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Forest development types in the region of Kirchleerau, Canton of Aargau, Switzerland

By Erwin AICHINGER

with a vegetation map by Dr. Helke BOSSE-MARTIN

The forest region of Schöftland, Kirchleerau and Moosleerau was mapped also by the phytosociological method of AICHINGER. This method stresses especially the dynamics in vegetation. The forests of the surveyed region were formerly devastated by various human influences, viz. burning, intermediate agricultural utilization, extensive pasturing, clear-cutting, moving, coppice-system and forest litter utilization. According to their special ecology, the forest stands recuperate differently. The more humid inferior slope-parts ("semi-superirrigatum"), especially the shady slopes, recuperate quicker than the dry, sunny slope-parts ("silicicolum") because the former receive water and fine earth from the superior slope parts.

Intermediate agricultural land use, especially shifting cultivation, on the plateaus has provoked water-logging ("*agrum solum paludosum*") by forming soil compaction at the depth of plough furrow. Disturbance of the nutrition cycle by litter-utilization or irregular shifting cultivation has reduced the activity of soil-micro-organisms and has favoured the formation of raw humus.

These statements are supported by the fact that most of the deciduous forests are reproduced from stool. Many acidity indicators prove the existence of raw humus, such as *Blechnum spicant*, *Deschampsia flexuosa*, *Carex pilulifera*, *Luzula luzuloides*, *Lathyrus montanus*, *Pyrola secunda*, *P. minor*, *Vaccinium vitis-idaea*, *V. myrtillus*, *Veronica officinalis* and *Melampyrum pratense*. Moreover the microrelief of many forest parts still shows the former agricultural use.

The forests were surveyed with Dr. Helke BOSSE-MARTIN. I have determined the vegetation units ("forest development types") whereas Mrs. Bosse designed the vegetation map according to my directions. The vegetation units are based on relevés by the method of BRAUN-BLANQUET and are evaluated:

1. physiognomic-floristically (association)
2. ecological-floristically (e.g. "silicicolum")
3. syngenetic-floristically (dynamics of the unit)
4. floristic-sociologically (lower units).

Evaluation by a group of silviculturalists of the results from the comparison of several methods of site classification

(Location of the study area: Switzerland, Canton of Aargau, Forest district of Zofingen)

Twelve professors of silviculture from several countries were invited to express their opinions on the mapping methods. This invitation was accepted by Prof. OLA-BØRSET, Oslo; Prof. KÖSTLER, Munich; and Prof. LEIBUNDGUT, Zürich. Dr. ROTH, forest district officer, assisted as a fourth expert.

This study was planned and prepared by Prof. RICHARD and Prof. ELLENBERG, who deserve a great deal of credit for developing this approach toward clarification of the problems of site mapping which play such an important role in both silvicultural research and practice. The contributions of the colleagues who participated in the site mapping is acknowledged. All those who contributed to the large amount of work in the site classification, preparation of reports, and organization of the meeting deserve a great deal of thanks for their efforts. In particular, the efforts of Dr. ROTH in establishing the study area are greatly appreciated.

Five methods were included in the evaluation, which was based on maps and accompanying, already printed texts: