

The Canadian Field-Naturalist

SUPPLEMENTARY MATERIAL:

Confirmation of Shining Firmoss (*Huperzia lucidula*; Lycopodiaceae) in Manitoba

RICHARD J. STANFORTH

APPENDIX S1. Specimens of Shining Firmoss (*Huperzia lucidula*), Butters' Firmoss (*Huperzia ×buttersii*), and Northern Firmoss (*Huperzia selago*) known from Manitoba herbaria (examined in the present study).

Lists of specimens of Shining Firmoss (*Huperzia lucidula*), Butters' Firmoss (*Huperzia ×buttersii*), and Northern Firmoss (*Huperzia selago*) from Manitoba herbaria (Manitoba Museum [MMMN], University of Manitoba Herbarium [WIN], University of Winnipeg [UWPG], and the personal plant collection of the author [RS, to be deposited in a public Manitoba herbarium]) examined during the present study, in chronological order of their collection date.

Shining Firmoss (*Huperzia lucidula*)

1. *J.C. Ritchie 3325* (DAO 337594) 10 July 1958, Riding Mountain National Park, near East Gate. Estimated as 50.680°N, 99.562°W. N-facing slope under birch on wet moss-covered shale. Stet! W.J. Cody (DAO) 1982.
2. *J.M. Walker 213* (WIN) 19 July 1958, Riding Mountain National Park. Not possible to estimate latitude and longitude from vague location. Damp shaded hollow beneath woods. Identified by D. Sawatsky (WIN) 2012.
3. *R. Staniforth 849a* (RS) 24 June 2013, Gunisao Lake, near Lodge. 53.522°N, 96.371°W. Granite outcrop, Jack Pine (*Pinus banksiana* Lambert), spruce, birch forest. Identification as *H. lucidula* by W. Testo, University of Gothenburg, Sweden (August 2015).

Butters' Firmoss (*Huperzia ×buttersii*) (*H. lucidula* × *H. selago*)

1. *G.M. Keleher 74-242*. (WIN 28636) 4 August 1974, Quesnel Lake (Caribou). 50°55'N, 95°39'W (recalculated as 50.917°N, 95.650°W). Rock outcrop with mosses and lichens. Identified by R.J.S. (this study).
2. *R. Green s.n.* (WIN 34172) 9 June 1978, West Hawk Lake. 49°44'N, 95°12'W (recalculated as 49.733°N, 95.200°W). Growing with *Sphagnum* sp. along saturated roadside next to Black Spruce (*Picea mariana* (Miller) Britton, Sterns, and Poggenburg) bog. Identified by R.J.S. (this study).
3. *R. Staniforth 488* (RS) 7 August 1979, McGillivray Falls, Whiteshell Provincial Park. West side of bog, at top of falls. 49.619°N, 95.769°W. Aspen forest in moss, granite boulders. Confirmed by W. Testo (University of Gothenburg, Sweden) August 2015.

4. *R. Staniforth 849b* (DFB) 24 June 2013. Gunisao Lake, near Lodge. 53.522°N, 96.371°W. Granite outcrop, Jack Pine, spruce, birch forest. Identified by D.F. Brunton (October 2013); Stet! W. Testo, University of Gothenburg, Sweden (August 2015).

Northern Firmoss (*Huperzia selago*) (including *H. appressa*, p.p. [pro parte, in part])

1. *H.J. Scoggan and W.K. W. Baldwin 8214* (WIN) 10 July 1950, Baralzon Lake. 60°00'N, 98°10'W (recalculated as 60.000°N, 98.167°W). Hummocky sedge-heath tundra. Identified as *Lycopodium lucidulum* var. *appressum* by W.K.W. Baldwin; revised R.J.S. (this study).
2. *W.K.W. Baldwin 2193* (WIN 4717) 19 July 1951, Nueltin Lake. 59°48'N, 99°39'W (recalculated as 59.800°N, 99.650°W). Bare knoll. Stet! R.J.S. (this study).
3. *J.C. Ritchie 1941* (WIN 4716) 14 July 1956, Big Spruce River at junction with Seal River, NE Manitoba. 58°58'N, 96°47'W (recalculated as 58.967°N, 96.783°W). Rare on N-facing shoreline, outcrop of lake island with various mosses. Stet! R.J.S. (this study).
4. *P.W. Stringer s.n.* (UWPG) 4 August 1970, Nutimik Lake, Whiteshell Provincial Park. Estimated as 50.148°N, 95.661°W. Mixed forest. Stet! W. Testo, University of Gothenburg, Sweden.
5. *J.D. Johnson s.n.* (MMMN 13306) 12 July 1983, Pointe du Bois, 2 km WNW of Hwy 313. Location estimated as 50.298°N, 95.583°W. Granite rock outcrop. Collected as *H. lucidula*; revised to *H. selago* by R.J.S. (this study).
6. *J.D. Johnson s.n.* (MMMN 13290) 15 July 1983, Cat Lake 2 km S of Hwy 314, Nopiming Provincial Park. Location estimated as 50.581°N,

- 95.417°W. Granite rock outcrop. Collected as *H. lucidula*; revised to *H. selago* by R.J.S. (this study).
7. *K.L. Johnson s.n.* (MMMN 13056) 2 October 1983, Wallace Lake, 6 km W of turn-off, Prov. Hwy 304. Estimated as 51.030°N, 95.419°W. In feather moss, on Black Spruce ridge. Stet! R.J.S. (this study).
 8. *G.M. Keleher and E. Punter 94/141* (WIN 57320) 30 July 1994, Space Port Project, Churchill area. 58°43'58"N, 93°49'05"W (recalculated as 58.733°N, 93.818°W). Shrub area between open ground and open spruce woodland. Stet! R.J.S. (this study).
 9. *M. Piercy-Normore, D. Punter and B.A. Ford s.n.* (WIN 71096) 12 July 2004, Wapusk National Park. Site 3b. Beside small lake on W side of S end of Skidmore Lake. 57°47'15"N, 93°22'44"W (recalculated as 57.788°N, 93.379°W). Wetland between ice polygons, open graminoid community dominated by sedges (*Carex* spp.). Stet! R.J.S. (this study).
 10. *V. Bobretsova s.n.* (RS 170) 4 August 2008, Sails Lake region. UTM 14 046 608; estimated as 54.905°N, 99.571°W. In moss on rock outcrop. Stet! W. Testo University of Gothenburg, Sweden (August 2015).
 11. *B. Ford and E. Punter 10-1110* (WIN 78357) 16 July 2010, Churchill WMA. 1.5 km S of Wapusk National Park. 9 km E of Yelland Lake and 24 km NW of Port Nelson. UTM 15c 0501387 6385574 NAD27 (recalculated as 57.190°N, 92.977°W). Growing on bank above water level amongst lichens and mosses. Stet! R.J.S. (this study).
 12. *R. Staniforth 885* (RS, WIN 77428, UWPG) 16 July 2014, NE of Courage Lake, UTM 14 0536356E 6651449N (recalculated as 60.000°N, 98.348°W). Edges of hummocks at pond edge, wet organic substrate. Originally identified as *H. appressa*; revised to *H. selago* by W. Testo University of Gothenburg, Sweden (August 2015).
 13. *R. Staniforth 887, R. Staniforth 888* (RS) 17 July 2014, S. of Courage Lake. UTM 14 0536163E 6643667N (recalculated as 59.929°N, 98.353°W). Slack between eskers, open, scattered herbs. Organic substrate, moist, well drained. Originally identified as *H. appressa*; revised to *H. selago* by W. Testo, University of Gothenburg, Sweden (August, 2015).
 14. *R. Staniforth 878* (RS) 3 August 2014, Nopiming Provincial Park. Black Lake campground. UTM 15 0330785E 5616219N (recalculated as 50.673°N, 95.395°W). Granite outcrop in moss, pine forest. Substrate moist peat. Stet! W. Testo, University of Gothenburg, Sweden (August, 2015).
 15. *R. Staniforth 1376* (RS, WIN, UWPG) 10 June 2018, Whiteshell Provincial Park. Nutimik campsite and Trans-Canada Trail. UTM 15 0309891E 5558458N (recalculated as 50.148°N, 95.661°W). Shade, mixed forest, among boulders below cliff among mosses and *Spinulum annotinum*. Organic, moist.