ARKANSAS MELANOPLI. — III.

BY JEROME MCNEILL, FAYETTEVILLE, ARK.

Melanoplus impiger Scudd. — This is a not uncommon species among vegetation in the sandy bottoms and along the banks of streams. I have captured full grown specimens as early as the seventeenth of July and as late as the twenty-sixth of October. These specimens seem to be quite typical. Sixteen males, twenty females from Washington, Crawford, Sebastian, and Marion counties.

Melanoplus keeleri Scudd. — A variable species occurs commonly in Arkansas and farther north which after much hesitation I have decided to consider *Mel. keeleri.* I have specimens from Washington, Crawford, Sebastian, Madison, Newton and Marion counties and from the Indian Territory and while they vary little in size and color there is such great difference in proportion and shape of parts that following Scudder's key individuals fall in either of three closely related species, *Mel. keeleri, deletor* and *luridus.* To illustrate the amount and character of this variation, I have five males from Fayetteville, one has the median carina of the pronotum percurrent on the prozone and distinct, a second has it percurrent but indistinct, a third has it entirely obsolete between the transverse sulci, the last two have no trace of it on the prozone. All of these specimens have the space between the mesosternal lobes three times as long as wide; but four males from Cane Hill in the western part of Washington County have the space between the mesosternal lobes four times as long as wide, and in the median carina they are quite constant, there being but a faint indication of it before the first sulcus. Three other males from Fort Smith, Gaither, Newton County, Ark., and Mackey, I. T. have the median carina percurrent and distinct on the prozone but the second and third have the space between the mesosternal lobes two and one half times as long as wide while the first has this space little if any longer than broad. The cerci are very like those of *Mel. luridus* as figured by Scudder but they differ much in color and appearance from typical specimens from Nebraska. The furcula is very small, in one case apparently obsolete, and very divergent. My specimens are indistinguishable in size and color from Illinois specimens which Scudder considers *Mel. collinus.* On the whole it seems to me to be highly probable that the four species named above are merely varieties of one widespread species and accordingly I give the Arkansas specimens the oldest name.

Melanoplus atlanis Riley. — This widely distributed species is rather more common than *Mel. femur rubrum.*

Specimens with red hind tibiae are about as common as those with green legs. My collection contains thirty-nine of the former and forty-two of the latter. Difficulty is frequently experienced in distinguishing red leg females from those of *Mel. femur rubrum.* The weakness of the median carina on the prozone, the length of the tegmina and their more distinct maculation are all useful characters, but I have found the sharpness of the prosternal spine a good guide when other distinctions failed.

Melanoplus femur-rubrum De Geer.— This species is abundant in meadows and pastures. Short winged females are somewhat difficult to distinguish from *Mel. impudicus* but the last mentioned species may be known by the fact that the second sulcus of the prozone is twice as distant from the third as from the first. A single specimen, female, from Fayetteville captured October fifth has green hind tibiae.

Melanoplus packardii Scudd. — I have collected this very variable species at three points in the State. It was found to be common on the shores of the Arkansas River opposite Pine Bluff on September first. I found it again amongst the rank vegetation about the mouth of the Big Buffalo in Marion County July twentieth. Specimens from these two localities differed strikingly in size and color and to a slight extent in structure. The former were smaller, paler, less distinctly marked and had green instead of purplish red hind tibiae. Still other specimens were captured near Diamond Cave in Newton county July twenty-seventh which had either red or green hind tibiae and in other respects were intermediate between the first two series.

Melanoplus impudicus Scudd. — This species hitherto known only by three specimens from Georgia and Mississippi is represented by a considerable number of specimens in my collection. These seem to agree well with the published description and figure, excepting only that the tegmina never exceed the femora in the females and in the males there is no distinct post-apical tubercle on the subgenital segment and the apical half of the cerci is less than one half the width of the base. It is confined so far as I have observed to the open borders of woods on high land. From Madison, Boone, Carroll, Newton, Marion, and Washington counties.

Melanoplus gracilis Bruner. — This appears to be an uncommon species, though it is apt to be rather abundant where it occurs at all. I have met with it but twice; once near Yellville, Marion county where it was common on very dry rocky ledges amongst very sparse vegetation in company with Hadrotettix and Trimerotropis; again on the bank of White River a mile below Buffalo City, Marion county. Here it was quite common on the very rank vegetation which flourished in a soil which was occasionally enriched by the overflow of the river. Specimens from both localities agree well with specimens from Illinois and Indiana.

Melanoplus sylvaticus n. sp. — Medium size, brownish fuscous above, yellowish below; head testaceous, or brown much infuscated above and with a broad post-ocular stripe; occiput moderately tumid, slightly elevated above the pronotum; interspace between the eyes a little narrower (♂), or half as broad again (♀), as the first antennal joint; fastigum rather steeply delivent, deeply, (♂) or distinctly, (♀), sulcate; frontal costa slightly narrowed above, otherwise equal in width and nearly percurrent, distinctly sulcate (♂) at and below the ocellus, or slightly sulcate for a very short distance below the ocellus (♀) punctate throughout and about as broad as the inter-ocular space; eyes rather large, somewhat prominent, a little longer than the infra-ocular portion of the genae; antennae dark brown somewhat (♂), or scarcely, (♀), longer than the head and pronotum. Pronotum faintly (♂), or decidedly, (♀) expanding posteriorly; above infuscated (♂) or sometimes, (♀) ferruginous; on the sides flavous or flavo-testaceous below, with the upper portion occupied by a broad shining piceous stripe broadening slightly on the metazone; disk convex, passing by a slightly angulate shoulder into the anteriorly somewhat tumid lateral lobes; median carina distinct on the metazone, variable and more or less indistinct on the prozone but least apparent between the second and third sulci; front margin slightly convex or a little emarginate, hind margin very obtusely angulate; prozone decidedly (♂) or faintly (♀), longitudinal and about half as long again as the densely punctate metazone; prosternal spine conical, bluntly pointed; space between the meso-sternal lobes as long as (♂), or not so long as (♀) broad. Tegmina slightly shorter than the pronotum, scarcely twice as long as broad elliptical, overlapping a very little, fuscous or brownish fuscous. Fore and middle femora slightly tumid in the male, green or flavous; hind femora rather slender but thick, flavous with the outer and inner faces dark green or ferruginous, never in the least fasciate outwardly, sometimes with very faint infuscations on the upper surface and with a more or less deeply infuscated genicular spot; hind tibiae green with the extreme base more or less infuscated but without a pale ring basally; spines black, ten or eleven in the outer series. Extremity of abdomen in the male clavate scarcely at all recurved; the supra-anal plate triangular with the sides gently convex, the median sulcus very broad and deep, equal and terminated about the middle by a short transverse ridge; furcula very small, distant triangular denticulations; cerci shorter than the supra-anal plate, straight, rapidly tapering from the base to the middle, beyond very slightly tapering substyliform and bluntly pointed, the width at the middle being less than a third the width of the base; subgenital plate somewhat longer then broad, scarcely elevated apically and ending in a small tubercle.

Length of body, male, 17 mm. female, 25 mm.

Length of tegmina male, 4 mm. female 5½ mm.

Length of hind femora, male, 11 mm. female, 14 mm.

Seven males, three females, along wooded clifts in Carroll, Boone, and Newton counties.

This seems to be an uncommon species though probably widely scattered. It is very closely related to *Melanoplus viridipes Scudd.*, though it does not fall in the same part of Scudder's key owing to the differently shaped cerci. It is readily distinguished from that species by the straight, tapering, comparatively short cerci, the little recurved extremity of the male abdomen, the absence of post-femoral bands

so conspicuous in the allied species, the shorter tegmina and antennae and proportionally longer hind femora.

Melanoplus obovatipennis Blatchley. — A rather uncommon species. I have but eight specimens, four males and four females, found in Washington and Sebastian counties in September and October. Compared with Indiana specimens, the tegmina are more elongate, and the cerci shorter. This species is much more closely related to *Mel. gracilis* Bruner than would be indicated by their position in Scudder's key. This is the species I formerly mistook for *Mel. mancus Smith* which was erroneously reported by me to be found in Indiana.

Melanoplus baconi, n. sp. — Medium size, ferrugineo-fuscous frequently suffused with vinous red. Head moderately (♂) or not (♀) prominent; in front on the genae as well as on the lower part of the lateral lobes of the pronotum olivaceous flavous, more (♀), or less (♂) completely suffused with vinous red; vertex gently tumid and distinctly elevated above the pronotum; space between the eyes a little more than once (♂) or nearly twice (♀) as broad as the first antennal joint; fastigium considerably (♂) or slightly (♀), sulcate; frontal costa almost equal throughout, not quite reaching the clypeus, sulcate for a short (♀) or considerable (♂) distance below the ocellus, punctate; eyes only slightly longer than broad; antennae rufo-testaceous (♂) or red (♀) infuscated apically, a little (♂) or decidedly (♀) shorter than the hind femora. Pronotum feebly enlarging posteriorly in the female though the sides of the disk are parallel behind the first sulcus or even distinctly converging on the metazone, hardly expanding in the male even below; the sides with a broad distinct piceous postocular stripe strictly limited to the prozone and generally contrasting strongly with the color below, about as distinct in the female as in the male; disk gently rounded passing into the lateral lobes by a very rounded shoulder (♀) or distinctly angulate (♂); median carina distinct and sharp, though slight, on the metazone; on the prozone slight and frequently wanting between the sulci, especially in the male; hind margin strongly but obtusely and roundly angulate; prozone scarcely longitudinal even in the male but little longer than the densely but shallowly punctate metazone; prosternal spine long, cylindrical, blunt, retrorse; space between the mesosternal lobes variable, one and a half times as long as broad (♂) or one and a half to twice as broad as long (♀). Tegmina abbreviate more than half the length of the abdomen, five sixths (female) the length of the posterior femora, costal and anal margins evenly and gently arcuate, apex blunt, the dorsal and lateral fields angularly separated, the former plain generally infuscated, the latter frequently with a median row of smaller spots. Fore and middle femora quite tumid in the males; hind femora testaceous, with the disk of the exterior face irregularly infuscated, rarely bifasciate with fuscous, the upper and inner faces plainly bifasciate, inferior face flavous, more or less suffused with red. The geniculation black or brown, hind tibiae red without black at the base and without sub-basal pallid annulus, spines black. Extremity of male abdomen moderately clavate considerably recurved; the supra-anal plate triangular, longer than broad with a very acute angulate apex and with gradually and considerably elevated sides and a broad median sulcus which is percurrent though narrowing apically and interrupted near the middle of the plate by a sharp and high transverse plication; furcula consisting of a pair of small widely separated diverging denticulations about as long as

the last dorsal segment, separated by a third of the width of the supra-anal plate and entirely outside of the sub-median ridges; cerci moderately broad and very heavy, their thickness equalling the middle width, gently tapering at the base, the apical two-thirds about equal and two-thirds the width of the base bent a little downward and scarcely perceptibly inward, the outer face sulcate apically, the extremity rounded above and angulate below, exceeding the supra-anal plate and falling short of the apex of the abdomen by a little more than their basal width, the length being three and a half times their width at the base. Subgenital plate about as long as broad, with the lateral margins sinuate and the apex much elevated.

Length of body, male, 22 mm.; female, 25 mm.

Length of tegmina, male, 10 mm.; female, 11 mm.

Length of posterior femora, male, 11 mm.; female, 12½ mm.

Three males, sixteen females all taken with the exception of a single female near the War Eagle ford between Spring Valley and Clifty in Carroll county, June twenty-sixth. The female referred to was taken a few days later near the same locality. All were captured in woods. This species falls in the *Texana* group of the genus near those species of the group that have the tegmina attingent and the subgenital plate of the male elevated apically but without a tubercle. It is readily separated from *Mel. lepidus Scudd.* by the red hind tibiae, the much longer overlapping tegmina, the larger size, lighter color, absence of fascia on the disk of the hind femora, and the longer and differently shaped cerci. It is readily separated from *Mel. texanus Scudd.* by the unequal median carina of the pronotum, the nearly quadrate prozone of the male, the much longer tegmina and shorter hind femora, the widely separated and differently shaped furcula and the longer straighter and differently shaped cerci. Finally it is quite distinct from *Mel. blatchleyi Scudd.* in its shorter antennae and hind femora, in the quadrate prozone, the much longer tegmina, the absence of fascia on the disk of the hind femora, the absence of the fuscous base and pallid annulus of the hind tibiae, the much more distant furcula, the longer, heavier, straighter and differently shaped cerci, the longer supra-anal plate with its percurrent median sulcus. It is most nearly related in the structure of the pronotum, the furcula and the cerci to *Mel. lepidus Scudd.* from which it may not be distinct, but the obvious differences of tegmina and hind tibiae in addition to other points indicated in the description and the widely different habitat compel me to consider it specifically distinct. Named in honor of Mr. William Bacon to whose zeal as a collector I owe many of the Arkansas specimens in my collection.

Melanoplus scudderi Thos. — This is a common wood species in Arkansas in the extreme northwestern part of the State and in the east-central part. It does not occur in collections made in Boone, Carroll, Marion, Newton and Madison counties. The earliest date for its capture is September first and

the latest October twenty-eight. I think it survives the winter in the adult State as I feel confident I have seen on warm days in the middle of winter. Scudder's observations concerning the rounded tegmina of specimens from Texas applies equally well to the Arkansas form. There is also a marked variation in the length of the tegmina which are decidedly shorter or somewhat longer than the pronotum.

Nine males, twenty-two females.

Phoetaliotes nebrascensis Bruner. — This species has not actually been captured within the borders of the State but I have two males and one female which were taken a few miles within the Indian Territory and as the species occurs in Kansas and Texas and as far East as Indiana and Illinois, I have no hesitation in including it. The specimens referred to are much larger than those from Cordova, Illinois, and West Point, Nebraska, in my collection. The female measures 31 mm. the males 22 mm. and they are proportionately robust.

(*End.*)

CRYPTORHYNCHUS LAPATHI (L.) IN MASSACHUSETTS.

BY A. H. KIRKLAND, MALDEN, MASS.

A striking example of serious insect damage resulting from favorable local conditions is found in the occurrence of *Cryptorhynchus lapathi* (L.) in certain parts of Eastern Massachusetts. In Europe this beetle has gained much notoriety as a borer in alders and willows, but in Massachusetts its attack is largely directed against the balm of Gilead poplar. This leads us to a mention of a very interesting — from an entomological standpoint — state of affairs now existing in Winthrop, Revere and some other shore towns. The land being somewhat marshy and the balm of Gilead the indigenous tree that thrives best there, the streets and yards in the past have been largely planted with this tree. By far the majority of all shade trees on this low land are of this species of poplar. The weevil gained a foothold here some time ago and having an apparent preference for this tree finds here nearly perfect conditions for multiplication and gives evidence of its intention to replenish at least this particular section of the earth. The branches or young stems, as the case may be, weakened by the boring of the larvae are easily broken down by ice storms or high gales. At the present time there is hardly a sound balm of Gilead in the localities mentioned and it would seem probable that this weevil in the future may become a considerable pest in places where this tree is largely grown. The weevil breeds in nearly all species of poplars and in willows. Mr.