

Lichen Mapping in the German Democratic Republic – Principles and Examples

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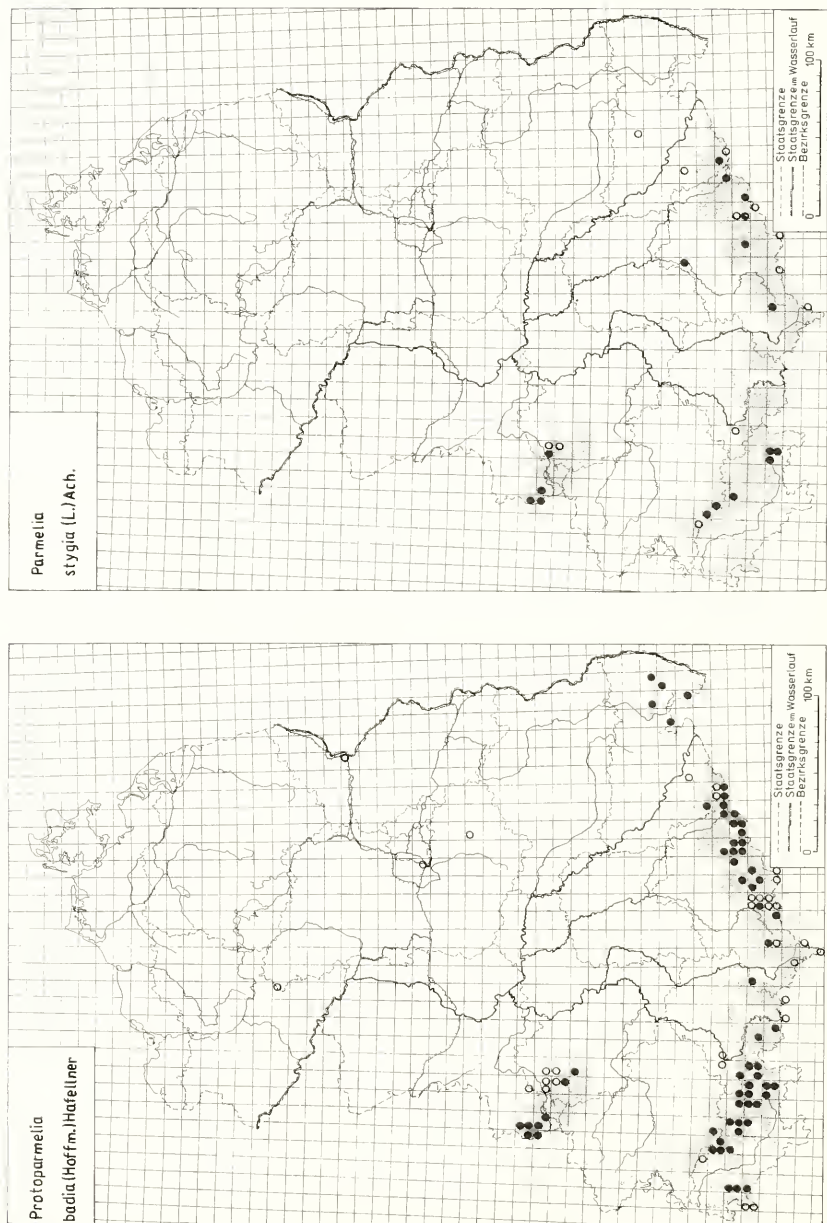
With 6 figures

The publications of GRUMMANN (1963) and SCHOLZ (1986) offer an almost complete bibliography of lichenological papers dealing with the territory of the GDR. An assessment of the older literature is rather difficult yet, due to changes in taxonomy and partly also because of obviously unreliable data given there.

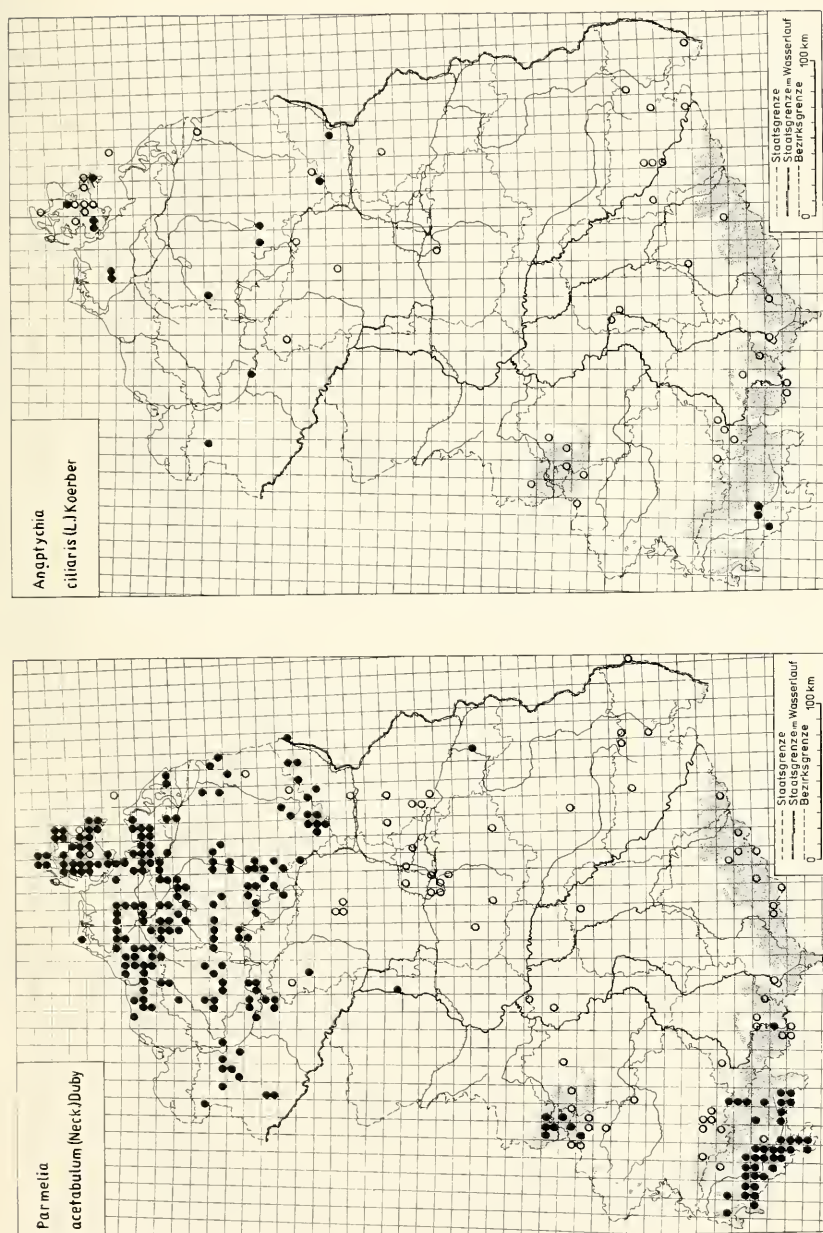
In the first half of our century prominent lichenologists had been working in our area. Among them were HILLMANN, SCHULTZ-KORTH and GRUMMANN in the region of Brandenburg and on the Isle of Rügen, LETTAU in Thuringia and SCHADE in Saxony whose papers cope even with modern standards. In 1955 SCHADE, the last representative of this generation, wrote with resignation (SCHADE 1955: 196):

„Wenn es jemand für überflüssig halten sollte, daß . . . alle mir bekannt gewordenen Fundorte mit den Einzelheiten angegeben werden, so darf man demgegenüber nach der eigenen Erfahrung gewiß sein, daß spätere Lichenologen dankbar daraus Nutzen ziehen werden, zumal nach dem Tode unserer alten Generation alle mündliche Tradition in unserem Lande abreißt, da kein junger Nachwuchs vorhanden ist.“ (“If anybody regards it to be superfluous . . . to communicate all localities known to me in detail, then it may be stated by experience with certainty, that future lichenologists will gratefully profit of it, the more so because any oral tradition will cease in this country after the death of our old generation as a junior generation is missing.”)

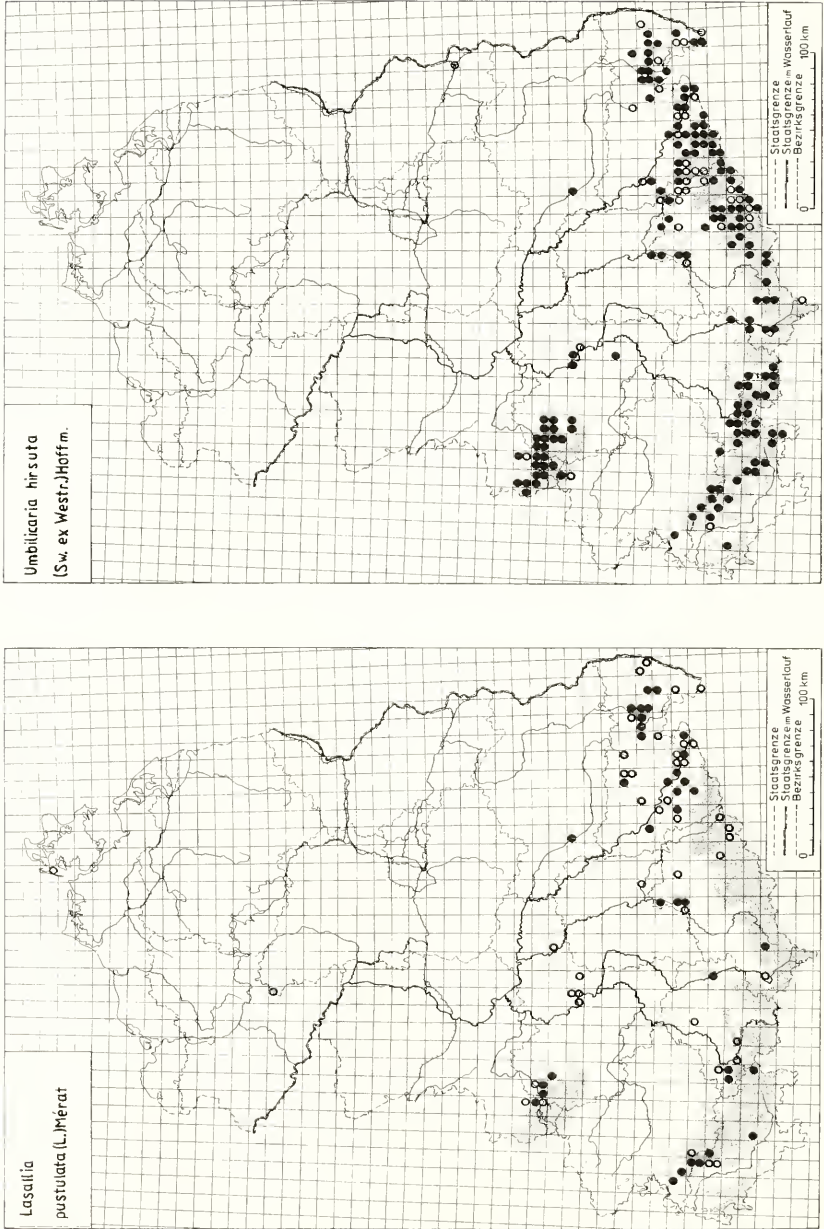
During the decades following the end of World War II lichenological activities and knowledge had been low compared to the ones of the authorities mentioned above. There are, however, noteworthy papers by DOLL (1982) on the Mecklenburg region, SCHUBERT & KLEMENT (1961) on the upper Harz Mountains, BÜTTNER (1959) on Saxony and MARSTALLER on Thuringia. Only in the last decade the interest in lichenology has increased again. An essential prerequisite was the publication of modern literature with keys for the identification of lichens, especially the flora by WIRTH (1980). Moreover, the great importance of lichens as sensitive bioindicators in nature and environment protection had become generally recognized. Lignite is mined and burnt in great quantities in huge areas of the central and southern parts of the GDR. Resulting environmental changes and high levels of air pollution have caused a disastrous decline of the lichen flora. Even formerly common species have disappeared in large areas. Nevertheless new records have been made. The recently described species *Mycoblastus sterilis* and *Fuscidea viridis* have been recorded for the first time for the GDR. *Micarea botryoides* was recently recorded from the Thüringer Wald (Thuringian Forest), the Harz Mountains, the Erzgebirge (Ore Mountains) and from Oberlausitz, where it seems to be widely distributed. Since about 1980 a card-file of lichen records which primarily serves for a registration of the actual flora was compiled by the senior author (L. M.). Data are being contributed by about 30 co-workers. Lichenological works have been completed or are in progress at some universities. Examination of most older herbaria had to be postponed because of lack of time.



Figs. 1–2. Distribution of 2 lichen species in the GDR. — 1. *Protoparmelia badia*; — 2. *Parmelia stygia*. — In all figures: circles = pre 1975, dots = 1975 onward.



Figs. 3–4. Distribution of 2 lichen species in the GDR. — 3. *Parmelia acetabulum*; — 4. *Anaptychia ciliaris*.



Figs. 5–6. Distribution of 2 lichen species in the GDR. — 5. *Lasallia pustulata*; — 6. *Umbilicaria hirsuta*.

A first series of distribution maps for the lichen families Baeomycetaceae and Umbilicariaceae was worked out by the junior author (SCHOLZ in press). They include all data available from herbaria and literature. This series of distribution maps is planned to be continued in the next years on, e. g. the genera *Cetraria*, *Peltigera* and *Xanthoria*.

Mapping is based on quadrant-grids of the topographical map 1 : 25.000 (so called "Meßtischblatt"), which is being used in most Central European countries and in the mapping projects of vascular plants, bryophytes and fungi of the GDR, too. Distribution maps of six easily identifiable species are presented as examples (Fig. 1–6). Records from 1975 and later are indicated by black dots, older ones by open circles. Dotted open circles refer to localities which may lie slightly beyond the limits of the respective grid unit.

Protoparmelia badia (Fig. 1) is an inhabitant of open siliceous rocks mostly in the montane region and it is regularly found in suitable localities in the Harz, the Rhön, the Thüringer Wald and the Erzgebirge, more rarely in the mountain region of the Oberlausitz. This species seems to be threatened in a minor degree at present. There are no recent records from lowland localities, which are sometimes mentioned in older literature.

Parmelia stygia (Fig. 2) is a strictly montane species, scattered on rocks and rockslides in mountain regions. It has been recorded also from a few extraordinary localities at lower altitudes. There are no records from secondary habitats. This species has survived at most known localities, of which some are integrated into nature reserves. It is little endangered. Recently lime-powder was scattered over forest areas by planes in order to fight symptoms of "waldsterben". The effects of this treatment on the siliceous rock lichen flora must carefully be observed.

Parmelia acetabulum (Fig. 3) has been distributed throughout the whole area according to older literature. Its recent distribution typically represents the actual situation of epiphytes. The best localities for epiphytes lie in the northern part of the GDR, especially on the coastline of the Baltic Sea. They decline in number towards south to Brandenburg and the Berlin region. A few localities have been recorded in the humid parts of the Harz and the Thüringer Wald but there exist no recent records from the more dry, warm and densely industrialized areas east of the Harz, from the Thuringian Basin and Saxony. It seems to be extinct there. The present situation in the flora of epiphytes is only better in the extreme south-western part, especially in the Muschelkalk region south of the Thüringer Wald. The occurrence of *P. acetabulum* there agrees well with its distribution pattern in north-western Bavaria (RITSCHER 1977: 67).

What has been said about *P. acetabulum* is valid for *Anaptychia ciliaris* (Fig. 4), too. Formerly it was also distributed in the whole area but less common. Present records are very scattered in the northern part and in southern Thuringia, restricted there to the valley of the Werra.

Lasallia pustulata (Fig. 5) is distributed from lowland up to the lower mountain level, generally below 500 m. The highest altitude was recorded at a locality at 720 m in the Vogtland region. Suitable substrata, siliceous rock at localities with favourable temperature conditions, are rare in lowland areas and can only be found in the mountains or in lower mountains like in Sächsische Schweiz with its sandstone rocks or in the Oberlausitz with granite rocks at low altitudes. The re-examination of known localities confirmed its presence in many cases. At some localities, e. g. in the

Harz, it was found to be abundant and associated with other characteristic species, forming a *Lasallietum pustulatae* there. Yet, *L. pustulata* seems to have disappeared at the porphyrite rock localities near Halle, probably due to severe pollution in this industrial area.

Umbilicaria hirsuta (Fig. 6) is the most common species among the Umbilicariaceae in our area. It occurs in the Umbilicarietum *hirsutae*, associated by *Umbilicaria polyphylla* and other species. It is very often found on siliceous rock from lower altitudes up to the upper mountain level. There are no records from the northern part of the GDR.

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