

POLLINATION OF ALFALFA BY BEES OF THE GENUS
MEGACHILE. TABLE OF CANADIAN SPECIES
OF THE *LATIMANUS* GROUP.

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A study has been made of the species of bees that trip and therefore, presumably, pollinate the flowers of alfalfa in the parts of Canada where this plant is or can be grown for seed.

In July and August, 1916, the females of a species of leaf-cutter bee, *Megachile diligens*, Sladen* (*latimanus* Cockerell, not of Say) were found to be visiting the fields of alfalfa in bloom and tripping the flowers in considerable numbers at Medicine Hat and Lethbridge, Alta., each flower visited being tripped. The same thing was noticed in 1917, when they were observed to be tripping the flowers at an average rate of 17 per minute. This species was more numerous in the alfalfa fields than five other species of *Megachile* together, (*perihirta* Ckll., *calogaster*, Ckll., *vidu* Sm., *manifesta* Cr. and *brevis* Cr.) all of which performed the same service. Several species of bumble-bees, fairly plentiful, worked more slowly and often failed to trip the flowers. Honey-bees, also plentiful, visited the flowers without tripping them.

Observations made on July 20, 1917, at Summerland, B.C., and on July 21, at Keremeos, B.C., gave the same results, except that *perihirta* was the abundant species, *M. diligens* not having been met with in British Columbia.

M. perihirta was found nesting gregariously in a nearly new and bare gravel railway embankment at Cochrane, Ont., on August 9, 1917. A nest of the same species was found in a nearly new gravel road leading to a dwelling house at Invermere, B.C., in July, 1914. There is, therefore, some hope that *perihirta* might be encouraged to breed in the vicinity of alfalfa fields by spreading gravel and making it firm by rolling. *Diligens* might also be encouraged in this way because it is very closely related to *perihirta* and probably has similar nesting habits.

Closely related to these two species is a third, *latimanus* Say, found in Southeastern Canada. These three species constitute

*The name *diligens* was first used in the Agricultural Gazette of Canada, Feb. 1918, p. 125.
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