Bookreview

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LEBENSBEDINGUNGEN UND HOLZWACHSTUM IN ZENTRALAMAZONISCHEN ÜBERSCHWEMMUNGSWÄLDERN.

(Site conditions and tree growth of Centralamazonian inundation forests.)

Scripta Geobotanica, Lehrstuhl für Geobotanik der Universität Göttingen, Vol. 17, Göttingen, 1986, pp. 1—112.

Volume 17 of Scripta Geobotanica presents the results of investigations carried out in two areas of inundation forests in Brazil and contributes to our restricted knowledge about Amazonian tropical vegetation and site conditions.

Two experimental plots (2 100 m² in area) were chosen, one in black-water and one in white-water inundation forest. Some vegetation-ecological and dendrological investigations were carried out during the submersion and the emersion phase in 1981/82.

The results of hydrological investigations show some differences between the black-water and white-water localities (more favorable conditions in the white-water locality). As to soil properties, there is relatively good aeration on both sites and a sufficient water supply in the rainy season, whereas some insufficiency appears in the period of low precipitation. A high P- and normal N-contents, in comparison with other tropical soils, result in normal productivity in the first and a high productivity in the second localities.

The study of vegetation shows less species diversity of inundation forests in comparison with non-flooded stands, and the dominance of some tree species. The family of Leguminosae is represented by the highest number of species as well as of tree individuals. Phenological observations, focussed on the periodicity of foliage, flowering and fruit-bearing, result in certains differences between the two sites investigated.

Great attention was given to wood-anatomical and dendroclimatological investigations. Dendrochronological study was carried out in 80 species and wood-anatomical study in 13 species. The description of individual investigated species is given in the publication, completed with photographic and some graphic documentation. The results show that the trees of inundation forests form more or less distinct periodical growth zones, which are equal to annual rings. Their width corresponds with the duration of the annual emersion phase. This phase represents the growth period of inundation forests. The anatomical structure reveals the range of variations within a family or genus, corresponding to the results in related genera from other tropical regions. The age determination by radiocarbon dating was successfully applied in one species and offers some possibilities for the investigation of structure and dynamics of tropical forests.

The publication reviewed represents an important contribution to our information about the Amazonian region, still very incomplete. The description of metodology gives proof of a very serious approach to the solution of the given problems. The discussion and comparison with the results of other authors and from other tropical sites appear very useful and complete the general view of the studied phenomena. A rich bibliography offers the possibility of more profound study of individual problems.

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