Pteridophyta collected in the Kivu Zone of Zaire

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Abstract

A list is given of 50 taxa of pteridophytes collected in 1983 in the Kivu Zone of Zaire by K. A. Nowak and identified in KRA by J. Kornaś. Twenty six of these taxa have not been indicated for the Kivu Zone in the recent revision of the pteridophytes of this area by Pichi Sermolli (1983, 1985).

Key words: *Cheilanthes concolor* var. *kirkii* comb. nova, ferns, floristics, tropical Africa, *Trichomanes inopinatum* comb. nova

In February 1983 one of us (K.A.N.) had the opportunity to collect pteridophytes in the following localities in the Kivu Zone of Zaire (Fig. 1): 1) on the banks of the Evi (Cyabafi) River at Buramba near Mirambi (environs of Kananza, Rutshuru Region, 0° 56' S, 29° 34' E); 2) in a ravine at Kisharo (Rutshuru Region, 0° 57' S, 29° 34' E); 3) near the Rutshuru Village and the Falls of the Rutshuru River (Rutshuru Region, 1° 13' S, 29° 26' E); 4) on the slopes of Nyiragongo Volcano (Virunga Mts., Gome Region, 1° 31' S, 29° 16' E).

Very little published pteridological records from these localities exist. Pichi Sermolli (1983, 1985), who recently revised all the herbarium material available in the collections in Belgium (BR, GENT, LG, NAM¹), indicates only the occurrence of *Phymatosorus scolopendria* (Burm. f.) Pichi Sermolli (*Phymatodes scolopendria* (Burm. f.) Ching) and *Nephrolepis biserrata* (Swartz) Schott at the Rutshuru Falls, and of these two species together with *Arthropteris orientalis* (J.F. Gmel.) Posthumus, *Asplenium majus* (Hieron.) Pichi Sermolli and *Pteris vittata* L. from the slopes of Mt. Nyiragongo. It seems therefore justified to

¹ Herbarium acronyms according to Holmgren et al. 1981.

Fig. 1. Map of the Kivu Zone of Zaire showing the position of localities of collections (underlined)

publish the present list, the more so as it includes information on several rare and interesting species (e.g. *Asplenium varians* subsp. *fimbriatum*, rediscovered after many years).

The material was identified in the Herbarium Universitatis Jagellonicae (KRA). Critical taxa were compared with the relevant specimens in the fern collections in BR and GENT during a visit of J.K. to Belgium in 1984. The kind assistance and hospitality of the Directors and Staff Members of both these herbaria are gratefully acknowledged. The paper was prepared under a grant of the Polish Academy of Sciences (MR II. 2.2.4.).

The list of species is arranged alphabetically. The taxonomic nomenclature is that of Pichi Sermolli (1983, 1985), with a few most important synonyms added. Species not indicated for the Kivu Zone by Pichi Sermolli are marked with an asterisk*. Voucher specimens are deposited in KRA, with duplicates sent to BR, GENT, and some other herbaria.

LIST OF SPECIES

(B = Buramba, K = Kisharo Ravine, N = Nyiragongo Volcano, R = Rutshuru Village, RF = Rutshuru Falls).

Adiantum thalictroides Willd. ex Schlecht. (*A. poiretii* Wikstr.) — N, forest on mountain slope, alt. 2400 m, Nowak 1795, KRA.

**Anthrophyum immersum* (Bory de Saint-Vincent ex Willd.) Mett. — RF, thickets near the waterfall, alt. 1220 m, Nowak 1810, KRA.

Arthropteris monocarpa (Cordem.) C. Chr. — N, forest on mountain slope, alt. 2400 m, Nowak 1796, KRA; ibidem, alt. 2500 m, Nowak 1824, KRA.

Arthropteris orientalis (J.F. Gmel.) Posthumus — R, yard of the parish house, alt. 1200 m, Nowak 1818, KRA; RF, thickets, alt. 1250 m, Nowak 1769, KRA.

**Asplenium abyssinicum* Fée — N, montane forest, alt. 2400 m, Nowak 1807, KRA; ibidem, alt. 2500 m, Nowak 1822, KRA.

**Asplenium cecii* Pichi Sermolli — RF, thickets near the waterfall, alt. 1250 m, Nowak 1738, KRA.

**Asplenium* cfr. *currori* Hook. — B, on slope of a ravine, alt. 1450 m, Nowak 1755, KRA; RF, thickets near the waterfall, alt. 1250 m, Nowak 1775, KRA.

Asplenium friesiorum C. Chr. — N, montane forest, alt. 2800 m, Nowak 1772, KRA; ibidem, Nowak 1785, BR, KRA.

Asplenium cfr. *kassneri* Hieron. — N, montane forest, alt. 2700 m, Nowak 1788, KRA.

**Asplenium lademannianum* Rosenst. (*A. lividum* auct. afr.) — RF, thickets near the waterfall, alt. 1250 m, Nowak 1737, KRA.

Asplenium mannii Hook. — N, epiphyte in montane forest, alt. 2200 m, Nowak 1790, BR, GENT, KRA.

**Asplenium protensum* Schrad. — N, montane forest, alt. 2250 m, Nowak 1763, KRA; ibidem, alt. 2400 m, Nowak 1821, KRA.

Asplenium sandersonii Hook. — N, epiphyte in montane forest, alt. 2400 m, Nowak 1794, KRA; RF, thickets at the waterfall, on rocks, alt. 1250 m, Nowak 1813, BR, KRA.

**Asplenium sertularioides* Bak. — N, forest on mountain slope, alt. 2800 m, Nowak 1786, KRA.

**Asplenium* cfr. *strangeanum* Pichi Sermolli — RF, thickets near the waterfall, alt. 1250 m, Nowak 1736, KRA.

**Asplenium varians* Wall. ex Hook. subsp. *fimbriatum* (Kunze) Schelpe — RF, thickets near the waterfall, on rocks and tree trunks, alt. 1250 m, Nowak

1812, KRA; ibidem, Nowak 1737 bis, KRA. This material is being studied presently by T. Reichstein, Basel, and R. Viane, Gent.

Christella dentata (Forssk.) Brownsey et Jermy (*Thelypteris dentata* (Forssk.) E. St. John) — K, on slope, alt. 1400 m, Nowak 1770, KRA; RF, thickets at the waterfall, alt. 1220 m, Nowak 1768, BR, KRA.

**Ctenitis cirrhosa* (Schum.) Ching — RF, thickets near the waterfall, alt. 1220 m, Nowak 1811, KRA.

**Cyathea camerooniana* Hook. (cfr. Holttum 1981) — B., forest on the river, alt. 1420 m, Nowak 1765, KRA.

**Doryopteris concolor* (Langsd. et Fisch.) Kuhn var. *kirkii* (Hook.) Smith (*D. kirkii* Hook., *Cheilanthes concolor* (Langsd. et Fisch.) R. et A. Tryon var. *kirkii* (Hook.) Kornaś comb. nova² — RF, thickets near the waterfall, alt. 1220 m, Nowak 1809, KRA.

Dryopteris callolepis C. Chr. — N, forest on mountain slope, alt. 2300 m, Nowak 1825, KRA; ibidem, alt. 2400 m, Nowak 1776, KRA; ibidem, alt. 2600 m, Nowak 1778, KRA.

Dryopteris inaequalis (Schlecht.) Kuntze s.l. — N, forest on mountain slope, alt. 2700 m, Nowak 1759, KRA. All specimens of *D. inaequalis* group from the Kivu Zone, Rwanda and Burundi are regarded by Pichi Sermolli 1985 as belonging to *D. pentheri* (Krasser) C. Chr. — a critical taxon which needs further study.

Dryopteris kilemensis (Kuhn) O. Kunze — N, forest on mountain slope, alt. 2900 m, Nowak 1777, KRA.

**Elaphoglossum aubertii* (Desv.) Moore — N, forest on mountain slope, alt. 2600 m, Nowak 1773, KRA.

Loxogramme lanceolata (Swartz) Presl — N, forest on mountain slope, epiphyte, alt. 2400 m, Nowak 1804, KRA; ibidem, alt. 2250 m, Nowak 1803, KRA; ibidem, alt. 2700 m, Nowak 1801, KRA; ibidem, alt. 2800 m, Nowak 1806, KRA; RF, thickets near the waterfall, alt. 1250 m, Nowak 1774, BR, KRA.

Lycopodium clavatum L. — N, forest on mountain slope, alt. 2700 m, Nowak 1798, KRA; ibidem, alt. 2900 m, Nowak 1797, KRA.

Marattia fraxinea Smith — B., forest on the river, alt. 1420 m, Nowak 1743, KRA.

**Microlepia speluncae* (L.) Moore — B, forest on the river, alt. 1420 m, Nowak 1749, BR, GENT, KRA.

Microsorium punctatum (L.) Copel. — B, slope of the ravine, alt. 1450 m, Nowak 1757, KRA; K, thicket in the ravine, alt. 1400 m, Nowak 1751, KRA; near Rwindi, 0° 47' S, 29° 17' E, forest on the Rwindi River, alt. 1000 m, Nowak 1758, KRA; RF, thicket near the waterfall, epiphyte, alt. 1250 m, Nowak 1741, AAU, BR, GENT, KRA.

² Basionym: *Cheilanthes kirkii* Hook., Second Cent. t. 81 (1861).

Nephrolepis biserrata (Swartz) Schott — B, slope of the ravine, alt. 1450 m, Nowak 1755 bis, KRA; K, slope in the ravine, alt. 1400 m, Nowak 1752, AAU, BR, GENT, KRA; RF, epiphyte on palms on riverbank below the waterfall, alt. 1200 m, Nowak 1740, BR, KRA; ibidem, thickets near the waterfall, alt. 1220 m, Nowak 1767, KRA.

**Pellaea doniana* J. Sm. ex Hook. — B, slope of the ravine, alt. 1450 m, Nowak 1816, KRA.

**Pellaea viridis* (Forssk.) Prantl s.s. (*P. viridis* (Forssk.) Prantl var. *viridis*, *Cheilanthes viridis* (Forssk.) Swartz var. *viridis*) — K, slope of the ravine, alt. 1400 m, Nowak 1817, KRA.

Phymatosorus scolopendria (Burm. f.) Pichi Sermolli (*Phymatodes scolopendria* (Burm. f.) Ching) — K, thickets on the slope of the ravine, alt. 1400 m, Nowak 1750, AAU, BR, GENT, KRA; R, thicket in the yard of the parish house, alt. 1200 m, Nowak 1756, BR, GENT, KRA; RF, thickets near the waterfall, alt. 1250 m, Nowak 1739, KRA.

**Platycterium elephantotis* Schweinf. (*P. angolense* Welw. ex Bak.) — R, epiphyte in thickets in the yard of the parish house, alt. 1200 m, Nowak 1826, KRA.

Pleopeltis mildbraedii (Hieron.) Pichi Sermolli — N, forest on mountain slope, alt. 2700 m, Nowak 1799, KRA.

Pleopeltis macrocarpa (Bory ex Willd.) Kaulf. — N, epiphyte in montane forest, alt. 2200 m, Nowak 1802, KRA; ibidem, alt. 2700 m, Nowak 1800, KRA.

Pneumatopteris afra (C. Chr.) Holttum (*Thelypteris afra* (C. Chr.) Reed) — B, forest on river bank, alt. 1420 m, Nowak 1744, KRA.

**Pneumatopteris afra* (C. Chr.) Holttum x *Christella dentata* (Forssk.) Brownsey et Jermy (cfr. Holttum 1974) — B, forest on river bank, alt. 1420 m, Nowak 1744-A, KRA (together with *P. afra*, Nowak 1744).

**Pneumatopteris blastophora* (Alston) Holttum (*Thelypteris blastophora* (Alston) Reed) — B, forest on river bank, alt. 1420 m, Nowak 1760, KRA.

**Polystichum fuscopaleaceum* Alston var. *fuscopaleaceum* (*P. setiferum* (Forssk.) Moore ex Woynar var. *fuscopaleaceum* (Alston) Schelpe) — N, forest on mountain slope, alt. 2200 m, Nowak 1784, KRA; ibidem, alt. 2300 m, Nowak 1764, KRA.

Polystichum fuscopaleaceum Alston var. *ruwensoriense* (Pierrotta) Pichi Sermolli — N, forest on mountain slope, alt. 2700 m, Nowak 1780, KRA; ibidem, alt. 2800 m, Nowak 1781, KRA; ibidem, alt. 2900 m, Nowak 1779, KRA; ibidem, in crevices of volcanic rocks, alt. 3100 m, Nowak 1782, KRA.

**Pteris* cfr. *auquieri* Pichi Sermolli — B, forest on river bank, alt. 1420 m, Nowak 1748, KRA. This collection (consisting of three large, gemmiferous fronds) differs from the type collection from Rwanda (Auquier 3744, BR) by having irregularly anastomosing veins, which form narrow areoles along the more broadly winged parts of the costae.

**Pteris dentata* Forssk. subsp. *flabellata* (Thunb.) Runem. — N, forest on mountain slope, alt. 2200 m, Nowak 1771, KRA.

**Pteris intricata* C.H. Wright — B, forest on river bank, alt. 1420 m, Nowak 1745, KRA.

**Pteris microlepis* Pichi Sermolli — N, forest on mountain slope, alt. 2800 m, Nowak 1761, KRA.

**Pteris preussii* Hieron. — B, forest on river bank, alt. 1420 m, Nowak 1746, KRA; RF, thickets near the waterfall, alt. 1220 m, Nowak 1766, KRA.

Selaginella kraussiana (Kunze) A. Br. — N, forest on mountain slope, alt. 2200 m, Nowak 1793, KRA; ibidem, alt. 2400 m, Nowak 1791, KRA; ibidem, 2600 m, Nowak 1792, KRA.

**Stenogramma pozoi* (Lagasca) K. Iwats. (*Thelypteris pozoi* (Lagasca) Morton) — N, forest on mountain slope, alt. 2200 m, Nowak 1787, KRA.

Tectaria gemmifera (Fée) Alston — RF, thickets near the waterfall, alt. 1220 m, Nowak 1742, KRA.

Vandenboschia inopinata Pichi Sermolli (*Trichomanes inopinatum* (Pichi Sermolli) Kornaś comb. nova³) — RF, thicket at the waterfall, alt. 1250 m, Nowak 1737-B, KRA.

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Paprotniki znalezione w Zonie Kivu, Zair

Streszczenie

Zamieszczono spis 50 taksonów paprotników zebranych w 1983 roku w Zonie Kivu w Zairze przez Nowaka i oznaczonych przez Kornasia. W tym, 26 są to taksony, których nie podano dla Zony Kivu w ostatnich publikacjach Pichi Sermolli z 1983 i 1985 roku.

³ Basionym: *Vandenboschia inopinata* Pichi Sermolli in Bull. Jard. Bot. Natl. Belg. 53: 245, 1983.