

Distributional data for the *Pteridophyta* in Zambia

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Abstract

477 records on the occurrence of 144 species of the *Pteridophyta* in each of Zambia's eight provinces are presented, 213 of them being additions to those contained in Schelpe's account in *Flora Zambesiaca* (1970).

Schelpe (1970) compiled all data available on the occurrence of ferns and fern allies in six geographical divisions of Zambia as defined in the first volume of *Flora Zambesiaca* (Exell, Wild 1960). He cited, by way of example, one specimen for each division in which a given species was known to occur (altogether 264 records). Since then many new finds have been made which essentially supplement Schelpe's data. The scope of the present paper is to summarize both the old and new evidence on the pteridophyte distribution in Zambia and to rearrange it according to the administrative division of the country into eight provinces as in force in 1971—1973 (Fig. 1 A). In this way existing gaps in the data are brought to light, many of which may still be filled in through future exploration.

The new evidence presented here (altogether 213 records) is based on the herbarium materials and field notes collected during the author's trips in Zambia in 1971—1973 (Fig. 1 B), as well as on the revision of all specimens of Zambian pteridophytes housed in the following herbaria: Royal Botanic Gardens, Kew (K); British Museum, Natural History, London (BM); East African Herbarium, Nairobi (EA); Division of Forest Research, Kitwe (NDO); Mount Makulu Research Station, Mount Makulu (MPR); Biology Department, University of Zambia, Lusaka (LUSAKA). Recent pteridological literature has also been considered. The nomenclature and the delimitation of taxa accepted conform with those of Schelpe's (1970) account, the only exceptions being *Salvinia molesta* (Mitchell 1972) and *Thelypteris interrupta* (Holttum

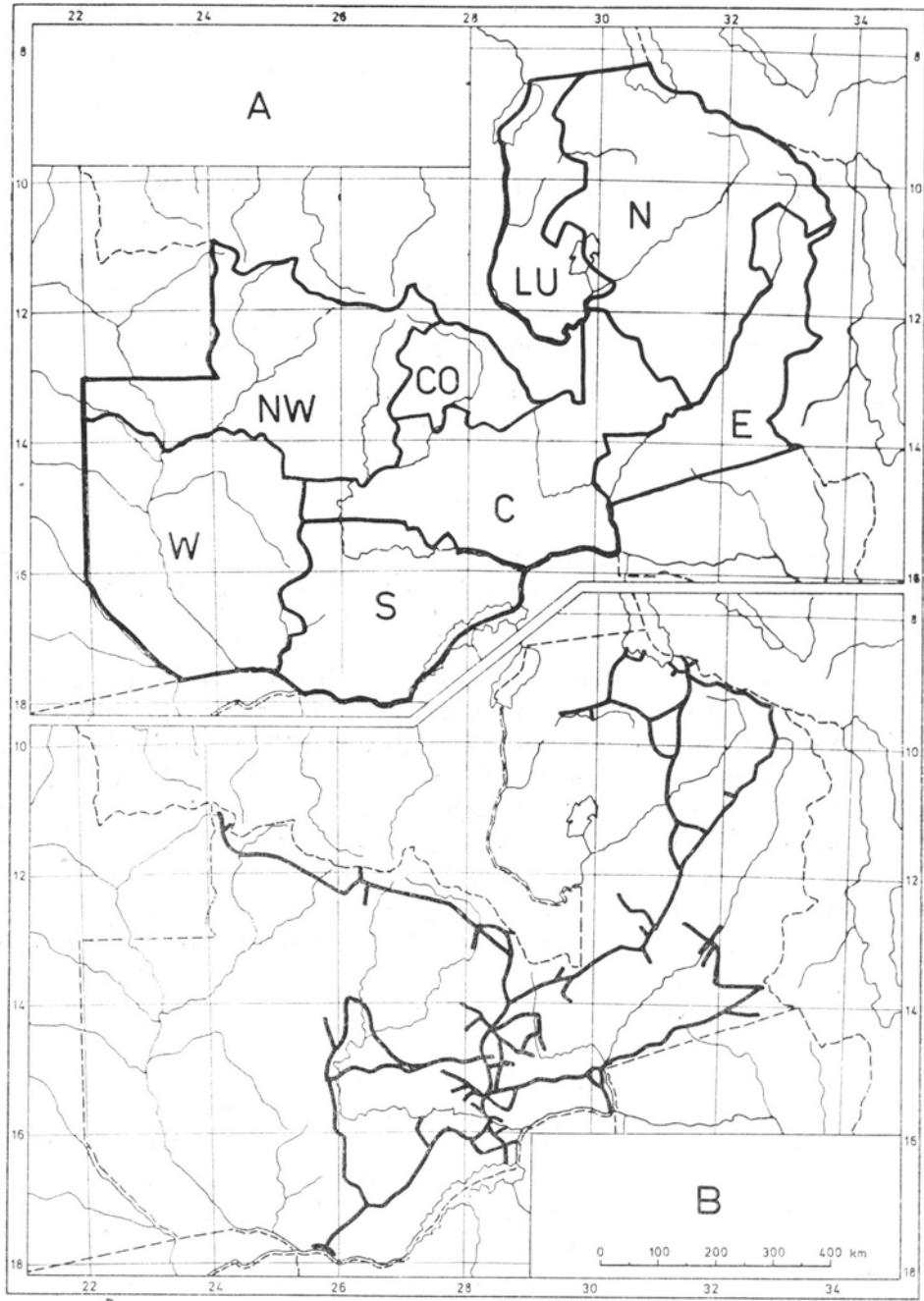


Fig. 1. A — The administrative division of Zambia as in force in 1971–1973.
 C = Central Province, Co = Copperbelt Province, E = Eastern Province, LU =
 Luapula Province, N = Northern Province, NW = North Western Province,
 S = Southern Province, W = Western Province (former Barotse Province).
 B — Routes of the author's collecting trips in Zambia in 1971–1973

1974). The herbarium abbreviations used are those proposed by Holmgren and Keukens (1974).

Table 1

Provincial records for Zambian pteridophytes

Explanations: W = Western Province, NW = North Western Province, CO = Copperbelt Province, LU = Luapula Province, N = Northern Province, C = Central Province, E = Eastern Province, S = Southern Province, + = records included in Schelpe (1970), X = new records (for annotations see text pp. 141-148), ? = doubtful records.

Species	W	NW	CO	LU	N	C	E	S
1. <i>Actiniopteris dimorpha</i> Pic. Ser.	+	.	.
2. <i>Actiniopteris pauciloba</i> Pic. Ser.	.	.	.	+	+	+	+	+
3. <i>Actiniopteris radiata</i> (Sw.) Link	+
4. <i>Adiantum capillus-veneris</i> L.	.	+	x	.	.	+	x	+
5. <i>Adiantum incisum</i> Forsk.	.	.	.	+	.	x	+	+
6. <i>Adiantum patens</i> Willd. in L. subsp. <i>oatesii</i> (Bak.) Schelpe	.	.	.	+	+	.	.	x
7. <i>Adiantum philippense</i> L.	.	+	x	x	+	+	x	+
8. <i>Adiantum poiretii</i> Wikstr. var. <i>poiretii</i>	+	x	+	.
9. <i>Ampelopteris prolifera</i> (Retz.) Copel.	.	x	.	.	+	x	+	+
10. <i>Anemia angolensis</i> Alston	.	+	x	.	+	+	x	+
11. <i>Arachniodes foliosa</i> (C. Chr.) Schelpe	x	.	.
12. <i>Arthropteris monocarpa</i> (Cordem.) C. Chr.	.	x	.	.	x	.	x	.
13. <i>Arthropteris orientalis</i> (J. F. Gmel.) Posthumus	.	+	x	.	+	+	x	+
14. <i>Aspidotis schimperi</i> (Kunze) Pic. Ser.	.	+	x	.	+	+	x	+
15. <i>Asplenium abyssinicum</i> Fée	+	?
16. <i>Asplenium aethiopicum</i> (Burm. f.) Becherer	.	+	x	.	+	+	+	.
17. <i>Asplenium blastophorum</i> Hieron.	.	x	.	.	.	.	.	+
18. <i>Asplenium boltonii</i> Hook. ex Schelpe	+	.	.	.
19. <i>Asplenium buettneri</i> Hieron.	.	.	x	.	+	x	.	+
20. <i>Asplenium chaceanum</i> Schelpe	.	.	.	+	+	.	.	.
21. <i>Asplenium dregeanum</i> Kurze	.	.	.	+	.	.	+	.
22. <i>Asplenium erectum</i> Bory ex Willd. in L. var. <i>usambarensis</i> (Hieron.) Schelpe	+	.	.	?
23. <i>Asplenium formosum</i> Willd. in L.	.	+	x	.	+	x	.	.
24. <i>Asplenium friesorum</i> C. Chr.	+	.	.	.
25. <i>Asplenium inaequilaterale</i> Willd. in L.	.	.	.	+	.	x	+	.
26. <i>Asplenium mannii</i> Hook.	.	.	.	+	.	+	.	.
27. <i>Asplenium megalura</i> Hieron.	.	.	.	+	.	+	.	.
28. <i>Asplenium protensum</i> Schrad.	.	x	+	.	x	x	x	?
29. <i>Asplenium pumilum</i> Sw. subsp. <i>hymenophylloides</i> (Fée) Schelpe	.	x	x	.	x	x	x	x
30. <i>Asplenium ramlovii</i> Hieron.	.	.	+
31. <i>Asplenium theciferum</i> (Kunth) Mett. var. <i>concinnum</i> (Schrad.) Schelpe	.	+	x	.	+	x	.	.
32. <i>Athyrium schimperi</i> Moug. ex Fée	.	x	+	.	x	x	.	.
33. <i>Azolla nilotica</i> Decne. ex Mett.	x	x	x	.
34. <i>Azolla pinnata</i> R. Br. var. <i>africana</i> (Desv.) Bak.	+	.	.	x	+	+	.	+
35. <i>Blechnum attenuatum</i> (Sw.) Mett. var. <i>attenuatum</i>	+	.	.	?

Species

W NW CO LU N C E S

35 A. <i>Blechnum attenuatum</i> (Sw.) Mett. var. <i>giganteum</i> (Kaulf.) Bonap.	.	.	.	.	x	.	x	.
? <i>Blechnum punctulatum</i> Sw. in Schrad.	.	.	.	.	.	.	.	?
36. <i>Blechnum tabulare</i> (Thunb.) Kuhn	.	+	.	x	+	x	x	.
37. <i>Blotiella crenata</i> (Alston) Schelpe	.	+	.	x	+	x	.	.
38. <i>Blotiella currorii</i> (Hook.) Tryon	.	.	.	+	?	.	.	.
39. <i>Blotiella glabra</i> (Bory) Tryon	.	.	.	+	?	.	.	.
40. <i>Blotiella natalensis</i> (Hook.) Tryon	.	+	?	.	.	.	.	.
41. <i>Bolbitis huedelotii</i> (Bory ex Féé) Alston	.	+	.	.	+	.	.	.
42. <i>Ceratopteris thalictroides</i> (L.) Brongn.	.	.	.	x	+	x	.	+
43. <i>Cheilanthes angustifronsos</i> Alston	.	.	.	+	x	.	.	.
44. <i>Cheilanthes farinosa</i> (Forsk.) Kaulf.	.	+	.	.	.	x	x	+
45. <i>Cheilanthes inaequalis</i> (Kunze) Mett. var. <i>inaequalis</i>	.	+	x	x	+	+	+	+
45 A. <i>Cheilanthes inaequalis</i> (Kunze) Mett. var. <i>buchananii</i> (Bak.) Schelpe	.	.	.	.	+	x	x	.
46. <i>Cheilanthes leachii</i> (Schelpe) Schelpe	.	.	.	.	x	+	x	.
47. <i>Cheilanthes multifida</i> (Sw.) Sw.	.	+	x	.	+	.	+	.
48. <i>Cheilanthes similis</i> Ballard	.	+	.	+	x	.	.	.
49. <i>Ctenitis cirrhosa</i> (Schum.) Ching	.	.	+	.	.	.	.	.
? <i>Ctenitis lanuginosa</i> (Willd. ex Kaulf.) Copel.	.	.	.	.	.	.	.	?
50. <i>Cyathea dregei</i> Kunze	.	+	x	x	+	+	.	.
51. <i>Cyathea manniana</i> Hook. in Hook. et Bak.	.	.	.	.	x	.	x	.
52. <i>Cyathea thomsonii</i> Bak.	.	.	.	.	+	x	.	.
53. <i>Dicranopteris linearis</i> (Burm.f.) Underw. var. <i>linearis</i>	.	+	x	+	x	x	.	.
54. <i>Diplazium zanzibanicum</i> (Bak.) C. Chr.	.	.	.	.	.	.	+	.
55. <i>Doryopteris concolor</i> (Langsd. et Fisch.) Kuhn var. <i>kirkii</i> (Hook.) R.E.Fr.	.	.	.	.	+	x	+	x
55 A. <i>Doryopteris concolor</i> (Langsd. et Fisch.) Kuhn var. <i>nicklesii</i> (Tardieu) Schelpe	.	.	+	.	.	x	.	+
56. <i>Drynaria volkensii</i> Hieron. in Engl.	.	.	.	.	.	.	+	.
57. <i>Dryopteris athamantica</i> (Kunze) Kuntze	.	+	x	.	+	x	.	.
? <i>Dryopteris elongata</i> (Sw.) Sim	.	.	.	.	.	.	.	?
58. <i>Dryopteris inaequalis</i> (Schlechtend.) Kuntze var. <i>inaequalis</i>	.	x	x	.	+	x	+	.
58 A. <i>Dryopteris inaequalis</i> (Schlechtend.) Kuntze var. <i>atropaleacea</i> Schelpe	.	.	.	.	+	.	.	.
59. <i>Dryopteris kilemensis</i> (Kuhn) Kuntze	.	.	.	+	x	.	.	.
? <i>Dryopteris mauritiana</i> (Fée) C. Chr.	.	.	.	.	.	.	.	?
60. <i>Dryopteris squamiseta</i> (Hook.) Kuntze	.	.	.	.	.	.	x	.
61. <i>Elaphoglossum petiolatum</i> (Sw.) Urb. subsp. <i>salicifolium</i> (Willd. ex Kaulf.) Schelpe	.	x	x	.	x	x	.	.
62. <i>Elaphoglossum rhodesianum</i> Schelpe	.	.	.	.	+	.	.	.
63. <i>Elaphoglossum spathulatum</i> (Bory) Moore	.	+	x	.	x	x	.	.
64. <i>Elaphoglossum welwitschii</i> (Bak.) C. Chr.	.	.	.	.	+	?	?	.
65. <i>Elaphoglossum zambesiacum</i> Schelpe	.	x	.	.	+	x	.	.
66. <i>Equisetum ramosissimum</i> Desf.	.	x	x	.	x	+	+	+
67. <i>Histiopteris incisa</i> (Thunb.) J. Sm.	.	+	.	+	+	.	.	.
68. <i>Hypodematiump crenatum</i> (Forsk.) Kuhn	.	+	.	.	.	.	.	.

Species	W	NW	CO	LU	N	C	E	S
69. <i>Isoëtes aequinoctialis</i> A. Br. in Kuhn	.	.	+
70. <i>Isoëtes alstonii</i> Reed et Verdcourt	.	×	.	.	.	+	.	+
71. <i>Lonchitis occidentalis</i> Bak.	+	.	.	.
72. <i>Loxogramme lanceolata</i> (Sw.) C. Presl	.	+	×	×	+	×	+	.
73. <i>Lycopodium carolinianum</i> L. var. <i>affine</i> (Bory) Schelpe	+	+	.	×	+	.	.	.
73 A. <i>Lycopodium carolinianum</i> L. var. <i>grandifolium</i> Spring	.	+	.	.	+	×	.	.
73 B. <i>Lycopodium carolinianum</i> L. var. <i>tuberosum</i> (Welw. et A. Braun ex Kuhn) Nessel	.	+	.	×	×	×	.	.
74. <i>Lycopodium cernuum</i> L.	+	+	×	×	+	+	.	.
75. <i>Lycopodium clavatum</i> L. var. <i>inflexum</i> (Beauv.) Spring	+	×	.
76. <i>Lycopodium verticillatum</i> L.f.	×	.	.	.
77. <i>Lygodium kerstenii</i> Kuhn	.	+
78. <i>Lygodium microphyllum</i> (Cav.) R.Br.	+	+	.	+	×	.	.	.
79. <i>Marattia fraxinea</i> Sm. ex J. F. Gmel. in L. var. <i>salicifolia</i> (Schrad.) C. Chr.	.	+	.	.	+	.	×	.
80. <i>Marsilea capensis</i> A. Braun	+
81. <i>Marsilea ephippiocarpa</i> Alston	+	+	.	×
82. <i>Marsilea minuta</i> L.	+	.	.	+	.	+	+	+
83. <i>Microgramma lycopodioides</i> (L.) Copel.	.	×	.	.	×	.	.	.
84. <i>Microlepia speluncae</i> (L.) Moore	.	.	+	+	.	.	×	?
85. <i>Mohria caffrorum</i> (L.) Desv.	+	×	.	.
86. <i>Mohria lepigera</i> (Bak.) Bak.	.	×	.	.	+	+	.	.
87. <i>Nephrolepis biserrata</i> (Sw.) Schott	+	.	.	.
88. <i>Nephrolepis delicatula</i> (Decne. in Jacquem.) Pic. Ser.	.	×	.	.	(x)	.	.	.
89. <i>Nephrolepis undulata</i> (Afz. ex Sw.) J.Sm. in Curt.	+	+	×	×	+	+	+	+
90. <i>Oleandra distenta</i> Kunze var. <i>distenta</i>	.	+	×	×	+	×	.	.
90 A. <i>Olendra distenta</i> Kunze var. <i>welwitschii</i> Bak. in Hook. et Bak.	.	.	.	×	×	.	.	.
? <i>Ophioglossum capense</i> Sw.	?
91. <i>Ophioglossum costatum</i> R. Br.	x	×	+	.	+	×	.	+
92. <i>Ophioglossum gomezianum</i> Welw. ex A. Braun in Kuhn	.	.	+	.	+	+	.	+
93. <i>Ophioglossum lancifolium</i> C. Presl	.	.	+	.	+	+	.	+
94. <i>Ophioglossum reticulatum</i> L.	×	.	.	+
95. <i>Ophioglossum rubellum</i> Welw. ex A. Braun in Kuhn	+	.	.	.
96. <i>Ophioglossum thomasii</i> Clausen	+	.	.	.
97. <i>Ophioglossum vulgatum</i> L.	+	×	+
98. <i>Osmunda regalis</i> L.	.	+	×	×	+	×	.	.
99. <i>Pellaea boivini</i> Hook.	.	.	+	.	.	×	.	+
100. <i>Pellaea calomelanos</i> (Sw.) Link	×	×	×
101. <i>Pellaea doniana</i> J. Sm. ex Hook.	.	+	×	.	+	+	.	.
102. <i>Pellaea dura</i> (Willd.) Hook. var. <i>dura</i> ad var. <i>latipinna</i> Schelpe vergens	×	×	.	.

Species	W	NW	CO	LU	N	C	E	S
102 B. <i>Pellaea dura</i> (Willd.) Hook. var. <i>holstii</i> (Hieron.) Schelpe	.	.	.	.	x	.	.	.
103. <i>Pellaea longipilosa</i> Bonap.	.	.	+	.	+	+	+	+
104. <i>Pellaea pectiniformis</i> Bak. in Hook.	.	x	+	+	x	+	x	+
105. <i>Pellaea viridis</i> (Forsk.) Prantl var. <i>involuta</i> (Sw.) Schelpe	.	.	.	.	.	.	.	+
105 A. <i>Pellaea viridis</i> (Forsk.) Prantl var. <i>glauca</i> (Sim) Sim	.	.	.	.	x	x	x	x
106. <i>Pityrogramma argentea</i> (Willd.) Domin	.	.	.	x	.	.	.	.
107. <i>Pityrogramma calomelanos</i> (L.) Link var. <i>aureoflava</i> (Hook.) Weath. ex Bailey	.	.	+	.	.	.	.	.
108. <i>Platycerium elephantotis</i> Schweinf.	x	.	+	x	?	x	.	.
109. <i>Pleopeltis excavata</i> (Bory ex Willd.) Sledge	+	x	x	+	x	+	.	.
110. <i>Pleopeltis macrocarpa</i> (Bory ex Willd.) Kaulf. ? <i>Polystichum pungens</i> (Kaulf.) Presl	.	.	.	x	x	x	.	?
111. <i>Psilotum nudum</i> (L.) Beauv.	.	.	+	+	x	.	.	.
112. <i>Pteridium aquilinum</i> (L.) Kuhn subsp. <i>aquilinum</i>	x	+	.	+	x	.	.	.
112 A. <i>Pteridium aquilinum</i> (L.) Kuhn subsp. <i>centrali-africanum</i> Hieron.	x	+	x	+	x	.	.	+
113. <i>Pteris catoptera</i> Kunze var. <i>catoptera</i>	.	.	.	x	x	+	.	?
114. <i>Pteris cretica</i> L.	.	.	.	.	.	.	+	.
115. <i>Pteris dentata</i> Forsk. subsp. <i>flabellata</i> (Thunb.) Runemark	x	+	.	.	.	.	.	?
116. <i>Pteris friesii</i> Hieron.	+	x	x	+	+	x	x	x
117. <i>Pteris intricata</i> C. H. Wright	.	.	.	+	x	.	.	.
118. <i>Pteris linearis</i> Poir.	.	.	.	x	.	.	.	.
119. <i>Pteris vittata</i> L.	+	x	.	.	+	.	.	+
120. <i>Pyrrosia schimperiana</i> (Mett. ex Kuhn) Alston	+	x	x	+	+	x	.	+
121. <i>Pyrrosia stolzii</i> (Hieron.) Schelpe	.	.	.	+	+	x	.	+
122. <i>Salvinia molesta</i> Mitchell	x	.	+	.	.	x	.	+
123. <i>Selaginella abyssinica</i> Spring	+	.	x	+	x	.	+	.
124. <i>Selaginella dregei</i> (C. Presl) Hieron.	+	.	x	+	x	.	.	+
125. <i>Selaginella imbricata</i> (Forsk.) Spring ex Decne.	+	.	x	+	x	.	.	x
126. <i>Selaginella mittenii</i> Bak.	+	.	.	.	x	x	.	x
127. <i>Selaginella njam-njamensis</i> Hieron.	+	.	.	.	.	.	+	.
128. <i>Selaginella subisophylla</i> Jermy	+	.	.	+	.	.	.	.
129. <i>Selaginella tenerrima</i> A. Braun ex Kuhn	+	.	.	x	.	.	.	.
130. <i>Tectaria gemmifera</i> (Fée) Alston	+	.	.	.	x	.	.	.
131. <i>Thelypteris bergiana</i> (Schlechtend.) Ching	+	.	.	+	+	.	+	?
132. <i>Thelypteris chaseana</i> Schelpe	+	x	.	+	+	x	.	.
133. <i>Thelypteris confluens</i> (Thunb.) Mort.	+	+	x	x	+	x	x	+
134. <i>Thelypteris dentata</i> (Forsk.) E. St. John	+	+	x	.	x	+	x	x
135. <i>Thelypteris friesii</i> (Brause) Schelpe	+	+	x	x	+	x	x	x
136. <i>Thelypteris gueinziana</i> (Mett.) Schelpe	+	+	x	x	+	x	.	.
137. <i>Thelypteris interrupta</i> (Willd.) K. Iwats.	+	.	.	?	.	+	?	?
138. <i>Thelypteris madagascariensis</i> (Fée) Schelpe	+	x	.	+	x	+	+	+
139. <i>Thelypteris quadrangularis</i> (Fée) Schelpe	+	.	.	x	.	.	.	.
140. <i>Thelypteris striata</i> (Schumach.) Schelpe	+	.	x	x	+	.	.	.
141. <i>Trichomanes mannii</i> Hook.	+	x	.	.	.	.	.	.
142. <i>Trichomanes pyxidiferum</i> L. var. <i>melanotrichum</i> (Schlechtend.) Schelpe	+	x	.	.	x	x	+	.

Species	W	NW	CO	LU	N	C	E	S
143. <i>Trichomanes rigidum</i> Sw.	.	.	.	.	+	.	.	.
144. <i>Vittaria guineensis</i> Desv. var. <i>orientalis</i> Hieron.	.	.	.	.	+	.	.	.
Total	12	68	56	40	113	78	60	50

A list of Zambian pteridophytes indicating their occurrence in each of eight provinces is presented in Table 1. Provincial records not included in Schelpe's (1970) account are documented below (only one exemplary locality for each province cited).

Adiantum capillus-veneris L. — **CO:** Mpongwe River, at old Boma, 25.9.1949, Grout 21/49, NDO. **N:** Sumbu Natl. Park, Nkamba Valley, 11.4.1973, J. Kornaś (not collected). **E:** Fort Jameson (= Chipata), 13.10.1967, J. M. Mutimushi 2309, NDO.

Adiantum incisum Forsk. — **N:** Sumbu Natl. Park, Nkamba Valley, 11.4.1973, J. Kornaś (not collected).

Adiantum patens Willd. in L. subsp. *oatesii* (Bak.) Schelpe. — **S:** Livingstone, Victoria Falls, 8.1.1972, J. Kornaś Pl. Afr. 0824, KRA.

Adiantum philippense L. — **CO:** Ndola Forest Reserve, 30.3.1972, J. Kornaś Pl. Afr. 1465, K, KRA, LUSAKA, MO. **LU:** 2 miles from Mubende, Mapula Valley, 10.4.1961, A. Angus 2804, LUSAKA. **E:** Katete, Mpangwe Hill, 2.3.1973, J. Kornaś (not collected).

Adiantum poiretii Wikstr. var. *poiretii*. — **C:** Lunsemfwa Wonder Gorge, 18.3.1973, J. Kornaś Pl. Afr. 3521, KRA, LUSAKA, MO.

Ampelopteris prolifera (Retz.) Copel. — **NW:** Mwinilunga road 32 km of Solwezi, 12.5.1972, J. Kornaś Pl. Afr. 1718, KRA, NSW. **E:** Lundazi, 18.10.1967, J. M. Mutimushi 2246, NDO.

Anemia angolensis Alston. — **CO:** Lake Chirenga Natl. Mon., 8.3.1973, J. Kornaś (not collected). **E:** Chadiza Hill, 2.3.1973, J. Kornaś Pl. Afr. 3381, KRA.

Arachniodes foliosa (C. Chr.) Schelpe. — **E:** Kornaś (1976).

Arthropteris monocarpa (Cordem.) C. Chr. — **NW, N:** Kornaś (1974). **E:** Nyika Plateau, 6.5.1952, F. White 2712, BM, FHO, K.

Arthropteris orientalis (J. F. Gmel.) Posthumus. — **CO:** Kitwe, Jan. 1960, A. Odgers 22, LUSAKA. **E:** Chadiza, Chiali Mountain, May 1972, D. Levinge s.n., LUSAKA.

Aspidotis schimperi (Kunze) Pic. Ser. — **CO:** Ndola Forest Reserve, 30.3.1972, J. Kornaś Pl. Afr. 1473, KRA, LUSAKA, MO. **E:** Katete, Mpangwe Hill, 2.3.1973, J. Kornaś (not collected).

Asplenium aethiopicum (Burm.f.) Becherer. — **CO:** Chichele Forest Reserve near Ndola, 30.3.1972, J. Kornaś Pl. Afr. 1481-A, KRA.

Asplenium blastophorum Hieron. — **NW:** Zambezi Bridge 98 km NW of Mwinilunga, 13.5.1972, J. Kornaś Pl. Afr. 1736, KRA.

Asplenium buettneri Hieron. — **CO:** Chichele Forest Reserve near Ndola, 30.3.1972, J. Kornaś Pl. Afr. 1481, KRA, MO. **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0872-A, K, KRA, LUSAKA.

Asplenium formosum Willd. in L. — **CO:** Mwekera Falls, 9.3.1973, J. Kornaś Pl. Afr. 3450, KRA, NSW. **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0893, KRA, MO.

Asplenium inaequilaterale Willd. in L. — **E:** Makutus, 26.10.1972, D.B. Fanshawe 11527, NDO.

Asplenium protensum Schrad. — **NW:** Solwezi, Chifubwa Cave Natl. Mon., 15.5.1973, J. Kornaś Pl. Afr. 3980, AAU, G, K, KRA, LUSAKA, NSW. **N:** Lumangwe Falls, 15.4.1973, J. Kornaś Pl. Afr. 3734, BR, G, K, KRA, LUSAKA, MO. **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0869, K, KRA, LUSAKA, MO. **E:** Makutus, 26.10.1972, D. B. Fanshawe 11524, NDO.

Asplenium pumilum Sw. subsp. *hymenophylloides* (Fée) Schelpe. — **NW, CO, N, C, E, S:** Kornaś (1974).

Asplenium theciferum (Kunth) Mett. var. *concinnum* (Schrad.) Schelpe. — **CO:** Chichele Forest Reserve near Ndola, 30.3.1972, J. Kornaś Pl. Afr. 1483, KRA. **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0862, BR, KRA, LUSAKA, NDO.

Athyrium schimperi Moug. ex Fée. — **NW:** 79 km of Mwinilunga on Solwezi road near Lumwana Mission, 12.5.1972, J. Kornaś Pl. Afr. 1730, KRA. **N:** Lumangwe Falls, 15.4.1973, J. Kornaś Pl. Afr. 3752, KRA. **C:** Kundalila Falls, 5.5.1972, J. Kornaś Pl. Afr. 1683, BR, K, KRA, LUSAKA, MO.

Azolla nilotica Decne. ex Mett. in Kotschy et Peyr. — **N, C, E:** Kornaś (1974).

Azolla pinnata R.Br. var. *africana* (Desv.) Bak. — **LU:** Lake Bangweulu, Nsombo, 14.10.1947, P. J. Greenway, J. P. M. Brenan 8207, BM, K.

Blechnum attenuatum (Sw.) Mett. var. *giganteum* (Kaulf.) Bonap. — **N:** Mafingi Mts., 21.11.1952, F. White 3743, BM, K. **E:** Nyika Plateau, 7.5.1952, F. White 2766, BM.

Blechnum tabulare (Thunb.) Kuhn. — **LU:** Kambya, Kawambwa, 23.10.1963, J. M. Mutimushi 399, NDO. **C:** Chilongoma Hills 22 km E of Mkushi, 25.3.1973, J. Kornaś Pl. Afr. 3557, AAU, KRA. **E:** Nyika Plateau, 28.12.1962, D. B. Fanshawe 7279, NDO.

Blotiella crenata (Alston) Schelpe. — **LU:** near Samfya Mission, 30.8.1952, F. White 3174, BM, K. **C:** Irumi Hills 22 km NE of Mkushi Boma, 24.3.1973, J. Kornaś Pl. Afr. 3537, K, KRA.

Ceratopteris thalictroides (L.) Brongn. — **LU:** Schelpe (1973). **C:** Lusaka (Distr.), on the Kafue, 8.3.1971, D. B. Fanshawe 11188, NDO.

Cheilanthes angustifrondosa Alston. — **N:** Kalambo Falls, 7.4.1973,

J. Kornaś Pl. Afr. 3662, AAU, BR, G, K, KRA, LUSAKA, MO, NDO, NSW.

Cheilanthes farinosa (Forsk.) Kaulf. — **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0881, KRA. **E:** between Katete and Naviruli, 2.3.1973, J. Kornaś Pl. Afr. 3376, KRA, MO.

Cheilanthes inaequalis (Kunze) Mett. var. *inaequalis*. — **CO:** 32 km N of Kapiri Mphoshi, 30.3.1972, J. Kornaś Pl. Afr. 1484, AAU, K, KRA, NSW. **LU:** Schelpe (1973).

Cheilanthes inaequalis (Kunze) Mett. var. *buchananii* (Bak.) Schelpe. — **C:** Muka Mwanji Hills 25 km SSW of Kabwe, 13.1.1973, J. Kornaś Pl. Afr. 3012, KRA. **E:** Chadiza, 2.3.1973, J. Kornaś Pl. Afr. 3385, KRA.

Cheilanthes leachii (Schelpe) Schelpe — **N:** Great North Road 125 km S of Mpika, 28.2.1972, J. Kornaś Pl. Afr. 1314, KRA. **E:** between Katete and Naviruli, 2.3.1973, J. Kornaś Pl. Afr. 3374, G, K, KRA, MO, NSW.

Cheilanthes multifida (Sw.) Sw. — **CO:** Ndola Forest Reserve, 30.3.1972, J. Kornaś Pl. Afr. 1471, BR, KRA, LUSAKA, MO.

Cheilanthes similis Ballard. — **N:** Mbala Distr., Kambole Escarpment, 2.1.1955, H. M. Richards 3875, K.

Cyathea dregei Kunze. — **CO:** Chati — Kitwe, 3.7.1967, D. B. Fanshawe 10138, NDO. **LU:** Kawambwa, 26.9.1963, D. B. Fanshawe 8147, LUSAKA.

Cyathea manniana Hook. in Hook. et Bak. — **N:** Kornaś (1974). **E:** Nyika Plateau, 25.10.1958, N.K.B. Robson 344, MPR, NDO.

Cyathea thomsonii Bak. — **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0891, K, KRA, LUSAKA, MO.

Dicranopteris linearis (Burm.f.) Underw. var. *linearis*. — **CO:** Mindolo Mission, 6.3.1964, J. M. Mutimushi 676, K, LUSAKA. **N:** Chipoma Falls, 28.5.1972, J. Kornaś Pl. Afr. 1881, K, KRA, LUSAKA, MO. **C:** Chilongoma Hills 22 km E of Mkushi, 25.3.1973, J. Kornaś Pl. Afr. 3554, KRA, LUSAKA.

Doryopteris concolor (Langsd. et Fisch.) Kuhn var. *kirkii* (Hook.) R. E. Fr. — **C:** Sanje 50 km W of Lusaka, 9.3.1972, J. Kornaś Pl. Afr. 1362, G, KRA. **S:** Victoria Falls, 21.11.1971, J. Kornaś Pl. Afr. 0484, BR, KRA.

Doryopteris concolor (Langsd. et Fisch.) Kuhn var. *nicklesii* (Tardieu) Schelpe. — **C:** Chalimbana River 18 km E of Lusaka, 5.1.1972, J. Kornaś Pl. Afr. 0788, AAU, G, K, KRA, LUSAKA, NSW.

Dryopteris athamantica (Kunze) Kuntze. — **CO:** Ndola Forest Reserve, 30.3.1972, J. Kornaś Pl. Afr. 1468, BR, G, KRA, LUSAKA, MO. **C:** Leopards Hill Road 24 km of Lusaka, 4.3.1972, J. Kornaś Pl. Afr. 1329, BR, KRA, LUSAKA, MO.

Dryopteris inaequalis (Schlechtend.) Kuntze var. *inaequalis*. — **NW:** Kabompo Gorge road, 14.5.1969, J. M. Mutimushi 3149, NDO. **CO:** Lake

Chirengwa Natl. Mon., 8.3.1973, J. Kornaś Pl. Afr. 3422, KRA. **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0867, BR, G, K, KRA, LUSAKA, MO.

Dryopteris kilemensis (Kuhn) Kuntze. — N: Kasama Distr., Mpungwe, 18.12.1960, E. A. Robinson 4204, K.

Dryopteris squamiseta (Hook.) Kuntze. — **E:** Kornaś (1976).

Elaphoglossum petiolatum (Sw.) Urb. subsp. *salicifolium* (Willd. ex Kaulf.) Schelpe. — **NW, CO, N, C:** Kornaś (1976).

Elaphoglossum spathulatum (Bory) Moore. — **CO:** Lake Chirengwa Natl. Mon., 8.3.1973, J. Kornaś Pl. Afr. 3424, K, KRA, MO. **N:** Mafinga, 23.5.1973, S. M. Chisumpa 40, KRA. **C:** Kundalila Falls, 5.5.1972, J. Kornaś Pl. Afr. 1676-A, KRA, MO.

Elaphoglossum zambesiacum Schelpe. — **NW:** Zambezi Source, 13.5.1972, J. Kornaś Pl. Afr. 1757, BR, G, KRA, MO. **C:** Kundalila Falls, 5.5.1972, J. Kornaś Pl. Afr. 1682, AAU, K, KRA, MO, NSW.

Equisetum ramosissimum Desf. — **NW:** Solwezi, 12.1.1969, J. M. Mutimushi 2951, NDO. **CO:** Kitwe, 16.11.1965, D. B. Fanshawe 9422, NDO. **N:** Muchinga Escarpment W of Luangwa South Natl. Park, Lokwa Stream, 30.5.1973, J. Kornaś Pl. Afr. 4025, AAU, G, K, KRA, LUSAKA, NSW.

Isoëtes alstonii Reed et Verdcourt. — **NW:** Kasempa District, Chizela (= Chizera), 28.3.1961, Drummond and Rutherford-Smith 7473 (incorrectly located by Schelpe 1970 in N).

Loxogramme lanceolata (Sw.) C. Presl. — **CO:** Chati — Kitwe, 2.5.1963, D. B. Fanshawe 7785, K, NDO. **LU:** 18 miles W of Kawambwa, 31.10.1952, F. White 3566, K. **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0870, KRA.

Lycopodium carolinianum L. var. *affine* (Bory) Schelpe. — **LU:** Kawambwa, Fort Rosebery road 5 miles from Kawambwa, 27.11.1961, H. M. Richards 15397, K.

Lycopodium carolinianum L. var. *grandifolium* Spring. — **C:** Kundalila Falls, 3.2.1973, J. Kornaś Pl. Afr. 3199, KRA, LUSAKA.

Lycopodium carolinianum L. var. *tuberosum* (Welw. et A. Braun ex Kuhn) Nessel. — **LU:** Kawambwa, Ntumbacushi, 23.8.1957, D. B. Fanshawe 3565, NDO. **N:** on Mbala road 6 miles of Kasama, Dec. 1953, F. M. Benson 66, BM. **C:** between Unda-Unda and Rufunsa, 2.1.1972, J. Kornaś Pl. Afr. 0778, AAU, BR, G, K, KRA, LUSAKA, MO, NSW.

Lycopodium cernuum L. — **CO:** Kitwe — Kapiri Mposhi road 3 km NW of the Ndola Road junction, 15.5.1972, J. Kornaś Pl. Afr. 1808, AAU, G, K, KRA, LUSAKA, MO, NSW. **LU:** Luwingu, 15.5.1958, A. Angus 1941, K, MPR.

Lycopodium clavatum L. var. *inflexum* (Beauv.) Spring. — **E:** Nyika Plateau, 30.12.1962, D. B. Fanshawe 7325, NDO.

Lycopodium verticillatum L.f. — **N:** Kornaś (1974).

Lygodium microphyllum (Cav.) R. Br. — **N:** Kasama Distr., Mungwi, 7.10.1960, E. A. Robinson 3900, EA, K.

Marattia fraxinea Sm. ex J. F. Gmel. in L. var. *salicifolia* (Schrad.) C. Chr. — **E:** Makutus, 27.10.1972, D. B. Fanshawe 11549, NDO.

Marsilea ephippiocarpa Alston. — **S:** Schelpe (1973).

Microgramma lycopodioides (L.) Copel. — **NW, N:** Kornaś (1974).

Microlepia speluncae (L.) Moore. — **E:** Lunkwakwa, Chipata, 12.10. 1967, J. M. Mutimushi 2135, NDO.

Mohria caffrorum (L.) Desv. — **C:** Kundalila Falls, 5.5.1972, J. Kornaś Pl. Afr. 1666, BR, G, K, KRA, LUSAKA, MO, NDO.

Mohria leptigera (Bak.) Bak. — **NW:** Solwezi, Chifubwa Cave, 15.5. 1973, J. Kornaś (not collected).

Nephrolepis delicatula (Decne. in Jacquem.) Pic. Ser. — **NW, (N):** Kornaś (1976).

Nephrolepis undulata (Afz. ex Sw.) J. Sm. in Curt. — **CO:** Ndola Forest Reserve, 30.3.1972, J. Kornaś Pl. Afr. 1466, BR, G, KRA, LUSAKA, MO. **LU:** Schelpe (1973).

Oleandra distenta Kunze var. *distenta*. — **CO:** Chingola, 9.12.1972, D. B. Fanshawe 11696, NDO. **LU:** Kawambwa, 22.3.1962, R. M. Lawton 839, K. **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0892, BR, K, KRA, LUSAKA, MO.

Oleandra distenta Kunze var. *welwitschii* Bak. in Hook. et Bak. — **LU, N:** Kornaś (1976).

Ophioglossum constatum R. Br. — **W:** Machili, 3.3.1961, D. B. Fanshawe 6383, NDO. **NW:** Mwinilunga Distr., Kalenda. Dambo, 14.2.1938, E. Milne-Redhead 4567, BM. **C:** Lusaka, 17.1.1965, E. A. Robinson 6363, MPR.

Ophioglossum reticulatum L. — **N:** Sansia Falls, 29.12.1958, H. M. Richards 10370, K.

Ophioglossum vulgatum L. — **E:** Katete, Mpangwe Hills, 2.3.1973, J. Kornaś Pl. Afr. 3353, KRA.

Osmunda regalis L. — **CO:** Ndola, Chichele, 7.6.1964, J. M. Mutimushi 718, DNO. **LU:** Kawambwa, 23.8.1957, D. B. Fanshawe 3569 K. **C:** Kundalila Falls, 4.5.1972, J. Kornaś Pl. Afr. 1644, K, KRA LUSAKA.

Pellaea boivinii Hook. — **C:** between Unda-Unda and Rufunsa, 6.4.1972, J. Kornaś Pl. Afr. 1553, BR, G, K, KRA, LUSAKA, MO, NSW.

Pellaea calomelanos (Sw.) Link. — **C, E, S:** Kornaś (1974).

Pellaea doniana J. Sm. ex Hook. — **CO:** Chichele Forest Reserve near Ndola, 30.3.1972, J. Kornaś Pl. Afr. 1479, AAU, BR, G, K, KRA, LUSAKA, MO, NSW.

Pellaea dura (Willd.) Hook. var. *dura*. — **N:** Great North Road 125 km S of Mpika, 17.4.1973, J. Kornaś Pl. Afr. 3782, KRA. **C:** Sanje

50 km W of Lusaka, 9.3.1972, J. Kornaś Pl. Afr. 1361, K, KRA, LUSAKA.

Pellaea dura (Willd.) Hook. var. *dura* ad var. *latipinna* Schelpe vergens. — NW: Solwezi, Chifubwa Cave, 15.5.1973, J. Kornaś Pl. Afr. 3982, KRA. C: Muka Mwanji Hills 25 km SSW of Kabwe, 25.2.1973, J. Kornaś Pl. Afr. 3288, KRA, NDO.

Pellaea dura (Willd.) Hook. var. *holstii* (Hieron.) Schelpe. — N: Fries (1914).

Pallaea pectiniformis Bak. in Hook. — NW: Solwezi, Chifubwa River Gorge, 20.3.1961, R. B. Drummond and R.O.B. Rutherford-Smith 7145, K. N: Great North Road 125 km S of Mpika, 28.2.1972, J. Kornaś Pl. Afr. 1319, G, KRA. E: Katete, Mpangwe Hills, 2.3.1973, J. Kornaś (not collected).

Pellaea viridis (Forsk.) Prantl var. *glaucoides* (Sim) Sim. — C, E, S: Kornaś (1976).

Pityrogramma argentea (Willd.) Domin. — N: Kornaś (1976).

Platycerium elephantotis Schweinf. — NW: Mwombezi River on Solwezi — Mwinilunga road, 14.5.1972, J. Kornaś Pl. Afr. 1788, KRA, LUSAKA. N: Luangwa South Natl. Park, near Chibembe Pontoon, 1.6.1973, J. Kornaś Pl. Afr. 4030, KRA, LUSAKA, MO. E: Chipata, Mwami River, 10.7.1958, G. E. Grout 211, FHO.

Pleopeltis excavata (Bory ex Willd.) Sledge. — CO: Ndola Forest Reserve, 30.3.1972, J. Kornaś Pl. Afr. 1470, BR, G, K, KRA, LUSAKA. LU: Kawambwa Distr., 32 km W of Kalungwishi River, 23.12.1963, B. K. Simon and G. Williamson 1517, K. C: Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0863, BR, K, KRA, LUSAKA, MO.

Pleopeltis macrocarpa (Bory ex Willd.) Kaulf. — N, C, E: Kornaś (1974).

Psilotum nudum (L.) Beauv. — N: Sumbu Natl. Park, Nkamba Valley, 11.4.1973, J. Kornaś Pl. Afr. 3685, BR, K, KRA, LUSAKA, MO, NDO.

Pteridium aquilinum (L.) Kuhn subsp. *aquilinum*. — NW: Mwinilunga — Solwezi road 79 km of Mwinilunga near Lumwana Mission, 12.5.1972, J. Kornaś Pl. Afr. 1725, KRA. C: between Unda-Unda and Rufunsa, 2.1.1972, J. Kornaś Pl. Afr. 0774, KRA.

Pteridium aquilinum (L.) Kuhn subsp. *centrali-africanum* Hieron. — NW: Mutanda River on Mwinilunga — Solwezi road, 32 km of Solwezi, 12.5.1972, J. Kornaś Pl. Afr. 1715-A, G, KRA. LU: Lake Bangweulu, 21.5.1931, D. Stevenson 281, K. C: Leopards Hill Road 24 km of Lusaka, 25.11.1971, J. Kornaś Pl. Afr. 0507, K, KRA, LUSAKA, MO.

Pteris catoptera Kunze var. *catoptera*. — N: Mbala Distr., Ndundu, 6.5.1959, H. M. Richards 11373, EA. C: Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0880, K, KRA, LUSAKA.

Pteris dentata Forsk. subsp. *flabellata* (Thunb.) Runemark. — NW:

Solwezi, Chifubwa Cave, 15.5.1973, J. Kornaś Pl. Afr. 3981, BR, K, KRA, LUSAKA.

Pteris friesii Hieron. — **CO:** Kitwe — Kapiri Mposhi road 3 km NW of the Ndola Road junction, 15.5.1972, J. Kornaś Pl. Afr. 1805, KRA, NSW. **LU:** Ntumbacushi Falls, 22.6.1957, E. A. Robinson 2348, K, MPR. **E:** Katete, Mpangwe Hills, 2.3.1973, J. Kornaś Pl. Afr. 3359, KRA, MO. **S:** Victoria Falls, 21.11.1971, J. Kornaś Pl. Afr. 0485, KRA.

Pteris intricata C. H. Wright. — **N:** Mporokoso — Kasama road 32 km E. of Mporokoso, 16.4.1973, J. Kornaś Pl. Afr. 3766, KRA.

Pteris linearis Poir. — **N:** Kornaś (1976).

Pteris vittata L. — **CO:** Kitwe, 13.6.1963, J. M. Mutimushi 323, NDO.

Pyrrosia schimperana (Mett. ex Kuhn) Alston. — **CO:** Mwekera Falls, 9.3.1973, J. Kornaś Pl. Afr. 3451, BR, KRA. **LU:** Lake Bangweulu near Samfya, 30.8.1952, A. Angus 345, BM, K. **E:** Mpangwe Mountain, Chipata Distr., Grout 275, NDO.

Salvinia molesta Mitchell. — **W:** Mwandi, 2.9.1972, D. B. Fanshawe 7020, NDO. **C:** Feira, 4.7.1972, J. Kornaś Pl. Afr. 1929, KRA.

Selaginella abyssinica Spring. — **LU:** Mapula Valley 2 miles from Mubende, A. Angus 2803, FHO. **C:** Kundalila Falls, 17.1.1972, J. Kornaś Pl. Afr. 0883, KRA.

Selaginella dregei (C. Presl) Hieron. — **LU:** Kawambwa Distr., Timnatushi Falls, H. M. Richards 9303, K. **C:** Mkushi Distr., Muchinga Escarpment, Lunsemfwa Wonder Gorge, 19.4.1972, J. Kornaś Pl. Afr. 1592, BR, G, K, KRA, LUSAKA. **S:** Lake Kariba, Lufua River valley, 24.5.1962, D. S. Mitchell 618, NDO.

Selaginella mittenii Bak. — **N, C, S:** Kornaś (1974).

Salaginella tenerima A. Braun ex Kuhn. — **N:** Lumangwe Falls, 15.4.1973, J. Kornaś Pl. Afr. 3751, EGR, KRA, LUSAKA.

Thelypteris chaseana Schelpe. — **CO:** Mwekera River, Mutenge, 9.3.1973, J. Kornaś Pl. Afr. 3444, KRA, MO. **E:** Lundazi, 18.10.1967, J. M. Mutimushi 2245, NDO.

Thelypteris confluens (Thunb.) Morton. — **CO:** Kitwe — Kapiri Mposhi road 3 km NW of the Ndola Road junction, 15.5.1972, J. Kornaś Pl. Afr. 1804, BR, KRA. **LU:** Lake Bangweulu, 10.1.1959, A. Bowmaker 23, NDO. **C:** Kundalila Falls, 4.5.1972, J. Kornaś Pl. Afr. 1654, AAU, BR, G, KRA, MO. **E:** Chipata, Lunkwakwa, 12.10.1967, J. M. Mutimushi 2133, NDO.

Thelypteris dentata (Forsk.) E. St. John. — **CO:** Kitwe, 29.11.1967, J. M. Mutimushi 2370, NDO. **N:** Kalambo Falls, 22.10.1971, J. Kornaś Pl. Afr. 0370, K, KRA, LUSAKA, MO. **E:** Katete, Mpangwe Hills, 2.3.1973, J. Kornaś Pl. Afr. 3356, KRA, MO. **S:** Victoria Falls, 21.11.1971, J. Kornaś Pl. Afr. 0491, BR, K, KRA, LUSAKA.

Thelypteris friesii (Brause) Schelpe. — **CO:** Mwekera River near

Mutenge, 9.3.1973, J. Kornaś Pl. Afr. 3443, AAU, K, KRA, MO. **LU:** Kawambwa, Kambya, 2.9.1963, J. M. Mutimushi 490, NDO. **C:** between Unda-Unda and Rufunsa, 2.1.1972, J. Kornaś Pl. Afr. 0787, AAU, G, K, KRA, LUSAKA, MO, NSW.

Thelypteris interrupta (Willd.) K. Iwats. — **NW:** Nayakaseya 92 km of Mwinilunga, 13.5.1972, J. Kornaś Pl. Afr. 1751, G, KRA. **N:** Chishimba Falls, 25.5.1972, J. Kornaś Pl. Afr. 1815, BR, G, K, KRA, LUSAKA, MO, NSW.

Thelypteris madagascariensis (Fée) Schelpe. — **N:** Kornaś (1974).

Thelypteris quadrangularis (Fée) Schelpe. — **N:** Kornaś (1976).

Thelypteris striata (Schumach.) Schelpe. — **CO:** Mwekera River Falls, 9.3.1973, J. Kornaś Pl. Afr. 3452, KRA, **LU:** Schelpe (1973).

Trichomanes manii Hook. — **NW:** Kornaś (1976).

Trichomanes pyxidiferum L. var. *melanotrichum* (Schlechtend.) Schelpe. — **NW:** Mwinilunga Distr., Zambezi Rapids, 13.5.1972, J. Kornaś Pl. Afr. 1743, AAU, BR, G, K, KRA, LUSAKA, MO, NDO, NSW. **N:** Bwingi Mfumu Hills 45 km NNE of Mpika, 4.4.1973, J. Kornaś Pl. Afr. 3589, KRA, LUSAKA. **C:** Kundalila Falls, 20.5.1972, K. Straznický s. n., KRA.

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Występowanie paprotników w Zambii

S t r e s z c z e n i e

W pracy zestawiono 477 notowań, dotyczących występowania 144 gatunków paprotników, znanych dotychczas z Zambii, w każdej z ośmiu prowincji administracyjnych tego kraju. 213 spośród podanych notowań nie było przytoczonych w opracowanym przez Schelpego (1970) tomie *Flora Zambesiaca*, poświęconym paprotnikom.