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## Note on the Habits of the Bee, Anthidium Manicatum

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## Election of Fellows.

The following were elected Fellows of the Society:—

MESSRS. CHARLES L. FOX, 1621, Vallejo St., San Francisco, California; WILLIAM F. N. GREENWOOD, Lautoka, Fiji; HENRY W. DOBSON, 14-16, Finkle St., Kendal; KALIDOS D. SHROFF, Nahani, Surat, India; ARNOLD ROEBUCK, Edgmond, Newport, Salop; the Rev. J. WESLEY HUNT, 116, Cross St., Kroonstadt, Orange Free State; and Miss AMY CASTLE, Assistant Entomologist, Dominion Museum, Wellington, New Zealand.

## Exhibits.

NOTE ON THE HABITS OF THE BEE, ANTHIDIUM MANICATUM.—

With reference to a recent note by Mr. Morice on the pugnacity of a bee, a male of *Anthophora pilipes*, which attacked a female of *Bombus pratorum* (Proc. Ent. Soc. Lond., 1921, p. lxix), Mr. E. E. GREEN read the following extract from his Journal, dated 30th June: "A patch of *Nepeta cataria*, in my garden, is frequented by bees of the species *Anthidium manicatum*. The males have a peculiar flight, frequently poisoning themselves motionless in the air. They appear to be of an extremely pugnacious disposition. When a 'bumble bee' (*Bombus* sp.) approaches the patch of flowers, the *Anthidium* poises itself for a moment, takes aim, then launches itself straight at the intruder, striking it with such force that the *Bombus* often loses its balance and falls to the ground, after which it picks itself up and makes a hurried departure. The *Anthidium* does not follow up its victory or exhibit any further interest in its fallen foe, but resumes its previous occupation of cruising about above the patch of flowers, occasionally refreshing itself at a blossom."

Mr. Morice has suggested, as explanation of the action of his *Anthophora*, that this male mistook the *Bombus* for a female of its own species, but Mr. Green did not think that this explanation would fit the case just described. In the first place, the female of *A. manicatum* is much smaller than the male, while the individuals of *Bombus* that were the objects of attack were considerably larger and more brightly coloured

than the *Anthidium*. Further, the fact that the *Anthidium* took no further interest in the vanquished *Bombus* does not suggest that its action was due to sexual instinct. The conclusion arrived at is that the *Anthidium* wished to preserve this particular patch of flowers for the benefit of itself and its congeners, and resented the intrusion of outsiders.

BRITISH SPECIES OF ZYGAEANA.—Mr. T. H. L. GROSVENOR exhibited the following:—

(1) A small race of *Zygaena trifolii* from Sussex, compared with a large race from Kent; it was found that these two races were unable to pair although readily attracted to one another.

(2) A black form from Sussex; it was found that these would only pair *inter se* with the greatest reluctance, and when finally obtained the resulting ova were infertile; it was also noted that a normal male preferred a black female and would not pair with a normal individual if a black one was present. Microscopic examination of the scaling showed this form to be normal.

(3) With a white female it was found impossible to obtain a pairing, as it did not seem to exhibit any sexual attraction, and males that readily paired with normal individuals showed not the slightest attraction. The scaling was found to be very sparse, and such scales as were present were curled.

(4) A male with spot 4 missing from the left primary.

(5) Teratological examples, including a male with wings small and almost circular, and a black male with wings fully developed but those on the left smaller than on the right.

(6) Two males with a number of white scales mixed with the red of the maculae; these were found to be different to exhibit No. 3, as these white scales were quite normal.

(7) A male *Z. tutti* and a female of *Z. trifolii* taken *in coitu*. Six imagines, the result of this pairing, were shown, altogether 19 were bred with the following results:—

All the females resembled the female parent.

50 % of the males resembled the female parent.

50 % of the males had a well-defined but small sixth spot.

A pairing between these was found to be infertile.

(8) Two males found *in cop.*, one *Z. tutti* and one *Z. trifolii*; they remained together at least 12 hours; the genitalia,