

MEETINGS OF THE BOTANICAL BRANCH.

Held at the residence of Mr. D. A. Campbell, 226 Clemow Avenue, Saturday evening, March 20th, 1909. There were present in addition to the host, Messrs. Attwood, Whyte, Clarke, Gibson, Michaud, Bond, and W. T. Macoun.

The subject for the evening's discussion was "The Stems of Seed Plants." Lantern slides, photographs and drawings of sections of various stems were used to illustrate the types discussed. After a reference to the monocotyledon stem, a series of slides was exhibited showing the various stages leading from the soft herbaceous stem with relatively small wood bundles to the woody stem with the wood bundle the major portion of the stem. These furnished the material for the discussion. Among the topics dealt with were growth in length and in diameter, and the elements of the stem which contributed to this growth, the chief active living portion of the stem being the cambium, the medullary ray cells, the younger inner bast, and the young outer wood. The function of each of these parts of the tree stem was dealt with. The wood cells of the heart of the tree gave stiffness, the wood cells of the sap wood were the channels for water from root to leaf, the sieve tubes of the bast carried food from leaf towards root, the cambium was the source of new cells added to wood and bast, the medullary rays served to carry water and plant food across the stem.

In the discussion on sap flow and ascent of water in the stem, some of the members were in doubt as to the existence of such a force as root pressure and some were not prepared to accept the proposition that living plant cells have the power to select certain substances from the soil. It seems necessary to assume a root pressure to account for the ascent of water in a glass tube tied tightly a few inches above the soil to the cut end of a stem.

In reference to selective absorption it was pointed out that two trees may grow in the same soil and one may contain more ash than the other. Barley and red clover in flower grown in the same soil have about the same total ash or mineral matter, yet the clover contains over five times as much lime as the barley and the barley about eighteen times as much silica as the clover.

Reference was made to a recent explanation of the ascent of water in trees of great height. This explanation will be considered more fully at some future time. It was generally considered that the known forces seem inadequate to fully account for the phenomenon.

D. A. C.