

PTERIDOPHYTE DIVERSITY IN LUXEMBOURG

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The Grand-Duchy of Luxembourg is internationally known for its small relictual population of Tunbridge filmy-fern (*Hymenophyllum tunbrigense* (L.) Sm.), first discovered here in 1821. In recent decades, however, ferns and allied plants - especially subspecies and hybrids - have often been neglected by botanists in Luxembourg, so that reliable data about distribution and status of pteridophyte species is often lacking. Over the last few years, the study of the pteridophytes of Luxembourg has been relaunched, and previous deficiencies in information are being reduced progressively.

Despite the small geographic area of Luxembourg (2586 km²), the diversity of pteridophytes is remarkable. A great number of geological substrates, special geomorphological features with particular microclimatic conditions and a great variety of habitats, ranging from acidic to rather base-rich, have favoured the luxuriant development of a certain number of ferns and fern allies. Not less than 57 pteridophytes (species, subspecies, nothosubspecies and hybrids) are known for Luxembourg. Regrettably a certain number of species have not been observed in the recent decades and can be considered as extinct in wild. Fortunately new taxa have been discovered recently, such as *Trichomanes speciosum* Willd. (gametophytes), *Asplenium trichomanes* L. subsp. *pachyrachis* (Christ) Lovis & Reichstein, *Asplenium trichomanes* L. nothosp. *staufferi* Lovis & Reichstein, *Asplenium* x *murbekii* Dörfler and *Equisetum* x *litorale* Kühl. ex Rupr. At present the pteridophyte flora of Luxembourg includes five clubmosses, seven horsetails and 45 ferns. The Red List, based on the checklist of the pteridophytes of Luxembourg, applies the revised IUCN Red List categories (IUCN 2001) at a national level. Currently 14.7% of the taxa fall in the category Regionally Extinct (RE), 6.5% are Critically Endangered (CR), 6.5% Endangered (EN), 8.2% Vulnerable (VU) and 18% Extremely Rare (R). Only c. 40% of all pteridophyte taxa are considered not to be threatened (*) for Luxembourg.

Despite the recent discoveries of new taxa, the pteridophyte flora of Luxembourg has experienced a significant loss of species. This is predominantly due to habitat changes and resulting climatic variations (habitat destruction, deforestation, changes in drainage patterns etc.). Management plans for rare and endangered species may prevent further loss. For critical species and extremely threatened sites, however, it is advisable to envisage securing the collection through ex-situ conservation and storage of representative samples for future scientific purposes.

REFERENCES

IUCN 2001. - IUCN Red List Categories and Criteria: Version 3.1. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK. ii + 30 pp.