

The randomization for the plot shown in Table II is illustrated in Figure 2.

The foreword to the table of *Random Sampling Numbers* deals with their use at length and simple ingenuity will find a method of use appropriate to almost any problem of randomization. The present discussion, it is hoped, will draw the attention of those engaged in field work to the possibility of carrying out theoretically perfect randomization with less concern and labour than is required for faulty methods.

SOME NEW MYCETOPHILIDAE*

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In classifying several collections of Mycetophilidae I have found six species which appear to be new. In addition I wish to report two interesting variations in wing venation which I observed.

***Bolitophila bucera* n. sp.**

Male: Length 6 mm. General color brown. Head brown. First two antennal segments and basal half of third yellow. Remainder of antennae brown covered with conspicuous white spines. Palpi and mouthparts dark brown.

Thorax uniformly brown. No markings present. Wing 6 mm. long. Sc_2 ends opposite base of R_s . R_4 ends in $R_1 +_2$. Stigmal spot present but faint. M-cu crossvein greatly reduced.

Legs: Coxae yellow. Remainder of legs dark brown. Abdomen dark brown. Hypopygium as in figure 1. This species seems to resemble *B. duplus* Garrett. The details of the hypopygium do not seem to agree with his description. Described from a single male taken at Boyer, Oregon, January, 1933, by James Macnab.

***Mycetophila subquatuornotata* n. sp.**

Male: Length $4\frac{1}{2}$ mm. General color yellow and dark brown.

Head dark brown. Antennae and palpi yellowish brown.

Thorax brown. Humeri yellow. Posterior angles of mesonotum yellow. A short, narrow yellow strip at posterior margin of mesonotum continuing to the scutellum. Lateral margins of scutellum dark brown. Scutellar setae six. Wing 4 mm. long. A dark brown spot covers R_s , distal $\frac{2}{3}$ of r-m and the fork of M. A brown band from the tip of $R_1 +_2$ beyond Cu_1 being broken in cell M_2 .

Legs: Coxae, trochanters and femora yellow, the tips of the femora are dark brown. Tibiae and tarsi brownish yellow. Mesothoracic tibia with one spine on the flexor surface. Two rows of spines on the extensor surface of the metathoracic tibia.

Abdomen yellow. Dorsum of each segment with a large brown spot at the base. Posterior margin of each segment yellow. Hypopygium is in figure 2.

This species seems to be closest to *Mycetophila quatuornotata* Loew which was described from a female. In her thesis, Miss E. G. Fisher figures the hypopygium of what she believes to be *M. quatuornotata*. My specimen differs from hers in structure of both the inner and outer disti-styles. Described from a single specimen taken at Sherwood, Oklahoma, June, 1937, by Standish and Kaiser. Type in my collection.

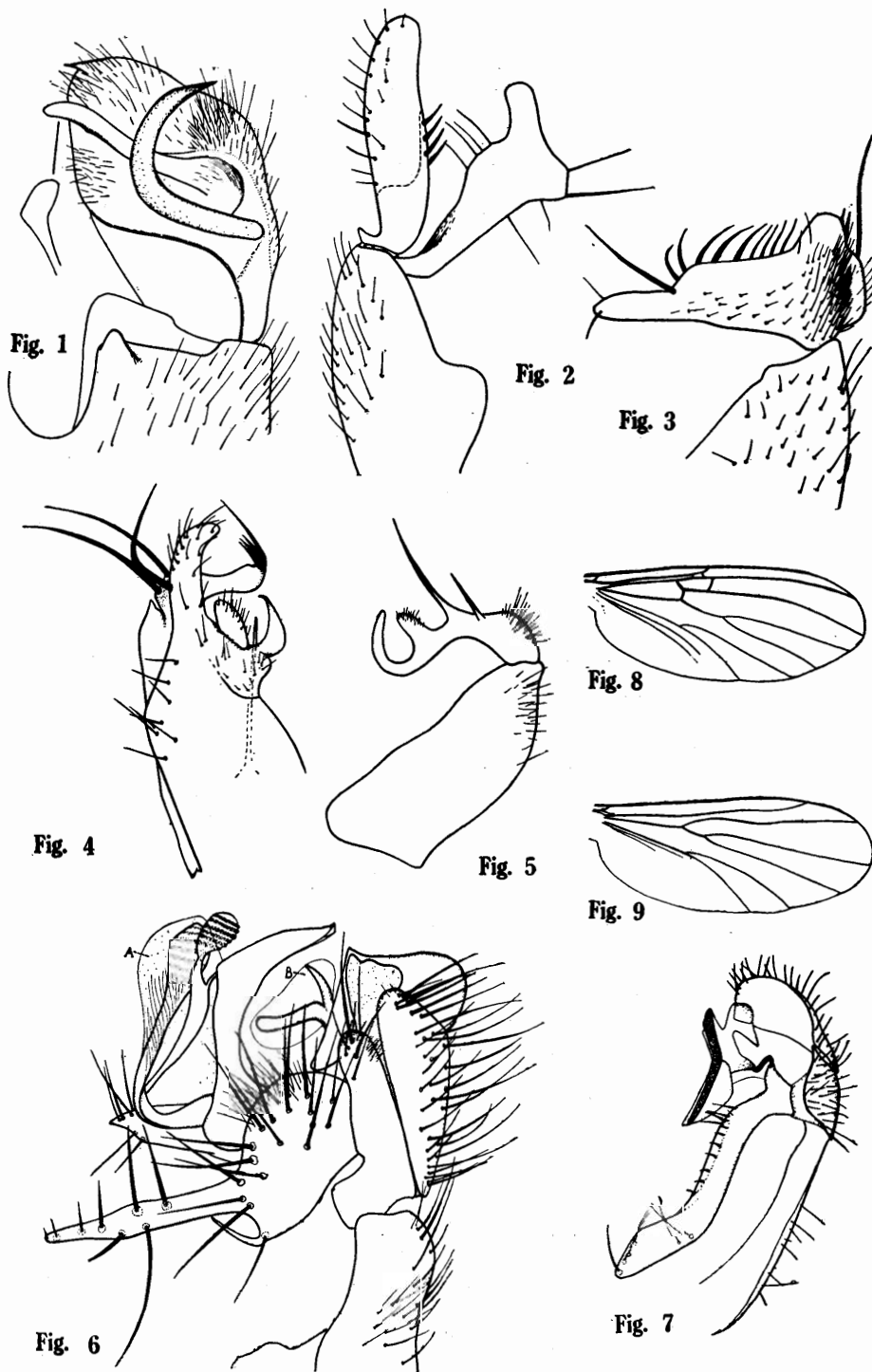
***Mycetophila thioptera* n. sp.**

Male: Length $4\frac{1}{2}$ mm. General color yellowish brown.

Head brown. First two antennal segments yellow. Remainder of an-

*Contribution from the Department of Entomology, Massachusetts State College, Amherst, Massachusetts.

PLATE IV.



tennae and palpi brown. First joint of palpus small, remaining three greatly enlarged and flattened.

Thorax yellowish brown. Mesonotum somewhat darker than rest of thorax. Wing $4\frac{1}{2}$ mm. long, unmarked but with a yellowish tinge—r-m crossvein longer than petiole of M.

Legs yellow. Mesothoracic tibia lacking spines on the flexor surface. Two rows of spines on the extensor surface of the metathoracic tibia.

Abdomen light brown. Hypopygium yellow, as in figure 3.

This species most closely resembles *Mycetophila fungorum* variety *obscura* Fisher. It differs in the structure of the dististyle and the number and arrangement of setae on the dististyle. Described from two males taken at Page and Sherwood, Oklahoma, June, 1937, by Standish and Kaiser. Type in my collection. Paratype in Massachusetts State College Collection.

***Mycomyia kiamichii* n. sp.**

Male: Length 4 mm. General color yellow.

Head brown. Palpi and first two antennal segments yellow. Remainder of antennae brown.

Thorax yellow. Mesonotum with a dark brown stripe above the base of each wing. Humeri yellow. Scutellar setae four. Wing 4 mm. long. Sc_2 ends proximad of middle of cell R_1 . Petiole of M about $1\frac{1}{3}$ times as long as vein M_3 . Cu forks slightly distad of the base of the r-m crossvein.

Legs: Coxae, femora and trochanters yellow. Tibiae and tarsi dusky. Mesothoracic coxae lack spurs.

Abdomen yellow. A narrow dark brown band present at the tip of each of segments 1-5. Remainder of abdomen brown. Hypopygium yellow as in figure 4.

This species most closely resembles *Mycomyia tantilla* Loew but differs in thoracic markings and the structure of the hypopygium. Described from one male taken at Flint, Oklahoma, June, 1937, by Standish and Kaiser. Type in my collection.

***Phthinia catawbiensis* n. sp.**

Male: Length 7 mm. General color light brown.

Head brown. First two antennal segments yellow. Remainder of antennae, palpi and mouthparts light brown.

Thorax uniformly light brown. Wing 4 mm. long. Costa extends $1\frac{1}{3}$ — $1\frac{1}{2}$ the distance from tip of R_6 to $M_1 + 2$. Sc ends slightly proximad of R_5 . r-m crossvein shorter than the petiole of M. Cu forks slightly distad of the base of R_5 . Anal veins well developed extending almost to the fork of Cu.

Legs yellowish brown. Basitarsus of prothoracic leg three times as long as the tibia. Tibial spurs black, one on prothoracic leg, one large and one small on the mesothoracic leg and two subequal in length on the metathoracic leg.

Abdomen brownish. Base of each of segments 3-7 with a narrow yellow band. Hypopygium, figure 5, yellow, resembling that of *P. tanypus* but differs in that there is one long and one short spur on the dististyle instead of two subequal spurs.

Described from one male collected by M. W. George at Smokemont, North Carolina, August, 1937. Type in my collection.

***Trichonta hansonii* n. sp.**

Male: Length 6 mm. General color dark brown.

Head dark brown. Palpi, first three segments of antenna light brown.

Thorax brown. Mesonotum light brown with 3 dark brown stripes. The posterior region of the mesonotum with a transverse narrow dark brown band; this extends and covers the dorsum of the scutellum. Margin of scutellum light brown. Scutellar setae six. Wing 5 mm. long. Sc joins R at a point $2/3$

the distance from the humeral crossvein to the base of R_s . Cu forks slightly beyond the base of the r-m crossvein.

Legs: Coxae and trochanters yellow, the latter with a dark brown spot on the ventral, distal region. Femora, tibia and tarsi yellow.

Abdomen: Dorsum of segment one dark brown, segment two dark brown with a narrow yellow band at the tip of the segment. Remainder of segments brown with a narrow yellow band at the base and tip of each segment. Hypopygium as in figure 6. The portions designated as "a" and "b" are covered with membrane.

This species most closely resembles *Trichonta venosa* Staeger but differs in the structures of the hypopygium.

I take pleasure in naming this species for my friend John Hanson who has prepared these and other drawings for me.

Described from one specimen taken at Mt. Desert, Maine, June 16, 1935, by C. P. Alexander. Type in my collection.

***Trichonta sagana* n. sp.**

Male: Length 4 mm. General color brown.

Head dark brown, palpi and first three antennal segments yellow. Remainder of antennae dark brown.

Thorax brown. Mesonotum with 3 dark brown stripes. Lateral stripes do not reach anterior margin so that the humeri are lighter in color. Median stripe does not reach the scutellum. Scutellar setae six. Wings $3\frac{1}{2}$ mm. long. Sc joins R at a point $\frac{2}{3}$ the distance from the humeral crossvein to the base of R_s . Cu forks under the base of the r-m crossvein.

Legs: Coxae yellow with a narrow brown band at the tip. Remainder of leg yellow.

Abdomen: Segments one and two uniformly dark brown. Remainder of segments brown with both the anterior and posterior margins light yellow. Hypopygium brown, as in figure 7.

This species resembles most closely *T. vulgaris* Loew. It differs in the details of the hypopygium. Described from one male taken by C. P. Alexander at the Witch Hole, Mt. Desert Island, June, 1935.

In addition to the species described two specimens were found of considerable interest.

One, a female of *Mycomyia imitans*, has an added element of the subcosta (figure 8) which forms a small cell above cell R_1 . The second, a species of *Allodia* has lost the base of R_s as shown in figure 9. Both of the above mentioned specimens were taken in the White Mountains, August, 1935, by C. P. Alexander.

EXPLANATION OF PLATE

- Figure 1. *Bolitophila bucera* n. sp. Right clasper.
 Figure 2. *Mycetophila subquatuornotata* n. sp. Left clasper.
 Figure 3. *Mycetophila thioptera* n. sp. Right clasper.
 Figure 4. *Mycomyia kiamichii* n. sp. Left clasper.
 Figure 5. *Phthinia catawbiensis* n. sp. Right clasper.
 Figure 6. *Trichonta hansonii* n. sp. Right clasper.
 Figure 7. *Trichonta sagana* n. sp. Right clasper.
 Figure 8. Abnormal wing of *Mycomyia imitans*.
 Figure 9. Abnormal wing of *Allodia* sp.
 Drawings by J. F. Hanson.