

spiral fibres and more resistant tissue, is much assisted by the combined action of frost and moisture. Frost disintegrates the fibres and the black mould-like substance absorbs so much water that it becomes water-logged and sinks to the bottom of the pool or liquid which it is in. With the accumulation of this matter it becomes subjected to pressure, to slow carbonisation, and to permeation by bituminous and resinous substances, and after a time becomes what is known as peat."

In order that the process may proceed as above outlined free access of air must be excluded, otherwise the residue will be gradually oxidized and only the inorganic ingredients left.

In the case of a peat bog, however, the material is immersed in water and the free access of air excluded, resulting as above outlined in the gradual accumulation of peat, which becomes richer in carbon contents at a rate depending on the rapidity of the humification process. The older the peat is, the better humified or riper it generally is, dependent, however, on the vegetation forming the different peat layers. In many cases the vegetation on one and the same bog has changed from time to time, probably depending on different heights of the water level, and in such cases poorly humified layers of peat derived from a vegetation more resistant to humification than the previous or later vegetation can be found imbedded in a bog with otherwise well ripened peat. As a rule, however, the upper layers of a growing peat bog, consequently of younger age, are less humified than the deeper layers. They have a comparatively light colour, small specific gravity and low fuel value. The deeper layers and older peat bogs generally contain a brown to black, heavy and well humified peat, and the deepest layer a brownish black, dense peat, containing very little of still recognisable vegetable remains, and which has the highest fuel value.

In many peat bogs a bottom layer of earthy black material is found, which contains no recognisable vegetable remains and when dried crumbles to pieces.

"The formation of peat is dependent upon a special combination of climatic and topographical conditions. The principal factors are:

1. Growth of aquatic and moisture loving plants.
2. A soil or sub-soil which will retain water at the surface.
3. Sufficiently humid atmosphere to prevent too rapid evaporation
4. A temperature high enough to allow a profuse growth of vegetation, yet low enough to check too rapid a decay of vegetable matter.

Bogs generally occur in shallow depressions having a clay bottom, or when the water rests on permeable matter like sand this overlies an impermeable sub-soil. The water must be still, but not stagnant nor subject to the influence of rapid currents of water. Hence, the bogs generally originate in a lacustrine area, which gradually becomes filled up with silt and aquatic plants and so becomes fitted for the vegetation characteristic of peat. As a consequence of this, bogs are most prevalent in lowland districts, but they