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A LIST OF SOME BEEFLIES OF THE NEVADA TEST SITE¹

Dorald M. Allred², D. Elmer Johnson³, and D Elden Beck²

During ecological investigations at the Nevada Test Site (refer to Brigham Young University Sci. Bull., II(2):1-52, 1963), several thousand beeflies were collected between March, 1961, and August, 1962. Specimens were taken by members of our field staff at the test site, and to a large extent by D. Elmer Johnson, who also identified the flies.

This reports 2,573 identifications representing 111 species of 24 genera. In addition several undescribed species were taken but are not listed here.

The species, numbers of individuals collected, months of occurrence, and ecological distribution are shown in Table I. The validity of some identifications made on the basis of descriptions and keys in the literature is open to question, and these names are followed by a question mark in the table.

Species which were taken in the most abundant numbers at the test site are *Lordotus albidus*, *L. nigriventris*, and *Poecilanthrax apache*. Those most widely distributed ecologically are *Paracosmus morrisoni*, *Poecilanthrax apache*, and *Villa aenea*. The greatest numbers of species and individuals were found in the Mixed and Larrea-Franseria communities (Fig. 1). Seasonally, the greatest



Fig. 1. Relative numbers of species of beeflies found in each of seven plant communities.

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numbers of species and individuals occurred in May, June, April, and September, respectively (Fig. 2).

TAXONOMIC NOTE

Material in the genus *Lordotus* collected for this study, plus that collected in other strategic localities, clarifies the relationships between some of the taxa in the genus and necessitates changes in the nomenclature of several of them.

Lordotus luteolus Hall, new combination
L. pulchrissimus luteolus Hall

Collection of a copulating pair of this species at Walker Pass, Kern County, California, on September 12, 1961, by D. E. Johnson

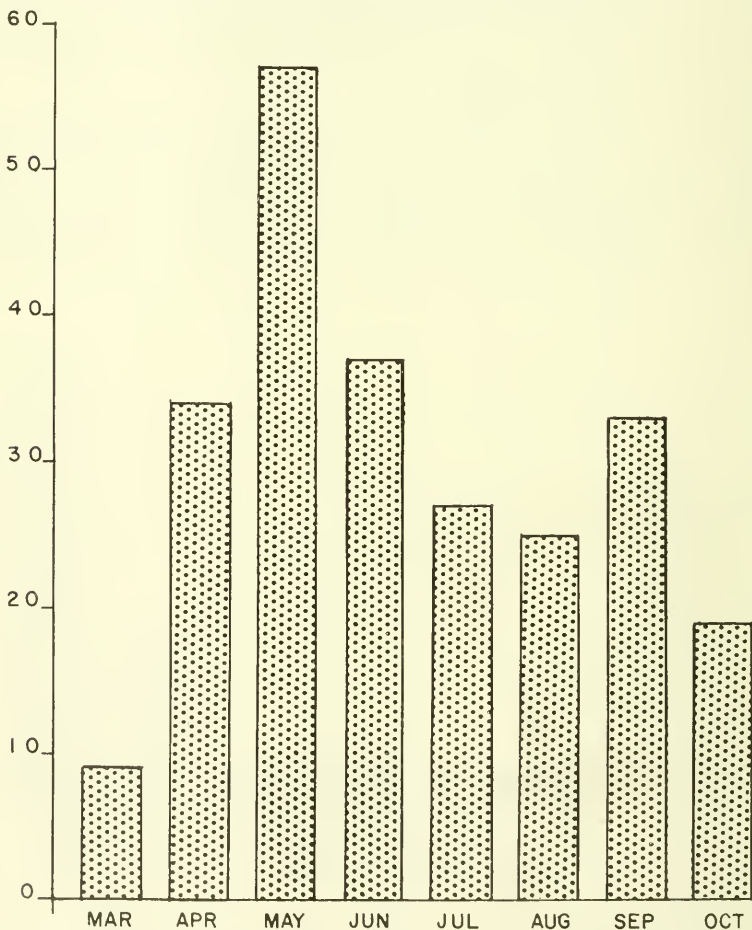


Fig. 2. Relative numbers of species of beflies found during each of eight months of the year.

linked the two sexes of this species and made possible the certain separation of this species and *Lordotus pulcherrimus* Williston. In *L. pulcherrimus* the hypopleura are hairy while in *L. luteolus* they are bare. This holds true for both sexes.

Lordotus melanosus Johnson and Johnson, new combination
L. miscellus melanosus Johnson and Johnson

Examination of much material in this species and *L. miscellus* Coquillett has failed to reveal any intergrades between the two.

Lordotus nigriventris Johnson and Johnson, new combination
L. sororculus nigriventris Johnson and Johnson

As in the species above, examination of many specimens of this species and *L. sororculus* Williston and finding the two occurring at the same place, without intergrades being evident, are indicative that the two are best considered as distinct species. *Lordotus sororculus* is the more southerly and westerly in distribution, the two coming together in southern Nevada.

Lordotus striatus Painter, new combination
L. gibbus striatus Painter

This species and *L. gibbus* Loew have been found associated together in a number of places. They differ from each other as much as any of the related species in the group. Therefore, these are considered as distinct species.

Table 1. Occurrence of beetles in plant communities at the Nevada Test Site

(* = Occurrence; P = Predominance; Month in boldface = Period of greatest abundance.)

| Species | Plant Community or Locality ¹ | | | | | | |
|--|--|-------|----|-------|-------|----|-------|
| | La-Fr | Gr-Ly | Co | At-Ko | Pi-Ju | CS | Mixed |
| <i>Anastoechus hessei</i> Hall 41-Sept., Oct. | * | | | | | * | P |
| <i>A. melanohalteralis</i> Tucker 2-Sept. | | | | | | | * |
| <i>Anthrax albofasciatus</i> Macquart 11-April, May | P | | * | | | | P |
| <i>A. limatulus</i> Say 3-June, Sept. | | | * | | | | |
| <i>A. nidicola</i> Cole ? 18-April, May | P | * | | | | | * |
| <i>A. oedipus</i> Fabricius 23-April through October | * | | | | * | * | P |
| <i>A. seriepunctatus</i> (Osten Sacken) 9-May, June , July | P | | | | | | * |

| | | | | |
|---|---|---|---|---|
| <i>Aphoebantus abnormis</i> Coquillett | * | | * | * |
| 11-Aug., Sept., Oct. | | | | |
| <i>A. altercinctus</i> Melander ? | | | * | |
| 37-June | | | | |
| <i>A. arenicola</i> Melander | * | | | * |
| 3-May | | | | |
| <i>A. argentifrons</i> Cole | | | | * |
| 6-Aug. | | | | |
| <i>A. borealis</i> Cole ? | | | | * |
| 2-May | | | | |
| <i>A. brevistylus</i> Coquillett ? | | | | * |
| 1-July | | | | |
| <i>A. desertus</i> Coquillett | * | * | | |
| 28-April, May | | | * | P |
| <i>A. eremicola</i> Melander | P | * | | |
| 17-April, May | | | | |
| <i>A. fumosus</i> Coquillett | P | * | | * |
| 26-April | | | * | * |
| <i>A. interruptus</i> Coquillett | P | * | | * |
| 15-April, May, June | | | * | * |
| <i>A. marcidus</i> Coquillett | * | * | | P |
| 15-March, May, June | | | | |
| <i>A. marginatus</i> Cole ? | * | | | |
| 5-July | | | | |
| <i>A. marmon</i> Melander | * | | P | |
| 41-March, Aug., Sept., Oct. | | | * | P |
| <i>A. mus</i> Osten Sacken | * | | | P |
| 7-April, May, July | | | | |
| <i>A. pavidus</i> Coquillett | | | * | |
| 8-Aug. | | | | |
| <i>A. parkeri</i> Melander | P | | | * |
| 8-July, Aug., Oct. | | | | |
| <i>A. peodes</i> Osten Sacken | * | | * | P |
| 51-Mar., April, May | | | | |
| <i>A. scalaris</i> Melander | P | | P | * |
| 36-May, June, July | | | | |
| <i>A. scriptus</i> Coquillett | * | | | |
| 1-May | | | | |
| <i>A. tardus</i> Coquillett | * | | | P |
| 14-May, June | | | | |
| <i>A. timberlakei</i> Melander | | | | * |
| 1-July | | | | |
| <i>A. transitus</i> Coquillett | P | * | * | * |
| 20-April, May | | | | |
| <i>A. ursula</i> Melander | P | * | | * |
| 15-April, May | | | | |
| <i>A. varius</i> Coquillett ? | * | | P | |
| 9-June | | | | |
| <i>A. vasatus</i> Melander ? | | | | * |
| 1-May | | | | |
| <i>A. vittatus</i> Coquillett | | | * | P |
| 18-May, June, Aug. | | | | |
| <i>A. vulpecula</i> Coquillett | P | | | * |
| 25-May, June | | | | |
| <i>Astrophanes adonis</i> Osten Sacken | | | | * |
| 1-May | | | | |
| <i>Bombylius lancifer</i> Osten Sacken | | | | * |
| 47-May, June | | | | |
| <i>Conophorus fenestratus</i> (Osten Sacken) | * | | P | * |
| 38-April, May, July | | | | |

| | | | | | |
|--|---|---|---|---|---|
| <i>Desmatoneura argentifrons</i> Williston 8-Aug. | * | | | | |
| <i>Dipalta serpentina</i> Osten Sacken 7-Sept. | | | | | * |
| <i>Empidideicus humeralis</i> Melander 45-March, May | * | * | | | P |
| <i>Epacmus connectens</i> Melander 1-May | * | | | | |
| <i>E. labiosus</i> Melander 11-July, Aug. , Sept. | * | | | | P |
| <i>E. litus</i> Coquillett ? 34-Sept. | | | | | * |
| <i>E. pulvereus</i> Melander 11-March, April, May | * | P | | * | * |
| <i>Eucessia reubens</i> Coquillett 1-July | | | * | | |
| <i>Exepacmus johnsoni</i> Coquillett 20-March, April, May | * | * | | * | P |
| <i>Exoprosopa arenicola</i> Johnson and Johnson 8-Aug. | | | | | * |
| <i>E. caliptera</i> Say 8-April, May, Aug., Sept. | * | | | | P |
| <i>E. divisa</i> Coquillett 25-June, July , Aug. | P | * | * | | P |
| <i>E. dorcadion</i> Osten Sacken 11-April, June, Aug., Sept. | | * | | | P |
| <i>E. doris</i> Osten Sacken 68- July , Aug., Sept. | P | * | * | | P |
| <i>E. sharonae</i> Johnson and Johnson 20- Aug. , Sept. | | | | | * |
| <i>E. utahensis</i> Johnson and Johnson 16-July, Aug. , Sept. | | * | | * | P |
| <i>Geminaria canalis</i> (Coquillett) 32-March, May , June | * | * | | * | P |
| <i>G. pellucida</i> Coquillett 2-June, July | | | | | * |
| <i>Geron argutus</i> Painter 12-May, July, Aug. | * | | * | | P |
| <i>Heterostylum robustum</i> (Osten Sacken) 12-April, May , June | * | * | | * | * |
| <i>H. sackeni</i> (Williston) 41- April , May | P | * | | * | P |
| <i>H. vierecki</i> Cresson 8-April, May, June, Oct. | * | * | | * | * |
| <i>Lepidanthrax agrestis</i> (Coquillett) 51- May , June , July, Aug. | P | | | | * |
| <i>L. angulus</i> Osten Sacken 1-May | | * | | | |
| <i>L. hyalinipennis</i> Cole 60-May, June , July | P | | | * | P |
| <i>Lordotus abdominalis</i> Johnson and Johnson 28-April, May , June, Sept. | P | | | * | * |
| <i>L. albidus</i> Hall 208- April , May , June | P | * | | | * |
| <i>L. apicula</i> Coquillett 63-May, June | | | * | | * |
| <i>L. singulatus</i> Johnson and Johnson 85- Sept. , Oct. | P | | | * | P |

| | | | | | |
|---|---|---|---|---|-----|
| <i>T. vasta</i> Coquillett | * | | | | P |
| 12-June | | | | | |
| <i>T. virgata</i> Osten Sacken | | | * | * | |
| 3-June, July, Oct. | | | | | |
| <i>Villa aenea</i> Coquillett | * | * | * | * | P |
| 27-June, July , Aug., Sept., Oct. | | | | | |
| <i>V. arizonensis</i> (Coquillett) | | | * | | |
| 4-June | | | | | |
| <i>V. atrata</i> (Coquillett) | | | | | * |
| 1-July | | | | | |
| <i>V. cautor</i> (Coquillett) | P | * | | | P * |
| 26-Sept., Oct. | | | | | |
| <i>V. crocina</i> (Coquillett) | P | * | * | | * |
| 72-June, July , Aug. , Sept. | | | | | |
| <i>V. cypris</i> (Meigen) | * | | * | * | |
| 5-May, June, July | | | | | |
| <i>V. junctura</i> (Coquillett) | * | | | | * |
| 20-April, May | | | | | |
| <i>V. lepidota</i> (Osten Sacken) | | | | * | P |
| 37-July, Aug. , Sept. , Oct. | | | | | |
| <i>V. mira</i> (Coquillett) | * | | | | |
| 1-July | | | | | |
| <i>V. morio</i> (Linnaeus) | P | * | | * | * |
| 37-April, May | | | | | |
| <i>V. scitula</i> (Coquillett) | | | * | | P |
| 20-Sept. | | | | | |
| <i>V. sinuosa</i> (Wiedemann) | | | | | * |
| 2-July | | | | | |
| <i>V. supina</i> (Coquillett) | * | | | P | |
| 38- June , July | | | | | |
| <i>V. utahensis</i> Maughan | * | * | | * | P |
| 49-April, May | | | | | |

¹La-Fr = Larrea-Franseria; Gr-Ly = Grayia-Lycium; Co = Coleogyne; At-Ko = Atriplex-Kochia; Pi-Ju = Pinyon-Juniper; CS = Cane Springs; Mixed = areas not applicable to the designated communities.