

PSYCHE.

THE SPECIES OF GRYLLUS ON THE PACIFIC COAST.

BY SAMUEL H. SCUDDER, CAMBRIDGE, MASS.

The basis of this study is the collection of crickets made a few summers ago by Mr. A. P. Morse, from Victoria, B. C., to San Diego, Cal. I have used also the material previously in my col-

lection. I have seen no specimens from Alaska.

The species found here are four in number and may be separated by the following table.

Table of the species of Gryllus found on the Pacific Coast, north of Mexico.

*a*¹. General effect of coloring fuscous or black. Lower margin of lateral lobes of pronotum arcuate, a little oblique; branches of mediastinal vein of tegmina generally three, sometimes four in number; tympanum of outer face of fore tibiae elongate, much more than twice as long as broad, of inner face long ovate or elongate; upper inner calcar of hind tibiae distinctly, sometimes much, shorter than the intermediate calcar.

*b*¹. Tegmina very dark testaceous, fully as long as the body, the wings, except rarely, much longer; pronotum nearly twice as broad as long, the hind margin faintly angulate; upper inner calcar of hind tibiae scarcely more than half as long as intermediate calcar *integer*.

*b*². Tegmina black, very rarely as long as the body, the wings not surpassing them except in such cases; pronotum not more than half as broad again as long, the hind margin straight; upper inner calcar of hind tibiae fully three fourths as long as intermediate calcar.

*c*¹. Somewhat larger. Tegmina generally shorter than the body, especially in the female, with light-colored humeral stripe, especially distinct in the female, the apical area beyond the male tambourine almost as long as its basal breadth; pronotum more villous; femora considerably stouter; generally six spines on inner side of hind tibiae. *vocalis*.

- c^2 . Somewhat smaller. Tegmina always shorter than the body, without humeral stripe, the apical area beyond the male tambourine much shorter than its basal breadth; pronotum less villous; femora not so stout; generally five spines on inner side of hind tibiae. *pennsylvanicus*.
- α^2 . General effect of coloring testaceous. Lower margin of lateral lobes of pronotum straight and distinctly oblique; branches of mediastinal vein of tegmina at least four in number; tympanum of outer face of fore tibiae not (or but little) more than twice as long as broad, of inner face subcircular; upper inner calcar of hind tibiae scarcely shorter than intermediate calcar. *assimilis*.

Gryllus integer sp. nov.

Moderately slender, not very large, with piceous body. Head rather large and full, but with the vertex not prominent, no broader than the pronotum, wholly black. Pronotum delicately and briefly villous, nearly twice as broad as long, with nearly parallel sides, the front margin truncate or faintly and broadly emarginate, the hind margin faintly and roundly angulate, with a feeble median impressed line not reaching the hind margin, the lower margin of the lateral lobes a little oblique and arcuate. Tegmina fully as long as the abdomen in both sexes, nearly uniform dark testaceous, the mediastinal vein with three or four branches; wings, except rarely, caudate. Legs black or blackish fuscous, the hind tibiae more or less tinged with testaceous, the hind femora moderately stout only, the hind tibiae rather short, commonly with five spines on the inner margin, the upper inner calcar scarcely more than half as long as the intermediate calcar. Ovipositor considerably longer than hind femora.

Length of body, ♂, 18 mm., ♀, 17 mm.; pronotum, ♂, 3 mm., ♀, 3.5 mm.; breadth of same, ♂, 5.75 mm., ♀, 6 mm.; length of tegmina, ♂, 12.5 mm., ♀, 10 mm.; hind femora, ♂ ♀, 10 mm.; ovipositor, 13.5 mm.

11 ♂, 8 ♀. West Berkeley, Cal., Aug. 20 (Morse); San Francisco, Cal., Aug. 19 (Morse); South Santa Monica, Cal., July 30 (Morse); Los Angeles,

Cal., July 29 (Morse); San Diego, Cal. (Crotch); California (Edwards). I have also specimens (not used in describing) from San Francisco (Edwards); Sonoma and Marin Cos. (Osten Sacken), and Santa Barbara, Cal. (Cooper); as well as from Oregon (Edwards); New Mexico: Mesilla (Cockerell, Morse), Las Cruces (Cockerell), Ft. Buchanan (Nevin), and Organ Mts. (Wooton); Colorado: southern Colorado (Carpenter); and Texas: Pecos River (Pope), Dallas (Boll), San Antonio (Palmer), Gulf Coast (Aaron), and central Texas (Belfrage). I have both macropterous and brachypterous forms from all these states, excepting Colorado, from which I have only brachypterous.

It differs from the other Pacific coast species in the contrasted color of pronotum and tegmina, and further from *G. pennsylvanicus* in the broader pronotum and in that the frontal suture of the head is broadly and uniformly obtusangulate and not centrally rectangulate.

Gryllus vocalis sp. nov.

Moderately stout, moderately large, with piceous body. Head rather large with prominent vertex, a little broader than the pronotum.

tum, wholly black. Pronotum delicately and briefly villous, about a third as broad again as long, broadest in the middle by the gently and regularly convex sides, the front and hind margins truncate, with a median impressed line failing to reach the hind margin, the lower margin of the lateral lobes a little oblique and arcuate. Tegmina nearly covering (♂), or somewhat shorter than (♀) the abdomen, black with a fulvous or flavous humeral stripe especially distinct in the female, the apical area beyond the male tambourine almost as long as its basal breadth, the mediastinal vein with three branches; wings generally no longer than the tegmina, but sometimes surpassing a little the abdomen. Legs black, the hind pair more or less ferruginous especially in the female, the hind femora stout, the hind tibiae with generally six spines on the inner side, the upper inner calcar fully three fourths as long as the intermediate calcar. Ovipositor about as long as the hind femora.

Length of body, ♂, 21.5 mm.; ♀, 21 mm.; pronotum, ♂, 4.5 mm., ♀, 4 mm.; breadth of same, ♂, 6 mm., ♀, 5.25 mm.; length of tegmina, ♂, 12 mm., ♀, 10 mm.; hind femoral ♂ ♀, 13 mm.; ovipositor, 12.5 mm.

6 ♂, 3 ♀. Palm Springs, Cal., July 13, 14 (Morse); Los Angeles, July 29 (Morse).

In this species, the tegmina of the male are almost as long as the abdomen and the wings usually no longer; in the female the tegmina are considerably shorter than the abdomen and the wings short so far as seen. It differs from the other species by the distinct humeral stripe of the tegmina, especially distinct in the female, and in its stouter legs. It further differs from *G. integer* in the color of the tegmina, their lesser length and shorter postspecular area, and in the

narrower pronotum which is less villous; and from *G. pennsylvanicus* (as occurring on the Pacific slope) in size, in the rather broader pronotum, which is less villous, and its longer postspecular area of the tegmina.

Gryllus pennsylvanicus.

Gryllus pennsylvanicus Burm., Handb. ent., ii, 734 (1838).

This is the most widely distributed species of *Gryllus* in the United States and appears to be the only Atlantic species* found on the Pacific coast, where it is much more common in the north than in the south. Mr. Morse brought home specimens from Victoria, B. C., Sept. 29; Tacoma, Sept. 25, and Tenino, Wash., Sept. 24; Drain, Sept. 11, Divide (Cottage Grove), Sept. 12, Corvallis, Portland, Sept. 19, and Philomath, Or., Sept. 15; and Lancaster, Cal., July 31. I have besides seen specimens from Vancouver Isl. (Edwards), British Columbia (Crotch), Oregon (Edwards), and the following localities in California — Mt. Shasta, Soda Springs, San Francisco (Edwards, Behrens), Santa Barbara (Edwards), Colorado River, July 28 (W. Somers), Mohave River (Palmer), San Diego (Crotch, Webb).

It is more uniformly black than any of the other California species and differs from all of them in its shorter tegmina and always (so far as I have seen them) short wings; it is also peculiar for the bent-arcuate rather than simply

* Unless *G. assimilis* is found on the Atlantic coast.

arcuate fiddle-bow of the male tegmina. Though found by Mr. Morse at numerous localities it was nowhere taken by him with any of the others.

Gryllus assimilis.

Acheta assimilis Fabr., Syst. ent., 280 (1775).

Gryllus (Acheta) assimilis Goeze, Ent. beytr., ii, 87 (1778).

Gryllus assimilis Oliv., Encycl. méth., vi, 634 (1791).

Both long-winged and short-winged

forms occur. It was taken by Mr. Morse in California only, at Raymond, Aug. 16, South Santa Monica, July 30, and Palm Springs, July 13.

It differs from the others at first glance by its general testaceous coloring, and differs also in the straight oblique cut of the lower margin of the lateral lobes of the pronotum and the greater length of the upper inner calcar of the hind tibiae. The only United States specimens which I have seen are from California.

SOME NEW RECORDS OF THE NEW ENGLAND FORMICIDAE.

BY GEO. B. KING, LAWRENCE, MASS.

So little is known of the geographical distribution, and in fact the existence of our ants, even in a general way, that it seems very important to record any information bearing upon any new localities for the various known species. And any fact treating upon their peculiar habits is always interesting. Dr. George Dimmock collecting in Springfield, Mass., and vicinity for *Coleoptera* larvae in a quiet way as opportunity would permit, sent me such ants as he found from time to time. The following notes, therefore for the most part, are the results of his labors. Where no further locality is given, Springfield should be understood.

Camponotus laevigatus Em.

" *castaneus* Latr. subsp. *americanus* Mayr. (Mt. Tom, Mass.).

Camponotus herculeanus L.

Camponotus herculeanus L. var. *pictus* For. (Mt. Tom, Mass.).

Camponotus herculeanus pennsylvanicus De Geer.

Camponotus marginatus var. *nearcticus* Em.

Formica sanguinea Latr. subsp. *rubicunda* Em. (Springfield and Holyoke, Mass.).

Formica rufa L. var. *obscuripes* For. (Mt. Tom, Mass.).

Formica rufa subsp. *integra* Nyl.

" *exsectoides* For. (Mt. Tom, Mass.).

Formica pallide-fulva Latr. (Mt. Tom, Mass.).

Formica pallide-fulva, subsp. *schaufussii* Mayr. (Mt. Tom, Mass.).

Formica fusca L. var. *subsericea* Say. (Mt. Tom and Springfield, Mass.).



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