

shown something of the same tendency in his first paper. The next few years will certainly show marked advances in our knowledge of the Tineids.

This review indicates that we need certain work in the immediate future. A monograph of the Butterflies with practicable synoptic tables, critically revising both genera and species; comprehensive work on the larvæ of the Sphingidæ; studies on the larvæ of the Noctuidæ, to supplement Dr. Smith's work on the adults, which should be continued; a review of Dr. Hulst's work on the Geometridæ, which might most profitably take the form of a monograph, giving practicable synoptic tables to species to supplement Dr. Hulst's generic ones; determinative tables for Tortricidæ, both generic and specific. Dr. Fernald ought not to delay the preparation of such a badly needed paper; continued descriptions of new species of Tineids to make the extent of our fauna known to us. We hope to see these subjects soon taken up.

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At the conclusion the society offered Dr. Dyar a vote of thanks for his address. The address was discussed by Messrs. Schwarz, Banks, Gill and Marlatt.

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—Mr. Banks then presented the following paper :

#### NOTES ON BRACHYNEMURI OF THE *B. FEROX* GROUP.

(PLATE III.)

By NATHAN BANKS.

In examining some recent additions to my collection of Myrmeleonidæ, I was struck more forcibly than ever before with the constancy in size and shape of the male appendages. Various species are now known to me from a considerable number of localities, yet there is no distinct variation in the general appearance of these appendages. Therefore it seems that they are of considerable importance in the separation of species. In the *B. ferox* group I have had various specimens that differed from the known forms very slightly in colorational points but prominently in the appendages; therefore I believe these forms are distinct species.

Two are from the United States, a third is from Baja California, and was formerly considered *B. peregrinus*, but is very distinct from that species. The following table will separate these allied forms:

1. Superior appendages very long and slender, more than one-half the length of last abdominal segment..... 2  
Superior appendages much shorter, scarcely as long or shorter than one-half the last abdominal segment..... 4
2. Superior appendages as long as last abdominal segment, yellowish, apical abdominal segments without pale marks.....*B. carrizonus*.  
Superior appendages shorter than the segment, often blackish. .... 3
3. Superior appendages plainly shorter than last abdominal segment; apical abdominal segments without pale marks.....*B. assimilis*.  
Superior appendages nearly as long as segment, black, abdomen spotted with pale throughout.....*B. dissimilis*.
4. Cubitus heavily marked with black; pronotal stripes connected in front; femora black above; superior appendages black.....*B. ferox*.  
Cubitus not heavily marked with black; thoracic stripes not connected in front; smaller species..... 5
5. Femora thickly dotted with black; superior appendages blackish; vertex not with four dots.....*B. texanus*.  
Femora wholly pale; superior appendages yellowish; vertex with four black dots.....*B. 4-punctatus*.

### *Brachynemurus assimilis*, n. sp.

Face yellow, a transverse black spot from eye to eye, including bases of antennæ, and limited above by a curved black band, the lower margin pointed in the middle; vertex pale, with a brown band, interrupted in the middle and not reaching the eyes. Prothorax yellowish, with four black stripes at subequal distances apart and all reaching anterior margin, the pair each side sometimes connected in front; lower margin with black stripe. Palpi tipped with black; antennæ brown, quite long. Rest of thorax lineate and maculate with black, two stripes on meso- and metascutellum. Legs pale, more or less heavily spotted with black, the tips of the tibiæ and tarsi black. Abdomen pale at base, lineate with black, beyond middle black. Wings hyaline, venation interrupted black and white; pterostigma pale, with a basal brown spot; the cubitus quite heavily marked with brown (but not so much as in *B. ferox*). The abdomen of the male is very long, longer than in allied species, the superior appendages very long and slender, about as long as in *B. carrizonus*, but the last abdominal segment is very much longer than the appendages.

Length ♂, 57 mm.; ♀, 34 mm.

Four specimens from Tehama, California, August (Morse), and from Oregon. Closely allied to *B. carrizonus*, but differs

by the greater length of the male abdomen, and also by the shape of the inter-antennal mark, which is not plainly transversely divided above antennæ, and is pointed on the median line below.

**Brachynemurus carrizonus** Hagen.

All my specimens (15) have the appendages as Hagen describes them, about as long as the last abdominal segment. The inter-antennal mark is transversely divided above the antennæ, and the lower margin is not pointed on median line.

**Brachynemurus ferox** Walker.

*B. peregrinus* Hagen.

I have compared the descriptions of Walker and Hagen with specimens from California, Oregon, Washington, Nevada, and Arizona, and think there cannot be the slightest doubt of the synonymy.

**Brachynemurus dissimilis**, n. sp.

Face pale yellow, a transverse black spot from eye to eye extending more below antennal bases than in *B. assimilis* or *B. carrizonus*, above cut off by a pale band from the curved black band on front margin of vertex; latter with a dot and line each side; palpi tipped with black; antennæ long, brown; prothorax with four black stripes and side margins black, not connected in front; rest of thorax marked with black, two stripes on meso- and metascutellum. Legs pale, lightly dotted with black, and the tibiæ and tarsi black-tipped; legs more slender than in allied forms. Abdomen pale at base, lineate with black, beyond middle black, but with a distinct yellow spot on posterior margin of each segment on each side in both sexes. Wings marked as in allied forms, the cubital marks not very heavy. Abdomen long and slender, the last segment, however, not as long as in *B. assimilis*, the superior appendages long and slender, black, and curved toward each other, plainly a little shorter than last abdominal segment.

Length, ♂, 39 mm.; ♀, 25 mm.

Habitat, San José del Cabo, Baja California. This is the species that I had previously considered *B. peregrinus* in my paper on the Neuroptera of Baja California.

**Brachynemurus texanus**, n. sp.

Face yellowish, a transverse inter-antennal mark, concave on lower margin, separated by a yellow band from the black band on front margin of vertex; the latter with a triangular mark each side; palpi tipped with black; antennæ pale brown. Prothorax with four black lines, somewhat broken in male; rest of thorax maculate with brown, two stripes on meso- and metascutellum; legs heavily dotted with black, tibiæ and tarsi tipped with same. Wings marked as in allied species. Abdomen pale at base, lineate with black, black beyond middle, but with pale spots on the pos-

terior margin of some of the segments. Last abdominal segment of male quite long; the superior appendages short, divaricate, black, not half the length of the segment.

Length, ♂, 33 mm.; ♀, 25 mm.

One pair from Laredo, Texas, August (McClendon).

### **Brachynemurus 4-punctatus Currie.**

This species is very constant in markings, as Mr. Currie has already noted; however, I think it is closely allied to the other species by the structure and general plan of markings.

#### EXPLANATION OF PLATE III.

1. *Brachynemurus assimilis*, inter-antennal mark and superior appendage of male.

2. *Brachynemurus carrizonus*, inter-antennal mark and superior appendage of male.

3. *Brachynemurus dissimilis*, inter-antennal mark and superior appendage of male.

4. *Brachynemurus ferox*, pronotal marks and superior appendage of male.

5. *Brachynemurus texanus*, pronotal marks.

6. *Brachynemurus texanus*, superior appendage of male.

7. *Brachynemurus 4-punctatus*, superior appendage of male.

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The paper was discussed briefly by Mr. Currie. He mentioned the fact that many species which differ widely in other respects often have very similar anal appendages and, *vice versa*, there are some species which resemble each other very closely *except* as regards the appendages. He said that, according to his own observations, there is considerable individual variation, in some species, both in the length and shape of the inter-antennal marking. Mr. Banks replied that, though there is some variation in length, he has found the shape fairly constant in the species he has studied. The paper was further discussed by Messrs. Schwarz and Gill.

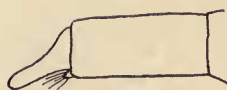
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FEBRUARY 19, 1903.

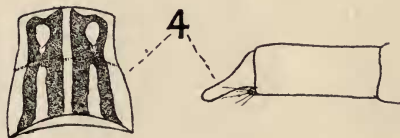
The 175th regular meeting was held at the residence of Mr. John D. Patten, 2212 R street N.W. In the absence of the



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PLATE III.