

The Soil Column

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conclusions the geologist may arrive at as to the remote or recent elevation of this country, the tops of the higher hills appear to have been formerly islands in the sea; and I doubt not but the same may be said of higher lands on every part of the Arctic regions. Admitting this to have been the case, it contributes to confirm the theory of that distinguished philosopher, Sir Charles Lyell, as to the cause of the changes that have taken place in the climate of the northern regions." (Wallace, 1932).

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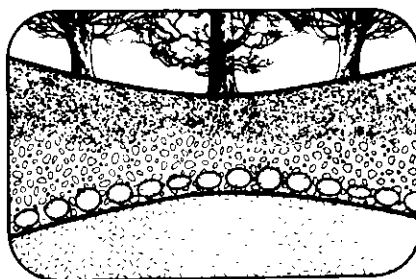
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MS received, June 12, 1974.

Note

The title of R. K. Steven's "History of Canadian Geology" feature was inadvertently omitted from the last issue. The title was: *Sir William Logan and the Taconic Problem*.



The Soil Column

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It has been said (Hunt, 1972) that geologists use the term "soil" in a broader sense than agriculturalists and in not as broad a sense as the engineer. To the engineer the term has about the same meaning that "surface deposit" has to a geologist and the agriculturalist uses the word "soil" to refer to the weathered uppermost layers of surface deposits. Obviously ambiguity develops when the terms "soil" and "surface deposit" are not clearly defined. Definition of terms is only a part of the difficulties faced by those who study the role of pedology in earth science. But it is not the object of this column to point out the differences of opinion between pedologists and geologists but rather to report on the activities of soil scientists so that a more acute awareness of the similarities between the disciplines may be realized. Indeed, we could point out that pedology is a part of earth science and should not be of only marginal interest to geologists in general or the GAC in particular. Perhaps the "Soil Column" will enliven and broaden that interest.

This column will appear in subsequent issues of *Geoscience Canada* and will be shared by soil science and soil mechanics. Its content will vary but likely will include reports of recent research projects, reports of workshops, meetings and conferences and so forth. Your comments, criticisms and suggestions are solicited.

Having disposed of the introductory statement with respect to this column let us now pursue the main topic for this issue. It concerns developments in the study of that most neglected surface deposit of all, the organic deposit.

Organic Deposits

Although well studied in European countries organic deposits have received little attention in Canada until recently. This is not to say that no research was done, 50 or more years ago. Indeed, the first information concerning the location and description of the organic soils of Canada appears in publications of the Geological Survey of Canada as early as 1885. Most of the peat investigations during the early part of the 20th Century were conducted by researchers with the Canada Department of Mines. By 1960, biologists, foresters and pedologists became much more involved than they had in the past and with this involvement came a change in the direction of the research. Interest in peat deposits in the early 1900s centered on its use as fuel. By 1926 this interest waned but was renewed in 1939 with the developing market for peat litter. Today classification, hydrology, vegetative cover, chemical and physical characteristics, and genesis of organic deposits are studied to determine their value for use for agriculture, forestry, wildlife production, water reservoirs as well as for the production of peat litter.

Of major concern to researchers in peatlands are the development of a national classification system, the recognition and definition of peat landforms and the development of a glossary of terms. Two of the groups most concerned with attaining these objectives are the Canada Soil Survey Committee and the Peatlands Study Committee of the National Forest Lands Committee. The Canada Soil Survey Committee is composed of soil scientists from the Canada Department of Agriculture. In 1968 this committee proposed and adopted for trial a system of classification for organic soils which is essentially that which is used today. Certain modifications have been made as

experience in using the classification in the field has been gained. The most recent modifications appear in the Proceedings of the ninth meeting of the Canada Soil Survey Committee, 1973.

The whole problem of classifying and mapping organic deposits was discussed at an Organic Soil Mapping Workshop held in Winnipeg on June 3 to 7, 1974 by members of the Canada Soil Survey Committee. At this workshop the definition of peat landforms in terms of form, properties, identification and air photo signature was discussed. Another important topic of the meeting dealt with the identification of different kinds of organic soil materials, especially those encountered in Western Canada. Morphological, physical and chemical characteristics of such organic material types as sphagnum, fen, forest-fen and aquatic types of peat were identified.

The prime purpose of the workshop was to deal with the organic soil classification particularly the numbers of taxa within the system and the means of identifying significant thicknesses of control section and fiber content. The pedologist's approach to organic soil classification is different from that of the botanist and forester whose system of classes, subclasses, units and types is based mainly on vegetation, surface hydrology and landscape position of various bogs. The pedologist places a great deal of emphasis on the characteristics of the soil profile when classifying organic soils. Little has been done to date to integrate these two procedures.

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