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New combinations in *Struthiopteris spicant* for the European flora

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Delimitation of genera in Blechnaceae Newman (1844: 8), a subcosmopolitan fern family with ca. 250 species, has remained uncertain for a long time. During the last decade, evidence has been accumulating about the polyphyletism within *Blechnum* Linnaeus (1753: 1077) (e.g. Shepherd *et al*. 2007, Rothfels *et al*. 2012, Gabriel y Galán *et al*. 2013, Perrie *et al*. 2014). Recent molecular studies (Gasper *et al*. 2016a) lead to an updated classification attempting to put morphological characters into a natural, phylogenetic relation (Gasper *et al*. 2016b). Because of these changes, the species most people associate with the genus *Blechnum*, *B. spicant* (Linnaeus 1753: 1066) Roth (1794: 56), is now treated under *Struthiopteris* Scopoli (1754: 25).

Struthiopteris spicant (L.) F.W.Weiss (1770: 287), a widely distributed plant in the Northern Hemisphere, is characterized by having strongly dimorphic fronds (Lawalrée 1964), but it shows certain morphological variability that has led to the recognition of several forms, which have been taxonomically treated in several ways, the varietal rank being the currently accepted. Besides very common var. *spicant*, there are two rare, local forms with monomorphic fronds: var. *fallax* Lange (1880: 11) from Iceland (Tigerschiöld 2000) and var. *homophyllum* Merino (1898: 108) from Iberian Peninsula (Ormonde 1986).

When *Blechnum spicant* was transferred to the genus *Struthiopteris*, the two varieties have been omitted (Gasper *et al*. 2016b). Thus, we here provide the required combinations that enable further formal recognition of the endemic Icelandic and Iberian forms while conserving their ranks. We also provide updated field observations that support their status.

Struthiopteris spicant var. ***fallax*** (Lange) Wasowicz & Gabriel y Galán, *comb. nov.*

Basionym: *Blechnum spicant* var. *fallax* Lange (1880: 11–12).

Lectotype (designated by Wasowicz *et al*. 2017):—ISLAND. Tunguhver, varme Kilde, *Ch. Grønlund s.n.* (C! barcode C10021769, left hand specimen, ”no. 2” and its separate parts) .

Notes:—Plants classified to the var. *fallax* are very small, with monomorphic leaves 2–5 cm long. All leaves in this taxon are fertile and in shape similar to the sterile ones in var. *spicant*. Variety *fallax* was first discovered by Danish botanist Christian Grønlund during his excursion to Iceland in 1876 (Grønlund 1881). He found the plant growing on the cone of a large hot spring called Deildartunguhver in western Iceland. Grønlund passed his herbarium material to Lange (Löve & Löve 1966), who described var. *fallax* on the basis of these collections (Lange 1880). During summer 2016 all locations of plants previously classified as var. *fallax* were visited by the authors. This study proved that var. *fallax* is still present only in one locality (*locus classicus*) where it forms a large population of several hundred individuals that are morphologically uniform and conform to the description of var. *fallax* given by Lange. In the vicinity of all other hot springs the presence of typical, heterophyllous var. *spicant* was confirmed. No transition forms to var. *spicant* were observed.

Struthiopteris spicant var. ***homophyllum*** (Merino) Gabriel y Galán & Pino, *comb. nov.*

Basionym: *Blechnum spicant* var. *homophyllum* Merino in Christ (1904: 79).

Homotypic synonyms: *Homophyllum blechniforme* Merino (1898: 108). *Blechnum spicant* subsp. *homophyllum* (Merino) Merino (1909: 488).

Type (protologue):—SPAIN. Galicia: “Haec planta, quam non nisi uno in loco reperi, nempe in quodam proclivio umbroso et madido prope oppidum San Juan de Tabagon nomine cognitum, et ab hoc Collegio 8 kilom. circiter distans, magnam similitudinem primo intuitu cum *Blechno spicant* Roth. prae se fert.”

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Lectotype (designated here):—SPAIN. Galicia: Fig. Ic. " *Homophyllum blechniforme* (la mitad de su tamaño)" in Merino (1898: Lám. I).

Notes:—This plant was first discovered and described by 19th-century Spanish botanist P. Merino, from the village of Tabagón (Pontevedra, Spain), who created first a new genus *Homophyllum* with the species *H. blechniforme* (Merino 1898). He later sent some material to pteridologist H. Christ, who treated the species as variety of *Blechum spicant* (Christ 1904), acknowledging Merino the contribution of the plants and descriptions. This variety comprises small plants, with monomorphic or nearly monomorphic fronds less than 20 cm long, scarcely contracted lamina, and typically interrupted sori that cover only a small part of the abaxial surface. It is supposed to be endemic to the most northwest part of the Iberian Peninsula (south of Galicia in Spain and north of Portugal), always rare and with scattered populations, but new recent field trips made for this study rendered the discovery of new populations, quite far from the alleged area. Unlike var. *fallax*, var. *homophyllum* does not seem to have a dependence on special environmental conditions.

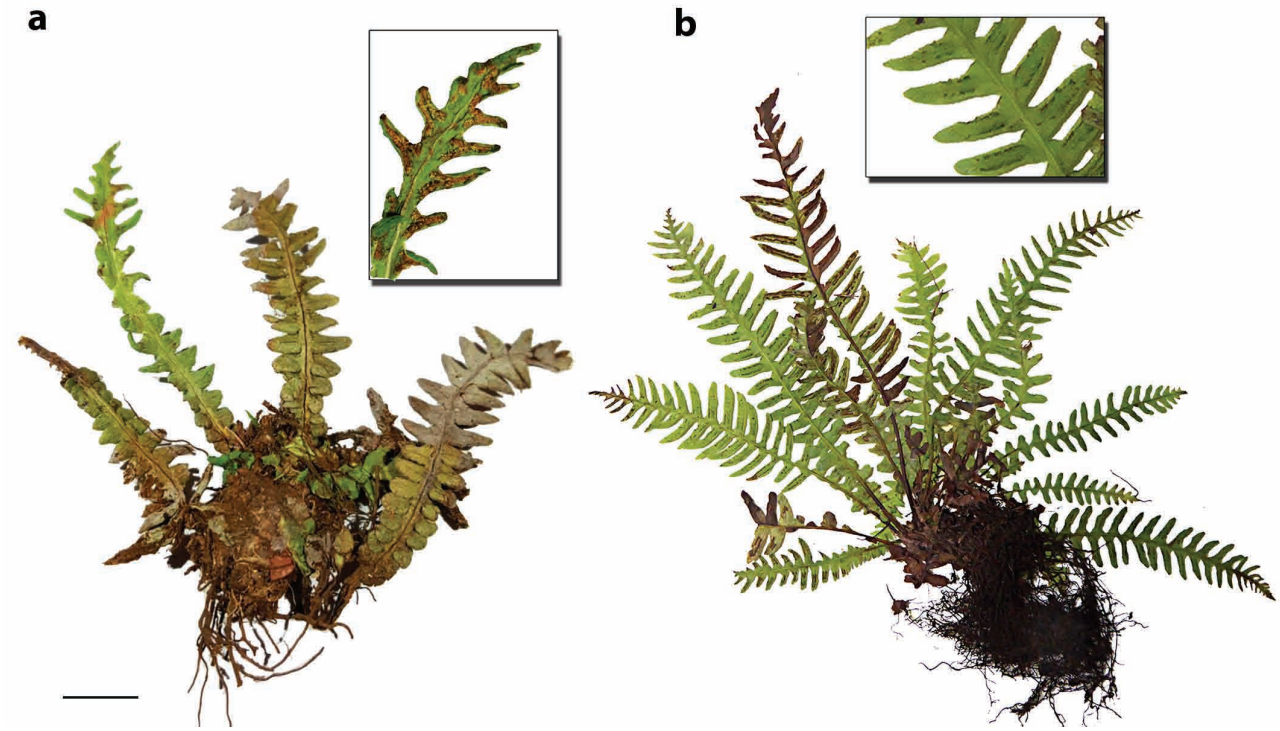

FIGURE 1. Two homophyllous varieties of *Struthiopteris spicant*. **a.** var. *fallax* (MACB 109359), with detail of sori; bar = 1.0 cm (general view), 0.6 cm (detail). **b.** var. *homophyllum* (MACB 109358), with detail of sori; bar = 3.2 cm (general view), 1.3 cm (detail).

References

Christ, H. (1904) Les fougères de la Galicie Espagnole. *Bulletin de l'Academie Internationale de Geographie Botanique* 13: 76–81. Available from: http://www.biodiversitylibrary.org/item/107781#page/93/mode/1up (accessed 1 March 2017)

Gasper, A.L., Almeida, T.E., Dittrich V.A.O., Smith, A.R. & Salino, A. (2016a) Molecular phylogeny of the fern family Blechnaceae (Polypodiales) with a revised genus-level treatment. *Cladistics*. [Published online] https://doi.org/10.1111/cla.12173

Gasper, A.L., Dittrich, V.A.O., Smith, A.R. & Salino, A. (2016b) A classification for Blechnaceae (Polypodiales: Polypodiopsida): New genera, resurrected names, and combinations. *Phytotaxa* 275: 191–227. https://doi.org/10.11646/phytotaxa.275.3.1

Gabriel y Galán, J.M., Prada, C., Rolleri, C., Ainouche, A. & Vincent, M. (2013) cpDNA supports the identification of the major lineages of American *Blechnum* (Blechnaceae, Polypodiopsida) established by morphology. *Turkish Journal of Botany* 37: 769–777. https://doi.org/10.3906/bot-1210-49

Grønlund, C. (1881) *Islands Flora*. Gyldendalske Boghandels Forlag, Copenhagen, 159 pp.

Lange, J. (1880) *Icones Plantarum Florae Danicae Fasciculus L*. C. Philibert, Copenhagen, 17 pp.

Lawalrée, A. (1964) *Blechnum* L. *In:* Tutin, T.G., Heywoood, V.H., Burges, N.A., Valentine, D.H., Walters, S.M. & Webb, D.A. (Eds.) *Flora Europaea vol. 1. Lycopodiaceae to Platanaceae*. Cambridge University Press, Cambridge, 464 pp.

Linnaeus, C. (1753) *Species plantarum (vol.2)*. L. Salvius, Stockholm, 1200 pp. http://dx.doi.org/10.5962/bhl.title.669

Löve, A. & Löve, D. (1966) The variation in *Blechnum spicant*. *Botanisk Tidsskrift* 62: 186–196.

Merino, B. (1898) Descripción de un helecho nuevo. *Actas de la Real Sociedad Española de Historia Natural, ser. II.* 8 (27): 108–109. Available from: http://bibdigital.rjb.csic.es/spa/Libro.php?Libro=1175&Pagina=108 (accessed 1 March 2017)

Merino, B. (1909) *Flora descriptiva é ilustrada de Galicia, tomo III*. Tipografia Galaica, Santiago, 693 pp. Available from: http://bibdigital.rjb.csic.es/spa/Libro.php?Libro=172&Pagina=495 (accessed 1 March 2017)

Newman, E. (1844) *A history of British ferns (Ed. 2)*. John van Voorst, Paternoster Row. London, 104 pp. http://dx.doi.org/10.5962/bhl.title.23220 (accessed 1 March 2017)

Ormonde, J. (1986) *Blechnum*. *In*: Castroviejo, S., Laínz, M., López González, G., Montserrat, P., Muñoz Garmendia, F., Paiva, J. & Villar, L. (Eds.) *Flora Iberica I*. Real Jardin Botanico, CSIC, Madrid, 575 pp. Available from: http://www.floraiberica.es/eng/PHP/cientificos_.php?gen=Blechnum (accessed 1 March 2017)

Perrie, L.R., Wilson, R.K., Shepherd, L.D., Ohlsen, D.J., Batty, E.L., Brownsey, P.J. & Bayly, M.J. (2014) Molecular phylogenetics and generic taxonomy of Blechnaceae ferns. *Taxon* 63: 745–758. https://doi.org/10.12705/634.13

Roth, A.W. (1794) Observationes botanicae. *Annalen der Botanik (ed. Usteri)* 10: 34–57. http://bibdigital.rjb.csic.es/ing/Libro.php?Libro=2014&Pagina=60

Rothfels, C.J., Sundue, M.A., Kuo, L.Y., Larsson, A., Kato, M., Schuettpelz, E. & Pryer K.M. (2012) A revised family-level classification for eupolypod II ferns (Polypodiidae: Polypodiales). *Taxon* 61: 515–533. Available from: http://www.ingentaconnect.com/content/iapt/tax/2012/00000061/00000003/art00003 (Accessed 31 Mar. 2017)

Scopoli, G.A. (1754) *Methodus plantarum*. J. P. van Ghelen, Vienna, 28 pp.

Shepherd, L.D., Perrie, L.R., Parris, B.S. & Brownsey, P.J. (2007) A molecular phylogeny for the New Zealand Blechnaceae ferns from analyses of chloroplast trnL-trnF DNA sequences. *New Zealand Journal of Botany* 45: 67–80. https://doi.org/10.1080/00288250709509703

Tigerschiöld, E. (2000) *Blechnum* L. *In*: Jonsell, B. (Ed.) *Flora Nordica vol. 1 Lycopodiaceae - Polygonaceae*. The Bergius Foundation, Royal Swedish Academy of Sciences, Stockholm, 344 pp.

Wasowicz, P., Folcik, L. & Rostanski, A. (2017) Typification of *Blechnum spicant* var. *fallax* Lange (Blechnaceae). *Acta Societatis Botanicorum Poloniae* 86: 3542. http://dx.doi.org/10.5586/asbp.3542

Weiss, F.W. (1770) *Plantae Cryptogamicae Florae Gottingensis*. Viduae A. Vandenhoeck, 333 pp. http://dx.doi.org/10.5962/bhl.title.82237