

DAMON P. LITTLE AND DAVID S. BARRINGTON. 2003. Major evolutionary events in the origin and diversification of the fern genus *Polystichum* (Dryopteridaceae). *American Journal of Botany* 90(3): 508-514.

APPENDIX 1. Synopsis of subgeneric classifications for the genus *Polystichum*.

Here we report on the two major classifications of the fern genus *Polystichum* (Daigobo, 1972; Fraser-Jenkins, 1997, for characters and subgeneric taxa see Tables 2 and 3 below). These classifications have three things in common: (1) They adopt a geographically limited scope-albeit focused on a region of the world in which the genus has the highest endemism and diversity (i.e., the subtropical montane regions of Eastern Asia); (2) They do not consistently define or report a set of characters for sections or species; and (3) They do not report the analytic protocol by which they arrived at their sectional classification. Daigobo (1972), addressing the Japanese and Taiwanese species of the genus, recognizes 16 sections, which he circumscribes in a diagnostic key incorporating 16 characters. Fraser-Jenkins (1997), addressing the diversity on the Indian subcontinent, recognizes seven sections, which he circumscribes with descriptions that include a total of eight characters. Only those characters that yielded discontinuous character states suitable for phylogenetic analysis were utilized in our analysis (listed in Table 2 below). The section assignments of Daigobo (outlined in Table 3 below) were used to design our sample, as this classification provides the most detailed representation of the genus.

Table 2. Comparative analysis of morphological characters used by recent researchers. Abbreviations for researchers are D (Daigobo, 1972), F (Fraser-Jenkins, 1997), and LB (this work).

Morphological Character	Used By
petiole length and thickness	F
petiole-scale color and cilia type	D,F,LB
lamina dissection	D,F,LB
lamina texture	D,F
lamina shape	D,F
presence/absence of auricles	D,F,LB
presence/absence of spinules	D,F,LB
presence/absence of a bulbil	D,F,LB
small scales of the adaxial pinna rachis surface	D
small scales of the abaxial lamina surface	D,LB
venation	D
sorus position on vein	D,LB

receptacle elevation	D, LB
true-indusium diameter	D
true-indusium texture	D
true-indusium duration	D

Table 3. Comparison of circumscription of sections in the genus *Polystichum* by Daigobo (1972) and Fraser-Jenkins (1997). Asterisk marks Fraser-Jenkins' sectional depositions of the corresponding Daigobo sections.

Daigobo 1972 (in his order)	Fraser-Jenkins 1997 (numbers represent his section sequence)
1. <i>Achroloma</i> Tagawa	1. <i>Polystichum</i> *
2. <i>Prionoalepia</i> Daigobo	5. <i>Macropolystichum</i> *
3. <i>Macropolystichum</i> Daigobo	5. <i>Macropolystichum</i>
4. <i>Cyrtomiopsis</i> Tagawa [same as genus <i>Cyrtomidictyum</i>]	1. <i>Polystichum</i> *
5. <i>Stenopolystichum</i> Daigobo	1. <i>Polystichum</i> *
6. <i>Crucifilix</i> Tagawa	---
7. <i>Micropolystichum</i> Daigobo	3. <i>Micropolystichum</i>
8. <i>Polystichum</i>	1. <i>Polystichum</i>
9. <i>Haplopolystichum</i> Tagawa emend. Daigobo	1. <i>Polystichum</i> *
10. <i>Adenolepia</i> Daigobo	1. <i>Polystichum</i> *
11. <i>Xiphopolystichum</i> Daigobo	5. <i>Macropolystichum</i> *
12. <i>Scleropolystichum</i> Daigobo	? . <i>Hypopeltis</i>
13. <i>Sorolepidium</i> (Christ) Tagawa	2. <i>Sorolepidium</i>
14. <i>Lasiopolystichum</i> Daigobo	2. <i>Sorolepidium</i> *
15. <i>Mastigiopteris</i> Tagawa	1. <i>Polystichum</i> *
16. <i>Metapolystichum</i> Tagawa emend. Daigobo	7. <i>Metapolystichum</i>
---	4. <i>Hypopeltis</i> (Michx.ex Bory) C.Chr.
---	6. <i>Duropolystichum</i> Fraser-Jenkins 1997

Appendix 2. Sources of material for *rbcL* data. Abbreviations for voucher locations follow Holmgren, 1990.

Taxon with Diagobo (1972) section number in brackets (for <i>Polystichum</i> only; see Appendix 1)	Provenance and collection, collection date, and (voucher location) or literature source	GenBank accession number
<i>Arachniodes aristata</i> (G.Forst.) Tindale <i>Arachniodes denticulata</i> (Sw.) Ching	Hasebe et al., 1995 Costa Rica: <i>D.P. Little & D.S. Barrington 351</i> , January 1999, (VT)	U30608 AF537223
<i>Ctenitis eatonii</i> (Baker) Ching <i>Ctenitis sinii</i> (Ching) Ohwi	Hasebe et al., 1994 Sano et al., 2000	U05614 D43898
<i>Cyrtomidictyum lepidocaulon</i> (Hook.) Ching	Asia, ex hort. NYBG, 11 June 1998, (VT)	AF537224
<i>Cyrtomium caryotideum</i> (Hook. & Grev.) C.Presl	Asia: <i>Terry et al.</i> 1984 (IND)	AF537225
<i>Cyrtomium falcatum</i> (L.f.) C.Presl	Asia, ex hort. UVM: <i>D.P. Little 342</i> , Sept. 27, 1997 (VT)	AF537226
<i>Cyrtomium fortunei</i> J.Sm.	Asia: <i>Mitsuta</i> , 1994 (IND)	AF537227
<i>Dryopteris cristata</i> (L.) A.Gray	Eastern US: Wolf, Soltis, and Soltis, 1994	U05923
<i>Dryopteris dickinsii</i> (Franch. & Sav.) C.Chr.	Eastern Asia: Hasebe et al., 1994	U05622
<i>Dryopteris goldiana</i> (Hook.) A.Gray	Vermont: <i>D.S. Conant 4741</i> (LSC)	AF537228
<i>Dryopteris intermedia</i> (L.) A.Gray	Vermont: <i>D.P. Little 345</i> , Feb. 17, 1998 (VT)	AF537229
<i>Dryopteris submontana</i> (Fraser-Jenk. & Jermy) Fraser-Jenk. ¹	Europe: Vogel, unpublished	AF240653
<i>Elaphoglossum hybridum</i> (Bory) T.Moore	Eastern Asia: Wolf, Soltis, and Soltis, 1994	U05924
<i>Elaphoglossum yoshinagae</i> (Yatabe) Makino	Eastern Asia: Hasebe et al., 1994	U05623
<i>Lastreopsis effusa</i> (Sw.) Tindale	Costa Rica: <i>B. Howlett s.n.</i> ; 1998 (VT)	AF537230
<i>Megalastrum atrogriseum</i> (C.Chr.) A.R.Sm. & R.C.Moran	Costa Rica: <i>D.P. Little & D.S. Barrington 353</i> ; Jan. 13., 1999 (VT)	AF537264
<i>Megalastrum atrogriseum</i> (C.Chr.) A.R.Sm. & R.C.Moran	Costa Rica: <i>S.R. Hill 17693</i> ; Jan. 7, 1987 (VT)	AF537263
<i>Phanerophlebia nobilis</i> (Schltdl. & Cham.) C. Presl var. <i>nobilis</i>	Mexico: <i>G. Yatskievych et al. 85-211</i> (IND, MO)	AF537231
<i>Phanerophlebia nobilis</i> (Schltdl. & Cham.) C. Presl var.	Mexico: <i>G. Yatskievych & E. Wollenweber 83-</i>	AF537232

<i>remotispora</i> (E.Fourn.) Yats.	158 (IND, MO)	
<i>Phanerophlebia umbonata</i> Underw.	Mexico: <i>G. Yatskievych & E. Wollenweber</i> 83-87 (IND, MO)	AF537233
<i>Polystichopsis chaerophylloides</i> (Poir.) C.V.Morton	Puerto Rico: <i>D.S. Barrington</i> 140, May 24, 1970 (VT)	AF537234
<i>Polystichum acrostichoides</i> (Michx.) Schott [?]	Vermont: <i>D.P. Little</i> 343, Sept. 27, 1997 (VT)	AF537235
<i>Polystichum alfarii</i> (H.Christ) Barrington [?]	Costa Rica: <i>D.S. Barrington</i> 1978, Jan. 21, 1997 (VT)	AF537236
<i>Polystichum ammifolium</i> (Poir.) C.Chr. [?]	La Réunion: <i>T.A. Ranker (1537) Strasberg, & Adersen</i> (VT)	AF537237
<i>Polystichum craspedosorum</i> (Maxim.) Diels [15]	Japan: <i>M. Kato s.n.</i> , April 30, 1998 (VT)	AF537238
<i>Polystichum cystostegia</i> (Hook.) J.B.Armstr. [?]	New Zealand: Perrie, unpublished	AF208392
<i>Polystichum deltodon</i> (Baker) Diels [9]	Yunnan: <i>Sun Weibang s.n.</i> , Oct. 9, 1997 (VT)	AF537239
<i>Polystichum dracomontanum</i> Schelpe & N.C. Anthony [?]	Africa: <i>J. Roux</i> 2715, June 24 1998 (VT)	AF537240
<i>Polystichum dudleyi</i> Maxon [?]	California: <i>W.A. Born s.n.</i> , March 1998 (VT)	AF537241
<i>Polystichum ekmanii</i> Maxon [?]	Hispaniola: <i>P. Wieczoreck</i> 215, 1997 (VT)	AF537242
<i>Polystichum fibrillopaleaceum</i> (Kodama) Tagawa [16]	Japan: <i>M. Kato s.n.</i> , 1997 (VT)	AF537243
<i>Polystichum imbricans</i> (D.C.Eaton) D.H.Wagner [?]	Oregon: <i>D.H. Wagner</i> 9112, Nov. 30, 1997 (VT)	AF537262
<i>Polystichum lachenense</i> (Hook.) Bedd. [14]	Szechuan: <i>D. Boufford</i> 27954, June 24, 1998 (HUH)	AF537244
<i>Polystichum lehmannii</i> Hieron. [?]	Costa Rica: <i>D.P. Little & D.S. Barrington</i> 300, Jan. 11, 1997 (VT)	AF537245
<i>Polystichum lentum</i> (Don) T.Moore [?]	ex hort. NYBG accession 474/77, June 11, 1998 (VT)	AF537246
<i>Polystichum lonchitis</i> (L.) Roth [8]	Alaska: <i>D.P. Little</i> 344, Jan. 5, 1998 (VT)	AF537247
<i>Polystichum luctuosum</i> (Kze.) Moore [11]	Africa: <i>J. Roux</i> 2709, June 24, 1998 (VT)	AF537248
<i>Polystichum macleanae</i> (Baker) Diels [?]	Africa: <i>J. Roux</i> 2561, June 24, 1998 (VT)	AF537249
<i>Polystichum mohrioides</i> (Bory) C.Presl [?]	Chile: <i>B. Connolly</i> 2, Jan. 11, 2000 (VT)	AF537250
<i>Polystichum munitum</i> (Kaulf.) C.Presl [?]	Alaska: <i>D.P. Little</i> 239, Jan. 1, 1996 (VT)	AF537261
<i>Polystichum muricatum</i> (L.) Fée [?]	Wolf, Soltis, and Soltis, 1994	U05938
	Costa Rica: <i>D.P. Little & D.S. Barrington</i> 349, Jan. 1, 1999 (VT)	AF537251

<i>Polystichum neolobatum</i> Nakai [12]	Japan: <i>M. Kato s.n.</i> 1997 (VT)	AF537252
<i>Polystichum proliferum</i> (R.Br.) C.Presl [?]	Australia: Perrie, unpublished	AF208393
<i>Polystichum pungens</i> (Kaulf.) C.Presl [?]	Africa: <i>J. Roux 2370</i> , June 24, 1998 (VT)	AF537253
<i>Polystichum richardii</i> (Hook.) J.Sm. [?]	New Zealand: Perrie, unpublished	AF208394
<i>Polystichum setiferum</i> (Forssk.) T.Moore ex Woyn. [16]	Europe: ex hort. NYBG, June 11, 1998 (VT)	AF537254
<i>Polystichum speciosissimum</i> (A.Braun ex Kunze) Copel. [?]	Mexico: <i>D.S. Barrington 2027.16</i> , Jan. 2, 1992 (VT)	AF537255
<i>Polystichum stenophyllum</i> H.Christ [5]	Szechuan: <i>D. Boufford 27327</i> , June 24, 1998 (HUH)	AF537256
<i>Polystichum transkeiense</i> W.Jacobsen [?]	Africa: <i>J. Roux 2493</i> , June 24, 1998 (VT)	AF537257
<i>Polystichum tripterum</i> (Kunze) C.Presl [6]	Japan: Hasebe et al., 1995	U30832
<i>Polystichum tsussimense</i> (Hook.) J.Sm. [11]	Yunnan: <i>Sun Weibang s.n.</i> , Oct. 9, 1997 (VT)	AF537258
<i>Polystichum turrialbae</i> H.Christ [?]	Costa Rica: <i>D.P. Little & D.S. Barrington 295</i> , Jan. 1, 1997 (VT)	AF537259
<i>Polystichum underwoodii</i> Maxon [?]	Hispaniola: <i>P. Wieczorek 258</i> , July 20, 1998 (VT)	AF537260
<i>Polystichum vestitum</i> (G.Forst.) C.Presl [?]	New Zealand: Perrie, unpublished	AF208395
<i>Rumohra adiantiformis</i> (G.Forst.) Ching	La Réunion: Wolf, Soltis, and Soltis, 1994	U05942
	Australia: Hasebe et al., 1994	U05648

¹apparently a synonym of *Dryopteris mindshelkensis* Pavlov, which has priority.

Appendix 3. Materials used in the morphological analysis. For authorities see Appendix 2.. Abbreviations for voucher locations follow Holmgren, 1990.

Taxon	Collector & number	Collection Date	Herbarium
<i>Arachniodes aristata</i>	<i>H. Ito 240</i>	1933 May 26	BH
	<i>S. Okamoto s.n.</i>	1962 December 23	BH
	<i>D.P. Little & D.S. Barrington 351</i>	1999 January 13	VT

<i>Ctenitis eatonii</i>	<i>M. Hasebe 27600</i>	unknown	TI
<i>Ctenitis sinii</i> (Ching) Ohwi.	<i>Sano 40/ Hasebe s.n.</i>	1992 October 30	
<i>Cyrtomidictyum lepidocaulon</i>	<i>L.H. Bailey s.n.</i>	1918 December 23	BH
	<i>M. Gebhardt s.n.</i>	1891 February 6	BH
	<i>F.C. Wilson 61</i>	1923 February 3	BH
<i>Dryopteris dickinsii</i>	<i>M. Hasebe 26555</i>	1992 October 30	TI
<i>Dryopteris goldiana</i>	<i>E. Brainerd s.n.</i>	1909 July 16	VT
	<i>Mr. & Mrs. L.P. Breckenridge s.n.</i>	1916 August 2	VT
<i>Dryopteris intermedia</i>	<i>P.F. Zika 1983</i>	1981 August 7	VT
<i>Elaphoglossum hybridum</i>	<i>T.A. Ranker (1537) Strasberg, & Adersen (VT)</i>	1992 October 7	COLO
<i>Lastreopsis effusa</i>	<i>B. Howlett s.n.</i>	1998	VT
	<i>H. W. Churchill 3072</i>	1978 January 3	VT
<i>Megalastrum atrogriseum</i>	<i>S.R. Hill 17693</i>	1987 January 8	VT
	<i>D.P. Little & D.S. Barrington 353</i>	1999 January 13	VT
<i>Phanerophlebia nobilis</i> var. <i>nobilis</i>	<i>H.E. Moore Jr. & C.E. Wood Jr. 4427</i>	1948 August 9	BH
	<i>E. Matuda 18783</i>	1950 November 26	BH
	<i>J.W. Paterson J-1751</i>	1972 November 9	BH
<i>Phanerophlebia nobilis</i> var. <i>remotispora</i>	<i>E. Matuda 193</i>	1936 August	VT
<i>Phanerophlebia umbonata</i>	<i>A.E. Perkins & J.M. Hall 3294</i>	1939 April 11	BH
	<i>G.C. Pringle 13793</i>	1906 March 12	BH
	<i>R.T. Clausen 7570</i>	1949 April 13	BH
<i>Polystichopsis chaerophylloides</i>	<i>D.S. Barrington 140</i>	1970 May 24	VT
<i>Polystichum acrostichoides</i>	<i>C.G. Pringle s.n.</i>	1899 June 17	VT
<i>Polystichum alfariei</i>	<i>D.S. Barrington 1242</i>	1985 January 19	VT
<i>Polystichum ammifolium</i>	<i>T.A. Ranker 1531</i>	unknown	VT
<i>Polystichum craspedosorum</i>	<i>D.S. Barrington 1617</i>	1988	VT
<i>Polystichum deltodon</i>	<i>L.A. Charette 1138</i>	1953 May 27	VT
<i>Polystichum dracomontanum</i>	<i>J. Roux 2715</i>	1998 June 24	VT
<i>Polystichum dudleyi</i>	<i>R.S. Norris s.n.</i>	1894 May	BH
	<i>S.H. Burnham s.n.</i>	1895 March 9	BH
	<i>L.G. Yates s.n.</i>	1879 June	BH
	<i>J. Henensee s.n.</i>	1892	BH

<i>Polystichum ekmanii</i>	<i>P. Wieczoreck 215</i>	1997	VT
<i>Polystichum fibrillopaleaceum</i>	<i>Masahiro Kato s.n.</i>	1997	VT
<i>Polystichum imbricans</i>	<i>C.S. and E.H. English 2209</i>	1932 July 4	BH
	<i>A. Eastwood 1336</i>	1912 July 23	BH
	<i>W.J. Dress 3396</i>	1951 June 17	BH
<i>Polystichum lehmannii</i>	<i>D.S. Barrington 1552</i>	1989 January 8	VT
<i>Polystichum lentum</i>	ex hort. NYBG accession 474/77	1998 June 11	VT
<i>Polystichum lonchitis</i>	<i>J. Macoun s.n.</i>	1871	BH
	<i>G.L. Fisher s.n.</i>	1905 August 5	BH
	<i>F.B. Cotner s.n.</i>	1938 August 20	BH
<i>Polystichum mohrioides</i>	<i>O. Zöllner II237</i>	1971 February 11	VT
<i>Polystichum munitum</i>	<i>N.F. Bracelin 1693</i>	1942 January 10	BH
	<i>R.T. Clausen 63128</i>	1963 May 25	BH
	<i>I. Mounce s.n.</i>	1939 August 3	BH
<i>Polystichum muricatum</i>	<i>D.P. Little & D.S. Barrington 292</i>	1997 Jan. 3	VT
<i>Polystichum setiferum</i>	<i>S.G. Harrison & A.E. Wade s.n.</i>	1967 June 28	BH
	<i>L. Lavergne ?70</i>	1946 Juillet 18	BH
<i>Polystichum speciosissimum</i>	<i>D.P. Little & D.S. Barrington 297</i>	1997 January 11	VT
<i>Polystichum stenophyllum</i>	<i>D. Boufford 27327</i>	1997	GH
<i>Polystichum tripterum</i>	<i>J. Ohwi 202</i>	1951 April	BH
	<i>M. Togasi 484</i>	192 June 11	BH
	<i>S. Okamoto s.n.</i>	1957 November 9	BH
<i>Polystichum turrialbae</i>	<i>D.P. Little & D.S. Barrington 294</i>	1997 January 11	VT
<i>Polystichum underwoodii</i>	<i>P. Wieczoreck 258</i>	1998 July 20	VT
<i>Rumohra adiantiformis</i>	<i>Gallinal et al. PE-4653</i>	1942 May 30	BH
	<i>R.J. Rodin 4024</i>	1948 March 8	BH
	<i>A.G. Schultz 710</i>	1936 April	BH

APPENDIX 4. Morphological characters used in the analysis, with explanatory notes on methods for scoring character states in parentheses. All characters are non-additive (unordered) unless otherwise indicated.

00. internodes

- (0) elongate (stem visible between leaf bases)
- (1) condensed (stem not visible between leaf bases)

01. petiole-base abscission zone

- (0) absent
- (1) present

02. stem

- (0) radial (greatest stem diameter less than twice the least)
- (1) dorsiventral (greatest stem diameter two or more times the least)

03. dissection of the lamina at its midpoint (to be considered pinnate a segment must be unattached at its base for at least 3/4 of its width along the next-order axis) [additive]

- (0) once pinnate
- (1) twice pinnate
- (2) thrice pinnate

04. division of ultimate segments

- (0) at least 3/4 to midrib
- (1) less than 3/4 to midrib

05. basal pinna [additive] (0) reduced (less than half the length of the medial pinna)

- (1) equal in length to the medial pinna
- (2) enlarged (more than twice the length of the medial pinna)

06. most proximal basispicopic pinnule of basal pinna

- (0) less than twice as long as the same pinnule on the second pinna
- (1) more than twice as long as the same pinnule on the second pinna

07. fertile segments

- (0) unreduced with respect to sterile segments

(1) reduced with respect to sterile segments

08. gemmiferous bud

(0) absent

(1) attached subterminally on the rachis

(2) attached terminally on the rachis (leaf apex retuse or whip-like)

09. lamina (medial pinna)

(0) catadromous

(1) anadromous

(2) isodromous

10. ultimate segment bases

(0) not as in (1)

(1) acroscopically proliferated (the distance from the midrib to the margin on the acroscopic side more than twice that on the basisopic side)

11. ultimate segment tips

(0) with scarious tip (scarious tissue at segment tip more developed than along the adjacent margin)

(1) without scarious tip (including species without non-green tissue at segment margin)

12. adaxial groove on the main rachis

(0) absent

(1) present (extending from the base to a point at least half way up the rachis)

13. sorus confluence

(0) discrete

(1) acrostichoid

14. true indusium

(0) absent

(1) present

15. veins (vascular bundles arising from the costa of the ultimate segment)

- (0) branched
- (1) unbranched

16. veins (vascular bundles arising from the costa of the ultimate segment)

- (0) free
- (1) anastomose

17. veins at lamina margins

- (0) not connivent
- (1) connivent (some vein pairs angle toward each other, but do not fuse)

18. vein endings

- (0) submarginal (veins terminate in the green tissue of the segment)
- (1) marginal (veins terminate at the margin, often in the scarious tissue)

19. receptacle position

- (0) non-terminal
- (1) terminal (vein ends at sorus or soral vein terminates well before margin)

20. sorus shape

- (0) round
- (1) elongate

21. indusium attachment

- (0) central (indusium usually peltate)
- (1) marginal (indusium usually reniform)

22. petiole base scales

- (0) peltate
- (1) not peltate

23. petiole base scales

(0) not clathrate

(1) clathrate

24. color of the petiole base scales

(0) bicolorous

(1) concolorous

25. lustrous black central region on the petiole base scales

(0) absent (includes uniformly black-lustrous scales)

(1) present

26. edges of the petiole base scales

(0) entire

(1) ciliate

27. edges of the petiole base scales

(0) glandular

(1) not glandular

28. color of the cilia on the edges of petiole base scales

(0) same color as the scale on which they are borne

(1) darker than the scale on which they are borne

29. cilia or teeth on the edges of the petiole base scales

(0) strongly recurved

(1) more or less straight

30. cilia on the faces of the petiole base scales

(0) absent

(1) present

31. glands on the faces of petiole base scales

(0) absent

(1) present

32. cells at the margins of the petiole base scales

(0) oriented as the medial cells (scales conform)

(1) oriented differently from the medial cells (scales marginate)

33. ultimate segment rachis scales

(0) peltate

(1) not peltate

34. color of the ultimate segment rachis scales

(0) bicolorous

(1) concolorous

35. lustrous black central region on the ultimate segment rachis scales

(0) absent (includes uniformly black scales)

(1) present

36. edges of the ultimate segment rachis scales

(0) entire

(1) ciliate

37. edges of the ultimate segment rachis scales

(0) glandular

(1) not glandular

38. glands on the faces of ultimate segment rachis scales

(0) absent

(1) present

39. margins of the small lamina scales (i.e. indument associated with vascular tissue, whether multiseriate or not)*

(0) entire

(1) ciliate

Lastreopsis effusa	01?311101001100000000-001001--000010010010
Megalastrum atrogriseum	???101000001100Z00000?0011000??00110010011
Ph. nobilis var. nobilis	110111000100101011110001101101000110000001
Ph. nobilis var. remotispora	110111000101101010000001101101000110010011
Phanerophlebia umbonata	010111000100101001110000101101000110010011
Polystichopsis chaerophylloides	0??102100111100000000-011001--000110010010
Polystichum acrostichoides	110111010210111000011001101101000110110011
Polystichum alfariei	110211000011101000010001011001001110010011
Polystichum ammifolium	110211000010101000010001011100001110111111
Polystichum craspedosorum	110111002211101100010001101101000110110011
Polystichum deltodon	110111000110101000010001001101001-----011
Polystichum dracomontanum	1002110002101010000100100Z1101000110110010
Polystichum dudleyi	1102Z1000X10101000010001101101010110110110
Polystichum fibrillopaleaceum	???2110001101010000100011001--000110010011
Polystichum imbricans	110111000110111000110001101101010110100000
Polystichum lehmannii	110211000110100001000-01101101000110110011
Polystichum lentum	???1010011101010000Z0001101100001110010011
Polystichum lonchitis	110110000110101000110001101101000110110111
Polystichum mohrioides	100111000110101000000010ZZ01--000010000010
Polystichum munitum	110111000110101000110001101101000110110110
Polystichum muricatum	1102110000101010000100011001--000110010011
Polystichum setiferum	110211000010101000110001101101000110110000
Polystichum speciosissimum	1103Z1000101100000010-01101101000110110010
Polystichum stenophyllum	110111000110101000010001101100001110110101
Polystichum tripteron	1101120001101010001100011001--000110010011
Polystichum turrialbae	110211000110101000110001101101000110110011
Polystichum underwoodii	110111002111101001010001001100000110110111
Rumohra adiantiformis	010202000101101000010001001101000110111--0

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