

permanently, and the structures referred to are too insignificant to be easily discerned in the rocks, if they have been preserved. Moseley went so far as to say that were the foot-jaws only larger they would, no doubt, occur in strata as old as the "Old Red Sandstone." Phylogeny or the study of the pedigrees of animal types, has available no generalized stem-form more interesting than the Prototracheate *Peripatus*.

A NOTE ON THE COLOURS OF TUMBLING MUSTARD SEED.

To those of us who have had to do with the seeds of Tumbling Mustard (*Sisymbrium altissimum*) it is well known that these are nearly always met with in mixtures of two distinct colours, one kind being light-yellow, and the other dark-greenish. As a rule the latter predominate to the extent of about three to one, but occasionally the proportions are the other way about, while still more rarely one colour may entirely dominate. Two or more instances of the last condition were brought to my attention during the winter of 1913, while I was with the Dominion Seed Branch, at Ottawa. In these cases, samples of flax harvested in Saskatchewan contained light coloured Tumbling Mustard Seeds only, their purity being so unusual that some doubt was thrown upon the authenticity of the determination, though the seeds did not differ in other respects. The only objection being, therefore, that they were all of one colour instead of being mixed.

During the autumn of 1914, my brother Stuart had occasion to collect a quantity of Tumbling Mustard seed, and in doing so visited a situation where the species had only recently become established, probably not more than four or five years. By that time, however, the plants had spread over a considerable area and were sufficiently numerous to provide more than a pint of seed. On examining the seed thus collected, it was at once observed that all were of the light yellow variety, thus establishing the fact that they had evidently bred true to type, and were therefore a distinct strain.

This at once led to further investigation, and it was then discovered that both colours were never met with together on individual plants, but that one plant would produce only yellow seeds and another only greenish. We have as yet found no exception to this rule though plants of both types are frequently met with growing side by side; in fact, they are seldom found otherwise, which would, of course, account for the two kinds being nearly always mixed in samples of cultivated seeds.

As the plants producing both kind of seeds are generally

growing together and are moreover visited by various insects, particularly bees, it must naturally be supposed that they are readily cross-fertilized. It is, therefore, interesting to know that this crossing does not apparently affect the colour of the seeds on individual plants, which are still either all yellow or all greenish.

No attempt has been made to breed the plants to ascertain whether the resulting seeds confirm to the usual Mendelian law, when yellow and green producing seed plants are crossed, though doubtless this is the case.

NORMAN CRIDDLE.

MEETING OF THE BOTANICAL BRANCH.

Held December 19th, at the home of Mr. G. H. Clark, 501 O'Connor Street. Dr. M. O. Malte had charge of the meeting and exhibited many fine specimens of Canadian grasses, a collection of which he is preparing for exhibition at the Panama-Pacific Exhibition at San Francisco in 1915.

The remarks of Dr. Malte dealt with "Climatic and Soil Conditions as they influence Plant Life." Many of the specimens which he exhibited demonstrated in a very forceful manner how extremely powerful such influences are. It was stated that during the four months of collecting during the past summer he had brought together about two hundred distinct species of grasses. Of these about one hundred and seventy were native to Canada. The other thirty odd were probably originally imported from Europe, but could be now found wild in many places in Canada. These European grasses, he stated, did exceptionally well in the coastal regions, such as those of Nova Scotia and British Columbia. In this connection, he exhibited and discussed the awnless Italian Rye grass of which about fifty distinct forms could be found. Such forms being to a large extent the result of climatic and soil conditions. Moreover, the influence of such conditions also accounted for the fact that while this particular grass was an annual at Ottawa, in other parts of the Dominion it took on a biennial form, while in British Columbia, it became a true perennial. His remarks in this connection, that is, as to why a plant changed its seasonal habits, provoked some interesting remarks from other members of the club, who held different opinions on this point. This grass, he said, had been known to yield as high as eighteen tons to the acre, where the area it occupied had been irrigated by flooding it from a city sewerage system.

An interesting fact mentioned was, that out of the two



Criddle, Norman. 1915. "A Note on the Colours of Tumbling Mustard Seed."
The Ottawa naturalist 28(10), 138–139.

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