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THE LICHEN FLORA OF MECKLENBURG-VORPOMMERN (GERMANY) AND ECOLOGICAL INTERPRETATIONS

Die Flechtenflora von Mecklenburg-Vorpommern (Deutschland) und deren ökologische Interpretationen

by

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Key words: Lichens, hemerobic degree, Mecklenburg-Vorpommern, substrate.

Schlagwörter: Felchten, Hemerobie, Mecklenburg-Vorpommern, Substrat.

Summary: The epiphytic lichens of Mecklenburg-Vorpommern were analysed relating to substrate and threat, as well as occuring divisions of lichen communities. Besides an assessment of the human influence was given by hemerobic degrees of habitats.

Zusammenfassung: Die epiphytischen Flechten Mecklenburg-Vorpommerns werden hinsichtlich Substrat und Gefährdung, sowie auftretender Klassen von Flechtengesellschaften analysiert. Außerdem wird der menschliche Einfluß auf die Flora anhand des Hemerobiegrades der Standorte eingeschätzt.

Introduction

In Mecklenburg-Vorpommern 532 lichen species and lichenicolous fungi are known, among them about 400 species actually (after 1980, at August 1996) occuring. The distribution of species is related to substrate ecology, climate conditions and human influences. Each lichen species was characterized by hemerobic degree of habitats, sociology and sociological affinities to plant communities.

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Comparison of trees with different barks

The number of epiphytic species (without extinct species) is 191. Most epiphytic lichen species occur on *Fagus sylvatica* (121 species), *Fraxinus excelsior* (119 species), *Acer platanoides/pseudoplatanus* (106 species) and *Quercus robur* (104 species).

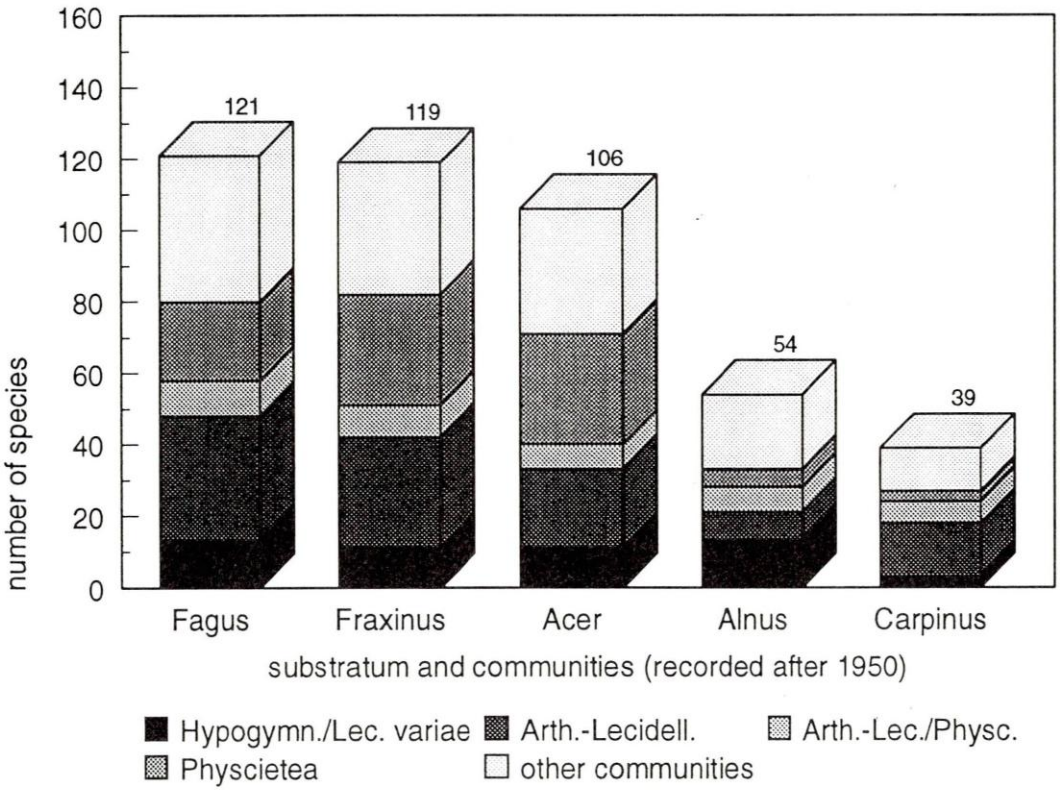


Fig. 1: Comparison of trees with moderate acid barks.

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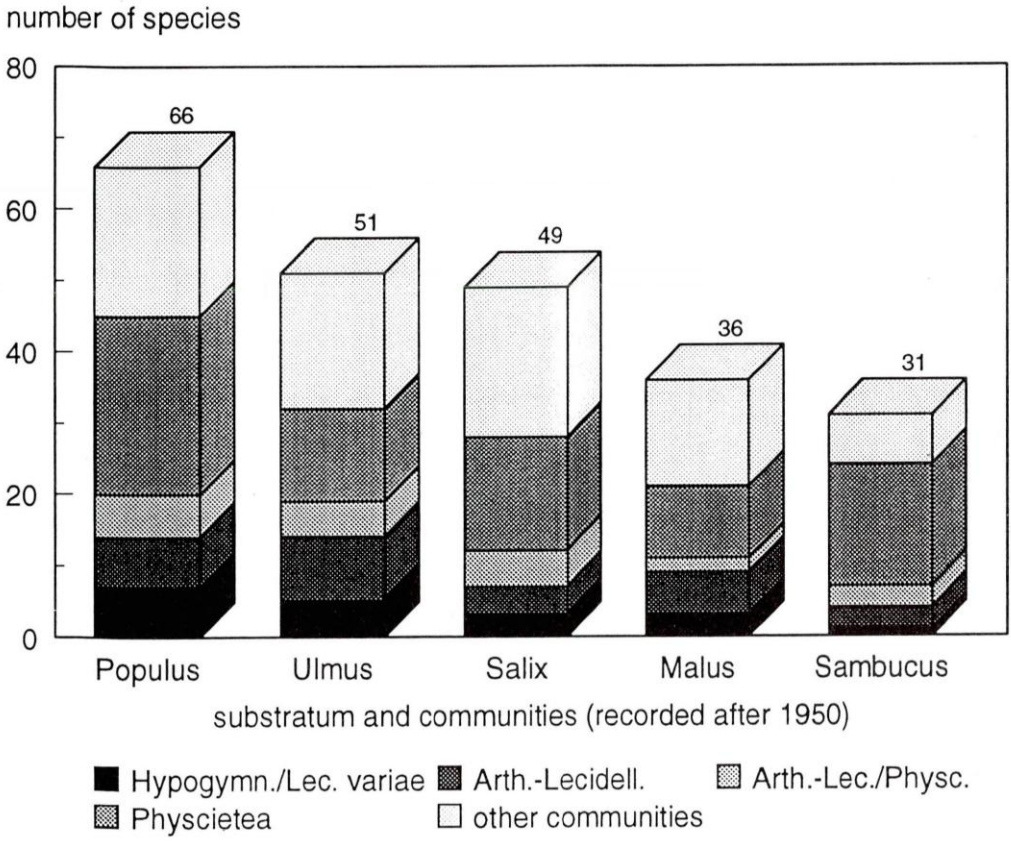


Fig. 2: Comparison of trees with basic barks.

Before 1950 the number of species occuring at trees with acid bark was much higher.

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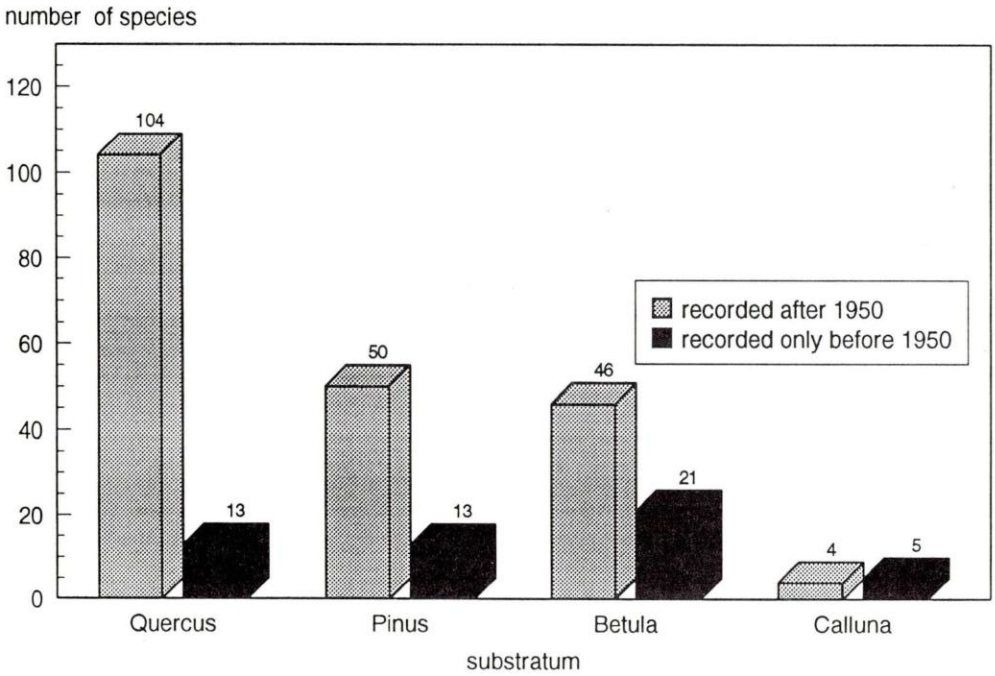


Fig. 3: Comparison of trees with acid barks.

At trees with barks of indifferent acidity like *Fagus sylvatica* the percentage of endangered species is higher than at species with lower (for example *Sambucus nigra)* and especially with higher acidity (for example *Pinus sylvestris).*

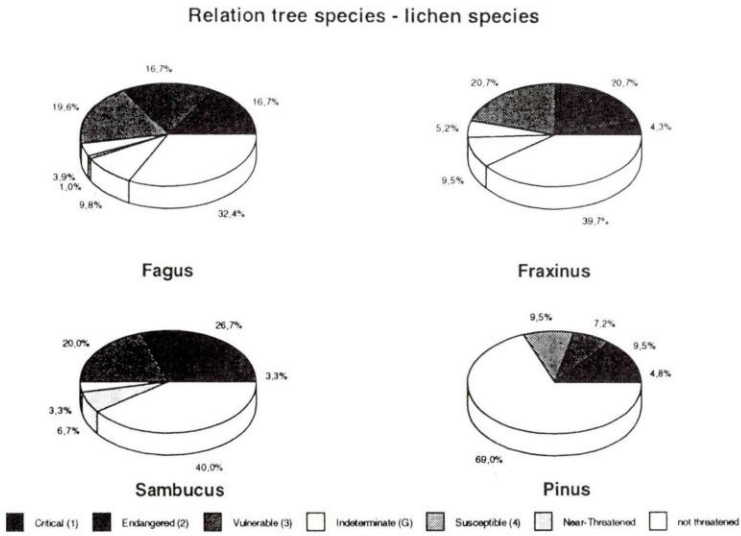


Fig. 4: Number of threatened species on different barks.

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Among the epiphytic lichen species 35% occur only in associations of Physcietea adscendentis, 26% in associations of Arthonio-Lecidelletea elaeochromae, 15% in associations of Hypogymnietea physodis and/or Lecanoretalia variae, 10% in associations of Chrysotrichetea candelaris, 6% in associations of Arthonio-Lecidelletea as well as in Physietea adscendentis.

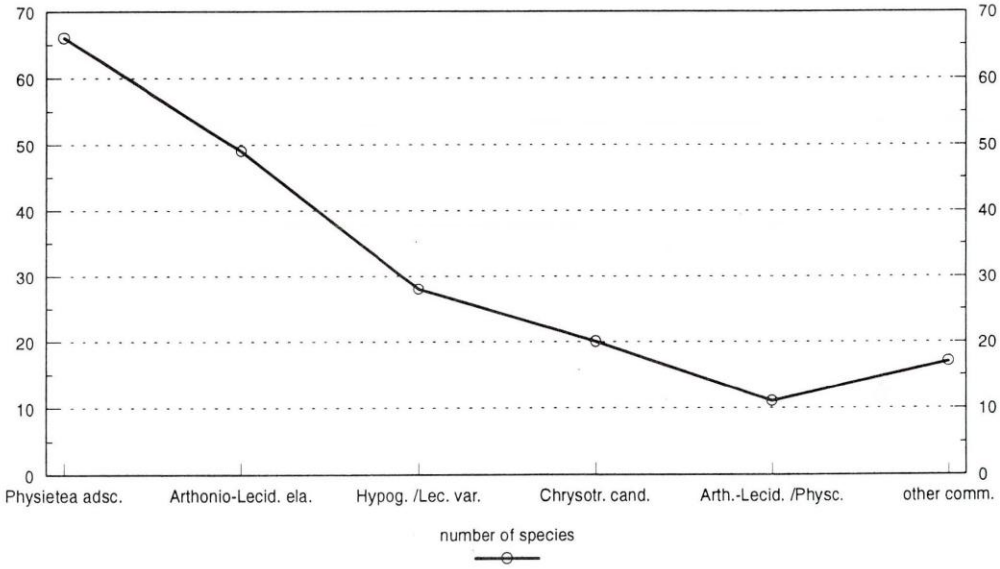


Fig. 5: Distribution of epiphytic species to communities.

Assessment of lichen habitats

The following groups are distinguished:

1. species of ahemerobic habitats
   - mainly oikophytes (without apophytes) present
   - occurrence in natural landscape, e. g. granite stones along the coast *(Lichina confinis)*
2. species of oligohemerobic habitats
   - mainly oikophytes (without apophytes) present
   - occurrence in natural or sparsely influenced landscape, e.g. old woodlands, dunes, fens *(Thelotrema lepadinum)*
3. species of mesohemerobic habitats
   - oikophytes (without apophytes) and archaeophytes present
   - occurence in sparsely influenced landscape, e. g. sparsely influenced forests, heathers, rough meadows *(Ramalina capitata)*
4. species of euhemerobic habitats
   - apophytes and archaeophytes present
   - occurence in influenced landscape, e. g. ruins, churches *(Diploicia canescens)*

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5. species of polyhemerobic habitats
   - archaeophytes and apophytes present
   - occurence in habitats with great human influence, e. g. roadside-trees, walls *(Anaptychia ciliaris)*
   - decline by air pollution
6. species of metahemerobic habitats
   - archaeophytes and apophytes present
   - occurence in habitats with extreme great human influence, e. g. walls *(Caloplaca teicholyta)*
   - no decline by air pollution

2% of all species occur in oligohemerobic habitats, 36% in mesohemerobic, 17% in meso - euhemerobic, 13% in euhemerobic, 9% in eu - polyhemerobic, 5% in meso-, eu- and polyhemerobic, 4% polyhemerobic habitats. The knowledge about habitat structure may be used to detect both threatened and expanding species.

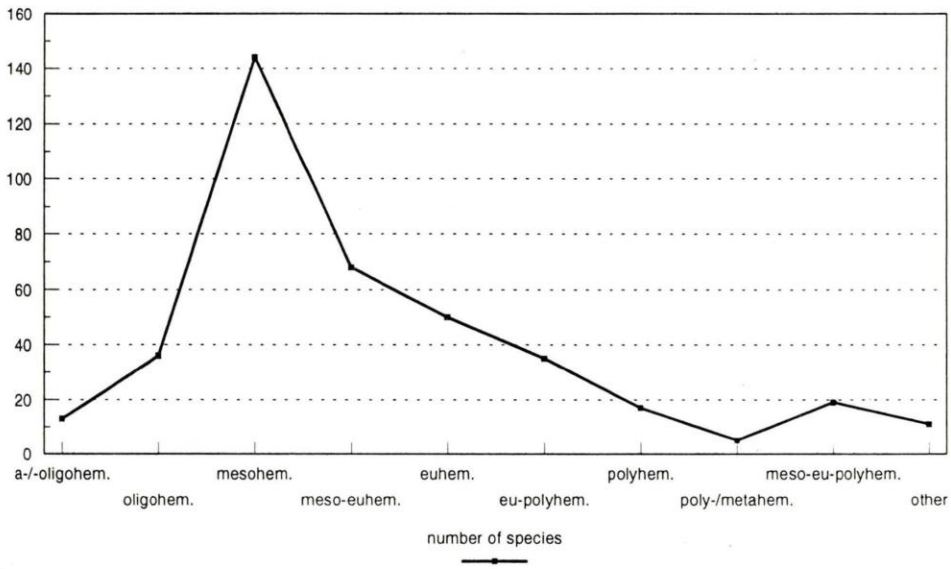


Fig. 6: Distribution to degree of habitat-hemerobie.

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