

## The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS :

### THE PSYCHODIDÆ OF WASHINGTON.

By TREVOR KINCAID, University of Washington.

So far as the writer is aware no Psychodidæ have been recorded from the Pacific coast, therefore it was with great interest that he undertook the investigation of the representatives of the group found in this vicinity. Careful collecting carried on during several months disclosed the fact that our Psychodid fauna is by no means a meagre one, since five distinct species were obtained. Of these only three were collected in sufficient quantities for critical comparison, and as they do not agree with any of the published descriptions they are hereby characterized as follows:

**Psychoda pacifica** n. sp. <sup>*P. phalaropus*</sup> Length 2.0-2.3 mm.—Body brown, except lateral margins of abdomen, which are dull white. Thorax and abdomen thickly clothed with long gray hair, an especially prominent tuft upon the posterior margin of thorax. Wings ovate, apex obtusely rounded, gray, with gray hair upon the veins; fringe gray, very long upon the posterior margin, shorter and more closely applied upon the anterior margin; length 3.0-3.5 mm. Legs brown, clothed with gray hair and scales; antennæ brown, as long as width of wing, 15-jointed, with verticillate gray hairs upon the nodes; joints 1-3 closely united; joints 3-13 separated by slender pedicles; joints 14-15 small and narrowly separated; ♂ genitalia conspicuous, with long gray hair above and below, several times as long as the breadth of the end of the abdomen. Inferior appendages 3-jointed, elongated, curving dorsally; first joint stout; second joint twice as long as first, very slender, swollen slightly at base, tapering to an acute point; third joint very minute, clavate. Superior processes one-half the length of inferior, curving ventrally, 2-jointed; first joint swollen near the base; second joint almost as long as first, slender, tapering to an acute point. Ventral plate of ♀ brown, with numerous gray scales and a few scattering hairs, about as long as broad, terminating posteriorly in two blunt lobes with a shallow emargination between; ovipositor black, prominent, slightly curved.

Described from several hundred specimens taken at Seattle, Wash., during the months of March and April. Several specimens were also reared from manure, but the larvæ were not obtained.

**Psychoda elegans** n. sp. Length 1.6-2 mm.—Thorax and dorsal surface of abdomen brown; lateral margins of abdomen dull white; ventral surface of abdomen brownish, varying to dull white. Thorax and abdomen sparsely clothed with gray hair. Legs brown, clothed with gray hair and scales. Wings lanceolate, acutely pointed, with gray hair upon the veins; fringe gray, sparse, short upon anterior margin, somewhat longer on posterior margin; antennæ brown, one and one-half times as long as breadth of wing, 16-jointed, with verticillate hairs upon the nodes; joints 1-3 closely jointed, joints 3-13 separated by slender pedicels; joints 14-16 small, narrowly separated: ♂ genitalia brown, with gray hair above and below, somewhat prominent. Inferior appendages moderately long, curving dorsally, 3-jointed; first joint broad at base, conical; second joint as long or a little longer than first, swollen at base, tapering; third joint extremely slender, cylindrical, about one-sixth as long as second joint. Superior appendages about one half the length of inferior, 2-jointed; first joint stout, ovate; second joint slender, longer than first, tapering to an acute point. Ventral plate of ♀ brown, with numerous gray scales and a few scattering hairs, about as long as broad, terminating posteriorly in two prominent lobes with a semicircular emargination between; ovipositor black, prominent, strongly curved.

Described from about fifty specimens taken at Seattle, Wash., during the March and April.

**Psychoda olympia** n. sp. Length 2. mm.—Body brown, densely clothed with dark gray hair. Legs brown, clothed with dark gray hair; a number of long white hairs scattered over the tibiæ; tarsi with gray scales. Wings lanceolate, acutely pointed; length 3.5 mm.; fringe on anterior margin black, as long as the width of a cell, with a long tuft near base, on posterior margin gray, sometimes with a few black hairs, as long as the width of three cells; small patch of black hair at tip of each vein, an irregular band of black hair across wing towards apex, immediately internal to this two patches of white hair which occasionally run together into a band; small patch of white hair at base of wing; region near base with mixed black and white hair; antennæ 16-jointed, dark, clothed with verticillate gray hairs upon the nodes, except first and second joints, which are covered with scales; first joint cylindrical; second joint round; joints 3-14 fusiform, produced into tapering pedicels; joints 15-16 small, without pedicels; length in ♀ as long as width of wing with fringe, in ♂ twice the breadth of wing; ♂ genitalia not conspicuous, brown, with scattering gray hairs. Inferior appendages 2-jointed; first joint oblong, stout, united into a broad plate ventrally, which is produced posteriorly into a small, median, conical process; second joint slightly longer than first, obclavate, slightly curved, apex truncated and bearing a group of long stiff bristles. Superior appendages as long as inferior, 2-jointed; first joint oblong; second joint a little longer than first, slender, tapering to an acute point. Ventral plate of ♀ as broad as long, terminating posteriorly in two finely

pubescent lobes with a slight emargination between; anteriorly it is densely clothed with gray hair; ovipositor yellowish inconspicuous, as long as ventral plate, almost straight.

Described from two specimens taken at Olympia, Wash., during the months of April and July respectively, and from thirty specimens taken at Seattle, Wash., during the month of April.

In *P. pacifica* and *P. elegans* the wings are folded roof-like over the back when at rest, but in *P. olympia* they are spread horizontally.

In dissecting these delicate little flies several points were observed which may be of interest.

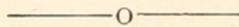
The ventral nerve cord of the abdominal region is double, the two bands being united only at the ganglia. This ladder-like arrangement of the nervous system probably points like the venation of the Psychodidæ to a generalized condition.

The ovaries are two in number and lie on each side of the abdomen, each resembling a bunch of grapes. The undeveloped eggs are oval and exhibit the usual arthropod condition of a central yolk and peripherally distributed protoplasm. They seem to develop considerably before being laid, as females were dissected which contained eggs in a much more advanced condition; these were oval, about .2 mm. long, nearly one-half of the egg being occupied by a dozen or more large embryonic cells, with prominent nuclei and nucleoli, which arched over the remaining yolk in a dome-like manner.

The study of antennæ which had been cleared and mounted in balsam brought to light some peculiar structures which are undoubtedly organs of special sense. In *P. pacifica* and *P. elegans* there is a small circular protuberance on each side of every node of the antennæ, except those at the tip and base. From the apex of each of these elevations three long, slender processes spring out, two of them projecting divergently forward to the base of the joint in front, and the third projecting backwards to the node of the joint behind. On examining the antenna of *P. olympia* for homologous structures it was found that here the conditions were quite different. On each side of the joints of the antennæ circular depressions were found, and springing from the centre of each of these were two beautiful lanceolate wing-like structures, which, from their longitudinally ribbed appearance, would seem to be either enormously developed scales, or

else formed by the fusion of a number of hairs into a flat plate. The writer would suggest for these structures an auditory function. Those of *P. olympia* are admirably adapted for this purpose, as on each joint the four processes are so arranged that each would take up a vibration from a different direction while the others would not be disturbed, which would enable the animal to detect not only sound, but its direction.

So far as observed the Psychodids are never captured in spiders' webs and this is explained, the writer believes, by the density and peculiar arrangement of the hairs upon the body, and especially upon the legs. The little flies may often be seen calmly walking over the snares so fatal to almost the whole race of Diptera—and if they come in contact with the webs in their flight they are never more than temporarily embarrassed.



## A PRELIMINARY CLASSIFICATION OF THE SPECIES OF THE GENUS *ACRONYCTA* OF TEMPERATE NORTH AMERICA.

By JOHN B. SMITH, Sc.D.

For some months past I have been engaged in a monographic revision of the genus *Acronycta* as represented in our fauna, and have been assisted in this work, so far as the early stages are concerned, by Dr. H. G. Dyar. The preliminary arrangement is now completed, and the new species have been determined, but it will be weeks before the mss. is in final shape for publication, and months before it can be actually printed. Inasmuch as there are quite a number of species represented in several collections, to which mss. names must be attached when they are returned to those who kindly loaned them to me, I have considered it best to present synoptic tables of all the species, indicating those that are new and differentiating them from their nearest allies. This will give validity to the names attached to the specimens and will not anticipate the full discussion of their structural and other characters in the monograph. The preliminary division of the genus into groups may not be entirely clear without the explanatory discussion, but can be made so by any one who will arrange his species in the series and will study the sexual characters of any one species of each group. It may be said that the order of the species in the tables is arbitrary, for convenience in iden-



Kincaid, Trevor. 1897. "The Psychodidae of Washington." *Entomological news, and proceedings of the Entomological Section of the Academy of Natural Sciences of Philadelphia* 8, 143–146.

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