *Globocarya*, new names in the extinct Juglandaceae of Northern Eurasia

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ABSTRACT. *Sphaerocarya* Dorofeev 1970, being a junior homonym of extant angiosperms *Sphaerocarya* Wallich 1827 (Santalaceae) and *Sphaerocarya* Dalzell ex de Candolle 1857 (Olacaceae), is replaced by a new name, *Globocarya* Doweld nom. nov. (fossil Juglandaceae). The aberrant fossil species *Sphaerocarya uralensis* Dorofeev is re-classified and segregated into a new distinct genus, *Boreocarya* Doweld, gen. nov.

KEYWORDS: Juglandaceae, fruits, botanical nomenclature, Miocene, Urals, Western Siberia

The homonymy of the fossil generic name *Sphaerocarya* Dorofeev (1970: 1600, 1971: 36, 37), established for the endemic juglandaceous fruit endocarps from the Miocene sediments of Siberia, was determined during editorial work for The International Fossil Plant Names Index (IFPNI), a global registry of fossil plant names from 1820 (IFPNI 2014–onwards). *Sphaerocarya* Wallich (1827) (Santalaceae) and *Sphaerocarya* Dalzell ex de Candolle (1857) (Olacaceae) were previously validly published. The homonymic fossil generic name *Sphaerocarya* Dorofeev is in current use and has no synonyms; a new generic replacement name, ***Globocarya*** Doweld **nom. nov.,** is proposed in accordance with the International Code of Nomenclature for algae, fungi, and plants (Melbourne Code: McNeill et al. 2012).

New nomenclatural acts (nomina nova) were registered through a pilot registration version in the International Fossil Plant Names Index (IFPNI 2014–), with unique persistent registration bar codes (LSIDs) listed under each newly proposed fossil plant taxon (Doweld 2015, 2016).

Globocarya Doweld, **nom. nov.** ≡ *Sphaerocarya* Dorofeev, p. 1600. 1970, nom. illeg.

non *Sphaerocarya* Wallich in Roxburgh, p. 371. 1824 (*Santalaceae*)

nec *Sphaerocarya* Dalzell ex de Candolle, p. 629. 1857 (*Olacaceae*)

IFPNI: 7545963F-1858-4E7C-B0E1-030899C7E34B.

Type species. ***Globocarya nikitinii*** (Dorofeev) Doweld, **comb. nov.**

Basionym. *Sphaerocarya nikitinii* Dorofeev, p. 1602, pl. 2, fig. 13; text-fig. 2: 3. 1970.

Synonymy.

1960 *Carya nikitinii* Dorofeev, p. 212, fig. 1: 3, 4, *nom. nud*.

1962 *Carya nikitinii* Dorofeev, p. 391, pl. 78, figs 13, 14, *nom. inval*. (ICN, Art. 40.1).

1963 *Carya nikitinii* Dorofeev, p. 138, pl. 19, figs 5–10; text-fig. 19, *nom. inval*. (ICN, Art. 40.1).

1970 *Sphaerocarya nikitinii* Dorofeev, p. 1602, pl. 2, fig. 13; text-fig. 2: 3.

1971 *Sphaerocarya nikitinii* Dorofeev, p. 37, pl. 6, fig. 11, 12, [*isonym*], *nom. inval*. (ICN, Art. 40.1).

Holotype: [fossil fruit endocarp] Kireevskoe village, Ob' river, Western Siberia, Tomsk region, Russian Federation (specimen # K388·200 [collection K-517], Komarov Botanical Institute, Russian Academy of Sciences, St.-Petersburg, Russian Federation).

IFPNI: 4AB4A590-0BB0-4F94-A990-72C13EC8F774.

Occurrence. Miocene; Western Siberia.

There were initial attempts to establish the fossil species as *Carya nikitinii* Dorofeev, but either the taxon lacked a description (Dorofeev 1960: 212) or the author failed to designate the holotype (Dorofeev 1962: 391; 1963: 138). All these nomenclatural acts were therefore invalid. When establishing the distinct generic name *Sphaerocarya*, Dorofeev met all necessary conditions of the ICN for the valid publication of a new species (description, holotype designation, illustrations), although he formally specified his nomenclatural act as a 'new combination'. Hence, the binomen *Sphaerocarya nikitinii* Dorofeev for the distinctive fossil fruits was not validly published until 1970 (Dorofeev 1970: 1602). The publication of the work by Dorofeev in a journal has precedence of nearly a month (1 December, 1970) over his monograph Tertiary floras of the Urals [Третичные флоры Урала], although published with the title year '1970' but actually delayed: 6 January, 1971 [Archive of the Russian Book Chamber; date of the receipt of obligatory copies and their start of distribution; see IFPNI bibliographic description of publications: http://fossilplants.info/publications/648E7F4E-ABD1-4D3B-A1EF-74C901A4CEC4 and http://fossilplants.info/publications/4C6E308E-8BA1-49D1-869B-205AF7BEDFB7].

Boreocarya Doweld, **gen. nov.**

Diagnosis. Fruit endocarps lacking pericarpium, globose to depressed-globose, 4.5–6.7× 6.6–7.7 mm, sometimes with compressed sides (bearing rudimentary wing); surface almost smooth. Walls thick, woody; secondary sept low or ¼ locule high, with distinctive median infundibuliform notch running to hilum.

IFPNI: 4D6999FE-E5F4-4073-80F7-0D1DFF0C385D.

Type species. ***Boreocarya uralensis*** (Dorofeev) Doweld, **comb. nov.**

Basionym. *Sphaerocarya uralensis* Dorofeev, p. 1602, pl. 2, fig. 8, text-fig. 2: 6. 1970.

Synonymy.

1971 *Sphaerocarya uralensis* Dorofeev, p. 36, pl. 6, fig. 1–10, text-fig. 3 [*isonym*].

Holotype. [fossil fruit endocarp] Polevskoj, Sverdlovsk region, Russian Federation (specimen # K464·200 [collection K464 (mistyped K467)], Komarov Botanical Institute, Russian Academy of Sciences, St.-Petersburg, Russian Federation).

IFPNI: 19730CC5-A33F-4EDD-B919-814BD4AD88BC.

Occurrence. Miocene; Urals.

Iljinskaja (1994), following Manchester (1987), questioned the relationships of the second fossil species, *Sphaerocarya uralensis* Dorofeev (1970: 1602, 1971: 36), originally described on the basis of fruit endocarps from the similar Miocene sediments of the Urals. They noticed differences in endocarp structure (and the lack of the outer zones of the pericarp in the fossil state) and a very important feature of these fossil fruits – a rudimentary wing – which precludes the possibility of relating both fossil species in a single genus. Therefore, for this aberrant fossil species a new generic repository is suggested and validated, ***Boreocarya*** Doweld **gen. nov.**

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REFERENCES

CANDOLLE A. DE. 1857. Prodromus systematis naturalis regni vegetabilis, sive Enumeratio contracta ordinum, generum, specierumque plantarum hucusque cognitrum, juxta methodi naturalis normas digesta. Vol. 14, Pars 2. Treuttel et Würtz, Paris–Strasbourg–London.

DOROFEEV P.I. 1960. Novye dannye o tretichnykh florakh Kireevskovo Jara na Obi [New data on the Tertiary floras of Kireevsky Jar on Ob']. Dokl. Akad. Nauk SSSR, 133: 211–213. [In Russian].

DOROFEEV P.I. 1962. Megaspory, semena I plody iz tretichnykh otlozheny [Megaspores, seeds and fruits from the Tertiary sediments]. Trudy Sibirsk. Nauchno-Issled. Inst. Geol. Geofiz. Miner. Syr., 22(1): 369–415. [In Russian].

DOROFEEV P.I. 1963. Tretichnye flory Zapadnoj Sibiri [Tertiary floras of Western Siberia]. Izdatel'stvo Akademii Nauk SSSR, Moscow & Leningrad. [In Russian].

DOROFEEV P.I. 1970. K sistematike nekotorykh iskopaemykh Juglandaceae [On the systematics of some fossil Juglandaceae]. Bot. Zhurn. (Moscow & Leningrad), 55: 1596–1604 [In Russian].

DOROFEEV P.I. 1971 ["1970"]. Tretichnye flory Urala [Tertiary floras of the Urals]. Izdatel'stvo "Nauka", Leningradskoe otdelenie, Leningrad. [In Russian].

DOROFEEV P.I. 1994. *Sphaerocarya* Dorof.: 93–96. In: Budantsev L. (ed.), Iskopaemye tsvetkovye rastenija Rossii i sopredel'nykh gosudarstv [Magnoliophyta Fossilia Rossiae et civitatum finitimarum]. Vol. 3. V. L. Komarov Botanical Institute, St.-Petersburg. [In Russian].

DOWELD A.B. 2015. The International Fossil Plant Names Index (IFPNI): First Year Report. Inter. Organ. Palaeobot. (IOP) Newsletter, 108: 4–5, Appendix A: [1]–[8].

DOWELD A.B. 2016. The International Fossil Plant Names Index (IFPNI): A global registry of scientific names of fossil organisms started. Palaeobotanist, 65: 203–208.

ILJINSKAJA I.A. 1994. *Sphaerocarya* Dorof. Note 3: 95. In: Budantsev L. (ed.), Iskopaemye tsvetkovye rastenija Rossii i sopredel'nykh gosudarstv [Magnoliophyta Fossilia Rossiae et civitatum finitimarum]. Vol. 3. V. L. Komarov Botanical Institute, St.-Petersburg. [In Russian].

INTERNATIONAL FOSSIL PLANT NAMES INDEX (IFPNI). 2014–onwards. Global registry of scientific names of fossil organisms covered by the International Code of Nomenclature for Algae, Fungi, and Plants (formerly International Code of Botanical Nomenclature) and International Code of Zoological Nomenclature. [online]. [Cited 09 June 2016]. Available from: http://www.fossilplants.info.

MCNEILL J., BARRIE F.R., BUCK W.R., DEMOULIN V., GREUTER W., HAWKSWORTH D.L., HERENDEN P.S., KNAPP S., MARHOLD K., PRADO J., PRUD'HOMME VAN REINE W.F., SMITH J.F., WIERSEMA J.H. & TURLAND N.J. (eds) 2012. International Code of Nomenclature for algae, fungi and plants (Melbourne Code) adopted by the Eighteen International Botanical Congress Melbourne, Australia, July 2011. Koeltz Scientific Books, Königstein. Regnum Vegetabile 154: 1–240.

MANCHESTER S.R. 1987. The fossil history of the Juglandaceae. Monogr. Syst. Bot. Missouri Bot. Gard., 21: 1–137.

ROXBURGH W. 1824. Flora indica; or descriptions of Indian plants, by the late William Roxburgh, edited by William Carey, D.D. to which are added descriptions of plants more recently discovered by Nathaniel Wallich. Vol. 2. Mission Press, Serampore.