

## NEW CICADAS FROM NORTH AMERICA

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There are at present one hundred and fifty named cicadas described from North America north of Mexico, nearly all of which are considered species; a few are evidently geographic races, and several are varieties.

While W. L. Distant in 1881, in "Biologia Centrali-Americana," and again in his catalogue of 1906, mentioned or described many of the Mexican cicadas, the total did not exceed the number of species now known to inhabit Texas or some of the other southwestern states. It was therefore evident that many more species must exist in a land so favorable for cicadas as we know Mexico to be. Texas has a cicada fauna of forty known species, and in the Chisos mountains there are no doubt species that extend into Mexico as they are suggestive of forms known only from that country. Also along the southern boundary line of Arizona there are several species that extend southward.

The foregoing facts explain why so many new forms are here described from Mexico which evidently has not been very thoroughly explored for cicadas. Owing to their number the writer was apprehensive that he might have overlooked some of the known Mexican species, so he sent most of the cicadas to the British Museum. Mr. W. E. China reported that he did not find any of them represented in that extensive collection. I am indebted to him for making the comparisons, and to Mr. Hans L. Stecher, of the Staten Island Institute of Arts and Sciences, for making most of the text figures.

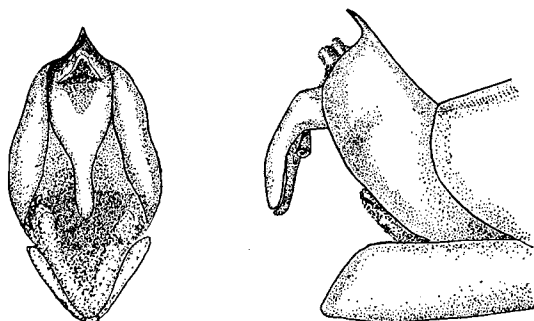
*Tibicen chisosensis* new species (Plate II, Figs. 1-2).

Type male and allotype female from Chisos Mts., Brewster Co., Texas, June, 1932.

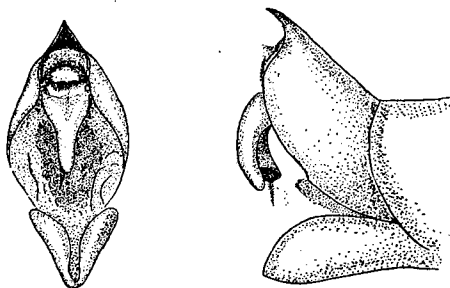
Resembles *Cicada montezuma* Distant, described in Biol. Centr.-Amer., Rhynch. Hom. 1 p. 8; t. 2, fig. 2, from Mexico, but is larger; has longer opercula and the front of the head is more prominent, protruding about as in *Tibicen townsendi* Uhler. In *Tibicen parallela*, *Tibicen paralleloides*

and related species, the posterior margin of segment two in the male, when viewed from above, slants obliquely to the sides of the abdomen. In *Tibicen montezuma* and in *Tibicen chisosensis*, the posterior margin of the segment has hardly any slant.

Head across eyes about as broad as the anterior part of the pronotum, front considerably produced; no median sulcus; transverse rugae well defined. Many white hairs about the face, also numerous hairs on the under side of the abdomen. The opercula contiguous but not overlapping, with the extremities broadly rounded and reaching the extremity of the second abdominal segment, the outer sides converging. Last ventral segment broad at the extremity and without a notch. Uncus as in the illustration and much like that of a male from Cuernavaca, Mexico, identified as *T. montezuma*, the uncus of which is also figured.



TIBICEN CHISOSENSIS



TIBICEN MONTEZUMA

Head black with six pale spots; one at front; one posterior to this; one each side above antenna, and one each side near the eye but on the posterior margin. Pronotum black with the hind margin narrowly bordered with olive green and the central portion variegated faintly with olive green. In the paratype the pronotum, except for the posterior margin is black, with

hardly discernible spots of a paler color. Mesonotum with each of the inner obconical areas terminated posteriorly with a pale spot, and with outer adjacent spot also pale. Cruciform elevation pale; centrally black, with a black spot on each of the anterior limbs. Sides pale with a narrow, pruinose line near the base of each fore wing. In the allotype the mesonotum is nearly all black, but the pruinose line is present. Abdomen black, tympanal coverings brownish, a small pruinose spot each side on segment one; larger spots each side on segments three and eight. Each segment both in the type and allotype is margined posteriorly with brownish. Under side with the legs striped and variegated with black; opercula pale; central portion of the abdomen, including valve, pale; the sides pruinose with each segment dark anteriorly and pale posteriorly. Fore wings with venation dark, the first and second cross veins clouded; the basal area orange; black outwardly, and the membranes at the base of the wings orange with a pinkish tinge. Membranes at the base of the hind wings orange with a more decided pinkish tinge.

## MEASUREMENTS IN MILLIMETERS

	Male Type	Female Allotype
Length of body .....	34	29
Width of head across eyes .....	11	10
Expanse of fore wings .....	83	79
Greatest width of fore wing .....	13.5	13
Greatest width of operculum .....	7.5	

This species was kindly sent to me for identification by Dr. Dana B. Casteel and Mr. H. B. Parks, Jr., of the University of Texas.

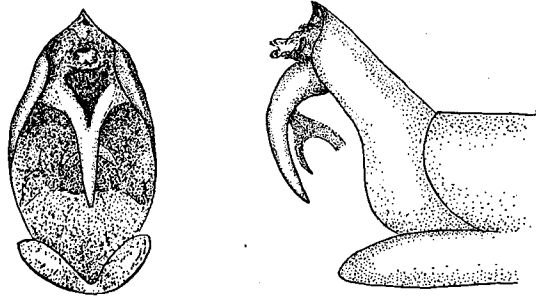
*Tibicen paralleloides* new species (Plate II, Fig. 3).

Type male from vicinity of Compostela, Nayarit, Mexico. Davis collection.

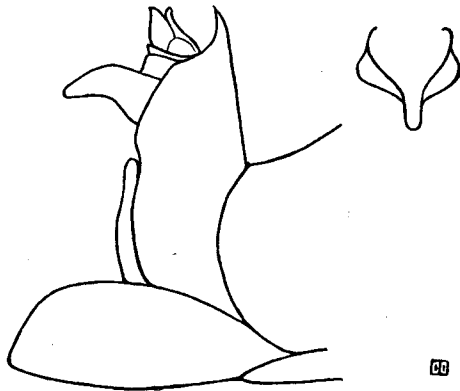
Resembles *Tibicen parallela* described and figured in this JOURNAL for March, 1923, and March, 1925.

Head across eyes broader than the pronotum, front moderately produced and about as in *parallela*; no median sulcus; transverse rugae well defined. Many white hairs about the face, also numerous hairs on the under side of the abdomen about as in *parallela*. The opercula overlapping at base with extremities rounded and not extending beyond the second abdominal segment; the outer sides nearly parallel as in *chiricahua*, and not as converging as in *parallela*. Last ventral segment broad at the extremity and with a shallow open notch. Uncus as in the illustration, and very differently formed from that of *parallela* figured in 1923 and here reproduced.

Body above nearly black. Head with a greenish spot at base and apex of front and a narrow stripe each side above antenna of the same color extending from the black rugae to the eye. A pale, irregular spot extending



TIBICEN PARALLELOIDES



TIBICEN PARALLELA

to back of head near each posterior ocellus. Pronotum with the collar olive green and the anterior portion variegated with green and black. In *parallela* the pronotum is black with the collar sometimes pale at the extremities each side. Mesonotum with two curved greenish colored lines centrally extending backward from the front margin and joining those extending forward from the cruciform elevation, which is pale except for a central, black spot. Abdomen black above with a well defined, pruinose spot each side on segment three. Under side of body pale, pruinose on each side of the abdomen, also about the base of the legs. Fore wings with the basal area clouded, the first and second cross veins clouded; the venation in both pairs of wings brownish, costal margin paler. Membranes at the

base of the fore wings are bright orange. The basal membrane of hind wings is not quite as highly colored. Both fore and hind wings very closely resemble those of *parallela* in shape and color.

## MEASUREMENTS IN MILLIMETERS

	Male Type
Length of body .....	33
Width of head across eyes .....	13
Expanse of fore wings .....	82
Greatest width of fore wing .....	13
Greatest width of operculum .....	7

Looking at *paralleloides* from above, the size, color and markings closely resemble those of *parallela* from New Mexico and Arizona, but an examination reveals a remarkably shaped uncus as well as other differences.

In the collection of Cornell University there is a female, probably *Tibicen paralleloides* from Guadalajara, Mexico, in the State of Jalisco, which adjoins Nayarit on the south, and extends to the Pacific Ocean. This female (Plate II, Fig. 4) is like the male in having no small red spots along the sides of the abdomen, one on the hind margin of each segment. The posterior margin of the pronotum is pale and the rostrum as in the male type extends about to the end of the hind coxæ, whereas in the five specimens of *parallela* in the writer's collection the rostrum is not quite as long. The first cross vein of the fore wing in type of *paralleloides*, as well as in the female from Guadalajara, starts from radius 3 nearer to the base of the wings than in any of the five specimens of *parallela* from Arizona and New Mexico.

*Tibicen minor* new species (Plate II, Fig. 5).

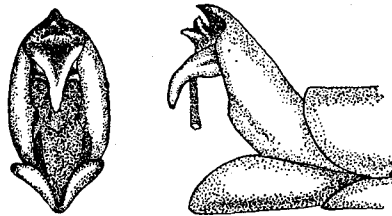
Type male from All. Córrea Nieto. Lomas de Sta. Fe D. F., Mexico. Davis collection.

This insect has sometimes been identified as *Cicada hilaris* from Mexico, described and figured by Distant in Biol. Centr.-Americana (1881). *Hilaris* expands 52 millimeters, while *minor* is much smaller and presents other differences as well.

Head across eyes broader than the front margin of the pronotum; front not conspicuously produced; hairy; no median sulcus, and with the transverse rugæ defined chiefly by hairs and pruinose stripes. The opercula

overlapping with extremities broadly rounded; not extending beyond the second abdominal segment, and with the outer sides nearly parallel. Last ventral segment broad at the extremity which is shallowly sinuate. Uncus as in the illustration and much more compressed in lateral view at the extremity than in the next species.

Body above black. Head with the following pale: a spot at the front; one each side near the eye; a central one in the depression in front of the median ocellus, and one each side extending to the hind margin. Pronotum with the anterior margin narrowly pale; the posterior margin or collar more broadly so and with a pale spot each side near the lateral margin. Mesonotum narrowly pale along each side to the base of the wings; cruciform elevation pale except for a central black area. Abdomen black above with the lateral margins of segments 3 to 8 inclusive broadly pale and more or less pruinose. Under side of the abdomen and opercula pale straw colored throughout; the legs and under side of head variegated with black. Fore wings with the basal area and the first and second cross veins clouded; the anterior margins pale; the venation of both pairs of wings brownish with the hind wings paler than the fore wings. Membranes at base of fore wings pale, or pale orange in some of the paratypes. Also in some of the paratypes the pronotum is more variegated with pale spots in the depressions, and there are indications of obconical spots on the mesonotum at the anterior margin. The membranes at the base of the hind wings are almost white in some individuals.



TIBICEN MINOR

MEASUREMENTS IN MILLIMETERS

	Male Type
Length of body .....	17
Width of head across eyes .....	6
Expanse of fore wings .....	47
Greatest width of fore wing .....	8
Greatest width of operculum .....	4.5

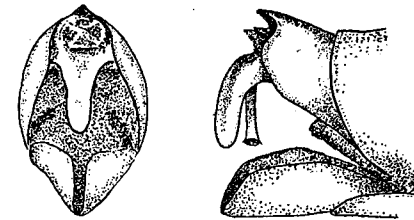
The following paratypes all from the collection of the U. S. Nat. Museum have been examined: Guadalajara, Mex., July, 1885, male; also a second male in this lot but without data; two males labeled "Mex, 302," and a male without data.

*Tibicen fusca* new species (Plate II, Fig. 6).

Type male, Mexico. D. F. (J. R. Inda collector). U. S. National Museum Collection.

This species resembles *minor* in size, but may be readily told from it by the narrower head, more prominent front, and brownish clouded wings with coarse venation. The uncus is also differently shaped.

Head across eyes very slightly broader than the front margin of the pronotum, the width of the head and pronotum being conspicuously narrower than the abdomen across the middle. The opercula and the last ventral segment are as in *minor*. The *uncus* is as figured and not as much compressed when seen in profile as in *minor*. Also the terminal, dorsal spine of the abdomen is more robust than in *minor*.



TIBICEN FUSCA

Body above blacker than in *minor*, but with some of the same spots faintly represented. There is no pale and pruinose margin on segments 3 to 8, the abdomen being entirely black above with slight indications of a paler area each side on segment eight. Under side of the abdomen with the segments fuscous, margined posteriorly with greenish straw color. The opercula pale in color except at base. Front and hind wings brownish with venation more heavily clouded and coarse than in *minor*; membranes of all of the wings pinkish.

MEASUREMENTS IN MILLIMETERS

	Male Type
Length of body .....	16
Width of head across eyes .....	5
Expanse of fore wings .....	37
Greatest width of fore wing .....	6
Greatest width of operculum .....	4

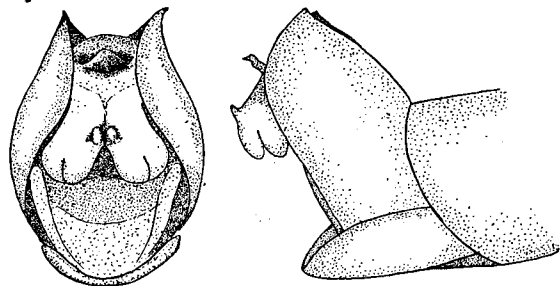
Only the type has been examined.

*Diceroprocta lucida* new species (Plate III, Fig. 1).

Type male and allotype female from Cuautla, Morelos, Mexico, 1927. Davis collection.

Resembles *Diceroprocta digueti* Distant from Lower California and the adjacent mainland of Mexico, but the front of the head is much more produced and is shaped as in *D. vulgara* Distant, from Mexico. Also the pruinose stripes on the sides of the abdomen often conspicuous in *digueti* on segments 4 to 7 are wanting.

Head across the eyes broader than the front margin of the pronotum; front very prominent; median sulcus shallow; transverse rugæ well defined with the grooves conspicuously white and tomentose. The opercula broad, not extending beyond the second abdominal segment; extremities rounded and almost meeting at the inner basal portion. Last ventral segment broadly rounded with a small and shallow notch at the extremity. Uncus as figured. The notch in the ventral segment of the allotype is broad and well defined.



DICEROPROCTA LUCIDA.

Body above conspicuously shining, especially on the mesonotum which is nearly devoid of the white and golden pubescence occurring on the remainder of the body. A much lacerated, broad, black stripe, connects the eyes; the grooves and hollows in the pronotum are black; collar greenish with a dark irregular spot at each extremity. Mesonotum almost black, with two obconical spots extending backward from the front margin. The pale lines encircling these spots are almost joined (or joined in some of the paratypes) by the pale fore limbs of the cruciform elevation. Sides pale to base of fore wings. Abdomen mostly covered by a golden or whitish pubescence but where this has been removed the segments are nearly black, pale on the posterior margin. A conspicuous pruinose spot each side on segment 8. Segment 9 pale on the sides. Under part of the abdomen pruinose at the sides, with an irregular, broad, central stripe. The opercula are pruinose and pale on the outer sides but almost black on the inner

portions. The legs are pale, the front pair darkest, and there are long white hairs near the eyes. The venation of all of the wings is brownish, especially along the front margin of the fore wings and about the marginal cells. The basal cell is conspicuously darkened at the anterior outer angle; the membranes at the base of all of the wings are gray, being darkest in the fore wings.

MEASUREMENTS IN MILLIMETERS

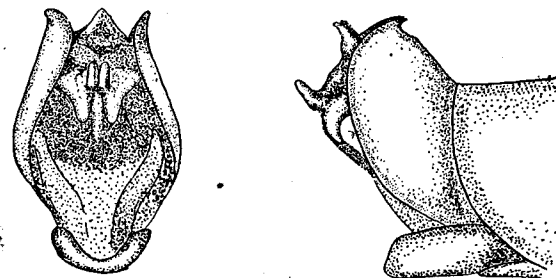
	Male Type	Female Allotype
Length of body .....	30	28
Width of head across eyes .....	12	12
Expanse of fore wings .....	90	90
Greatest width of fore wing .....	12	12
Greatest width of operculum .....	7	

In addition to the type and allotype 12 males and 7 females have been examined from Cuautla, all collected in 1927, and one female from Jojutla, Morelos, Mexico, collected in June, 1929.

*Diceroprocta operculabrunnea* new species (Plate III, Figs. 2-3).

Type male and allotype female from Cuautla, Morelos, Mexico, June, 1929. Davis collection.

Resembles *Diceroprocta transversa* Walker, but with the front of the head and eyes not as prominent. The opercula are very long reaching the 6th abdominal segment, and are bright brown in color. They are straw colored and pale in *transversa* and *marevagans*, as well as being much shorter.



DICEROPROCTA OPERCULABRUNNEA

Head across eyes a little broader than the front margin of the pronotum; median sulcus shallow; transverse rugæ well defined with the grooves white and tomentose. The opercula are very long, slightly overlapping at the

base, and with the widely diverging rather sharp extremities reaching the 6th and occasionally the 7th abdominal segment. Last ventral segment rounded at the extremity, with a notch, and clothed with numerous long white hairs. Uncus as figured. The notch in the ventral segment of the allotype is broad and double, that is one within the other.

Body above black and brown. The head is black with a small pale spot on the front and the grooves pale; the central ocellus is surrounded by pale; the other two by black; the back of the head is pale. The hind margin and sides of the pronotum or collar greenish brown, or green in some of the paratypes; the central elevations of the same color with the intervening grooves black. Mesonotum with four obconical spots outlined by green or greenish, extending backward from the front margin toward the cruciform elevation. The anterior, pale limbs of this elevation enclose a dark, shield-shaped, central spot, which has two black dots, one each side of the central line. The posterior margin of the pronotum is pale. Abdomen covered with white and brown appressed hairs, which form a white spot each side on segment three; segment 8 also conspicuously white each side in some of the paratypes forming two spots. Under side of the abdomen chocolate colored centrally; shining; paler at the extremity and pruinose each side. Opercula conspicuously red-brown. Head, pronotum and mesonotum covered with white hairs, and legs straw colored, striped with brown. Wings clear, membranes at base of all wings gray, first and second cross-veins of fore wings infuscated.

MEASUREMENTS IN MILLIMETERS

	Male Type	Female Allotype
Length of body .....	24	22
Width of head across eyes .....	9	9
Expanse of fore wings .....	70	70
Greatest width of fore wing .....	10	10
Greatest width of operculum .....	6	

In addition to the type and allotype three males have been examined from Cuautla, Morelos, Mexico, June, 1929, and six males from Jojutla, Morelos, Mexico, June, 1929.

*Diceroprocta bequaerti* Davis.

The standing of this species was last considered in this JOURNAL for June, 1932.

From June 28 to July 14, 1933, Mr. F. F. Bibby and his associates, Messrs H. B. Mills, J. M. Landrum and R. A. Garham,

sent me 14 male and 57 female *Diceroprocta bequaerti* taken about Waco, McLennan County, Texas. As is usual in the allied *D. vitripennis* Say, the females collected far outnumbered the males. This lot of 71 specimens can be readily separated from *D. vitripennis* found by Mr. Bibby at Midway, Madison County, Texas, in June, 1931, and from the many other specimens of that species in the writers' collection, by the larger head in *bequaerti*, as well as by the other characters noted in 1932.

In his letter of August 6, 1933, Mr. Harlow B. Mills states that by that date *bequaerti* had become uncommon, and that the greatest number of specimens had been taken about the middle of July. "The emergence at Waco must surely have assumed the proportions of a brood this year. The species was abundant in the bottom-lands, and cast skins were very common on small willows. On the upland, specimens were taken in a mesquite-postoak pasture where, however, they never became abundant. . . . The species was most abundant on the flood-plain of the Brazos River where it was common on willows growing on a sand-bar, and in tall weeds back from the river bank. Specimens were not uncommonly heard singing in cotton near the river and occasionally in upland cotton fields. In the flood-plain regions it was associated with the large *Tibicen marginalis*."

*Diceroprocta bequaerti* was seen by Mr. Mills ovipositing in cotton wood (*Populus deltoides*), willow, and the weed *Chenopodium anthelminticum*. Three specimens of the robber-fly *Proctacanthus hinei* Bromley, were taken with *D. bequaerti* as prey, and a dead one was found in the grasp of a spider determined by Willis J. Gertsch as *Phidippus purpuratus*. The song of *D. bequaerti* is "a high-pitched, penetrating, rasping, rapidly repeated zee-zee-zee. Occasionally it takes the form of a broken song instead of the common long-continued performance. . . . On the river bottom, where the species was abundant, the united song of thousands of individuals raised a clamor reminding one of an emergence of the seventeen-year cicadas."

*Beameria* new genus.

It is proposed that this genus have as type what was originally described as *Prunasis venosa* Uhler, and include the species here described as *Beameria whecleri*.

The genus *Prunasis* Stål, of which *P. viridula* Walker, of Brazil, is the type, is characterized as follows by Distant in his Catalogue (1906), p. 140: "Head with front prominently triangularly produced; margins of front and vertex discontinuous, somewhat at right angles to each other." The hind wings have four apical areas, and the notch in the last ventral segment of the female is deep and well defined.

In *Beameria* the hind wings normally have six apical areas, but sometimes less; the head is not triangularly produced, but has the front more rounded, and there is but a slight indication of a notch in the last ventral segment of the female.

In "Annals, Magazine of Natural History" (8), vol. 8, p. 134 (1911), Distant without comment removes *venosa* from the genus *Prunasis* and places it in *Proarna*, of which *hilaris* Germar, from the Antilles, is the type. In having the "transverse vein at base of second apical area more or less vertical," and also six apical cells in hind wing, *venosa* approaches the dozen or more species of *Proarna* of Mexico, Central and South America, but in them the genitalia is quite unlike that of *venosa*, and the proportionally longer marginal cells of the fore wings and amplified lateral margins of pronotum are in strong contrast, as is the size and the markings. In the females the notch in the last ventral segment is much deeper than in *venosa*.

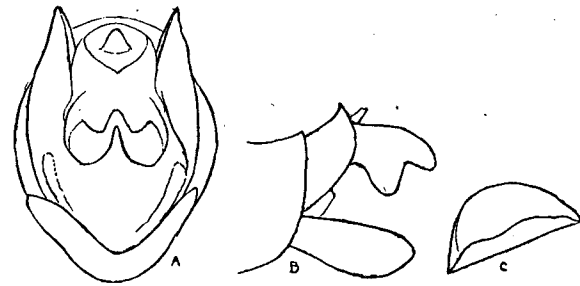
The accompanying figures and descriptions will more fully characterize *Beameria*, which is named for Dr. Raymond H. Beamer, who has kindly sent to me for examination the many cicadas collected by himself and associates during their extensive field excursions for the University of Kansas.

***Beameria venosa* (Uhler). (Pl. III, fig. 5.)**

*Prunasis venosa* was described by Uhler in *Entomologica Americana*, Vol. IV, p. 82, 1888, from "Middle and Southern Texas, not on the coast. Only males have thus far been examined; three specimens of which are at present in my collection. The venation is coarser than in any of the small cicadas which I have had the opportunity to examine." He gives the "length to the tip of abdomen 11-13 mm. Expanded wing covers 31-32 mm. Width of pronotum across the middle  $3\frac{1}{2}$ -4 mm."

In the writer's collection there are three *venosa* that were compared in 1916 with Texas specimens in the Uhler collection, now in the U. S. National Museum. They were labeled *Prunasis venosa* by him. The species is now known from Nebraska, Kansas, Oklahoma, Texas, Colorado, New Mexico and Arizona, and there are at present in my collection nearly 300 specimens from these states. With a few exceptions they all conform with the measurements given by Uhler in the original description.

In 1917 a Biological Expedition was organized at Cornell University and the cicadas collected were reviewed in the JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY for December, 1917. On page 213 of that volume 94 specimens of *venosa* are recorded from Texas and New Mexico. Three of these, all males, were collected at Alamogordo, New Mexico, July 1, 1917, by Prof. Wm. M. Wheeler, who was with the expedition for a time. Their expanse of wings is about 40 mm., and they are thus considerably larger than the remaining 91 specimens, which, however, they otherwise superficially resemble.



BEAMERIA VENOSA

In 1932 Dr. Raymond H. Beamer and J. D. Beamer, collected 25 *venosa* in New Mexico, and in Arizona, and also a male at Blue Springs, New Mexico, June 27, and six males at Alamogordo, N. M., June 30, 1932, of the large form. This led to an examination of all of the material, and it was found that the ten large males belonged to what is here considered a new species.

***Beameria wheeleri* new species (Pl. III, Fig. 6).**

Type male. Alamogordo, N. M., July 1, 1917 (Prof. Wm. M. Wheeler). Davis collection.

In this insect the wings expand about 6 mm. more than in *venosa*; the front of the head is usually more prominent, the tymbals are not as exposed along the posterior margin, but are covered to a greater extent by the forward extension of the second abdominal segment; the opercula are slightly longer with the tips not as rounded as in *venosa*. These differences, as well as those in the genitalia, are shown in the accompanying figures, "C" showing the relative amount of the tympanal covering.



BEAMERIA WHEELERI

Color pale, and as in *venosa*, with the venation surrounding the marginal cells of the fore wings black or nearly so. The obconical dark marks on the mesonotum are the same in both species.

## MEASUREMENTS IN MILLIMETERS

	Male Type
Length of body .....	16
Width of head across eyes .....	4.5
Expanse of fore wings .....	39
Greatest width of fore wing .....	7

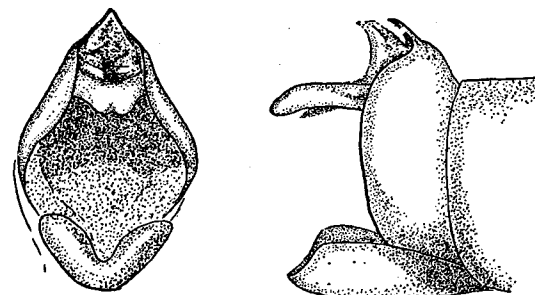
*Daza nayaritensis* new species (Plate IV, Figs. 1-2).

Type male and allotype female from near Compostela, Nayarit, Mexico, October, 1932. Davis collection.

Resembles *Daza (Odopaea) montezuma* (Walker) of Mexico and type of the genus, figured in Biol. Centr.-Amer., Rhynch. Hom. Plate 3, fig. 5, but is slimmer and has spotted wings.

Head including eyes about as wide as mesonotum, front rounded; lateral margins of the pronotum dilated as in *montezuma*; in some individuals the lateral angles not quite as pronounced. The opercula as in *montezuma*,

short and broad and not quite reaching the hind margin of the second abdominal segment. Last ventral segment shaped as in *montezuma*. Uncus as figured. The allotype has a notch in the ventral segment to accommodate the ovipositor.



DAZA NAYARITENSIS

General color greenish with dark brown or black markings. Head with the following black: narrow line at front, area about each ocellus; narrow irregular line extending from each of the outer ocelli to in front of the eye and four dots near the posterior margin and between the eyes (in some of the paratypes but two of these dots are present). Pronotum green with the grooves blackened and a central black spot near the hind margin but in front of the collar. Mesonotum greenish with the obconical spots extending backward from the front margin, a central line with two irregular spots each side, and two round, small, ones near the anterior extremities of the cruciform elevation, black. Cruciform elevation greenish with the anterior limbs black at the extremities. Abdomen yellowish green with irregular areas along the sides and the basal part of segment 8, blackish. Under side of the abdomen greenish with the basal part of each segment darkened. In the allotype there is a round black spot on segment 7 each side of the notch. Opercula green. Head green with the front edge including the fore part of the transverse rugæ, blackened; also the dilated, lateral margins of the pronotum edged with black. Legs green, variegated with black and brown. Wings nearly clear; first and second cross veins in the fore wings clouded, and sometimes the third cross vein as well. In each of the first seven of the marginal areas of the fore wings there is a faint central stripe, and the ends of the veins are clouded near the outer margin. Membranes at base of first pair of wings, gray; of the second pair, white, edged outwardly with dark gray.



## MEASUREMENTS IN MILLIMETERS

	Male Type	Female Allotype
Length of body .....	34	35
Width of head across eyes .....	11	11
Expanse of fore wings .....	102	102
Greatest width of fore wing .....	15	15
Greatest width of operculum .....	7.5	

In addition to the type and allotype 18 males and 25 females have been examined, all collected in Nayarit, Mexico, in October, 1932, and October and November, 1933.

*Chinaria* new genus.

The type of this genus is the species described in this paper as *Chinaria mexicana*, known from the states of Morelos and Sinaloa, Mexico. The lateral margins of the pronotum are dilated and medially angulated about as in *Odopœa*, *Miranha*, *Zammara*, *Collina* and *Daza*. In the shape of the pronotum, in that of the 8th marginal area of the fore wing and in the uncus, the type of this genus might be considered under *Odopœa*, but in *Odopœa* the tympana are covered at the outer sides by a forward extension of segment two of the abdomen. This is lacking in *Chinaria* where a continuous view of the sound apparatus may be had from the dorsal to the ventral part of the abdomen owing to the short opercula. There is but a slight forward extension or sinuation of segment two near the auditory capsule, not the prominent one as in the genera mentioned above, *Collina* excepted. In *Collina* the tympana are even less protected than in *Chinaria*, the head is narrower, the sides of the pronotum much less dilated, and the fore wings have a rather sudden bend or curve near the base.

The uncus is as figured and differs considerably from *Daza montezuma*, *Daza nayaritensis* or *Collina medea*.

I take pleasure in calling this genus *Chinaria*. Mr. W. E. China has kindly compared numerous specimens sent to him by me with those in the collection of the British Museum.

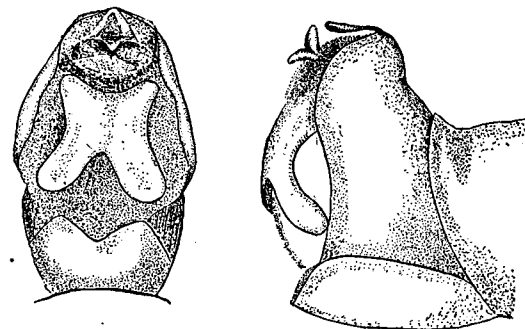
*Chinaria mexicana* new species (Plate IV, Fig. 3).

Type male and allotype female from Cuernavaca, Morelos, Mexico, June, 1922 (Mrs. E. P. Hinton). Davis collection.

Head including eyes not quite as broad as the mesonotum, front rounded, lateral margins of the pronotum considerably dilated. Opercula very short and rounded, the inner extremities being far apart. Last ventral segment not quite evenly rounded at the extremity; in the allotype there is a small

notch. The abdominal walls are very thin in the males, and from the under side an examination of the interior may be made when the insect is held in a strong light. In *Collina* the walls of the abdomen are also quite thin.

Color greenish, with the tergum of abdomen somewhat yellowish; wings much spotted with brown, and as illustrated. Head yellowish green with a stripe in the groove each side of the ocelli, and four dots near the posterior margin between the eyes, the outer two being the largest. Pronotum green, including the collar, with the grooves darkened. In one of the paratypes the pronotum is almost entirely green. Mesonotum with four obconical spots extending backward from the front margin, the inner pair the shorter. The cruciform elevation is green with a dark spot each side near the anterior limbs. Abdomen nearly uniform yellowish green in the type; in one of the paratypes segment eight is pruinose. In the female allotype the tergum is darker with a row of spots, one on each segment near the lateral margin, and a large one each side on segment nine. Under side uniformly pale with the central segments of the abdomen translucent. In one of the paratypes the under side is pruinose along the sides of the abdomen and especially about the legs and under side of the head.



CHINARIA MEXICANA

## MEASUREMENTS IN MILLIMETERS

	Male Type	Female Allotype
Length of body .....	34	28
Width of head across eyes .....	9.5	9
Expanse of fore wings .....	88	83
Greatest width of fore wing .....	12.5	12
Greatest width of operculum .....	6	

A second male collected at the same place and time as the type, and a male from Venvidio, Sinaloa, Mexico, July 27, 1918 (J. A.

Kusche, through Mr. Morgan Hebard), have also been examined, as well as two females collected at Compostela in July and August, 1933.

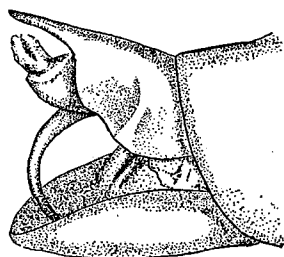
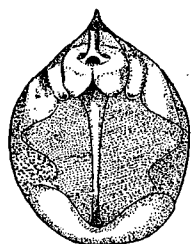
*Carineta martiniquensis* new species (Plate III, Fig. 4).

Type male from Martinique, French West Indies, March 27, 1930, and allotype female same locality, no date, both collected by Prof. L. M. Stöhr. Davis collection.

This insect has a rather broader head and more prominent eyes than is usual in *Carineta* for which reason it might be considered under *Herrera* if it were not for the narrow wings.

Head including eyes about as wide as the mesonotum, front moderately produced with the median groove narrow but well defined. Opercula with the inner extensions very narrow, as in *Carineta cingenda* figured in *Homoptera Andina, Cicadidae*, by A. Jacobi. Last ventral segment truncate at extremity; in the allotype the notch is very deep extending almost to the base of the segment.

General color olive green, paler in some of the paratypes. Head greenish, blackened about the ocelli; front green. Pronotum, with a narrow, dark colored stripe extending from behind each eye to the collar; front margin of the collar with a dark stripe. In some of the paratypes the entire dorsal surface is greenish and without dark spots except about the ocelli. Mesonotum greenish with the obconical spots extending backward from the front margin faintly outlined, the central pair most prominent. Cruciform elevation greenish with a dark area in the hollow between the anterior limbs, and also a dark area each side not well defined. Abdomen greenish, the segments edged posteriorly with green; segment eight darker than the others. The entire under surface is greenish with a central, narrow brown line extending from segment three to segment six and broadening to cover segment seven; valve also brown beneath. The allotype is without these dark marks, being almost unicolorous beneath.



CARINETA MARTINIQUENSIS

MEASUREMENTS IN MILLIMETERS

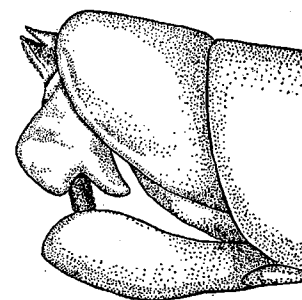
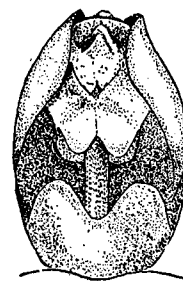
	Male Type	Female Allotype
Length of body .....	18	20
Width of head across eyes .....	6.5	7
Expanse of fore wings .....	47	54
Greatest width of fore wing .....	8	8.5

In addition to the type and allotype Prof. L. M. Stöhr has kindly sent to me from Martinique five males and one female. This last was collected December 6, 1928; the others from January 18 to June 26, 1930. It evidently has a long season.

*Fidicina compostela* new species (Plate IV, Fig. 4).

Type male from near Compostela, Nayarit, Mexico, October 8, 1932. Davis collection.

Some species of *Fidicina* have the costal margin of the fore wing nearly straight to a considerable distance beyond the radial area, while others have a noticeable bend in the wing at the end of this area. In *prona* and *picea* the wing is evenly curved, while in *viridis*, *cachla* and numerous others, there is a noticeable bend. The present species belongs to this last group. (See figures in Biol. Centr.-Amer. Rhynch. Hom.) In general appearance it may be compared to *F. fumca* as figured in Biol. Centr.-Amer., but the head is narrower with the front more rounded and less prominent. The eyes are rather prominent, and more so than in *fumca* and *dreuseni*. The tymbals are considerably exposed and the forward projection from segment two is narrow and rather sharp pointed. Operculum short and truncate and with the outer extremity forming a right angle bend. Last ventral segment gradually rounded to the extremity which has a shallow notch. Under side of abdomen and valve with numerous hairs. Uncus as figured.



FIDICINA COMPOSTELA

Body of a general brown color. Head orange with a broad, black band connecting the eyes; the band bends backward centrally and includes the ocelli. Pronotum olive or greenish orange, irregularly blackened along the front margin; collar narrowly black along the front margin. Mesonotum olive with four obconical spots extending backward from the front margin; inner pair shortest. Cruciform elevation orange with an irregular dark spot in the hollow between the anterior limbs. Abdomen with the segments broadly black anteriorly edged with orange posteriorly, the second segment conspicuously so. Under side of body greenish orange with the segments blackened at base; opercula black at base. Legs greenish orange; tarsi darker. Both pairs of wings clear except at base, where they are rather broadly and irregularly browned, the color being more chestnut than in *fumea* Distant, in which it is much darker. The basal area in the fore wing is included in the darkened area, as in *fumea*.

## MEASUREMENTS IN MILLIMETERS

	Male Type
Length of body .....	25
Width of head across eyes .....	10
Expanse of fore wings .....	78
Greatest width of fore wing .....	11
Greatest width of operculum .....	7

In addition to the type there is a second male in the writer's collection that is slightly greener in color than the type. It also came from near Compostela, Nayarit, Mexico, collected October 30, 1932. [Since the above was written, 4 males and 2 females of the species, collected at Compostela between September 26 and November 1, 1933, have been received.]

## Okanagodes

Some of the facts about *Okanagodes terlingua*, *O. gracilis* and variety *pallida*, were reviewed in this Journal for June, 1932, and attention called to the interesting account of *Okanagodes gracilis*, of its habits and song given by L. D. and R. H. Beamer, in the JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY for September, 1930, page 298. Of the sixty three males and two females taken, all were of the usual *gracilis* form in which "the color varies from almost white to greenish and tan with dark markings." No colony or brood of the brightly green colored

specimens was encountered in Arizona by the Beamers in the summer of 1929.

In June, 1931, Mrs. Martha Morfoot sent me two brightly green colored specimens of *gracilis* collected near Oracle, Arizona; in June, 1932, she sent twenty four more collected near Tucson, and in June, 1933, thirty three additional males and four females, all of the same color and from the same locality. In 1932, Mr. F. H. Parker furnished twenty two green males and three females collected in June near Tucson, and one male of the same color collected July 16, 1932, in the Santa Rita Mts., Arizona. In June, 1932, Mr. D. K. Duncan collected a great many typical *gracilis*, and also about twenty of the green form on the Tucson-Florence desert, and on June 30, 1933, he collected twelve males and two females of the green variety about 5 miles south west of Tucson. On July 1, 1933, he took fourteen males of the typical straw-colored form at Florence Junction. Mr. Duncan writes as follows: "Regarding the *Okanagodes*. The green specimens were taken four or five miles south west of Tucson on the San Xavier Road; they were in the green weeds, probably a species of sage, at least it smells like sage when crushed. One was taken on a green mesquite branch, but this is rare. Surroundings typical desert; flat, hot, dry, sage, cactus, mesquite and Acacias. Last year I took these green forms as far north of Tucson as 20 miles. The pale form [*gracilis*] was taken this year north of Florence and probably 100 miles from the green form. I find that this form [*gracilis*] tends to run to a few pale green examples on through pale straw-color into pale straw-color with dark brown markings, in other words is much more variable than the green form which is almost constant in color." He adds: "I consider them a valid variety all right."

This green form, which appears in broods by itself, may be designated *Okanagodes gracilis* variety *viridis*, with the following as type and allotype: Type male and allotype female from about five miles south west of Tucson, June 30, 1933 (D. K. Duncan). Davis collection.

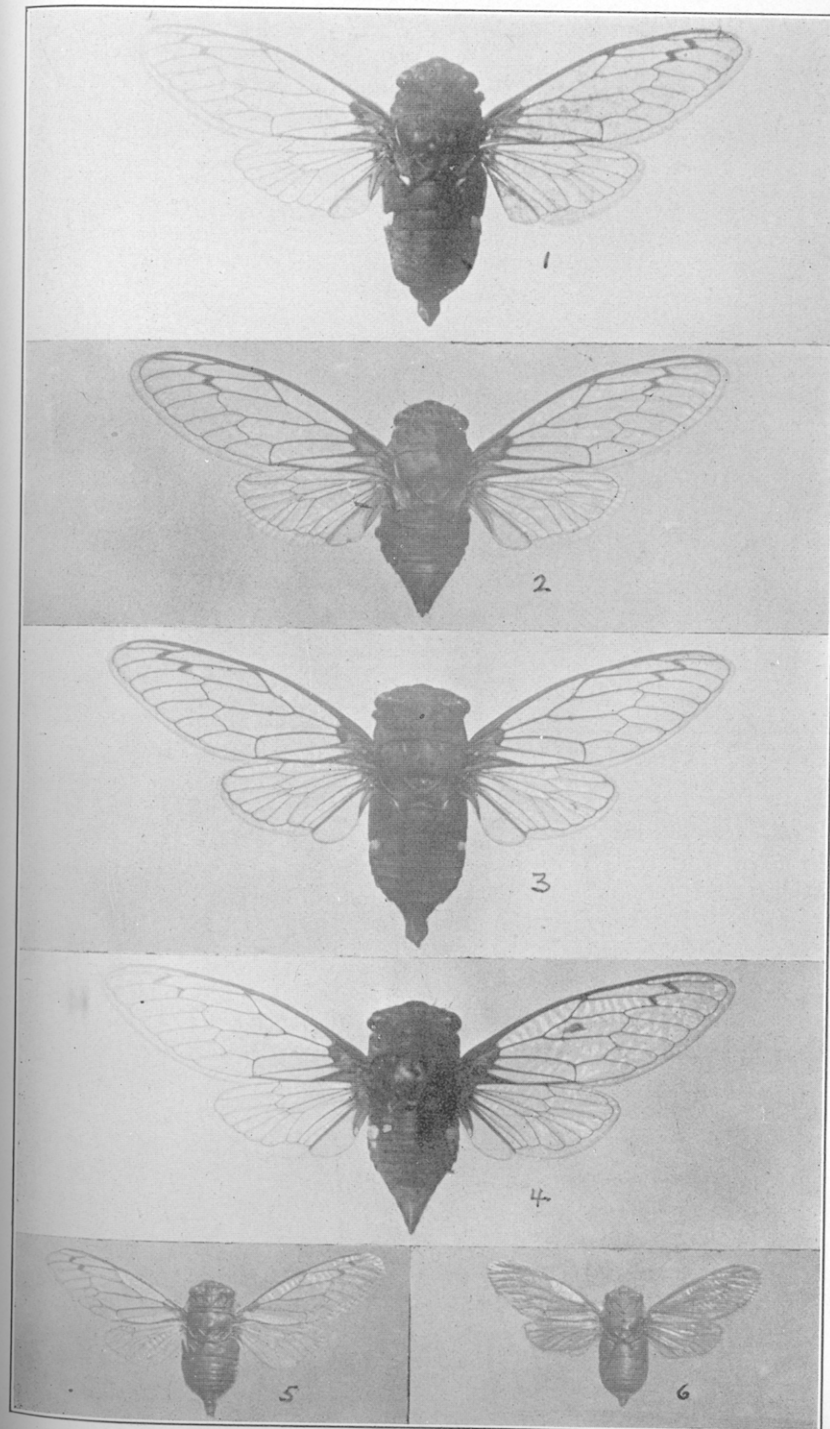
## MEASUREMENTS IN MILLIMETERS

	Male Type	Female Allotype
Length of body .....	21	20
Width of head across eyes .....	5	5
Expanse of fore wings .....	52	55
Greatest width of fore wing .....	8.5	9

In addition to the type and allotype there are over one hundred specimens of variety *viridis* in the writer's collection, received from Mrs. Morfoot, Mr. F. H. Parker, and D. K. Duncan. It is possible that in the course of years these cabinet specimens may fade somewhat, as green insects sometimes do, but the two collected at Oracle in 1931, are still brightly green.

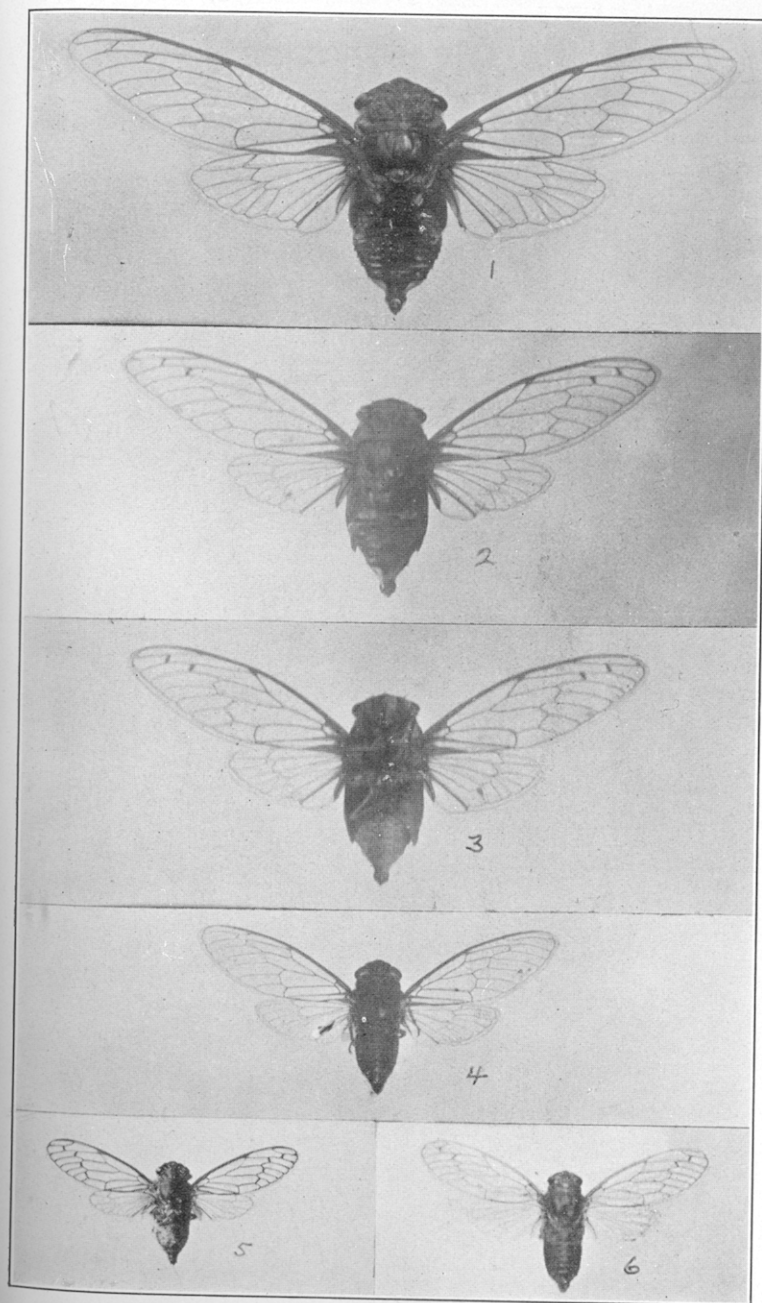
## PLATE II

- Figure 1. *Tibicen chisosensis*. Type.  
 Figure 2. *Tibicen chisosensis*. Allotype.  
 Figure 3. *Tibicen paralleloides*. Type.  
 Figure 4. *Tibicen paralleloides* ♀. Mexico near type locality.  
 Figure 5. *Tibicen minor*. Type.  
 Figure 6. *Tibicen fusca*. Type.



## PLATE III

- Figure 1. *Diceroprocta lucida*. Type.  
 Figure 2. *Diceroprocta operculabrunnea*. Type.  
 Figure 3. *Diceroprocta operculabrunnea*. Type; underside.  
 Figure 4. *Carineta martiniquensis*. Type.  
 Figure 5. *Beameria venosa* Uhler.  
 Figure 6. *Beameria wheeleri*. Type.





## PLATE IV

- Figure 1. *Daza nayaritensis*. Type.  
 Figure 2. *Daza nayaritensis*. Allotype.  
 Figure 3. *Ch'naria mexicana*. Type.  
 Figure 4. *Fidicina compostela*. Type.

