

to illustrate the complexity of this subject. A series of measurements (6, p. 319) upon the growth and yield of scrubby as well as of large timber indicated that the volume of wood produced varied periodically. The distribution of the timber showed no relationship to the depth of the peat area or to a specific type of peat material. A condition which lowered the quality and height of trees appeared to result when the peat material in the rooting zone had too high a water content for any length of time. The excess of water was probably a contributing rather than a direct factor in the variables which affected the quality of timber.

From the profile soundings it was finally established that with an increasing density in the stand of timber the stability of the structural framework below the surface peat layer was seriously impaired, causing the wooded area to sink irregularly (pl. 7, A). For this reason a clear understanding must be had of the carrying capacity of the underlying layers of peat. To make artificial reforestation reasonably profitable in the near future, careful attention should be paid to the complicated effects of a load placed on the surface of certain types of peat land.

EFFECT OF STRUCTURAL FEATURES OF PEAT LANDS

It would be interesting to illustrate by means of specific examples the fundamental relationship which exists between the position of the chief layers of peat and the origin and nature of a peat-land area. Local and regional peat deposits and those of foreign countries offer to the student of peat investigations an abundance of records for analysis, correlation, and interpretation. They will bear careful study, since the advantage rests with areas whose structural framework it would clearly be best to choose for special forms of peat-land utilization.

An added and very significant interest would be given by the consideration of such matters as the history of peat lands in the Northern and Southern Hemispheres, connecting this more definitely with the underlying terrestrial or cosmic causes of structural differences between areas of peat. In plans of peat investigations for the future, the new efforts need to be organized on a basis which will commend itself to science as well as to outstanding agricultural and industrial practices.

There are, however, certain measures urgently needed at present in order to lessen the speculative hazards connected with the economic development of peat resources in this country. The issue can best be solved by a careful scrutiny of some of the effects of the three varying and interfering major factors already mentioned.

The need for taking measures with respect to the necessary selection of peat lands for essential purposes is now generally conceded. Some of the differences between areas of peat, notably in the number, character, and profile position of the layers occurring in them, have been reported in several earlier publications (13). Plate 1 illustrates graphically a few of the more common type profiles. It is well to note that in the selection of peat lands for different uses two primary group distinctions should be kept in mind. Areas in the first group of peat lands consist predominantly either of sedimentary,