

THE CANADIAN HORTICULTURIST.

and only those retained from year to year which are true to the types selected. After several seasons of careful selection the type usually becomes established and is then fairly permanent."

Arguing from the known sterility of the mule, it was supposed that all true hybrids were sterile. It is evident that in the vegetable kingdom we must either abandon such a position or introduce a new factor into our classification. Botanically, *Juglans nigra* and *Californica* are different species, so are *Rubus Idæus* and *triflorus*, *Clematis crispa* and *C. coccinea*, and so on; more than this, we say all the Raspberries belong to the genus *Rubus* and the Strawberries to the genus *Fragaria*, and yet plants have been raised by fertilizing the raspberry with pollen of the strawberry. Genera and species, after all, are but our inventions for convenience of classification; to which genus or species a given plant belongs depends upon the opinion of experts, and they are not all of one mind.

We learn from Mr. Burbank that when we change the condition of plants from that of a state of nature, give them plenty of room and of suitable food in the form most readily assimilated, proper light and heat, and add to these potent forces those of hand-pollination and judicious selection, great changes are sure to occur. Possibly in time the relative potency of these several forces may be ascertained, and certain lines of procedure laid down whereby definite results can be secured.

Here is a field for study open to the lovers of natural science. Will not Canadians contribute something to its solution? Hand-pollination is taught at the Ontario Agricultural College, perhaps thence shall come some who shall reveal to us these as yet unknown laws. Professor J. L. Budd, Iowa Agri-

cultural College, tells us he has found that in the case of cross-bred apples, "hardiness follows largely the mother variety, and that the fruit is most frequently modified by the male parent." Is this a universal law? Questions in abundance cluster around this matter of our control of the vegetable kingdom. These problems await solution. Mr. Burbank has given us no further light regarding them than the assurance that "there is no barrier to obtaining fruits of any size, form, or flavor desired; and none to producing plants or flowers of any form, color, or fragrance; all that is needed is a knowledge to guide our efforts in the right direction, untiring patience, and cultivated eyes to detect variations of value."



FIG. 1362.—DR. D. W. BEADLE.

MR. D. W. BEADLE, the writer of the foregoing article, is a well-known figure in Canadian Horticultural circles. Being a B.A. of Yale, and LL.B. of Harvard University, Mr. Beadle was well fitted to take the position of Secretary of the Ontario Fruit Growers' Association, to which he was elected in January,