

was in an old fly-catcher's nest, composed of ptarmigan feathers, hairs of mountain sheep, etc., and was found in a crevice in bare rock at a creek near the camp. Large empty fly cocoons were found in the bird's nest and in some of the bee cells. Another but inhabited nest was found on the southwest coast of Victoria island by Dr. Anderson in July, 1911; this was in an old lemming burrow at the base of a rock, and was of the size of a child's fist.

Many of the specimens of *Bombus* taken carried parasitic mites (*Parasitus bomborum* Andemans) in their coat.

FROM F. JOHANSEN'S FIELD NOTES.

Observations on bumble-bees at the Arctic Coast of North America from Point Barrow in the west to Coronation gulf in the east, and adjoining islands:

"The first bumble-bees were seen at the beginning or middle of June while the snow was yet covering the ground to a large extent. The summer comes a little earlier west of Mackenzie river than east of it; except when there is an especially early season in the eastern region. The temperature during June is generally above the freezing point, and even if the nights are colder, it is fairly warm during the middle of the day, especially when the sun is out.

"The first bumble-bees seen in the season were mostly flying high up at rapid speed. A few days later the bees were seen feeding on the first flowers out (the male catkins of *Salix pulchra*, *S. angulorum*, and the flowers of *Saxifraga oppositifolia*). From the middle of June additional flowers were out (*Salix ovalifolia*, *Oxytropis n. griseus* and *O. arctica*, *Pedicularis lanata*, and during the end of June still more (*Salix reticulata*, *Dryas integrifolia*, *Cassiope tetragona*, *Pedicularis arctica*, *P. sudetica*, etc.), all of importance to the bumble-bees, and greatly utilized by them. From July on, there was no lack of flowers; in addition to the above mentioned were *Silene acaule*, *Lupinus nootkatensis*, *Hedysarum mackenzii*, *Astragalus alpinus*, *A. frigidus*, *Saxifraga groenlandica*, *S. tricuspidata*, *S. Cernua*, *Aconitum delphinifolium*, *Pedicularis capitata*, *Polemonium carolinum*, *Caltha pallida*, *Mipsotis silvatica*, *Lagotis glauca* and *Lychnis apchala*. Few plants upon which the bees depend for food begin their flowering so late as August; among these are *Epilobium latifolium*, *Campanula uniflora*, and various *Compositae*. Few bumble-bees were seen in September, and none after the first week of this month. Although the temperature in September may be about the same as in June the flowers which are out now are mostly of a kind (*Grasses*, *Compositae*) of little use to the bees, which seem to understand that the winter is near.

"In the preceding notes the many smaller islands skirting the Arctic coast examined are treated as a part of the latter; a few miles of open sea are no barrier for bumble-bees; they are found on all of the islets and show the same characteristics there. The few observations we have from the two large islands (Banks and Victoria islands) farther north show, however, that over there the season is considerably later, and bumble-bees were therefore not seen much before July. On the other hand, it seems the season along the south side of Coronation gulf and in Bathurst inlet is somewhat earlier than along the Arctic coast farther west, and bumble-bees and flowers may be looked for at the end of May in this more southern latitude.

The first bees to appear are naturally all queens; the first workers were noticed in the beginning of July (about July 10) and the first males at the same time."

Two sheets of drawings, showing the 8th ventral segment in males of *Bombus neoboreus*, *Kirbyellus, polaris* and *arcticus*, accompany this paper.