

PSYCHE.

NOTES ON NEW ENGLAND ACRIDIIDAE, IV,—ACRIDIINAE.—IV.

BY ALBERT P. MORSE, WELLESLEY, MASS.

25. *Melanoplus* Stål.

Melanoplus Stål 1873. Recensio orthopterorum, I, p. 79.

To this genus belong most of the locusts of medium size that swarm in our fields in late summer and early autumn in countless numbers and are popularly called "grasshoppers."

36. *Melanoplus atlanis* Riley.

Figs. 36, a, b, c, d.

Caloptenus atlanis. Riley, Ann. Rep. Ins. Mo., VII, 169, (1875).

Melanoplus atlanis. Fernald, Orth. N. E., 33; Beutenmüller, Orth. N. Y., 306; Scudder, Rev. Melanopli, 178.

Melanoplus atlantis. Comstock, Introd., 110; Morse, List, 106 (typ. error).

Measurements from 208 ♂, 135 ♀; — Antenna: ♂, 7-8.5; ♀ 6.5-8. H. fem.: ♂, 10-13; ♀, 10-14. Teg.: ♂, 15-21; ♀, 14.5-22. Body: ♂, 17-21.5; ♀, 16-27. Total: ♂, 20.5-27; ♀, 20-29 mm. The tegmina pass the hind femora from 1.5 to 6 mm.

The separation of the females of this species from those of *femur-rubrum* will cause the novice considerable difficulty, and examples are occasionally met with

that puzzle even the expert. The characters presented by the prosternal spine, the cerci, and the ovipositor as indicated in the key are the most valuable and when summed up will in all but a very few cases enable one to decide with certainty.

The hind tibiae of this species are normally red, but in about ten per cent of the specimens they are either reddish at tip and otherwise colored at base, or luteous, glaucous, or bluish. In this respect males are more variable than females.

This species is found over the whole of New England from Nantucket to Canada, from the seashore to the alpine tops of the White Mts. It appears early in the season (June 17-21) and is found late in the fall (Nov. 16).

It is seldom found except in dry situations, and is most abundant in hilly regions where it frequents sandy or gravelly spots and the slopes on light soil. In favorable localities it is found in immense numbers and causes much damage. Probably to this species should be laid much of the destruction attributed to *femur-rubrum* in early accounts of locust ravages in New England.

37. *Melanoplus scudderi* Uhler.

Figs. 37, a, b.

Pezotettix scudderi. Uhler, Proc. Ent. Soc. Phila., II, 555, (1864). Smith, Orth. Ct., 370; Thomas, Syn. Acrid., 152; Comstock, Introd., 107; Morse, List, 106; Beutenmüller, Orth. N. Y., 309.

Melanoplus scudderi. Scudder, Rev. Melanopli, 212, pl. xiv, figs. 5, 6.

Measurements from 82 ♂, 84 ♀:—Antenna: ♂, 6.5–7; ♀, 6–7. H. fem.: ♂, 10–11; ♀, 11–13. Teg.: ♂, 4–5.5 (average 5, 2 examples 8 and 8.5); ♀, 5–8 (av. 6, a little more than pronotum). Body: ♂, 15–18; ♀, 17–24 mm.

This species is unlikely to be mistaken for any but *mancus* whose range overlaps its own. It is much more likely to be passed by as an immature form. It is a local but common species, often abundant in favorable localities and seems to prefer dry hillsides among bushes, roadsides, and open woods. Some years ago it was quite plentiful among the rocks and bushes on the talus slope at the foot of West Cliff, New Haven, Ct. It has been reported from Brunswick, Me., Springfield, Mass., and many points in the South and West. Personally, I have met with it only in Connecticut in the latter part of August but it probably occurs in many parts of central Massachusetts and it should be looked for from the first of August until late in the fall.

38. *Melanoplus mancus* Smith.

Figs. 38, a, b, c.

Pezotettix manca. Smith, Orth. Me., in Proc. Portland Soc. Nat. Hist., I, (1868), p. 149. Thomas, Syn. Acrid., 149; Fernald, Orth. N. Y., 30, Morse, List, 106.

Melanoplus mancus. Scudder, Rev. Melanopli, 218, pl. xiv, fig. 9. Measurements from 70 ♂, 83 ♀.—Antenna: ♂, 6.5–7; ♀, 6.5–7. H. fem.: ♂, 8.3–9; ♀, 10–12. Teg.: ♂, 2–4; ♀, 3–5. Body: ♂, 14–17.5 (average 15+); ♀, 18–25 (av. 21) mm.

This species has been found at but four points in New England, three in the north and one in the south. The type locality was Speckled Mt., Stoneham, Me.; I have taken it there and on Kearsarge Mt. near No. Conway, N. H., at an altitude of 2000 to 3250 ft. Mr. Scudder has found it on Mt. Sargent, Mt. Desert Id., Me., and Prof. Blatchley took it at North Madison, Ct. This latter locality is especially interesting as it had previously been found only at high levels. It is apparently quite local, but continued collecting is likely to reveal its presence at many additional and intermediate points. The present season (1898), I found it common on the summit of Ascutney Mt. (3300 ft.), Windsor, Vt.

On Speckled Mt. where most of my specimens were secured, I found it plentiful, associated with *Podisma glacialis* among the various species of *Vaccinium* on the bare upper portions of the mountain. It is quite alert and agile, when approached springing suddenly and to a considerable distance,

sometimes making several leaps in succession.

It probably matures in late July or early August as it has been taken on the mountains from Aug. 14 to Sept. 6.

39. **Melanoplus fasciatus** Walker.

Figs. 39, a.

Acridium fasciatum Barnston Ms. Walker, Cat. Dermapt. Salt. Brit. Mus., iv, p. 680 (1870).

Caloptenus fasciatus. Thomas, Syn. Acrid., 224.

Pezotettix borealis. Scudder, Mat., 464; Thomas, Syn. Acrid., 153; Smith, Orth. Me., 149; Fernald, Orth. N. E., 30; Morse, List, 106.

Melanoplus borealis. Beutenmüller, Orth. N. Y., 308.

Pezotettix septentrionalis. Morse, Psyche (1894), 53.

Melanoplus rectus. Fernald, Orth. N. E., 32; Morse, Psyche (1894), 53.

Melanoplus fasciatus. Scudder, Rev. Melanopli, 267, pl. xviii, figs. 2, 3, 4.

Measurements from 83 ♂, 123 ♀:—Antenna: ♂, 7.5–9; ♀, 6.5–8.5. H. fem.: ♂, 9.3–10.7; ♀, 10.7–12.7. Teg.: ♂, 7.5–10.5; ♀, 9–12. Body: ♂, 16–19; ♀, 16.5–25.5. Teg. vs. H. fem.: ♂, –3.5––5; ♀, –3.5––6. Body vs. H. fem.: ♂, –2––3; ♀, –2– +3 mm.

A long-winged form is known from Michigan, but has not been detected in New England. This species is very variable in color, the upper parts, while usually of a dark reddish brown, are sometimes dark olivaceous gray and occasionally are strikingly varied with

white. The only species likely to be confused with it in New England is the short-winged female of *extremus*.

This much-named locust is a somewhat local but common and widely distributed species. I have found it most frequently among huckleberry bushes growing in and along the edges of open pitch-pine woods where it is frequently associated with *Chloealtis conspersa*. While usually numerous in individuals persistence is needed to secure many specimens, as the ground may be covered several times with equally good results, only a few being taken at one trip. When startled it leaps well, but may usually be secured without a net.

Adults appear in the latter part of June, and may be found as late as September or October. I have taken it from June 14 to Sept. 5, at Speckled Mt., Stoneham, Me., Thompson, Ct., West Chop, Martha's Vineyard, Provincetown, Winchendon, Waltham, Sudbury, Sherborn, Dedham, and Wellesley, Mass.

40. **Melanoplus femur-rubrum** DeG.

Figs. 40, a–d.

Acrydium femur-rubrum. DeGeer, Memoires pour servir a l'histoire des Insectes, t. III, p. 498, pl. 42, fig. 5. (1773). Harris, Treatise, 173.

Caloptenus femur-rubrum. Scudder, Materials, 464; Smith, Orth. Me., 150, —Orth. Ct., 362; Thomas, Syn. Acrid., 163.

Melanoplus femur-rubrum. Fernald, Orth. N. E., 33, Comstock, Introd., 110,

Morse, List, 106, Beutenmüller, Orth. N. Y., 306, Scudder, Rev. Melanopli, 278, pl. xix, figs. 1-4.

Measurements from 258 ♂, 173 ♀:—
Antenna: ♂, 6.5-10; ♀, 6.5-9. H. fem.: ♂, 10.7-13.3; ♀, 11-15. Teg.: ♂, 13-20; ♀, 15.5-23. Body: ♂, 16-23; ♀, 18-28. Total: ♂, 18.7-27.5 (average 23-25); ♀, 22-30.7. Teg. vs. H. fem.: ♂, = to +5; ♀, -1 to +5.

Though extremely plentiful, no marked varieties occur in this species in New England, the only variation worthy of note being in the color of the hind tibiae. These are so constantly red that a locust having them colored otherwise may be looked upon as almost sure to belong to another species, *atlanis*, *minor*, or *extremus*. Still, examples of *femur-rubrum* do occur with tibiae either pale (yellowish), or even greenish or blue. These are, however, extremely rare.

This is undoubtedly the commonest, most ubiquitous, "grasshopper" found in New England, occurring everywhere throughout the district in every plat of grass or sedge from sea-shore to mountain-summit. The destruction caused from time to time by locusts in New

England is usually ascribed to this species, and with good reason, though in some cases, particularly when caused by migratory swarms, it is probable that *atlanis* is largely if not chiefly concerned. In August, 1892, I received complaints of grasshopper injuries to garden crops, tomatoes, beans, etc., in the vicinity of Norway, Me. These proved on investigation to be entirely due to this species, which was very abundant locally, and no specimens of *atlanis* could be found. It is very plentiful at times on some of the islands off shore, as I have found it on Cuttyhunk, Mass., and Block Island, R. I., where it had the habit of collecting in great numbers on the warm, sunny sides of stone walls in the late afternoon and remained over night.

While it is almost ubiquitous it is in general most plentiful in meadows and the damper portions of mowinglands and pastures, among the more dense and succulent vegetation.

It reaches maturity in the latter part of July and is found throughout the rest of the season; I have taken specimens in the vicinity of Wellesley from July 25 to Nov. 8.

SOME NEW GENERA OF BEES.

BY WILLIAM H. ASHMEAD.

Assistant Curator Department of Insects U. S. National Museum.

Family NOMADIDAE.

Zacosmia n. g.

Marginal cell elliptical, not longer than the first cubital and separated from the costa

at apex; the submarginal cells along the cubitus are of unequal length, the first and third subequal, the second either petiolate or narrowed into a point above; scutellum subbilobed, the axillae rounded or convex be-

