

to emphasize the desirability, for archaeological as well as for petrological reasons, of a better knowledge of the volcanic rocks of Central America and Mexico.

ENTOMOLOGY.—*On the Orthopterous group Phaneropterae (= Scudderiae), with descriptions of a new genus and species.*<sup>1</sup> A. N. CAUDELL, Bureau of Entomology.

The genus *Phaneroptera* was erected by Serville in 1831,<sup>2</sup> with two originally included species, *Locusta lilifolia* Fabr., and *Locusta curvicauda* DeGeer. The only designation of genotype for this genus, so far as now known to the writer, was by Kirby in 1906,<sup>3</sup> when the *Gryllus falcatus* of Poda was so indicated. In his treatment of this matter Kirby followed Brunner in considering the *Locusta lilifolia* included by Serville as being a misdetermination, the real species being presumably the *Gryllus falcatus* of Poda. But, when an author names a particular species as originally included in a genus that species is presumed to be correctly determined, the sane and only rational reasoning applying, it seems, as in the case of genera based wholly on a misdetermined species, and covered by opinion No. 65 of the International Code of Nomenclature and by paragraph No. 96 of the Entomological Code. Thus the Fabrician *lilifolia* included by Serville in his genus is not to be considered a misidentification, and is eligible for genotype citation. The designation by Kirby of the non-included species *falcatus* being invalid the genus *Phaneroptera* is therefore as yet without a designated genotype, and one of the two originally included species, *lilifolia* and *curvicauda*, must be selected as the type. The first of these species, *Locusta lilifolia* Fabr., is the genotype of the monobasic genus *Tylopsis* of Fieber, 1858. The second species, *Locusta curvicauda* DeGeer, is the type of the genus *Scudderia* of Stal 1873, by original definite designation and by virtue of being the sole species of that monobasic genus. Now paragraph 98a and 101 of the Entomological Code and opinion 6 of the International Code restrict one to the selection of *curvicauda* as genotype, which I hereby do by definitely designating *Locusta curvicauda* DeGeer as the genotype of the genus *Phaneroptera* of Serville. This selection, being in accord with both recent codes governing such matters, can scarcely fail to meet with the approval of most nomenclatorialists.

<sup>1</sup> Received October 21, 1921.

<sup>2</sup> Ann. Sci. Nat. 22: 158.

<sup>3</sup> Syn. Cat. Orth. 2: 434.



From the above it is clear that Stal's genus *Scudderia* must fall as a synonym of *Phaneroptera* Serville, having the same genotype and being more recent by almost two decades. This leaves the species listed under *Phaneroptera* by Kirby<sup>4</sup> (except *attenuata* Walk., *marginalis* Brunn., and *annulata* Brunn., as noted below) without valid generic assignment. For these species and *grandis*, *nakoensis* and *tympanalis* M. & S., I propose the new generic name *Anerota*, with *Gryllus falcatus* Poda as the designated genotype.

The synonymy is as follows:

***Anerota* Caudell, nom. nov.**

*Phaneroptera* Brunner (not Serville), Monogr. Phaneropt. 23, 209. 1878.

*Phaneroptera* Kirby (not Serville), Syn. Cat. Orth. 2: 424. 1906.

The writer sincerely regrets these changes, the sinking of an old and well-known American genus and the introduction of a new generic name to replace an older one. However, such acts, being based on sound nomenclatorial grounds, are necessary if we attempt to comply with codified rules. And, as therein lies our only hope for an ultimately stable nomenclature, the sooner such changes are wrought the better.

The type of *Phaneroptera attenuata* Walker is in the British Museum, where it was studied by the writer in 1913. It is a female in poor condition, the abdomen being missing and the rest of the insect glued on a card. Most of the parts used in classification were, however, well preserved and prove that the species was wrongly placed by Walker and Kirby. It has conchate foramina and belongs to the genus *Tylopsis*, where it is a synonym of the older species *T. bilineolata* Serville. *Phaneroptera marginalis* Brunn. was described from an imperfect female, the anterior and intermediate legs being wanting. Kirby assumed the character of the missing parts to be the same as in Walker's *attenuata* and so synonymized it under that species. It seems probable that in this Kirby was correct, and the synonymy is as follows:

*TYLOPSIS BILINEOLARIS* Serville, Orth., p. 419. 1839.

*Phaneroptera attenuata* Walker, Cat. Derm. Salt. Brit. Mus. 2: 338. 1869.

—*Phaneroptera marginalis* Brunner, Monogr. Phaneropt. 210, 214. 1878.

<sup>4</sup> Syn. Cat. Orth. 2: 434-437 and 3: 574.



*Phaneroptera annulata* Brunn. has been made the type of the genus *Xenodoxus* of Carl, described in 1914, thus eliminating it from other generic assignment.

**Inscudderia**, genus nov.

This is a member of the group Phaneropterae (= Scudderiae), but tends towards the Insarae, standing between the genera *Phaneroptera* (= *Scudderia*) and *Insara*, hence the generic name *Inscudderia*. Superficially it resembles *Insara*, especially *I. elegans*, but structurally it seems more like *Phaneroptera*, though in this respect also it tends towards the Insarae, especially in the narrow tegmina with their slightly concave caudal margins, two or more branched radial sectors and variegated color, and the longer and more slender legs. The greatly prolonged and non-style bearing subgenital plate of the male, the fastigium of the vertex failing to meet that of the face, the slightly spinose genicular lobes and the non-sellate pronotum exclude it from the Insarae. In the group Phaneropterae (= Scudderiae) this genus runs out in Brunner's keys, Monogr. Phaneropt., to *Scudderia* on page 16 except that the fore and middle femora are slightly toothed ventrally, which is also often true of the anterior femora of *Scudderia*, or *Phaneroptera*, as we have above shown this American genus must now be called. But there are various characters for the ready separation of this new genus from that older one, the more prominent ones being the twice or more branched radial sector, the more slender and posteriorly slightly concave tegmina, the comparatively longer and more slender legs, the more rounded lateral carinae of the pronotum with the posteriorly flattened disk of the same, the ventrally subspinose intermediate femora and the more decidedly armed ventral margins of the posterior femora.

*Description*.—(♂, the ♀ unknown). Head with the fastigium of the vertex very narrow, not exceeding a fourth the width of the basal segment of the antenna, subhorizontal and failing to meet the frontal fastigium, the presenting face rounded; eyes almost round, prominent. Pronotum rounding into the lateral lobes without distinct lateral carinae except in the posterior fourth, where the disk, which is otherwise gently convex, is wholly and conspicuously flattened, and there the lateral carinae are sharp and distinct; lateral lobes about equally high as long, the humeral notch deep.

Organs of flight fully developed; wings hyaline with the tips, which project beyond the closed tegmina a distance approximately equal



to the pronotal length, green, especially in the costal area where it is coriaceous like the tegmina; tegmina narrow, slightly over five times as long as broad, at the widest point being very slightly broader than the pronotal length, the posterior margin barely concave; first radial branch two or three forked and joined near the base to the ulnar vein by a diagonal cross vein. Legs slender, the posterior femora just reaching the tips of the closed tegmina; spine of anterior coxa long and sharp; anterior tibiae with open foramen on each face; all the tibiae sulcate dorsally and armed on both ventral margins with several black spines of moderate size; above the intermediate and posterior tibiae also bear sharp black spines on both margins, only one to three on the cephalic margin of the middle ones, and on that margin there is no apical spine, as there is on the opposite margin and on both margins of the hind tibiae; anterior tibiae wholly unarmed on the dorso-cephalic margin, the opposite margin with a basal spine (often very small) near the lower margin of the foramen, a terminal spine and from one to three additional ones at irregular intervals between the above; posterior femora armed beneath on both margins with several black triangular teeth, the fore and middle ones with from none to two very minute teeth on the caudal margin beneath and the anterior ones may have one or two exceedingly minute teeth on the ventro-cephalic margin; posterior genicular lobes very briefly but acutely pointed, the others rounded.

Abdomen with the segments evenly truncate except the terminal one, which is slightly prolonged and apically broadly notched, as shown in figure 1, *c*; subgenital plate greatly prolonged and up-curved, as in *Phaneroptera* (= *Scudderia*), without apical styles but the latero-apical angles roundly tubercular, the apex notched; supraanal plate elongate-triangular, deeply concave above; cerci heavy, about twice as long as the last dorsal segment of the abdomen, subcylindrical, tapering moderately to about the middle and then again growing stouter to the noticeably swollen apex, where there is a heavy, sharply pointed and inwardly directed tooth about a third as long as the body of the cercus. (See fig. 1, *b* and *c*.)

Type *Inscudderia taxodii*, sp. nov.

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This is undoubtedly one of the most distinct species of Orthoptera, and that such a striking katydid inhabiting the southeastern United States should so long escape notice is indeed remarkable.



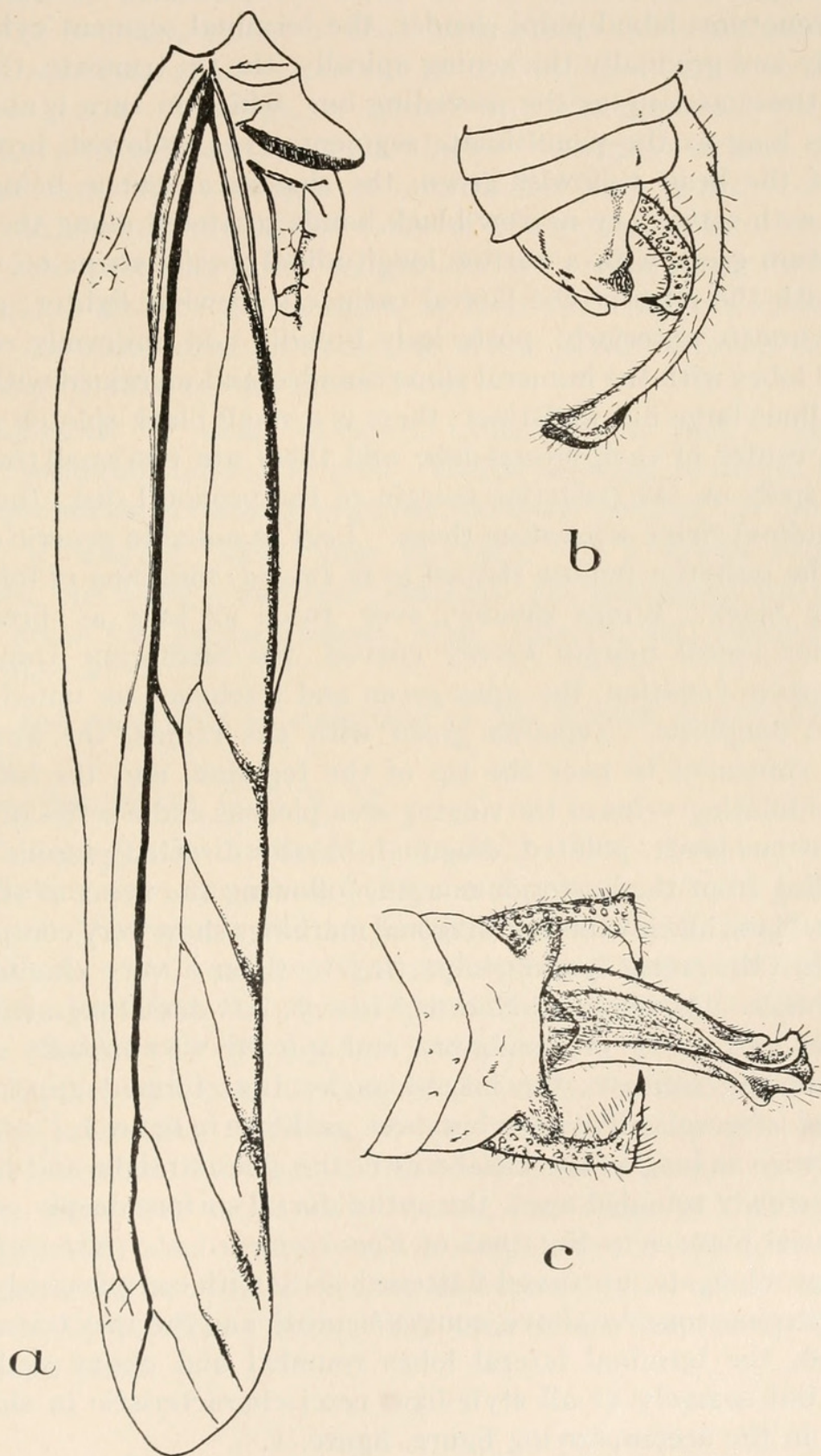


Fig. 1. *a*, Left tegmen of type; *b*, end of abdomen, lateral view; *c*, end of abdomen, dorsal view. Figures by Dr. A. BOWING.



*Description.*—(♂, the ♀ unknown). Head slightly broader than the pronotum; labial palpi slender, the terminal segment cylindrical, slightly and gradually thickening apically, the tip truncate, the whole three times as long as the preceding one, which in turn is about one-half as long as the penultimate segment; eyes yellowish brown, the rest of the head yellowish green, the slender antennae being darker green with some very narrow black bands scattered along the length. Pronotum green with a narrow longitudinal mesial stripe on the disk and with the cites of the lateral carinae somewhat lighter; pronotal disk truncate anteriorly, posteriorly broadly and uniformly rounded; lateral lobes with the humeral sinus rounded and margined with black, the callous large but indistinct; there is a small black splotch anterior of the center of each lateral lobe and there are two small transverse black spots on the posterior margin of the pronotal disk, the mesial longitudinal stripe separating them. Legs as noted in generic description, the posterior femora shaped as in *Insara*; foramina of fore tibiae shining black. Wings slender, over twice as long as broad, the posterior apical margin evenly curved, the membrane transparent with green venation, the apex green and thickened as noted in the generic diagnosis. Tegmina green with the radius, the anal vein, which continues to near the tip of the tegmina, and the heavier of the stridulating veins of the singing area piceous and a series of several conspicuous short, pointed, diagonal, basally directed piceous streaks extending from the posterior margin, following the veins as shown in fig. 1, *a*; these black veins and diagonal markings show very conspicuously against the green tegmina, imparting to them a very characteristic appearance. Abdomen moderately heavy; last dorsal segment about twice as long as the preceding one and apically very broadly notched and laterally concave, the lateral angles thus formed appearing as rounded tubercular-like protuberances, as shown in figure 1, *c*, supraanal plate twice as long as the basal width, the sides straight and tapering to a narrowly rounded apex, the entire dorsal surface deeply concave; subgenital plate very like that of *Phaneroptera* (= *Scudderia*), being a narrow elongate, upcurved flattened plate with conspicuously thickened margins, concave above, convex beneath and the apex triangularly notched, the terminal lateral lobes rounded and about as long as thick, but scarcely at all style-like; cerci characteristic in shape, as shown in the accompanying figure, figure. 1.

The immature form shows little essential difference from the adult except that the colors show evidence of the same brilliantly hued



variegation as exhibited by some of our species of *Phaneroptera*, though the second segment of the antenna does not show such conspicuous enlargement as is present in the young of some species of the latter genus. The legs are dotted with black and the posterior femora have some larger black markings on the upper surface and on the outer face; the abdomen is ornamented with numerous short narrow red dashes, the lateral lobes of the pronotum are centrally reddish with yellowish lower margin and with some black markings. The pronotal disk of the nymphs, at least the only two examined, does not show the absolute flattening of the posterior fourth as is so conspicuously true of the adult form.

*Measurements of adult*.—Length, pronotum, 4 mm.; tegmina, 21 mm.; posterior femora, 20 mm. Width, tegmina at widest point, 4 mm.; pronotum across the posterior flattened portion, 2.3 mm.

Type, ♂, Durant, Miss., July 15, 1921. C. J. Drake, collector; paratypes, one adult ♂ and two immature ♂♂, one nearly full grown and one about half grown, Pickens, Miss., July 16, 1921, taken by the same collector.

Type and paratypes in collection of the United States National Museum.

Catalog No. 24952, U. S. N. M.

In addition to the above four specimens Prof. Drake distinctly recalls having seen specimens, adults and nymphs, at the following localities in Mississippi: Fulton, Columbus, Vicksburg, Natchez and Port Gibson. Not realizing their interest and importance he unfortunately kept but the above described specimens, though many, he says, might easily have been secured.

Prof. Drake, who is to be congratulated on the discovery of this unusually interesting addition to our native orthopterous fauna, found this beautiful little katydid to occur quite common on cypress, where he often took them while beating the foliage of that tree for Hemiptera. He also on one occasion swept a few adults from weeds and grass in the immediate vicinity of cypress. The adults aroused his interest by the nicety with which their colors blended with those of the host plant.



Caudell, Andrew Nelson. 1921. "On the Orthopterous group Phaneropterae (=Scudderidae), with descriptions of a new genus and species." *Journal of the Washington Academy of Sciences* 11, 487–493.

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