A STUDY OF SOME NEOTROPICAL LEAFHOPPERS
(HOMOPTERA: CICADELLIDAE: IDIOCERINAE)

DISSESSATION

Presented in Partial Fulfillment of the Requirements
for the Degree Doctor of Philosophy in the
Graduate School of The Ohio State
University

By

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****

The Ohio State University
1956

Approved by:

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Adviser
Department of Zoology and
Entomology
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The many technicalities that were met during the study of this insect material could never have been solved and the work finished without the invaluable and unselfish help of all the persons mentioned below. To all of them I am sincerely and gratefully indebted.

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Dr. J. N. Knull for letting me examine the types of Idiotettix Osborn.

Special thanks are due to Dr. George Wallace, of the Carnegie Museum, for the loan of all of Osborn's types of Idiocerus Lewis and to Dr. David A. Young Jr., of the United States Department of Agriculture, for the detailed correction of parts of the first typescript, many other suggestions, and the drawings of the styles of Caldwell's types.

One last word of acknowledgment is due to the members of the Maquiritare Tribe of Venezuelan Carib Indians without whose help the collection of the Venezuelan material treated here and other very interesting material in the collection of the University of Puerto Rico would have been simply impossible. To their uncanny knowledge of the deep jungle and its ways we owe the success of our venture and the fact that we came back alive from Terra Incognita.
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<td>33</td>
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</table>
Introduction

This dissertation summarizes the results of a study of idiocerine leafhoppers. It contains a description of a new genus and new species collected by the writer in Territorio Amazonas, Venezuela, S. A., and a study of species of *Idiocerus* Lewis described by Osborn and by Caldwell. It includes the redescription and transfer of Osborn’s and the transfer of Caldwell's species, previously included in *Idiocerus* Lewis, into the new genus.
Methods

In order to examine the second abdominal sternal apodeme and the internal male genitalia the whole abdomen of the specimen has to be detached from the thorax. After relaxing an insect, the abdomen was removed by inserting a fine pin or needle between the thorax and the abdomen and then pulling the abdomen free with a pair of fine forceps. The detached abdomen was then cleared, stained and dissected for microscopic study. This process can be summarized as follows: 1. heat the detached abdomen for ten to fifteen minutes or leave the abdomen overnight in 10% KOH solution, 2. remove the alkali with warm water, 3. neutralize any remaining alkali with 10% HCl aqueous solution, 4. stain with 5% acid fuschin aqueous solution, 5. dissect internal male genitalia from genital capsule, and 6. store in small vials attached to the pins of corresponding specimens.

Drawings were made by means of an ocular grid with both compound and stereoscopic dissecting microscopes. The part to be drawn was submerged in a small cup of acid (2% acetic) glycerine and held in place by means of a small amount of boric acid ointment rubbed on the bottom. Slide projectors were used in making drawings of the wings.

The dimensions of the face were taken by measuring from the top of the crown to the base of the clypellus and across from the inner margins of the eyes. The second abdominal sternal apodeme was sketched while having the abdominal sterna horizontal and upward.
In redescribing Osborn's types his account of colors is used again instead of trying to describe the present faded colors of the specimens. Caldwell's descriptions of the three Puerto Rican species have been cited verbatim.

**Terminology**

Oman's terminology was used for describing the characters of the body, genitalia, and wing venation. Tables I, II, and III summarize and compare the terms used with the equivalents used by modern students of the Cicadellidae. Metcalf (1913) has published similar tables and in order to avoid repetition the terminology he compares is not treated here.
<table>
<thead>
<tr>
<th>DeLong</th>
<th>Evans</th>
<th>Oman</th>
<th>Snodgrass</th>
</tr>
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<tr>
<td>pygofer</td>
<td>pygophore</td>
<td>pygofer</td>
<td>--</td>
</tr>
<tr>
<td>valve</td>
<td>sternite IX</td>
<td>valve</td>
<td>--</td>
</tr>
<tr>
<td>plate</td>
<td>subgenital plate</td>
<td>plate</td>
<td>subgenital plate</td>
</tr>
<tr>
<td>style</td>
<td>paramere</td>
<td>style</td>
<td>--</td>
</tr>
<tr>
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<td>aedeagus</td>
<td>aedeagus</td>
<td>--</td>
</tr>
<tr>
<td>connective</td>
<td>basal plate</td>
<td>connective</td>
<td>second basal plate</td>
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Table II

Names of parts of head

<table>
<thead>
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<th>Snodgrass</th>
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<td>vertex</td>
<td>crown</td>
<td>crown</td>
<td>vertex</td>
</tr>
<tr>
<td>--</td>
<td>frons</td>
<td>--</td>
<td>frons</td>
</tr>
<tr>
<td>frons</td>
<td>postclypeus</td>
<td>clypeus</td>
<td>clypeus</td>
</tr>
<tr>
<td>clypeus</td>
<td>anteclypeus</td>
<td>clypellus</td>
<td>anteclypeus</td>
</tr>
<tr>
<td>gena</td>
<td>maxillary plate</td>
<td>gena</td>
<td>maxillary plate</td>
</tr>
<tr>
<td>frontal suture</td>
<td>frontal suture</td>
<td>lateral frontal suture</td>
<td>clypeal suture</td>
</tr>
<tr>
<td>--</td>
<td>epistomal suture</td>
<td>--</td>
<td>epistomal suture</td>
</tr>
<tr>
<td>--</td>
<td>postfrontal suture</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>lorum</td>
<td>lorum</td>
<td>lorum</td>
<td>anterior plate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>mandibulary plate</td>
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### Table III

**Terminology of forewing venation**

<table>
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<tr>
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<td><strong>Longitudinal veins</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outer branch of first sector</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>First sector</td>
<td>R / M</td>
<td>R / M</td>
<td>R / M</td>
</tr>
<tr>
<td>--</td>
<td>R₂ / 3</td>
<td>R₁ lb</td>
<td>R₂ / 3</td>
</tr>
<tr>
<td>--</td>
<td>--</td>
<td>R₁ a</td>
<td>--</td>
</tr>
<tr>
<td>--</td>
<td>R₄ / 5</td>
<td>R₅</td>
<td>R₄ / 5</td>
</tr>
<tr>
<td>Inner branch of first sector</td>
<td>M₁ / 2</td>
<td>M₁ / 2</td>
<td>M₁ / 2</td>
</tr>
<tr>
<td>--</td>
<td>M₃ / 4</td>
<td>M₃ / 4</td>
<td>M₃ / 4</td>
</tr>
<tr>
<td>Second sector</td>
<td>Cu₁</td>
<td>Cu₁</td>
<td>Cu₁</td>
</tr>
<tr>
<td>--</td>
<td>Cu₁ a</td>
<td>Cu₁ a</td>
<td>Cu₁ a</td>
</tr>
<tr>
<td>--</td>
<td>Cu₁ b</td>
<td>Cu₁ b</td>
<td>Cu₁ b</td>
</tr>
<tr>
<td>Claval suture</td>
<td>Cu₂</td>
<td>Cu₂</td>
<td>claval suture</td>
</tr>
<tr>
<td><strong>Cross veins</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross vein between sectors</td>
<td>1st r - m</td>
<td>M₁ / 2</td>
<td>--</td>
</tr>
<tr>
<td>Apical cross vein</td>
<td>2nd r - m</td>
<td>r - m</td>
<td>--</td>
</tr>
<tr>
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<td>1st m - cu</td>
<td>1st m - cu</td>
<td>1st cross vein</td>
</tr>
<tr>
<td>2nd cross nervure</td>
<td>2nd m - cu</td>
<td>2nd m - cu</td>
<td>2nd cross vein</td>
</tr>
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<td>DeLong</td>
<td>Comstock-Needham</td>
<td>Evans</td>
<td>Oman</td>
</tr>
<tr>
<td>--------</td>
<td>------------------</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>--</td>
<td>costal</td>
<td>--</td>
<td>costal</td>
</tr>
<tr>
<td>costal</td>
<td>costal</td>
<td>R_{1a}</td>
<td>costal</td>
</tr>
<tr>
<td>discal</td>
<td>R</td>
<td>R</td>
<td>discal</td>
</tr>
<tr>
<td>outer antepical</td>
<td>1st R_{3}</td>
<td>1st R_{1b}</td>
<td>outer antepical</td>
</tr>
<tr>
<td>apical</td>
<td>2nd R_{3}</td>
<td>2nd R_{1b}</td>
<td>fourth apical</td>
</tr>
<tr>
<td>central antepical</td>
<td>1st R_{5}</td>
<td>1st R_{s}</td>
<td>central antepical</td>
</tr>
<tr>
<td>apical</td>
<td>2nd R_{5}</td>
<td>2nd R_{s}</td>
<td>third apical</td>
</tr>
<tr>
<td>--</td>
<td>1st M</td>
<td>R / M</td>
<td>--</td>
</tr>
<tr>
<td>inner antepical</td>
<td>2nd M</td>
<td>M</td>
<td>discal</td>
</tr>
<tr>
<td>apical</td>
<td>3rd M</td>
<td>1st M_{3} / 4</td>
<td>inner antepical</td>
</tr>
<tr>
<td>apical</td>
<td>4th M</td>
<td>2nd M_{3} / 4</td>
<td>second apical</td>
</tr>
<tr>
<td>--</td>
<td>C_{u1}</td>
<td>C_{u1}</td>
<td>brachial</td>
</tr>
<tr>
<td>apical</td>
<td>C_{ula}</td>
<td>C_{ula}</td>
<td>first apical</td>
</tr>
<tr>
<td>appendix</td>
<td>appendix</td>
<td>appendix</td>
<td>appendix</td>
</tr>
</tbody>
</table>
The subfamily Idiocerinae Baker

The members of the Idiocerinae Baker 1915 can be distinguished from the members of other subfamilies of Cicadellidae as follows: episternum completely or almost completely concealed by gena; clypeus not large, broad basally, narrowed and rounded distally, ocelli on face, dorsal extremities of clypeus extending beyond antennal pits to near ocelli, dorsum without circular pits, distance between ocelli less than distance between antennal pits; clypellus short and broad, apex narrower than base, head nearly always broader than pronotum, and antennal ledges distinct. These characters have been summarized from Oman (1949).

The new genera described in this dissertation exhibits all these characters but the apex of the clypellus is slightly broader than its basal width and the dorsal extremities of the clypeus of a few specimens reach the ocelli.

Genera in Idiocerinae Baker 1915

Evans (1947) lists 22 genera under Idiocerinae. Oman (1949) considers one of these, Zinneca Amyot and Serville, a synonym of Idiocerus Lewis. In the list that follows the characters that distinguish Idioceropsis gen. nov. from the other genera in the subfamily are summarized. The characters that are listed are those which Idioceropsis gen. nov. has and differ from those exhibited by the genus with which it is compared. In a few cases striking characters of the other genera are mentioned.
1. Austrocerus Evans. The gena not deeply emarginate, the frontal suture not directed inward at its apex only, and all the spines on the row of strong spines on the hind tibia equally set and spaced.

2. Balocha Distant. With two subapical and four apical cells in the forewing, the lateral sutures of clypeus not meeting between ocelli.

3. Busonia Distant. With well defined upper lateral suture of clypeus, ocelli not very much nearer the eyes than to each other, legs not slender, forewing not short and broad, and the outer apical cell not very long and broad.

4. Chunra Distant. With the scutellum and clypeus not more or less tumidly elevated and the forewing with only two subapical cells instead of three.

5. Chunroides Evans. Face on lateral aspect not concave and the postfrontal suture not discernible, the hind tibia is flattened with three rows of strong spines and the row with the strongest spines usually numbers eight.

6. Exolidia Osborn. With the scutellum seemingly much longer (Osborn's description is somewhat vague and it is difficult to draw exact conclusions). This genus has only three apical cells instead of four as in Idioceropsis gen. nov.

7. Gnatia Evans. The frons is not angularly swollen and the hind margin of the frontoclypeus is not distinct, the hind tibia is not short.

8. Idiocerella Evans. The upper extremity of the lateral margin of the clypeus pointed to the ocellus of the same side and clypellus is not swollen.
9. **Idiocerinus** Baker. With the upper lateral suture of the clypeus directed to the ocellus of the same side.

10. **Idioceroides** Matsumura. Clypeus almost flat, not raised longitudinally or strongly wrinkled, tibia with three rows of strong spines.

11. **Idiocerus** Lewis. See discussion at end of this list.

12. **Idiotettix** Osborn. With only two subapical cells and the ocelli on the face instead of almost on the crown thus not visible from above. This genus includes very long species, 10 to 12 mm. in length, with crossveins on the clavus.

13. **Ipo** Kirkaldy. With the crown very slightly longer at middle than near eyes in some of the species, the remaining have the anterior and posterior margins parallel, the forewing is not so broad.

14. **Ipocerus** Baker. Same as number four above; with four apical cells instead of five.

15. **Iposcopus** Baker. Same as number four above. This genus has supraantennal edges strongly sinuate producing a distinct lobe.

16. **Macrocerus** Evans. The dorsal extremities of the lateral margins of the clypeus directed to the ocellus of the same side. In **Macrocerus** this suture is almost in line with the lateral margin of the clypeus and its apex points outward.

17. **Megipocerus** Zakhvatkin. Lateral edge of clypeus not so deeply arcuate, pronotum not humped posteriorly, scutellum not twice as long as crown and pronotum together, with only two subapical cells, and forewing not broadened posteriorly.
18. **Podioscopus** Kirkaldy. With two subapical cells.

19. **Tumocerus** Evans. Frons is not tumid.

20. **Zinneca** Amyot and Serville. According to Oman (1949) this genus is a synonym of **Idiocerus** Lewis.

21. **Rotifunkia** China. Forewing not so broad and short, only two anteapical cells.

22. **Idioscopus** Baker. Two costal cells are present.

It may be a significant fact that all the Philippine genera described by Baker (1915), namely, **Idioscopus**, **Idiocerinus**, **Ipocerus**, and **Ipococus** are characterized by only one elongate costal cell.

The styles, connectives, and aedeagi of about 25 North American species of **Idiocerus** have been studied and found to be distinct from those of the specimens under consideration. For convenience these three structures will be referred to collectively as internal male genitalia. The genitalia of North American species agree closely with the genitalia of European species according to Drs. D. A. Young Jr. and Paul Ludwig who have seen them. The very different internal male genitalia, the different type of external female genitalia, the four apical and the two anteapical cells in the forewing clearly separate **Idiocerus** Lewis from this new genus.

Evans (1947) states that the male genitalia can not be used to separate the genera in this subfamily. An exception can be made with **Idiocerus** Lewis, **Idiotettix** Osborn, and **Idioceropsis** gen. nov. as the internal male genitalia will separate the members of these three genera. The internal male genitalia of these genera have been illustrated by
DeLong (1945), Nast (1952), and Maldonado-Capriles (1954) and clearly demonstrate this point.

The geographic distribution of the genotypes of the 22 known genera in Idiocerinae is tabulated in Table V. It can be seen from this information that 9 genera have been described from the Oriental Realm, 6 from the Australian, and 4 from the Neotropical. The present excellent knowledge of the Neartic and European leafhopper fauna in contrast with the far from complete knowledge of the Neotropical and African leafhopper fauna seems to point that the Idiocerinae is poorly represented, as far as genera are concerned, in the Holartic region. Further comparative studies are needed before any conclusions can be reached in regard to the probable phylogeny or origin or origins of these genera.

Table V

<table>
<thead>
<tr>
<th>Genus</th>
<th>Country of genotype</th>
<th>Realm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Austrocerus</td>
<td>Kangaroo Island</td>
<td>Australian</td>
</tr>
<tr>
<td>2. Balocha</td>
<td>India</td>
<td>Oriental</td>
</tr>
<tr>
<td>3. Busonia</td>
<td>India</td>
<td>Oriental</td>
</tr>
<tr>
<td>4. Chunra</td>
<td>Malay, British</td>
<td>Oriental</td>
</tr>
<tr>
<td>5. Chunroides</td>
<td>British Guiana</td>
<td>Neotropical</td>
</tr>
<tr>
<td>6. Exolidia</td>
<td>Brazil</td>
<td>Neotropical</td>
</tr>
<tr>
<td>7. Gnatia</td>
<td>Australia (Western)</td>
<td>Australian</td>
</tr>
<tr>
<td>8. Idiocerella</td>
<td>Kangaroo Island</td>
<td>Australian</td>
</tr>
<tr>
<td>9. Idiocerinus</td>
<td>Philippines</td>
<td>Oriental</td>
</tr>
<tr>
<td>No.</td>
<td>Genus</td>
<td>Species</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>10</td>
<td>Idioceroides</td>
<td>Formosa</td>
</tr>
<tr>
<td>11</td>
<td>Idioscopus</td>
<td>India</td>
</tr>
<tr>
<td>12</td>
<td>Idioceropsis</td>
<td>Puerto Rico</td>
</tr>
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<td>13</td>
<td>Idiocerus</td>
<td>Europe</td>
</tr>
<tr>
<td>14</td>
<td>Idiotettix</td>
<td>South America</td>
</tr>
<tr>
<td>15</td>
<td>Ipo</td>
<td>Philippines</td>
</tr>
<tr>
<td>16</td>
<td>Ipocerus</td>
<td>Philippines</td>
</tr>
<tr>
<td>17</td>
<td>Ipoceropus</td>
<td>Philippines</td>
</tr>
<tr>
<td>18</td>
<td>Macrocerus</td>
<td>Kangaroo Island</td>
</tr>
<tr>
<td>19</td>
<td>Megipocerus</td>
<td>Siberia (Eastern)</td>
</tr>
<tr>
<td>20</td>
<td>Podioscopus</td>
<td>Philippines</td>
</tr>
<tr>
<td>21</td>
<td>Rotifunkia</td>
<td>Africa (West Central)</td>
</tr>
<tr>
<td>22</td>
<td>Tumocerus</td>
<td>Australia (Western)</td>
</tr>
</tbody>
</table>

Species in the new genus Idioceropsis

According to Metcalf (1946) the genus Idiocerus Lewis includes 70 Paleartic, 80 Nearctic, 29 Neotropical, 17 Australian, 6 Oriental, 4 Ethiopian, 1 Caribbean, 2 Malaysian, and 1 Oceanic species. Caldwell (1950) described two additional species from Puerto Rico making a total of 3 Caribbean species. As we are assigning the Caribbean and the Neotropical species to the new genus here described the number of species in Idiocerus is reduced to 180. Idiocerus magnus Osborn has been assigned to Idiotettix Osborn by Maldonado-Capriles (1954) and another is reduced to synonymy in the present work. As 13 new species are described here the new genus Idioceropsis contains at present 43 species, 3 Caribbean and 40 from South America.
All the species considered in this study are listed and systematically arranged in Table VI that follows.

Table VI

Systematic arrangement of the species in *Idioceropsis* gen. nov.

A. Pronotum unmarked

1. Crown unmarked
   a. Forewing with black dots . . . . . flavotinctus*
      myrciae
      ocellatus
      rotundifrons
   b. Forewing without black dots . . . . beryllinus
      breviatus
      costalis
      cristulatus
      fasciatus
      flavidus
      rotundifrons
      rugifrons
      venezolanus

2. Crown marked
   a. Crown with transverse band . . . . . acuminatus
   b. Crown with two spots . . . . . . . . fulvus
      parvulus

* For author and page of description see index on page 140.
B. Pronotum variously marked

1. Crown unmarked . . . . . . . . . . . maricensis

2. Crown with one marking

   a. Marking transverse, yellow . . . albicollis
      fulvotinctus
      occipitalis

   b. Marking transverse, red . . . . . aurantilineatus
      himertus

   c. Marking longitudinal . . . . . alimaculatus
      exquisitus
      hyalinus
      oncercus

3. Crown with two markings

   a. Pronotum with longitudinal stripes

      (1) Three stripes . . . . . . . bakeri

      (2) One, two, or four stripes

         (a) Face with four spots . . eburneomaculatus
            carmenae

         (b) Face with two spots . . bilineatus
            cuprinus
            multilineatus
            quadrangularis

   b. Pronotum with three green spots . trimaculatus
Relationships of the species in Idioceropsis gen. nov.

In order to determine the probable relationships of the species treated in this dissertation the following procedure was followed:

1. All the species were systematically arranged according to coloration. This was accomplished by digesting the key to the species on page 22 and the results of this arrangement is shown on table VI.

2. This arrangement was later modified by disregarding the coloration of the pronotum in some cases and the coloration of the crown in others. In a few cases the presence of only one spot on the crown, or the absence of spots on the crown, or different color patterns of the pronotum separated species otherwise evidently allied by their general appearance or by the genitalia.
3. The two abovementioned steps resulted in the formation of seven "groups" arbitrarily designated A, B, C, D, E, F, and G. The characters used to separate these groups are detailed and listed below.

4. After the seven groups were established additional allying characters were looked for in the internal male genitalia and the size. In several cases this procedure corroborated the soundness of the modifications explained in point two above.

5. Primitive characters were looked for in the species.

The seven groups resulting from the procedure detailed above, the characters used to separate them, and the species included in each are as follows:

1. Group A. Large species, over 4.9 mm. long; apple green and conspicuously ornamented with orange or red lines; aedeagus straight; includes:

   *aurantilineatus*  
   *multilineatus*  
   c*armenae*  
   *principensis*  
   *himertus*

2. Group B. Small species, usually under 4.5 mm.; with two fulvous or reddish spots on crown, or one spot probably resulting from the fussion of two spots, or without spots; in most cases with a well or poorly defined vitreous area on the crown inside which are located the spots if present; aedeagus decurved cephalad and with a small basal accessory lobe. Twenty-two species are included in this group, namely:

   a. *acuminatus*  
   *minutus*  
   a*reatus*  
   *quadrangularis*
18

c. costalis

Under a are included those species known only by females and under b those of which the males are known. I. costalis, although of different coloration, has genitalia similar to that of the other species in the group.

3. Group C. Includes large species, over 4.9 mm. long; with many blackish or brownish small spots on the face, aedeagus with apical half or less slender and angularly bent cephalad over the stouter basal half. The following species are assigned to this group:

   intricatus                         multimaculatus
   maculifrons

4. Group D. Pronotum and crown unmarked, aedeagus with T-shaped base and the remaining portion long, slender, and curved or bent cephalad. Seven species are allocated here, namely:

   beryllinus                         hyalinus
   cristulatus                        rotundifrons
flavidus  venezolanus  
flavotinctus

5. Group E. Brown species, with a large yellow spot above including part of crown and pronotum. The species included are:

albicollis  occipitalis

6. Group F. Small species, forewing with black areas. The single species with these characters is allmaculatus.

7. Group G. Small species, pygofer triangular with apical hook or accessory spine. Two species are placed here:

fasciatus  ocellatus

In order to determine relationships between the groups and between the species in each group, first, a search for primitive characters was made, and second, a comparison was made of as many structures as possible.

From assorted evidence Evans (1947) mentions what he considers primitive characters in the Cicadellidae. Some of these are:

1. In general the tendency is toward decreasing size; some of the smallest leafhoppers belong in the most recently developed groups.

2. The predominant color of the most primitive groups is brown. This is followed by green, orange, yellow, red, black, and white.

3. Most primitive Cicadellidae feed on moss and reeds, and live at the base of woody plants. Leafhoppers occupying a middle position in the evolutionary scale are largely arboreal, and those of most recent development feed on grasses and herbaceous plants, though not limited to them.

4. The primitive position of the ocelli is close to the
posterior apices of the frontal suture.

5. The frons in its original condition was a rectangular facial sclerite bounded by the epistomal suture, by the lateral frontal sutures, and posteriorly by the postfrontal suture.

6. The primitive leg is short, quadrilateral, and bears a few small hair-like spines. It evolved into a flattened leg with four rows of spines.

7. The aedeagus in direct contact with both the anal segment and the connective is probably ancestral to one in which the aedeagus is in contact with either.

8. Presence or remnants of the maxillary plates or genae is ancestral to total absence.

Considering the characters mentioned above, it seems that *Idioceropsis* is a relatively recent genus. No particular group of the seven lists of species mentioned above can be selected as more primitive than the rest because, in any one of them, all the species exhibit "recent" characters. Not being able to select ancestral forms we have to try to determine relationships on the basis of morphology alone.

From the discussion that follows it will be seen that further grouping of the species by the morphology of the parts of the genitalia can not be accomplished without falling into marked inconsistencies. We shall use the species in group "B" to make this point clear. Among the species in this group we find some with triangular, or subquadrangular, or nearly semicircular pygofers and any of these forms can have or not have accessory structures. This eliminates the use of accessory spines
and the shape of the pygofer as allying characters. The three Puerto Rican species, *I. myrciae*, *I. maricensis*, and *I. parvulus*, also seem to throw some light on the situation. These three species either arose from an unknown common ancestor, or two of them evolved from the third or a close relative of the third, or they had different origins. The first two species seem closer to each other than to the third if we consider their somewhat similar pygofers. On the other hand, *I. myrciae* and *I. parvulus*, seem closer to each other than to the third if we consider their somewhat similar aedeagi. Somewhat similar shapes of the connective and the second abdominal sternal apodeme are shown by species in the different groups.

Summarizing it can be said that all the 43 species discussed in this dissertation can be separated into seven groups according to similarities in their size, coloration, and shape of the aedeagi. The fact that all the species share the characters of the new genus herein described clearly show that all belong in a common genus. These two points seem to indicate that the genus is not as homogeneous as other known cicadellid genera. The differences between the species of the seven groups mentioned in this part of the dissertation are not sufficient to suggest further splitting of the genus into several genera. The sharing of quite a number of morphologically similar structures by the species in the seven mentioned groups does not seem to warrant the establishment of subgenera. Perhaps the collection of additional material may clarify the situation of these "groups".
Key to the species of *Idioceropsis* gen. nov.

The following key can be used for either males or females as there is no sexual dimorphism in coloration and markings of the known species. All the specimens studied were mature forms and not having worked with juvenile forms we do not have evidence to say whether this key will or will not work for the nymphs.

1. Pronotum variously marked
2. Pronotum unmarked

2. Crown unmarked or with one spot
3. Crown with two or more spots
4. Crown unmarked

4'. Crown with one marking

4. Costal margin yellowish to midwing
5. Costal margin black to midwing

5. Crown with transverse band
6. Crown with longitudinal stripe

6. Crown with yellow or greenish basal band
7. Crown with red band on disc

7. Crown with inconspicuous greenish band
8. Crown brown, yellow band conspicuous

8. Yellow on crown and pronotum forming a hexagonal spot
9. Yellow on crown and pronotum forming an oval spot

10. Yellow on crown and pronotum forming a hexagonal spot

*maricensis* (Cald.)
*flavidus* (Osb.)
*occipitalis* (Osb.)
*fulvotinctus* (Osb.)
*albicollis* (Osb.)
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Inner claval margin reddish</td>
<td><em>aurantilineatus</em> sp. nov.</td>
</tr>
<tr>
<td>9'</td>
<td>Inner claval margin yellowish</td>
<td><em>himertus</em> sp. nov.</td>
</tr>
<tr>
<td>10</td>
<td>Pronotum with median fulvous stripe</td>
<td><em>exquisitus</em> (Osb.)</td>
</tr>
<tr>
<td>10'</td>
<td>Pronotum marked differently</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Pronotum green basally, black apically</td>
<td><em>alimaculatus</em> sp. nov.</td>
</tr>
<tr>
<td>11'</td>
<td>Pronotum colored differently</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Pronotum with pale median line and 4 basal spots</td>
<td><em>oncercus</em> sp. nov.</td>
</tr>
<tr>
<td>12'</td>
<td>Pronotum with median stripe and 4 discal spots</td>
<td><em>hyalinus</em> (Osb.)</td>
</tr>
<tr>
<td>13(2')</td>
<td>Crown with two spots</td>
<td></td>
</tr>
<tr>
<td>13'</td>
<td>Crown with three or more spots</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Pronotum with longitudinal stripes</td>
<td></td>
</tr>
<tr>
<td>14'</td>
<td>Pronotum marked differently</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Pronotum with three longitudinal stripes</td>
<td><em>bakeri</em> (Osb.)</td>
</tr>
<tr>
<td>15'</td>
<td>Pronotum with one, two, or four stripes</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Face above ocelli with four reddish spots</td>
<td></td>
</tr>
<tr>
<td>16'</td>
<td>Face above ocelli with two reddish spots</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Pronotum with four short greenish stripes</td>
<td><em>eburneomaculatus</em> (Osb.)</td>
</tr>
<tr>
<td>17'</td>
<td>Pronotum with four long reddish stripes</td>
<td><em>carmena</em> sp. nov.</td>
</tr>
<tr>
<td>18</td>
<td>Head with bracket-shaped reddish spots</td>
<td><em>quadrangularis</em> (Osb.)</td>
</tr>
<tr>
<td>18'</td>
<td>Head with solid reddish spots</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Inner claval margin reddish</td>
<td></td>
</tr>
<tr>
<td>19'</td>
<td>Inner claval margin not reddish</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Pronotum with four longitudinal stripes</td>
<td><em>multilineatus</em> sp. nov.</td>
</tr>
<tr>
<td>20'</td>
<td>Pronotum with two longitudinal stripes</td>
<td><em>bilineatus</em> sp. nov.</td>
</tr>
</tbody>
</table>
21 Pronotum with two fulvous longitudinal stripes *cuprinus* sp. nov.
21' Pronotum with three greenish spots *trimaculatus* sp. nov.
22(14) Pronotum with two L-shaped markings *areatus* (Osb.)
22' Pronotum marked differently
23 Pronotum with semicircular band *figuratus* (Osb.)
23' Pronotum marked differently
24 Pronotum fulvous, lighter laterally and behind eye *fulvus* (Osb.)
24' Pronotum marked differently
25 Pronotum with transverse fulvous band near hind margin *flammeus* (Osb.)
25' Pronotum marked differently
26 Pronotum anteriorly with 5 faint spots *tumidulus* (Osb.)
26' Pronotum with inverted-V reddish spot *viridicatus* (Osb.)
27(13') Crown with three spots
27' Crown with five or more spots
28 Pronotum with 3 longitudinal reddish stripes *principensis* (Osb.)
28' Pronotum marked differently
29 Pronotum with six black spots arranged 1, 2, 3 *maculifrons* (Osb.)
29' Pronotum with 6 to 6 spots in a different pattern *multimaculatus* sp. nov.
30(27) Crown with five spots *minutus* (Osb.)
30' Crown with seven spots *intricatus* (Osb.)
31(1') Crown unmarked
31' Crown marked variously
32 Face, crown, and pronotum minutely rugose *rugifrons* (Osb.)
32' Face, crown, and pronotum not rugose
<table>
<thead>
<tr>
<th>Page</th>
<th>Description</th>
<th>Next Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>Forewing with dark spot or dot</td>
<td>34</td>
</tr>
<tr>
<td>33'</td>
<td>Forewing without dark spot or dot</td>
<td>37</td>
</tr>
<tr>
<td>34</td>
<td>Forewing with basal dot</td>
<td>35</td>
</tr>
<tr>
<td>34'</td>
<td>Forewing with discal dot</td>
<td>36</td>
</tr>
<tr>
<td>35</td>
<td>Reddish species</td>
<td>flavotinctus (Osb.)</td>
</tr>
<tr>
<td>35'</td>
<td>Green species</td>
<td>rotundifrons (Osb.)</td>
</tr>
<tr>
<td>36</td>
<td>Clavus with dark apical area; Caribbean</td>
<td>myrciae (Cald.)</td>
</tr>
<tr>
<td>36'</td>
<td>Clavus uniformly colored</td>
<td>ocellatus (Osb.)</td>
</tr>
<tr>
<td>37</td>
<td>Basal two-thirds of forewing fuscous, apex whitish</td>
<td>brevius (Osb.)</td>
</tr>
<tr>
<td>37'</td>
<td>Forewing not in contrasting portions</td>
<td>38</td>
</tr>
<tr>
<td>38</td>
<td>Genal margin and clavus striped with yellow</td>
<td>fasciatus (Osb.)</td>
</tr>
<tr>
<td>38'</td>
<td>Genal margin and clavus not striped</td>
<td>39</td>
</tr>
<tr>
<td>39</td>
<td>Costal margin and rest of forewing differently colored</td>
<td>40</td>
</tr>
<tr>
<td>39'</td>
<td>Costal margin and rest of forewing concolorous</td>
<td>41</td>
</tr>
<tr>
<td>40</td>
<td>First costal cell fuscous</td>
<td>costalis (Osb.)</td>
</tr>
<tr>
<td>40'</td>
<td>First costal cell lighter, not fuscous</td>
<td>cristulatus sp. nov.</td>
</tr>
<tr>
<td>41</td>
<td>Ocelli set in brownish spots</td>
<td>venezolanus sp. nov.</td>
</tr>
<tr>
<td>41'</td>
<td>Small brownish spot under ocelli</td>
<td>beryllinus sp. nov.</td>
</tr>
<tr>
<td>42(31')</td>
<td>Crown with transverse fulvous spot</td>
<td>acuminatus (Osb.)</td>
</tr>
<tr>
<td>42'</td>
<td>Crown with two spots; Caribbean</td>
<td>parvulus (Osb.)</td>
</tr>
</tbody>
</table>
Key to the known males of *Idioceropsis* gen. nov. using genitalic characters

| 1 | Pygofer without accessory structures, margin entire | 2 |
| 1' | Pygofer with accessory structures, projections or notches | 6 |
| 2 | Aedeagus slightly arcuate, base produced caudad | *himertus* |
| 2' | Aedeagus differently shaped, base produced cephalad | 3 |
| 3 | Aedeagus sickle-shaped, apical half curved cephalad | *breviatus* |
| 3' | Aedeagus differently shaped | 4 |
| 4 | Basal half of aedeagus broad, apical half nearly at 90° to basal half | *multimaculatus* |
| 4' | Aedeagus of different shape | 5 |
| 5 | Style with outer apical process well developed | *costalis* |
| 5' | Style with outer apical process poorly developed | *parvulus* |
| (1') | Aedeagus slender, with bulbous swelling near middle | *trimaculatus* |
| 6 | Aedeagus of different shape | 7 |
| 7 | Aedeagus with long caudal process | *bilineatus* |
| 7' | Aedeagus of different shape | 8 |
| 8 | Aedeagus with apical one third to two thirds distinctly curved, apex bent cephalad from vertical projection of base | 9 |
| 8' | Aedeagus straight or apical portion angularly bent or curved near middle and thence straight to or bent again before apex | 10 |
| 9 | Apical three fourths of aedeagus very slender, reaching under base | *flavidus* |
| 9' | Apical portion of aedeagus of different shape | 10 |

* For author see index of species on page 140.
10 Anterior accessory lobe of aedeagus very large, produced upward and cephalad, apex of aedeagus almost resting on it **alimaculatus**

10' Aedeagus without anterior or with small accessory lobe

11 Aedeagus sickle-shaped

11' Aedeagus of different shape

12 Pygofer quadrangular **beryllinus**

12' Pygofer triangular

13 Caudal angle of pygofer angularly bent mesad **flavotinctus**

13' Pygofer with sclerotized hook on inner surface near caudal angle **venezolanus**

14 Apical half of pygofer almost forming a complete loop

14' Apical half of pygofer not so curved

15 Pygofer triangular, caudal angle with hook on inner surface **fasciatus**

15' Pygofer subquadrangular, with mesad projection near middle of hind margin (Antillean) **maricensis**

16 Pygofer quadrangular, with Y-shaped apodeme **fulvotinctus**

16' Pygofer triangular

17 Pygofer longer than broad, small upward projection on caudal angle **cuprinus**

17' Pygofer broader than long, broad ventrad inner projection on upper margin **eburneomaculatus**

18 Pygofer with transparent area near apical margin **intricatus**

18' Pygofer without such area
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Style broad on dorsal aspect, with two outer accessory apical processes, pygofer triangular with long ventrad apical process</td>
</tr>
<tr>
<td>19'</td>
<td>Style narrow, with one outer accessory apical process</td>
</tr>
<tr>
<td>20</td>
<td>Pygofer triangular</td>
</tr>
<tr>
<td>20'</td>
<td>Pygofer quadrangular</td>
</tr>
<tr>
<td>21</td>
<td>Pygofer with process on caudal angle</td>
</tr>
<tr>
<td>21'</td>
<td>Pygofer with process not on caudal angle</td>
</tr>
<tr>
<td>22</td>
<td>Aedeagus with small caudal basal projection, fine serrations above near apex</td>
</tr>
<tr>
<td>22'</td>
<td>Aedeagus with small cephalad projection near base, without serrations near apex</td>
</tr>
<tr>
<td>23</td>
<td>Accessory process of pygofer sharp, pointed; margin entire; aedeagus not crested</td>
</tr>
<tr>
<td>23'</td>
<td>Accessory process of pygofer broad, not pointed; margin notched; aedeagus with small crest above</td>
</tr>
<tr>
<td>24</td>
<td>Aedeagus tapering from base, apex bent ventrad</td>
</tr>
<tr>
<td>24'</td>
<td>Aedeagus broadest medianly, narrower at both ends</td>
</tr>
<tr>
<td>25</td>
<td>Aedeagus with caudal projection on upper margin</td>
</tr>
<tr>
<td>25'</td>
<td>Aedeagus with apical upward projection from lower margin</td>
</tr>
<tr>
<td>26(20')</td>
<td>Accessory process of pygofer on ventrocaudal angle</td>
</tr>
<tr>
<td>26'</td>
<td>Accessory process of pygofer on different position</td>
</tr>
</tbody>
</table>

- **oncercus**
- **principensis**
- **exquisitus**
- **ocellatus**
- **maculifrons**
- **cristulatus**
- **hyalinus**
27 Aedeagus with a horn-like projection at either side of apex
27' Aedeagus without such structure, with minute serrations on caudal margin
28 Pygofer with three finger-like projections on caudal margin
28' Pygofer with one pointed process on caudal margin

Type localities of the species

To facilitate the location of rivers, towns and settlements given as type localities a list of the names used throughout the work is given below. This list gives country, state, and approximate latitudes and longitudes whenever possible. All the new species described in this paper are from the State of Territorio Amazonas of Venezuela, S. A., the southernmost state of the country. The countries from which all the other species come are stated in the descriptions.

Chapada (No. 3) is the name of two different localities in Brazil and we have not been able to determine which one is the right type locality. Taperina (No. 21) is another Brazilian locality we have not been able to locate on available maps. Towns or settlements named Taperica, Taperoa, and Tapera have been found. It is possible that Taperina is a temporary name, a misspelling of one of the three above mentioned names or a place not on maps.

1. Anaben, Colombia, 67°45'W., 4°15'N. A very small Colombian river settlement at the angle made by the Atabapo and the Irinida rivers. Across the Atabapo River in front of San Fernando de Atabapo.
2. Bartica, British Guiana, 58°30’W., 6°30’N. Also named Bartika Grove. A small town on the angle formed by the Essequibo and Purubi (also called Mazaruni) rivers, at the beginning of the delta of the Essequibo river.

3. Chapada, Estado Goyaz, Brazil, 49°W., 13°S. A small settlement. There is another town with the same name at Estado Maranhão, at 46°15’W., 4°45’S. We have no evidence to decide which one is the type locality.

4. Culebra, Territorio Amazonas. A small flat of savanna grass immediately north of Cerro Duida, Venezuela; this flat has been thus called because of the proximity of Pico Culebra mentioned next.


6. Cunucunuma River, Territorio Amazonas, Venezuela. A small tributary of the Orinoco River. Its mouth is about 250 kms. up the Orinoco from San Fernando de Atabapo, on the northern side of the river.

7. Duida, Cerro (or Mountain), Territorio Amazonas, Venezuela, 3°15’N., 66°W. An extensive sandstone mountain close to the eastern bank of the Cunucunuma River.

8. Fort Principe (de Beria), Matto Grosso, Brazil, 64°30’W., 12°S. A military fort about 75 kms. east from Rio Guaporé and the frontier between Brazil and Bolivia.

9. Guaporé River. This river is the frontier between Bolivia and Brazil, and runs diagonally to the northwest on the square formed by 60° and 65°W., and 10° and 5°S.

10. Machulto River, Matto Grosso (?), Brazil. This is apparently
a local name for a place we have not been able to locate on available maps. The labels of the specimens state "Machulto R. near Rio Guaporé". This river, probably a tributary of Rio Guaporé, should not be far from Fort Principe where a person named Haseman did some collecting around 1909.

11. Machupo River, Matto Grosso (?), Brazil. Same as 10 above.

12. Mana River, French Guiana, 53°40'W. A river running north toward the northernmost angle of the country.

13. Marahuaca Mountain, Territorio Amazonas, Venezuela, around 65°30'W., 3°30' S. The exact location of this big mountain is controversial. We have not been able to see aerial photos of this section of Venezuela in order to locate it exactly. All the maps we have seen are apparently in error in locating what seems to be this mountain. Tate (1930) puts it about 10-14 kms. east of Mount Duida which we think is pretty close. In some maps the mountain is located quite far from Duida.

14. Puerto Ayacucho, the present capital of Territorio Amazonas, Venezuela, 67°47'W., 5°50'N. Situated on the eastern bank of the Orinoco River.

15. Río Piedras, Puerto Rico. A section of the capital of Puerto Rico located on the northern coast of the island.

16. San Fernando de Atabapo, Territorio Amazonas, Venezuela, 67°40'W., 4°05'N. The former capital of Territorio Amazonas, now reduced to a small settlement after the seat of the state government was moved to Puerto Ayacucho. Located on the eastern bank of the Atabapo River a few miles south from where this river meets the Orinoco.
17. San German, Puerto Rico. A small town on the southeastern quarter of the island.


19. Santarem, Para, Brazil, 54°45'W., 2°25'S. A town on the southern bank of the Amazon River, about 25 kms. east of the mouth of the Tapajos River which is an important tributary of the Amazon.

20. Provincia del Sara, in the Department or State of Santa Cruz, Bolivia. The capital of this province is Portachuelo, located approximately at 16°30'S., 62°W.

21. Taperina, Brazil. Exact location unknown to author.


23. Villa Bella, Bolivia, 66°W., and 11°S. A settlement at the confluence of the Mamore, Benicito, and Beni Rivers, near the northernmost corner of Bolivia on the Brazilian frontier.

The second abdominal sternal apodeme

A study of the second abdominal sternal apodeme was made to determine its specific value and the possibility of its use in correlating the two sexes. As can be seen by the illustrations in the present work, at least in the new genus under consideration, this structure is of diagnostic value, as it is different in every species. It could be valuable in identifying a specimen where the genitalic structures are lost but otherwise its use does not seem warranted or necessary. Unfortunately it can not be used to correlate the sexes as it is very reduced or almost wanting in the females of this genus.
Table VII

Geographic distribution of the species in Idioceropsis gen. nov.

<table>
<thead>
<tr>
<th>Country</th>
<th>Species*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivia (7)</td>
<td>acuminatus</td>
</tr>
<tr>
<td></td>
<td>flammeus</td>
</tr>
<tr>
<td></td>
<td>viridicatus</td>
</tr>
<tr>
<td></td>
<td>costalis</td>
</tr>
<tr>
<td></td>
<td>fulvotinctus</td>
</tr>
<tr>
<td></td>
<td>quadrangularis</td>
</tr>
<tr>
<td>Brazil (18)</td>
<td>albicollis</td>
</tr>
<tr>
<td></td>
<td>flavidus</td>
</tr>
<tr>
<td></td>
<td>occipitalis</td>
</tr>
<tr>
<td></td>
<td>areatus</td>
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<tr>
<td></td>
<td>fulvus</td>
</tr>
<tr>
<td></td>
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* For authors see index on page 140.
Description of the new genus

**Idioceropsis** gen. nov.

Head from slightly to distinctly wider than pronotum; frons flat or slightly convex across and as seen in profile; face longer than wide, upper margin distinctly arcuate; upper lateral suture of clypeus directed toward the ocellus of the same side; ocelli closer to eyes than to each other, not visible from above; antennal scape and pedicel short and cylindrical, flagellum setiform. Crown short, rounded, of uniform length throughout its width or only slightly longer or shorter at middle than next to eye; clypellus usually distinctly longer than basal width, sides shallowly concave; lora reaching to or close to middle of lateral margin of clypeus, usually not tumid or if tumid slightly so. Pronotum not tumid, shorter than scutellum; scutellum broad basally, slightly longer than pronotum, not tumid. Forewing with four apical and two antepapical cells; appendix wide, reaching to second or third apical cell; elongate, not widened near center; first cross nervure sometimes missing and only one discal cell present as a result. Hindwing with four apical cells. Hind tibia flattened, rectangular in cross section, with three rows of strong spines, and a fringing row of hair-like spines, the row having the strongest spines containing usually six, all equally set.

**Male genitalia:** style with anterior end flat, fin-like and vertical or nearly so, rarely pointed; posterior end with a hook-like process on inner margin extending dorsad and caudad, its apex curved lateroventrad; the outer side of the posterior end if produced as an outer process short, lower on the shaft than the inner process, dorsally with small
patch of setae. Connective horizontal, triangular, with apex pointing caudad, the anterior margin shallowly or deeply concave, styles attached to the basal angles, the apex with a vertical process for the attachment of the aedeagus. Aedeagus curved or almost straight, pointing cephalad, usually wider at base, anterior or posterior accessory processes present or absent; gonoduct extending from a point near the base to gonopore at or close to apex of aedeagus. Pygofer rectangular, triangular or rounded apically, usually with accessory structures on margin; only slightly visible from below; with few very short setae near apical margin. Plates triangular, each with outer margin produced upward at apex, this projection with long setae on margin.

External female genitalia: seventh sternum broad, usually narrower near center; pygofer longer than wide, wider near center, embracing the ovipositor, glabrous or with two to four short spines apically; ovipositor narrow and slender, surpassing pygofers, glabrous; ovipositor much longer than abdominal sterna together.

Type of genus: Idioceropsis parvulus (Osborn)

Description of species

Idioceropsis parvulus (Osborn) n. comb., genotype


Caldwell's description follows: "Length 3.5 - 4 mm. General color greenish yellow. Vertex (crown) with two large yellowish-orange spots
extending over onto face. Pronotum hyaline in caudal half. Scutellum yellow with basal angles greenish and apex infuscate. Forewing greenish-hyaline; costa broadly greenish, commissural margin lightly infuscate.

Head broad; eyes very prominent, almost overlapping entire lateral margins of pronotum. Vertex four times as broad as long. Female sternite VII truncate apically. Male pygofer broadly rounded posteriorly on either side. Plate short, broad. Style bifid apically with a small curved finger-like projection reaching beyond basal apex of plate. Aedeagus long, posteriorly, projecting dorsad with apex slightly bent cephalad." Figures 1 to 6 (from Caldwell).

This species is similar to Idioceropsis fulvus (Osb.), I. quadrangularis (Osb.), I. cuprinus sp. nov., and I. acuminatus (Osb.) in having two large spots on the face but it can be separated from them by the characters in the key. The aedeagus of I. cuprinus sp. nov. resembles that of this species but other parts of the genitalia will separate them. The bifid apex of the valve is unique.

Holotype - female, San German, Puerto Rico, April 17, 1930, Cornell University, Lot 795, Sub. 36, W. T. M. Forbes collector. This species is abundant and has been collected repeatedly from all over Puerto Rico.

Idioceropsis beryllinus sp. nov.

Male: crown short, as long at middle as near eyes; face elongate, lateral margins of clypeus almost straight to clypellus; lateral sutures of clypeus extending to ocelli; clypellus slightly expanded distally, length slightly more than twice basal width; lora reaching to above middle of lateral edges of clypeus. Pronotum three times as long as crown,
twice as wide as long, hind margin almost straight; scutellum slightly longer than pronotum; wings extending well beyond apex of abdomen. Head, thorax, body, and legs pale or yellowish green; with a very small brownish spot under each ocellus; forewing straw-colored, transparent, veins near tip of wing conspicuous, others transparent; valve and plate greenish. Female: similar in body proportions to male. Straw-colored, scutellum greenish with brownish triangular spot on basal angles; thoracic and abdominal venters yellowish, seventh sternum brownish, ovipositor brownish; pygofer pale yellowish green, darker toward apex. Length: male, 5.3 mm.; female, 5.9 mm.

Male genitalia: style slender, of almost uniform width throughout; connective deeply concave at basal margin; aedeagus long, slender and curved, with a caudad projection on dorsal surface at midlength; pygofer quadrangular, with lower apical corner projecting into a hooked process (figs. 7, 8, 9, 11, 12). Second abdominal sternal apodeme reaching to base of fourth sternum, elongate, bluntly round inner projection at apex (fig. 10).

Idioceropsis venezolanus sp. nov., I. fulvotinctus (Osb.), and I. beryllinus sp. nov. could be confused because all three have a very similar coloration but the small brownish spot under the ocelli will separate the latter. The aedeagus of this species looks somewhat like that of I. flavotinctus (Osb.) but the shape of the pygofer and the style will separate it from this as well as from the two species mentioned above. Idioceropsis rotundifrons (Osb.), described from a female, could also be confused with this species but the characters mentioned in the key in addition to the high crown of I. rotundifrons
Holotype - male, allotype female, and one male paratype, northern
slopes of Mount Marahuaca, May 1 - 25, 1950, in U. S. National Museum
collection (Cat. No. 62841); one male paratype, same data, in the
author's collection.

**Idioceropsis almaculatus sp. nov.**

Male: crown relatively short, slightly longer at middle than next
to eyes; face slightly longer than wide, lateral suture of clypeus not
attaining ocellus, lateral margin suddenly curved mesad near base of
clypellus; clypellus slightly widened distally, slightly longer than
basal width, subquadrate; lora short, reaching to abruptly incurved
portion of the lateral margin of clypeus. Pronotum twice as long as
crown, slightly more than two and one-half times as wide as long, hind
margin almost straight; scutellum broad at base, equal in length to
pronotum. Crown green, with anterior two-thirds darker than basal
third, with small elongate brownish spot in midposterior margin; face
stramineous except for green basal margin extending ventrad to ocelli;
pronotum with narrow anterior margin green, remaining portion darkening
to almost black near posterior margin; scutellum dark green with lighter
triangular spot on basal angle and blackish transverse line on disc;
forewing mostly transparent, veins yellowish, areas on clavus, center
and apex of wing black (fig. 17). Thorax pale green or stramineous,
legs uniformly straw-colored except for black apex of hind tibia;
abdominal sterna yellowish except penultimate which is orange, valve and
plate dirty orange. Length: 3.8 mm.

Male genitalia: style on lateral aspect wider at both ends, apical process relatively large, two groups of setae on dorsal surface; connective concave at basal margin; pygofer quadrangular, with an L-shaped sclerotized structure on inner surface of caudodorsal angle connected with the similar structure of the other side; aedeagus long and slender, with a well developed anterior accessory lobe (figs. 14, 15, 16, 19, 20, 21). Second abdominal sternal apodeme reaching to apex of third sternum, elongate, inner margin undulate (fig. 18).

Idioceropsis flavotinctus (Osb.), I. myrciae (Caldwell), I. tumidulus (Osb.), I. ocellatus (Osb.), and I. cristulatus sp. nov. also have spots on the forewings but the spots on these are small and round instead of relatively extensive areas. The shape of the aedeagus and the pygofer, in I. alimaculatus sp. nov., is very different from that of these species.


Idioceropsis multilineatus sp. nov.

Male: crown short, very slightly longer at middle than next to eye; face wider than long, lateral edge of clypeus angularly bent at a point closer to clypeus than to antenna, its upper extremity almost reaching ocellus; clypellus very slightly widened distally, twice as long as basal width; lora reaching to angular bend of lateral edge of clypeus. Pronotum four times as long as crown, slightly more than
twice as wide as long, hind margin straight; scutellum as long as pronotum. Crown green, with two broad orange-red longitudinal stripes extending over margin to the inner margin of the ocelli; remainder of face, clypellus, lora, and gena straw-colored; pronotum green, with two longitudinal orange-red stripes that are continuations of those on the head and with an oval spot of the same color behind eye; scutellum light green with a triangular brownish spot near basal angle; forewing with inner half of clavus orange-red, outer half leaf-green, fuscous near apical end; an orange-red stripe on corium contiguous to claval suture, a black spot near first crossnervure, veins darker toward apex of wing. Thoracic venter and sides straw-colored, legs stramineous except brown apex of hind tibia; basal abdominal sterna blackish, apical ones, paler, valve and plates pale green. Length: 3.8 mm. (See figs. 27 and 28).

Male genitalia: style widest near center on lateral aspect; connective shallowly concave on basal margin; aedeagus slender, almost straight, inclined cephalad, with about eight small striations dorsally near apex; pygofer quadrangular, with an internal blunt hook on caudo-ventral angle (figs. 22, 23, 24, 25, 26).

Idioceropsis bakeri (Osb.), I. principensis (Osb.), I. figuratus (Osb.), I. carmenae sp. nov., and I. aurantilinesatus sp. nov. are green species lined with orange-red but as can be seen in the key their patterns of lines are different. The last two species have reddish longitudinal stripes on the forewings but their patterns of stripes on the head and pronotum are different. The shape of the aedeagus of
I. multilineatus is similar to that of I. principensis (Osb.) and I. himertus sp. nov. but the pygofer is very different.

Holotype - male, collected in the savanna of Culebra, April 7 - 16, 1950, in U. S. National Museum (Cat. No. 62843).

Idioceropsis carmenae sp. nov.

Female: crown short, slightly longer next to eyes than at middle, face longer than wide, lateral margin of clypeus gently arcuate, lateral suture of clypeus not attaining ocellus; clypellus slightly expanded distally, almost twice as long as wide; lora reaching to about mid length of lateral edges of clypeus. Pronotum twice as long as crown, two and one-half times as wide as long, hind margin almost straight; scutellum longer than pronotum. Crown green with two transverse elongate orange-red spots, face with these two spots visible and two more of same color and shape just above ocelli, portion below ocelli stramineous except clypellus that is brownish apically; pronotum with four equidistant longitudinal orange-red stripes, inner two constricted at middle, outer two shorter; scutellum pale green, with stramineous spot on disc; forewing with broad orange-red stripe along inner margin of clavus, contiguous to this a broad leaf-green band, remaining parts of clavus along outer margin transparent; claval suture tinted with orange-red; costal margin green, a conspicuous brown spot at base and another at first crossnervure, veins fuscous toward apex, a small portion of R opposite end of clavus ivory white. Thoracic venter and sides, and legs stramineous, apex of hind tibia fuscous; abdominal sternum yellowish, seventh sternum with a small brownish area near center of hind margin,
pale green; pygofer straw-colored with a longitudinal brownish stripe on center; ovipositor light brown, darker toward base. Length: 5.2 mm. (See figs. 29, 30.)

Female genitalia: seventh sternum broadly and shallowly concave behind, ovipositor one and one-half times as long as abdominal sterna combined (fig. 31).

This species belongs to the group of those prominently lined with orange-red that are discussed and compared above with *Idioceropsis multilineatus* sp. nov. to which it is closely related but separable by the coloration of the head and abdominal sterna, and size.

Holotype — female, collected from the savanna of Culebra, north of Mount Duida, April 7 - 16, 1950 in the U. S. National Museum (Cat. No. 62344).

*Idioceropsis multilineatus* sp. nov.

Male: crown short, slightly longer next to eye than at center; face slightly longer than wide, lateral edges of clypeus gently arcuate, extremities of clypeus almost reaching ocelli; clypellus very slightly widened distally, sides almost straight, nearly twice as long as basal width; lora reaching to middle of lateral edges of clypeus; gena with slight indentation on margin near middle. Pronotum twice as long as crown, slightly more than twice as wide as long, hind margin almost straight; scutellum longer than pronotum. Crown with an inverted J-shaped fuscous spot near each eye, this spot may appear as two smaller spots, a small spot on either side of median line, and median slender longitudinal stripe; face with one square area black and spotted with
low above ocellus, an inverted T-shaped black fascia medianly from ocelli to crown, lower part of clypeus with incomplete fuscous
black spot between base of antenna and eye; clypellus brown; lora
darker toward apex; gena with a large round black spot under;
orange markings near ocelli and below upper lateral edges of peus. Pronotum with pale yellowish margin, disc grayish, with four
erior black spots; scutellum pale yellowish, with a triangular brown
t near basal angles; forewing transparent, with a light brownish
g, veins dark, base of clavus yellow, costal margin broad and
ish. Mesepisternum black, other portions of sides and venter of
ax stramineous; legs straw-colored, hind tibia greenish; abdominal
na light brown with whitish margins, valve similarly colored, plates
ish. Female: with similar pattern of black spots but the ground
is darker so the pattern is less striking, without orange spots
face; abdominal sterna brown, ovipositor dark brown; costal area
ish, claval suture with a black spot near base. Length: male
mm., female 5.8 mm. (See figs. 36, 38, 39, 40.)

Male genitalia: style with well developed long and stout inner
dal process, with three groups of short setae above; connective
llowly concave on basal margin; aedeagus in lateral aspect with a
base and with the terminal half slender and almost at right angle
the basal half, with a caudally pointed serration above the basa
f; pygofer semicircular, notched above and below on posterior margin
s. 32, 33, 34, 37). Second abdominal sternal apodeme reaching to
of third abdominal sternum, triangular (fig. 35).
Two other species, *Idioceropsis intricatus* (Osb.) and *I. maculifrons* (Osb.), have similar intricate designs of spots on the face; *I. intricatus* (Osb.) is different in having the crown with seven spots and *I. maculifrons* in having six spots on the pronotum.


*Idioceropsis aurantilineatus* sp. nov.

Male: crown short, slightly longer at center than next to eye; face longer than wide, lateral margins of clypeus slightly arcuate, their dorsal extremities not reaching ocelli; clypellus with basal width two-thirds its length, sides almost straight, as wide at base as at apex; lora reaching to middle of lateral margins of clypeus; gena with slight indentation on lateral margin near middle. Pronotum slightly less than twice as long as crown, over three times as wide as long, hind margin shallowly concave; scutellum nearly twice as long as pronotum. Crown leaf-green, with a broad anterior transverse orange-red band; face above upper lateral suture of clypeus leaf-green, above ocellus with a quadrangular orange-red spot; eyes orange-red, remaining portions of face stramineous; pronotum leaf-green, with wide orange-red transverse band extending to basal angles of scutellum; scutellum leaf-green, with a small orange spot near center and a triangular straw-colored spot near basal angle; clavus leaf-green, with a narrow orange longitudinal stripe on inner side, corium with an orange-red longitudinal stripe ad-
jacent to the clavus, costal margin with a small greenish spot near base, costa not very wide, remaining portions of forewing transparent, veins orange; thorax, legs, sterna, and genitalia stramineous. Length: 4.9 mm. (See figs. 47, 48.)

Male genitalia: style wide behind middle, with a deep depression on outer apical margin in front of inner process; connective shallowly concave on basal margin; aedeagus narrower near apex, apex with a small hook projecting cephalad and one slender appendage on either side; pygofer with a long upcurved internal process arising from the lower posterior angle (figs. 41, 42, 43, 44, 46). Second abdominal sternal apodeme reaching to apex of fourth sternum, elongate, inner margin undulate (fig. 45).

Like *Idioceropsis bakeri* (Osb.), *I. multilineatus* sp. nov., *I. principensis* (Osb.), *I. figuratus* (Osb.), and *I. carmenae* sp. nov. this species is lined with orange-red, but the transverse band on the crown will separate this species from them. *I. himertus* sp. nov. also has a transverse band on the crown but does not have the inner margin of the clavus red. The genitalia of *aurantilineatus* sp. nov. are different from those of all these species.

Holotype - male, collected in the savanna of Culebra, north of Mount Duida, April 7 - 16, 1950, in the U. S. National Museum (Cat. No. 62846).

*Idioceropsis oncercus* sp. nov.

Male: crown relatively long, very slightly longer at middle than
next to eye; face longer than wide, lateral margin of clypeus suddenly curved mesad near clypellus, clypeus tumid at apex; lateral suture of clypeus not reaching ocellus; clypellus longer than wide, widened distally, sunken, with a few very short setae; lora reaching above middle of lateral margins of clypeus, inflated. Pronotum slightly more than twice as long as crown, three times as wide as long, hind margin very shallowly concave, scutellum as long as pronotum and crown combined. Crown straw-colored, with a very faint darker mesal stripe; face uniformly light brown, gena lighter apically; pronotum stramineous, anteriorly with two irregular dark spots on either side of faint brownish median line; scutellum stramineous, with darker triangular spots near basal angles; forewings transparent, stramineous, each with fulvous basal area, a small fulvous spot on base of inner anteapical cell, larger fulvous areas at the end of the clavus and apex of wing, veins faint. Thoracic venter and sides, and legs stramineous; abdominal sterna yellowish. Female: body proportions and coloration as in male; seventh abdominal sternum brownish, pygofer yellowish, ovipositor brownish. Length: male 3.5 mm., female 3.8 mm. (See figs. 54, 55, 56.)

Male genitalia: style in dorsal aspect much broader than in any of the other species, inner apical process long, two outwardly projecting processes in front of apical process of shank of style; connective deeply concave on basal margin; aedeagus long, slender, curved cephalad; pygofer almost triangular, with a long process projecting downward from apex (figs. 49, 50, 51, 52, 57). Second abdominal sternal apodeme reaching to apex of third sternum, tapering to apex that curves
slightly mesad on its longitudinal axis (fig. 53).

The uniform brownish coloration of the body, the fulvous spots on the forewings and the swollen lora will suffice to separate this species from any other in the genus. The aedeagus of this species somewhat resembles those of *Idioceropsis cuprinus* sp. nov., *I. albicollis* (Osb.), and *I. myrciae* (Caldwell) but otherwise the genitalia are very different.

Holotype - male and allotype female, from San Fernando de Atabapo, June 5, 1950, in the U. S. National Museum (Cat. No. 62847).

*Idioceropsis himertus* sp. nov.

Male: crown short, as long at center as next to eye; face longer than wide, lateral margins of clypeus slightly angular at a point closer to clypellus than to antenna; lateral suture of clypeus reaching to ocellus; clypellus almost twice as long as basal width, widened distally; lora reaching to middle of lateral margins of clypeus; lateral genal margin shallowly concave. Pronotum about four times as long as crown, not twice as wide as long, hind margin very shallowly concave, almost straight; scutellum one third longer than pronotum. Crown leaf-green, with a broad anterior orange-red transverse band; face stramineous from below the band to the lower margin of the head, each ocellus in a brownish small spot, lower margin of head brownish; first segment of beak with brown sides, last segment straw-colored; pronotum green with a transverse wavy orange-red band on anterior third; scutellum green, with yellowish spot near basal angle, apex dark brown; forewing transparent, tinged with brown, a whitish spot on outer apical cell, basal
angle of corium green, costal margin wide, veins brownish except in two or three small areas near apex. Thorax on sides and venter, and legs stramineous, apex of hind tibia and its row of stouter spines brown; abdominal sterna and valve yellowish, infuscated before margin and with margin whitish, plates yellowish with small oval spot on basal angles.

Female: crown short, as in male; face slightly longer than wide, lateral margins of clypeus arcuate; lateral suture of clypeus attaining ocellus; clypellus with basal width two-thirds its length, expanded distally; lora reaching to middle of lateral margin of clypeus. Pronotum as in male; scutellum slightly longer than pronotum. Color of head, pronotum, scutellum, forewing, thoracic pleurae and sterna, legs, and abdominal sterna as in male; genital segments stramineous. Length: male, 5.8 mm., female, 6.3 mm. (See figs. 63, 64.)

Male genitalia: apex of inner apical process of style not rounded as in the other species, lobed; aedeagus slender, slightly arcuate, with about ten striations on upper surface near apex; pygofer wider than long, without accessory processes, with very small spines on posterior margins (figs. 58 to 61). Second abdominal sternal apodeme reaching to base of fourth sternum, rectangular, with two rounded concavities on inner margin (fig. 62). Female genitalia: hind margin of seventh sternum straight (fig. 65).

This species and *Idioceropsis aurantilineatus* sp. nov. have very similar color patterns on the head and pronotum; the latter has the inner margin of clypeus and the claval suture reddish, and the genitalia are different. The contrast of the green crown, pronotum, and scutellum
with the fuscous wing is striking. The aedeagus of *I. principensis* (Osb.) and *I. multilineatus* sp. nov. are similar to that of *I. himertus* sp. nov. but other parts of the genitalia differ.

Holotype - male, collected along the shores of the upper Cunucunuma River, 10 to 12 kms. east from the savanna of Culebra, April 20, 1950, in the U. S. National Museum (Cat. No. 62848). Allotype - female, from the savanna of Culebra, north of Mount Duida, July 1 - 4, 1950, in the U. S. National Museum.

**Idioceropsis cuprinus** sp. nov.

Male: crown wide, longer at center than next to eye; face slightly longer than wide, lateral margin of clypeus straight, its dorsal extremity not reaching ocellus; clypellus slightly longer than basal width, slightly wider at base than at apex; lora reaching to middle of lateral margin of clypeus, apically separated from genal margin. Pronotum less than twice as long as crown, slightly more than twice as wide as long, hind margin almost straight; scutellum slightly longer than pronotum. Crown green, with two wide coppery spots extending ventrad to ocelli; face below ocelli light brown; pronotum with four fulvous or coppery short longitudinal stripes, with narrow orange-yellow areas on anterior margin behind eyes, lateral margins brownish, remaining parts greenish; scutellum coppery, with a black triangular spot on each basal angle, disc with two contiguous round spots; forewing with a light fulvous tinge to blackish narrow stripe across wing from tip of clavus to costal margin, thence hyaline to apex, costal margin yellowish to about middle, thence fuscous to apex, veins
inconspicuous. Thorax on sides and venter black; legs dark straw-colored; hind femur blackish; abdominal sterna blackish brown with narrow yellowish apical margin, valve brownish with yellow margin. Female: clypellus slightly wider at apex than at base; details of crown and clypeus as in male; pronotum three times as long as crown, slightly more than twice as wide as long, hind margin almost straight; scutellum as in male. Crown, face, pronotum, and scutellum colored as in male, but with green areas darker; forewing, thorax on sides and venter, and abdominal sterna as in male; pygofer brown with yellow apex, ovipositor black. Length: male 3.3 mm., female 3.35 mm. (See figs. 71, 72.)

Male genitalia: styles narrow, slender, with well developed apical process, above with a row of short setae from about middle to apex; aedeagus slender, curved, wider near base; pygofer triangular, the apical angle with a short upwardly produced process (figs. 66 to 69). Second abdominal sternal apodeme reaching to middle of third sternum, inner margin zigzag, outer roundly curved to tip on inner side (fig. 70). Female genitalia: hind margin of seventh sternum straight (fig. 73).

This beautiful coppery and green small species is similar to _Idioceropsis acuminatus_ (Osb.), _I. areatus_ (Osb.), _I. fulvus_ (Osb.), _I. quadrangularis_ (Osb.), and _I. parvulus_ (Osb.) in having two large spots on the upper face. The genitalia of _I. parvulus_ (Osb.) are different. The other four species can be separated by color details of the head, pronotum, wings, and by the genitalia. Some of the paratypes present the following color variation: pronotum green or olive green with two faint longitudinal coppery stripes not reaching the apical margin, wider on the basal half and separated by a space about one-half
their basal width. These spots are not well defined if the ground color of the pronotum is olive green. The genitalia show no variation.

Holotype - male, allotype female, and two male paratypes, from the northern slopes of Mount Marahuaca, May 1 - 25, 1950, in the U. S. National Museum (Cat. No. 62849). One male and one female with same data in author's collection.

_idioceropsis trimaculatus_ sp. nov.

**Male:** crown moderately long, median length equal to length next to eyes; face slightly wider than long, lateral margin of clypeus slightly arcuate, its dorsal extremities not reaching ocelli; clypellus longer than basal width, wider apically than at base; lora reaching to middle of lateral margin of clypeus, separated from outer genal margin. Pronotum two and one-half times as long as crown, three times wider than long, hind margin shallowly concave; scutellum longer than pronotum. Crown green, with two wide fulvous spots not reaching to ocelli; ocelli surrounded by reddish spots; face below ocelli stramineous; pronotum fulvous with oval area behind each eye and short anterior median longitudinal stripe greenish; scutellum pale greenish, basal angles fulvous, with darker triangular spot near each basal angle; forewing with pale brownish tinge, darker at apex, translucent, costal area greenish, longitudinal veins of two inner apical cells brownish; appendix fuscous, darker where it meets the clavus. Thoracic pleura and sterna, and abdominal sterna straw-colored or very pale green. Length: 3.4 mm. (See figs. 77, 78, 80.)

Male genitalia: style with inner apical process elongate, flat-
tended dorsoventrally at apex, with sinuate apical margin; aedeagus very slender, with a bulbous swelling near middle, curved cephalad near apex; pygofer quadrangular, upper margin sinuate above near apex, and with a spine-like inner process (figs. 74, 75, 76, 81, 82). Second abdominal sternal apodeme reaching to middle of third sternum, angularly bent near middle, slender (fig. 79).

This species belongs in the same group as *Idioceropsis* cuprinus sp. nov. and is also closely related to the same five species discussed under that species. It can be separated from the first species by the greenish sterna and from the others by slight color differences, as pointed out in the key, and by means of the genitalia.

Holotype - male, upper Cunucunuma River, 10 to 12 kms. north from Mount Marahuaca, April 28, 1950, in U. S. National Museum (Cat. No. 62850).

*Idioceropsis* cristulatus sp. nov.

Male: crown short, longer next to eyes than at center; face longer than wide, lateral margins of clypeus almost straight, their dorsal extremities not reaching ocelli; clypellus twice as long as basal width, widened distally, clypeal suture obsolete; lora reaching above middle of lateral margins of clypeus. Pronotum almost three times as long as crown, more than twice as wide as long; scutellum longer than pronotum and crown together. Crown, face, and pronotum green; scutellum green with stramineous triangular spot near basal angle; forewing transparent, with a light brown tinge, veins brownish, a small dark area on appendix close to claval apex. Thoracic pleura and sterna, and legs
light green, spines on hind tibia brownish; abdominal sterna light brownish. Length: 4.7 mm.

Male genitalia: style short, apical process very large compared with the rest of the style; aedeagus in lateral aspect stout at base, angularly bent at two points, with a small crest-like projection near apex; connective with basal margin deeply concave; pygofer triangular, upper margin with a spatulate internal projection (figs. 83 to 86). Second abdominal sternal apodeme reaching to apex of third sternum, subtriangular, as in figure 87.

This species is somewhat similar to Idioceropsis rotundifrons (Osb.) but the latter species lacks the dark spot near the disc of the forewing. Face, crown, and prothorax are uniformly green as in I. ocellatus (Osb.) but I. cristulatus sp. nov. is longer and has the veins of the forewing brownish as pointed out in the key; the genitalia of these two species are very different. I. cristulatus is somewhat similar to I. venezolanus sp. nov.

Holotype - male, collected on the northern slopes of Mount Marahuaca, May 1 - 25, 1950, in U. S. National Museum (Cat. No. 62851).
Paratypes - 2 males, one from savanna of Culebra, April 7 - 16, 1950, and the other with same data as holotype in the author's collection.

Idioceropsis venezolanus sp. nov.

Male: crown short, as long at middle as next to eye; face longer than wide, lateral margins of clypeus slightly arcuate; their dorsal extremities almost reaching ocelli; clypellus nearly twice as long as basal width, expanded distally; lora reaching above middle of lateral margins
of clypeus. Pronotum three times as long as crown, slightly over two and one-half times as wide as long; scutellum longer than pronotum and crown combined. Crown, face, and pronotum green, ocelli surrounded by brownish spot; scutellum light brownish with green apex; forewing transparent, with a light brown tinge, veins brownish. Thoracic pleura and sterna, and legs pale green or stramineous; abdominal sterna light green with blackish margins. Length: 5.3 mm. (See figs. 92, 93.)

Male genitalia: style long and slender, with an outward projection near middle; aedeagus sickle-shaped; pygofer produced apically, with an internal sharp inwardly curved spine near apex (figs. 88, 89, 90, 94). Second abdominal sternal apodeme reaching to base of fourth sternum, elongate, slender, and incurved at apex (fig. 91).

The type material of this species displays three different general body colors: stramineous, pale green, and light brown. This species resembles *Idioceropsis cristulatus* sp. nov. and *I. rotundifrons* (Osb.) and can be separated from these by details on the wing as pointed out in the key and by the genitalia.

Holotype - male, and one male paratype from savanna of Culebra, north of Mount Duida, April 7 - 16, 1950, in U. S. National Museum (Cat. No. 62852). One male paratype from the northern slopes of Mount Marahuaca, May 1 - 25, 1950, deposited in the author's collection.

*Idioceropsis bilineatus* sp. nov.

Male: crown slightly longer at middle than next to eye; face slightly longer than wide, lateral edge of clypeus straight, its upper
extremities not reaching ocelli; clypellus slightly wider at base than at apex, one and one-half times as long as basal width; lora not reaching to middle of lateral edges of clypeus. Pronotum slightly less than twice as long as crown, over twice as wide as long, hind margin shallowly concave at middle; scutellum longer than pronotum. Crown green, with two broad coppery-red longitudinal stripes extending over margin to the inner margins of ocelli, a narrow inconspicuous yellowish band from ocellus to ocellus; ocelli each surrounded by a reddish spot; rest of face stramineous, slightly darker near antennal bases; pronotum deep green with two coppery-red longitudinal stripes continuous with those on the crown; scutellum pale green; clavus with inner half pale coppery-red, outer half green; membrane translucent, with a light brown tinge, costal margin greenish, veins inconspicuous. Thoracic pleura and sterna, and abdominal sterna pale greenish-yellow. Length: 3.2 mm. (Figs. 99, 100.)

Male genitalia: inner posterior process of style long, almost one-third of total length of style, ending in a sharp point; connective with sides undulate, basal margin slightly concave; aedeagus with broad base, apical portion slender, almost vertical, base with a posterior decurved, accessory projection pointed caudad; pygofer triangular, with apical angle bilobed, upper lobe with a sclerotized projection on inner surface with a U-shaped apical indentation; inner surface of plate with a knob-shaped structure, against which the inner posterior process of the style seems to rest (figs. 95, 96, 97, 101). Second abdominal sternal apodeme short, reaching to middle of third abdominal sternum,
This species resembles *Idioceropsis viridicatus* (Osb.) but the longitudinal stripes on the pronotum do not meet anteriorly as they do in the latter. The aedeagus of this species differs from all other species in having a long accessory projection pointing caudad.


**Idioceropsis hyalinus** (Osborn) n. comb.


Male: crown short, anterior and posterior margins parallel; face longer than wide; lateral margins of clypeus almost straight, lateral extremities reaching ocelli; clypellus widened distally, nearly twice as long as basal width; loral elongate, reaching above center of lateral edge of clypeus. Pronotum three times as long as crown, over twice as wide as long, hind margin shallowly concave, scutellum longer than head and pronotum combined. Crown greenish yellow, with median anterior longitudinal black line; face with a broad sinuate black band extending between eyes, ocelli each surrounded by a black dot, remainder of face pale stramineous; pronotum greenish yellow, with a broken median dark line, two dark triangular spots near hind margin, two oval transverse brownish spots near anterior border a little nearer to the midline; scutellum greenish, with triangular fulvous patches on basal angles and across hind part of disc; forewing transparent, with a black dot on basal angle, costal margin greenish, all veins brownish. Length:
Male genitalia: style much broader near apex than basally, inner apical process stout; aedeagus stouter at base, gradually tapering to the beginning of the bent apical half, crested near apex; connective deeply concave on basal margin; pygofer triangular, with a deep notch near apex on upper margin and a broad appendage curving upward that seems to fit into the notch. (figs. 102, 103, 104, 105, 108).

The aedeagus and style of this species are similar to those of \textit{Idioceropsis cristulatus} sp. nov. but they can be easily separated by the shape of the pygofer. Osborn states that \textit{Idiocerus duzei} Provancher has some resemblance to \textit{Idioceropsis hyalinus} (Osb.)


\textit{Idioceropsis quadrangularis} (Osborn) \textit{n. comb.}


Female: crown very slightly longer at center than next to eyes; face in profile uniformly curved from crown to tip of clypellus, as long as wide, lateral margins of clypeus arcuate, their dorsal extremities not reaching ocelli; clypellus one and one-half times as long as basal width, slightly wider at apex than at base; lora reaching above middle of lateral margin of clypeus, slightly swollen. Pronotum about twice as long as crown, nearly three times as wide as long, hind margin shallowly concave; scutellum one-third longer than pronotum. Crown light green with two bracket-shaped fulvous spots; clypeus straw-colored, lateral margins black; clypellus infuscated; antennal sockets black;
pronotum light green, with four faint reddish longitudinal stripes, tinged with reddish at sides; scutellum brownish green basally, apex light green, a triangular black spot near each basal angle; forewing transparent, with a brownish smoky tinge, base of costa brown, base of costal cells and costal vein green. Pleura, abdominal sterna, and coxae blackish, legs greenish, hind femur and tip of tibia brownish; pygofer dull green, ovipositor brownish. Length: 4.0 mm. (See figs. 109, 110.)

Female genitalia: anterior and posterior margins of seventh sternum not straight, slightly angled inwardly (fig. 111).

The very distinctive bracket-shaped spots on the crown suffice to separate this species from others.

Holotype - and three paratypes females, from Provincia del Sara, Bolivia, December 1913, Steinbach collector, in the Carnegie Museum (Acc. No. 5064); one female paratype from Villa Bella, Bolivia in Carnegie Mus.

Idioceropsis acuminatus (Osborn) n. comb.


Female: crown short, very slightly longer at middle than next to eye; face longer than wide, lateral edges of clypeus arcuate, their upper extremities reaching half way to ocelli; clypellus very slightly widened distally, sides almost straight, one and one-half times as long as basal width; lora reaching to middle of lateral edges of clypeus, swollen. Pronotum more than twice as long as crown, slightly more than three times as wide as long, hind margin concave; scutellum as long as pronotum and crown combined. Crown green, with one broad fulvous transverse band partially divided above on median line; remainder of face, pronotum, and scutellum light green, unmarked; forewing trans-
parent, with a greenish tinge, veins inconspicuous. Sides and venter of thorax, legs, and abdomen greenish. Length: 4.0 mm. (See figs. 112, 113)

Female genitalia: hind margin of seventh sternum concave (fig. 114).

Osborn wrote "size and form of areatus sp. nov. but with no markings on pronotum and the spots of the crown meeting at the middle."

Idioceropsis fulvus (Osb.), I. quadrangularis (Osb.), I. parvulus (Osb.) and I. cuprinus sp. nov. are similar to this species but their two spots on the crown are separate; other details on the pronotum and forewing as pointed out in the key will separate these species.


Idioceropsis flavidus (Osborn) n. comb.


Male: head slightly wider than pronotum; crown with anterior and posterior margins parallel; face slightly longer than wide, lateral edges of clypeus strongly curved, lateral sutures of clypeus not attaining ocelli; clypellus widened distally, slightly longer than apical width; lora reaching to about middle of lateral edge of clypeus. Pronotum three times as long as crown, almost three times as wide as long, hind margin almost straight; scutellum slightly longer than crown and pronotum combined. Crown, pronotum, and scutellum light yellow, unmarked, strongly contrasting with black basal parts of forewing; face unmarked, faintly tinged with fulvous; ocelli black; forewing translucent, blackish, small areas near apex, and appendix whitish, inner margin of clavus almost opaque black to apex of scutellum, thence
brownish to apex, costal margin and apical cells opaque black, veins brown on white areas of wing. Thorax on sides and venter, legs, and abdominal sterna yellowish; tips of plates brownish. Length: 4.5 mm. (See fig. 118.)

Male genitalia: styles very narrow on dorsal aspect, with outer caudal process broad and well produced caudad; aedeagus with well developed base, apical three-fourths very slender and curved in such a way that its apex extends under the base; connective shallowly concave on basal margin; pygofer triangular, with a long, pointed inwardly curved accessory process from middle of lower margin (figs. 115, 116, 117, 120). Second abdominal sternal apodeme reaching to apex of third sternum, rectangular, inner margin straight, outer margin S-shaped (fig. 119).

_Idioceropsis flavidus_ (Osb.) and _I. maricensis_ (Caldwell) can be distinguished from all the other species of the genus by the yellow of the head, pronotum, and scutellum strongly contrasting with the black basal parts of the forewing. The former has the gena of the same color of the face and _I. maricensis_ (Cald.) has the gena and lora blackish.


_Idioceropsis maculifrons_ (Osborn) n. comb.


Male: head much wider than pronotum; crown relatively long, with anterior and posterior margins parallel; face one and one-half times
longer than wide; lateral edge of clypeus almost straight; lateral suture of clypeus not reaching ocellus; clypellus slightly widened basally, one and one-half times longer than wide; lora reaching to middle of lateral margin of clypeus. Pronotum over two and one-half times as long as crown, slightly more than twice as broad as long, hind margin almost straight; scutellum equal in length to crown and pronotum combined. Crown greenish yellow, with brownish central median line and a round spot near each eye; face with a broken transverse band between eyes and another across ocelli; clypeus with arcs near middle, apex brown; clypellus black; lora and genae greenish, one black spot on margin below each eye; pronotum on disc with six black spots arranged one, two, and three, pale fuscous area behind each eye, small brownish spot near lateral margin. Scutellum with one blackish triangular spot on each basal angle, medianly with two brownish broken longitudinal stripes; forewing transparent, veins whitish with alternating black and blackish brown short spots. Thorax on sides and venter greenish yellow, with scattered fuscous areas; abdominal sterna and genital plates fuscous with whitish apical margins; valves fuscous, darker toward apex. Length: 5.5 mm. (See figs. 125, 126.)

Male genitalia: styles on dorsal aspect constricted after middle, posterior accessory lobes extending laterad; aedeagus in lateral aspect narrower at both ends, wider on basal third, apex slender, with very minute serrations on upper surface, gonopore opening ventrally before apex; connective deeply concave on basal margin; pygofer triangular, with a sharp point near posterior angle projecting caudad (figs. 121 - 124).
Second abdominal sternal apodeme reaching to middle of third abdominal sternum, inner margin straight to apex, outer arched to apex (fig. 127).

The striking pattern of blackish dots on the face and the six black spots on the pronotum suffice to distinguish this species from *Idioceropsis multimaculatus* sp. nov. and *I. intricatus* (Osb.) the other two species with as many markings on the face.

Holotype - male, from Taperina, Brazil, in Carnegie Museum (Acc. No. 2966), H. H. Smith collector.

**Idioceropsis minutus** (Osborn) n. comb.


Female: crown moderately long, front and hind margins parallel; face slightly longer than wide, lateral edge of clypeus arcuate; lateral suture of clypeus not reaching ocellus; clypellus as wide at base as at apex, less than twice as long as wide; lora reaching to middle of lateral edge of clypeus. Pronotum almost three times as long as crown, nearly three times as wide as long, hind margin concave; scutellum as long as crown and pronotum combined. Overall color gray; crown with a short fuscous mesal line basally, with two blackish dots closer to eyes than to each other, each enclosed in L-shaped reddish bar; frons marked with reddish brown bars, each forming an indistinct bracket-shaped spot with black dot at center; ocelli blackish or reddish; clypeus with a row of short fuscous arcs on each side; blackish dot at base of lora; pronotum with two longitudinal very faint reddish stripes; some fused blackish dots behind eye, near lateral margin with very pale reddish area; scutellum dull yellowish, black triangular spot on basal angle, a dark
irregular area on disc; forewing hyaline, veins mostly indistinct, outer vein of clavus fuscous, veins and cross vein on disc of forewing infuscated; thorax on sides and venter blackish, legs dull yellowish; basal portions of abdominal sterna blackish, apical portions yellowish; last ventral segment fuscous; ovipositor and pygofer dull yellowish. Length: 3.0 mm. (See figs. 128, 129.)

External female genitalia: seventh sternum narrow, hind margin straight; ovipositor longer than rest of abdomen; pygofer with a pair of long setae near apex (fig. 130).

A very small wedge-shaped species, dark gray, marked with reddish and brown, and easily distinguished from other species by its color pattern.

Holotype and paratype - females, from Chapada, Brazil, November, collector unknown, in Carnegie Museum (Acc. No. 2966).

*Idioceropsis rotundifrons* (Osborn) n. comb.


Female: crown relatively short, anterior and posterior margins parallel; face longer than wide, lateral edge of clypeus gently arcuate; lateral sutures of clypeus not extending to ocelli; clypellus slightly widened distally, length slightly more than twice basal width; lora reaching to above middle of lateral edges of clypeus. Pronotum three times as long as crown, nearly two and one-half times as wide as long, hind margin slightly arcuate; scutellum slightly longer than crown and pronotum combined. Head, thorax on sides and below, and legs dull yellowish or greenish, probably pale green in life, without markings
except that the dark ocellus is in a blackish dot; forewing hyaline
with faint iridescent reflections, a small black dot basally on com-
missural line; costa at base yellowish, veins indistinct; abdominal
sterna fuscous; ovipositor fuscous, darker toward apex. Length: 5.0 mm.

External female genitalia: seventh sternum deeply cleft medianly
(fig. 131).

This species is similar to *Idioceropsis beryllinus* sp. nov., *I.
cristulatus* sp. nov., *I. venezolanus* sp. nov., *I. fulvotinctus* (Osb.),
and *I. rotundifrons* (Osb.) and can be separated from them by the cha-
acters mentioned in the key. See also the discussion under *I.
beryllinus* sp. nov.

Holotype - female, from Brazil, along Rio Guaporé, August 22,
1909, Haseman collector, in the Carnegie Museum (Acc. No. 4043).

*Idioceropsis areatus* (Osborn) n. comb.


Female: crown relatively short, anterior and posterior margins
parallel; face slightly longer than wide, lateral suture of clypeus not
attaining ocellus, lateral margin of clypeus faint on upper half,
slightly angularly bent near middle, thence straight to clypellus;
clypellus not quite twice as long as basal width, slightly wider at
apex; lora not very well defined, reaching to middle of lateral margins
of clypeus; gena inflated where it meets the lorum. Pronotum three
times as long as crown, two and three-fourths times as wide as long,
hind margin concave; scutellum much longer than crown and pronotum
combined. Crown light greenish, with two trapezoidal reddish spots, their outer margins concave, almost reaching to ocelli; ocellus and inner margin of eye reddish; faint inconspicuous reddish spot under each ocellus, remainder of face greenish; pronotum greenish with a broad L-shaped reddish marking on each side, the short limb of the L parallel to the middle line; scutellum with faint discal mark, a fulvous triangular spot on each basal angle; forewing hyaline, veins inconspicuous, base of clavus with a greenish opaque elongate area, costal margin greenish, apex faintly smoky. Thoracic sides and venter greenish; legs and ovipositor testaceous; apex of hind tibia and tarsal claws dark. Length: 4.0 mm. (See figs. 132, 133.)

External female genitalia: seventh sternum very short, hind margin shallowly concave; ovipositor extending about one-fourth its length beyond the pygofer; ovipositor twice as long as abdominal sterna together.

This species is related to all the species having two spots on the head. It can be separated from them by the characters mentioned in the key, the coloration of the ventral sclerites, and the elongated female genitalia. One of the paratypes of Idioceropsis fulvus (Osb.) has been examined and found to be a specimen of I. areatus (Osb.). This specimen differs from the holotype of I. areatus (Osb.) as follows: the spots on the head are united above and below by narrow transverse bands, the pronotal markings more angular, the abdominal sterna blackish on basal halves and the pygofer blackish dorsally. It can not be considered as I. fulvus as the spots on the crown and pronotum do not agree in any
respect with those of the holotype of I. fulvus.


**Idioceropsis fulvus** (Osborn) n. comb.


Female: crown short, anterior and posterior margins parallel; face slightly wider than long, lateral sutures of clypeus not attaining ocelli, lateral margin of clypeus gently arcuate, slightly tumid near apex; clypellus very slightly widened distally, one and one-fourth times as long as basal width, apical margin shallowly bilobed; lora reaching to middle of lateral margins of clypeus, slightly inflated, gena elevated where it meets the lorum. Pronotum strongly arched in front, over three times as long as crown, two and one-half times as wide as long, hind margin concave; scutellum longer than crown and pronotum combined. Crown light yellow, with two large quadrate fulvous areas extending over margin to ocelli, somewhat narrowed below, separated by a narrow greenish stripe, remainder of face pale greenish; pronotum tinged with fulvous, somewhat lighter behind eyes and laterally; scutellum greenish; forewing transparent, with a very pale yellowish tinge, veins inconspicuous, apex faintly smoky; venter including thorax, legs, abdominal sterna and genitalia pale greenish. Length: 5.0 mm. (Figs. 134, 135.)

Female genitalia: posterior margin of seventh sternum concave; ovipositor over twice as long as abdominal sterna together; ovipositor extending about one-third its length beyond the pygofer (fig. 136).

This species is related to *Idioceropsis areatus* (Osb.), and the
other small species having two spots on the face. It can be separated from them by the characters in the key. A specimen deposited by Osborn as a paratype of this species has been identified as *I. areatus* (Osborn).

Holotype - female, from Chapada, Brazil, collected by H. H. Smith, November, in Carnegie Museum (Acc. No. 2966).

*Idioceropsis intricatus* (Osborn) n. comb.


Male: crown moderately long, slightly longer at middle than next to eyes; face slightly longer than wide, lateral sutures of clypeus not attaining ocelli, lateral margins of clypeus gently arcuate; clypellus widened distally, campanulate, less than twice as long as basal width, surpassing the genal margin; lora reaching to middle of lateral margins of clypeus. Pronotum strongly convex in front, slightly over twice as long as crown, two and one-half times as wide as long, hind margin straight; scutellum slightly longer than crown and pronotum combined; forewing much exceeding the body. Crown yellowish, tinged with green, a short fuscous mesal line on hind margin, four elliptical orange spots on disc, a smaller round fuscous spot next to each eye; face with one transverse broken bar above and below the ocelli, the orange and mesal spots on crown visible, two rows of brownish spots from below lower transverse band to apex of clypeus, lateral clypeal margin fuscous; clypellus with a brownish elongate spot on base and a narrow transverse spot on apex; each lorum with small inconspicuous rounded reddish dot near center; antennal pit and gena above lorum fuscous; beak blackish. Pronotum yellowish with a greenish tinge, with two longitudinal red-
dish-brown stripes on disc, a smaller transverse spot laterad to the stripes, a short mesal fuscous line on hind margin, lateral margins narrowly black; scutellum with large triangular fuscous spot near each basal angle, central line and suture on disc fuscous; forewing mostly translucent, claval veins brownish, a dot at base and one on first cross vein brownish, apical half of wing, except apical costal cell, brownish, veins on inner half whitish, those on outer half concolorous or deeper brown. Thoracic pleura and sterna, legs and abdominal sterna yellowish, genital segments fuscous. Length: 4.5 mm. (Figs. 141, 142.)

Male genitalia; style on lateral aspect with posterior inner process erect basally, the outer side with posterior margin produced upward, and with numerous setae apically; connective with basal margin deeply concave; aedeagus straight and tapering apically, bent cephalad near apex; pygofer subtriangular, with a translucent, irregular membranous area near posterior margin, inner margin of apex very irregular (figs. 137, 138, 140, 143).

The only other species with such an intricate design of spots on the face are *Idioceropsis alimaculatus* sp. nov., *I. maculifrons* (Osborn), and *I. minutus* (Osborn); these can be separated by the characters given in the key (see the discussion under the first mentioned species).

Holotype - male, from Chapada, Brazil, October, H. H. Smith collector, in Carnegie Museum (Acc. No. 2966).

*Idioceropsis fasciatus* (Osborn) n. comb.

Male: crown relatively short, slightly shorter at middle than next to eye, slightly broader than pronotum; face longer than wide, upper lateral suture of clypeus obsolete, lateral margin suddenly incurved mesad near base of clypellus; clypellus widened distally, campanulate, slightly over one and one-half times as long as basal width, surpassing the genital margin; lora short, each reaching lower third of lateral margin of clypeus. Pronotum more than three times as long as crown, two and one-half times as broad as long, hind margin very shallowly concave; scutellum longer than crown and pronotum combined. Head except bright yellow genal margin and pronotum brown; scutellum brown with apex bright yellow; forewing mostly translucent, basal half pale fuscous, apical half with a broad transverse dark brown band from central anteapical cell to costal margin, apical margin and semicircular stripe from apex of clavus to before apex of forewing brown, intervening areas much paler, outer claval vein with broad conspicuous bright yellow stripe on basal half, apex of clavus with small yellow spot. Thoracic pleura and sterna, legs, and abdominal sterna dull yellow; apices of tibiae and tarsal claws brown; abdominal terga tinged with red; genital segments pale fuscous. Female: proportions of crown, face, pronotum, and scutellum as in male. Color pattern as in male, yellow markings more defined and contrasting. External female genitalia: seventh sternum short, hind margin slightly concave, pygofer slightly shorter than ovipositor, more than four times as long as abdominal sterna together (fig. 149).

Male genitalia: style on lateral aspect broader after center,
posterior inner process long and lobed at apex; connective with basal margin shallowly concave; aedeagus broad at base, slender apex forming an almost complete loop, with small serrations above; pygofer triangular, with an inwardly directed hook on posterior angle (figs. 144 to 147). Second abdominal sternal apodeme reaching to base of third abdominal sternum, elongate, rounded apically (fig. 148).

The contrasting and bright yellow apex of the scutellum and the longitudinal stripe along the outer claval vein distinguish this species from all others. The shape of the aedeagus is very distinctive.

Holotype - male and allotype female, Chapada, Brazil, no collecting date, H. H. Smith collector, in Carnegie Museum (Acc. No. 2966).

**Idioceropsis bakeri** (Osborn) n. comb.


Female: crown relatively long, anterior and posterior margins parallel; face slightly longer than broad, upper lateral suture of clypeus obsolete, not attaining ocellus, lateral margin and transverse suture before clypellus obsolete, lateral margin almost straight; clypellus slightly widened distally, slightly longer than basal width; lorum reaching to middle of lateral margin of clypeus, tumid. Pronotum less than twice as long as crown, slightly more than two and one-half times as wide as long, hind margin shallowly concave; scutellum equal in length to crown and pronotum combined. Head, pronotum, and scutellum leaf green, crown with two comma-shaped reddish spots not reaching ocelli, rest of face unmarked; pronotum with three reddish longitudinal stripes, one at
center and one on each side in line with fulvous spot on basal angle and
disc of scutellum, very faint orange triangular spot behind each eye;
forewing hyaline, costal margin greenish, apex faintly smoky. Thoracic
sterna and pleura, and legs pale green, hind tibia and tarsi darker
with dusky apical spines and claws. Length: 4.0 mm. (See fig. 150.)

External female genitalia: seventh sternum short, shallowly concave
on hind margin, ovipositor surpassing apex of pygofer by one-fourth its
length, ovipositor twice as long as all abdominal sterna together.

This species belongs in the group of small species with two spots
on the crown. It can be separated from them by the three longitudinal
reddish stripes on the pronotum. Metcalf (1955) found the trivial
name trifasciatus preoccupied by I. trifasciatus Kirschbaum, 1868.

Holotype - female, Brazil, along Rio Guaporé, below Rio San Miguel,

Idioceropsis ocellatus (Osborn) n. comb.

Male: crown short, very slightly longer at middle than next to eye;
face longer than wide, upper lateral suture of clypeus inconspicuous,
not attaining ocellus, lateral margin of clypeus gently arcuate (the
lores, clypellus, and genae are covered with glue, and can not be de-
scribed). Pronotum more than three times as long as crown, twice as
wide as long, hind margin very shallowly concave; scutellum longer than
crown and pronotum combined; forewing much exceeding abdomen. Uniformly
dull greenish; ocelli, antennal seta, a small dot on disc of forewing,
apical spines of hind tibia, and tarsi brownish. Thoracic pleura and
sterna, legs, and abdominal sterna light green, last abdominal segments
darker; length: 3.5 mm.

Male genitalia: style slender, inner caudal process well de-
veloped, slender, in dorsal aspect widened before apex; connective with
basal margin concave; aedeagus slender, tapering to a sharp point, with
minute serrations on upper surface at the point where the apex bends
cephalad; pygofer triangular, with a slender inwardly curved, accessory
spine on distal angle (figs. 151, 152, 153, 154). Second abdominal
sternal apodeme to end of second abdominal sternum, apex bell-shaped,
basal margin convex, not straight as in the other species (fig. 155).

Related to Idioceropsis cristulatus sp. nov., I. myrceae (Cald.),
and the other species without markings on the crown and pronotum and
with small dots on the forewing. It can be separated from these by
the characters mentioned in the key and the genitalia.

Holotype - male, Brazil, Matto Grosso, collected along Rio Guaporé
below Rio San Miguel, August 22, 1909, Haseman collector, in Carnegie
Museum (Acc. No. 4043).

Idioceropsis viridicatus (Osborn) n. comb.


Female: crown relatively long, strongly curved in front, slightly
longer at middle than next to eye; face slightly longer than wide,
lateral sutures of clypeus not attaining ocelli, lateral margins of
clypeus obsolete near antennal ledges, lower visible half straight;
clypellus slightly widened distally, one and one-half times longer than
basal width; lora slightly elevated above level of surface of genae,
outer margin not well defined, reaching to clearly visible section of lateral sutures of clypeus. Pronotum more than twice as long as crown, slightly less than three times as wide as long, hind margin shallowly concave; scutellum longer than pronotum and crown combined. Crown green, somewhat bluish on hind margin and between the reddish spots, with two reddish or dark fulvous spots, enlarged at each end and touching the ocelli; face yellowish, genal margins pale green; pronotum green with two oblique fulvous lines meeting at anterior margin; scutellum pale green, with very faint markings near basal angles, with a grayish faint round spot on disc; forewing hyaline, with a pale yellowish tinge, clavus with a fulvous stripe next to scutellum, another stripe on outer side of claval suture, costal margin pale green, apex of forewing slightly smoky. Thoracic pleura and sterna, legs, and abdominal sterna pale green to whitish, hind tarsal claws dusky.

Length: 4.0 mm. (See figs. 156, 157.)

Female genitalia: seventh sternum short, hind margin concave, with a deeper U-shaped median excavation (fig. 158).

This small species belongs in the group with two spots on the crown. The much rounded head and the fulvous stripes of the forewing distinguish it from the rest. It seems closest to *Idioceropsis arenatus* (Osborn) but the more rounded crown and the fulvous stripes on the forewing of *I. viridicatus* (Osb.) separates them.

**Idioceropsis occipitalis (Osborn) n. comb.**


Female: slender; head very broad, much exceeding pronotum in width, moderately arched; crown relatively long, anterior and posterior margins parallel; face longer than wide, lateral suture of clypeus very short and not well defined, lateral margins of clypeus gently arcuate (the clypellus and lora are hidden by glue and fungi in the type so can not be described). Pronotum twice as long as crown, slightly less than two and one-half times as wide as long; hind margin almost straight; scutellum broad at base, slightly shorter than pronotum and crown combined. Dark chocolate-brown to blackish species, with a hexagonal bright yellow spot covering most of the crown and disc of pronotum bordered anteriorly with brown, remaining parts of crown and pronotum dark brown, eyes dark brown, a broad dark brown band across face from eye to eye bordered above and below with darker brown, rest of face whitish; scutellum blackish; forewing brown, transparent, veins inconspicuous, slightly darker. Thoracic pleura and sterna, legs, and abdominal sterna white; seventh sternum brown, pygofer lighter brown and ovipositor dark brown (fig. 164).

Female genitalia: hind margin of seventh sternum convex, with a minute notch on center; ovipositor exceeding pygofer by one-third its own length (fig. 163).

This dark species is closely related to *Idioceropsis albicollis* (Osborn) that is described below. The large spot of the crown and pronotum imparts these two species a very distinct appearance. Further
collection may prove that they are but one species.


**Idioceropsis albicollla** (Osborn) n. comb.


Male: crown relatively long, slightly longer at middle than next to eyes; face slightly longer than wide, lateral sutures of clypeus almost attaining ocelli, lateral margins of clypeus gently arcuate; clypellus slightly longer than basal width, widened distally; lora each reaching to middle of lateral margin of clypeus. Pronotum slightly longer than crown, more than three times as wide as long, hind margin almost straight; scutellum slightly longer than crown and pronotum together. Dark chocolate-brown species, with a contrasting yellow oval spot covering most of crown and anterior half of pronotum; face with a broad fuscous band from eye to eye, a darker transverse band from ocellus to ocellus; rest of clypeus, clypellus, gena, and lora whitish; pronotum except for portion covered by oval spot chocolate-brown; scutellum chocolate-brown, paler toward apex; forewing transparent with a brownish tinge, costal and outer apical cells fuscous, with a paler transparent area between them. Thorax laterally and ventrally, and legs whitish; abdominal sternum yellowish, genital segments pale fuscous (figs. 166, 167). Length: 3.2 mm.

Male genitalia: style slender, inner caudal process small, poorly developed, apex T-shaped in dorsal aspect, outer caudal process wanting, represented by a small patch of short setae; connective with
basal margin shallowly concave; aedeagus short, in lateral aspect with a broad triangular base, apex, slender and slightly curved cephalad; pygofer subrectangular, upper margin longer than lower, apical margin with a short, stout, decurved spine (figs. 159, 160, 161, 165). Second abdominal sternal apodeme T-shaped, the vertical stem short, sub-triangular, its apex bent mesad (fig. 162).

This species is close to *Idioceropsis occipitalis* (Osborn); the yellow area on the crown and pronotum is oval and smaller, the band across the face is lighter and the forewing has more transparent areas.

Holotype - male, Brazil, Chapada, November, H. H. Smith collector, in Carnegie Museum (Acc. No. 2966).

*Idioceropsis eburneomaculatus* (Osborn) n. comb.


Male: crown relatively long, very slightly longer at middle than next to eye; face slightly longer than wide, lateral suture of clypeus not attaining ocelli, lateral margins gently arcuate; clypellus slightly widened distally, slightly longer than basal width, subquadrate; lora reaching to middle of lateral margins of clypeus. Pronotum less than twice as long as crown, two and one-half times as wide as long, hind margin shallowly concave; scutellum broad at base, length slightly less than crown and pronotum combined. Crown bright fulvous yellow, with two large quadrate patches of fulvous not reaching ocelli; two transverse fulvous spots just above ocelli; ocelli red; rest of face, clypellus, lora, and genae unmarked, yellowish; pronotum fulvous,
with four light greenish yellow stripes from anterior margin over disc not reaching posterior margin, the outer ones shorter, lateral margins of pronotum white; scutellum fulvous, faintly marked with three yellow stripes on basal margin; forewing mostly transparent, tinged with golden yellow, apical veins fuscous, other veins concolorous and inconspicuous, two ivory white spots on disc of wing on inner vein of inner discal cell, two elongate ivory white spots on clavus bordering scutellum, apex of clavus with a small ivory white spot. Thoracic pleura and sterna, and legs pale yellowish, hind tarsal claws pale fuscous; abdominal sterna and genital segments pale yellowish. Female: coloration and relative measurements of crown, pronotum, and scutellum as in male; two discal greenish yellow markings on pronotum separated from anterior margin, spots on outer margins of pronotum better defined (figs. 172, 173). Length: male, 4.0 mm.; female, 4.2 mm.

Male genitalia: style with anterior end narrow, inner posterior process somewhat truncate at apex, two well defined groups of short setae on dorsal surface; connective deeply concave on basal margin; aedeagus long and slender, with small anterior accessory lobe produced cephalad; pygofer pyriform, upper margin with an inwardly directed spine broad at base, apical margin bilobed (figs. 168 to 171). Second abdominal sternal apodeme reaching to apex of second sternum, three times as broad as long, apical margin concave (fig. 174).

The ivory white spots on the forewing separate this species from others.

Holotype - male, female allotype, and paratype, Brazil, along Rio
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**Idioceropsis costalis** (Osborn) n. comb.


Male: crown relatively long, slightly longer at middle than next to eye; lateral suture of clypeus not attaining ocelli, lateral margins of clypeus angularly bent near middle making the clypeus octagonal; clypellus widened basally, one and one-half times as long as basal width; lora pointed basally, its outer margin meeting the angularly bent portion of the clypeal margin. Pronotum slightly over twice as long as crown, almost three times as wide as long, hind margin concave; scutellum one-third longer than crown and pronotum combined; third apical cell narrow and short, preceded by ovate outer anteapical. Dull olive-brown; eyes and ocelli fuscous, rest of face and crown olive-brown; pronotum olive-brown, unmarked; scutellum with large triangular spot on each basal angle, apical half yellowish; forewing smoky, base of clavus, costal margin, first costal cell, base of appendix, and veins dark fuscous. Length: 3.5 mm.

Male genitalia: style slender on dorsal aspect, broad from apex to base on lateral aspect; outer apical process small but well defined, shelf-like, with a few long setae; connective shallowly concave on basal margin; aedeagus with triangular base, apical portion slender, straight to before the cephalad curved smaller portion of apex; pygofer subtriangular, without accessory structures (figs. 175 to 178).

Second abdominal sternal apodeme reaching to apical two-thirds of
third abdominal sternum, triangular, slightly inwardly pointed (fig. 179).

This small species is the only one with such angularly bent lateral margins of the clypeus, also the opaque blackish costal margin and costal cell are very striking.


_Idioceropsis figuratus_ (Osborn) n. comb.


Female: crown relatively short, two-thirds as long as pronotum, slightly longer at middle than next to eyes; face slightly wider than long, lateral suture of clypeus not attaining ocelli, lateral margins of clypeus gently arcuate; clypellus narrow, slightly widened distally, one and one-half times as long as basal width; lora reaching to middle of lateral margin of clypeus. Pronotum one and one-third times as long as crown, slightly less than three times as wide as long, hind margin concave; scutellum as long as crown and pronotum combined. Crown, face to upper lateral sutures of clypeus, pronotum, and scutellum apple green; crown with two large orange-red oval spots, a narrow orange-red transverse band, including ocelli, from lower borders of eyes; remainder of face, clypellus and lora yellowish white, gena greenish; pronotum with a semicircular fulvous band closer to anterior margin, hind margin fulvous orange; scutellum with triangular fuscous spot on each basal angle, and an elongate orange-fuscous spot from disc to basal margin; forewing transparent, with a pale fuscous tinge, veins
inconspicuous, base of clavus and a subsutural band fulvous red, claval suture and costal margin greenish. Thoracic pleura and sterna, legs, and abdominal sterna greenish or yellowish white; tarsal claws blackish (figs. 180, 181). Length: 3.0 mm.

Female genitalia: hind margin of seventh sternum concave; ovipositor slightly surpassing pygofer, twice as long as abdominal sterna together (fig. 182).

Idioceropsis aurantilineatus sp. nov. and I. himertus sp. nov. also have a transverse reddish band on the pronotum and these two species have a transverse reddish band on crown but I. figuratus has two spots.

Holotype and two paratypes - females, Brazil, Chapada, October, H. H. Smith collector, in Carnegie Museum (Acc. No. 2966).

Idioceropsis breviatus (Osborn) n. comb.


Male: crown relatively long, very slightly longer at middle than next to eye; frontal margin slightly convex at center; face wider than long, lateral suture of clypeus not attaining ocelli, lateral margin of clypeus strongly arcuate; clypellus slightly widened basally, one and one-half times as long as basal width; lora inflated, reaching to middle of lateral edges of clypeus. Pronotum very slightly shorter than crown, slightly over three times as wide as long, hind margin slightly concave; scutellum shorter than crown and pronotum together. Crown, frons, clypeus, lora, genae, pronotum, scutellum, thorax laterally and ventrally, and abdominal sterna light brown; disc of crown and pronotum somewhat vitreous; forewing transparent, with a
fuscous tinge on basal two-thirds and at apex of clavus, apical third of forewing milky hyaline; hind tibia and tarsal joints dusky (figs. 187, 188). Length: 3.5 mm., width across eyes 1.5 mm.

Male genitalia: style as seen from side much wider apically than basally, with two patches of setae, the one on the middle of the style on an elevated triangular projection; connective V-shaped; aedeagus sickle-shaped, tapering toward apex; pygofer with semicircular apical margin, lower margin extending cephalad, without accessory structures (figs. 183 to 186). Second abdominal sternal apodeme short, reaching to base of third abdominal sternum, apical margin very shallowly bilobed (fig. 189).

This species can be easily separated from others by its very broad and short body, and by the contrasting dark basal two-thirds and milky white apical third of the forewings.

Holotype - male, from Chapada, Brazil, December, H. H. Smith collector, in Carnegie Museum (Acc. No. 2966).

**Idioceropsis flavotinctus** (Osborn) n. comb.


Male: crown relatively short, anterior and posterior margins parallel; face longer than wide, lateral sutures of clypeus not attaining ocelli, lateral margins angularly bent about midway from antennae to clypellus; clypellus slightly widened distally, twice as long as basal width, basal suture semicircular, not almost straight as in the other species; lora reaching to angular bend of lateral margins of clypeus. Pronotum nearly three times as long as crown,
slightly more than twice as wide as long, hind margin almost straight; scutellum slightly longer than pronotum and crown together. Head and pronotum yellowish, somewhat tinged with greenish, crown vitreous at center, ocelli brown and margined with brownish; scutellum yellowish, lateral margins greenish, apex brownish; forewing transparent tinged with golden yellow, veins inconspicuous, darker toward apex of wing, base of wing with a fuscous spot; thoracic sides and venter, and legs yellowish, tarsal claws fuscous; abdominal sterna greenish yellow, plates greenish, tipped with fulvous brown. Length: 6.0 mm.

Male genitalia: style in lateral aspect narrower near middle, inner apical process erect; connective concave on basal margin; aedeagus sickle-shaped, apical three-fourths tapering to apex, strongly decurved; pygofer triangular, apex bent inward (figs. 190 to 193). Second abdominal sternal apodeme reaching to apex of third sternum, inner margin straight to apical angle that is inwardly produced, outer margin curved mesad on apical half (fig. 194).

This species belongs in the group of those with unspotted crown and pronotum, and with spotted wings. The fuscous spot on the base of the forewing separates it from Idioceropsis myrciae (Caldwell) and I. ocellatus (Osborn) which have dark spot on the disc of the forewing. The aedeagus is similar to those of I. principensis (Osborn), I. himertus sp. nov., and I. multilineatus sp. nov. but other parts of its genitalia are different.

Holotype - male, Mana River, French Guiana, June 1917, Klages collector, in Carnegie Museum (Acc. No. 6008).
Idioceropsis principensis (Osborn) n. comb.


Male: crown relatively short, slightly longer at middle than next to eye; face slightly longer than wide, lateral suture of clypeus not attaining ocellus, lateral margin of clypeus gently arcuate; clypellus very slightly widened distally, two and one-half times as long as basal width; lora almost straight, slightly arcuate, reaching to middle of lateral margin of clypeus. Pronotum one and one-half times longer than crown, about two and one-half times as wide as long, hind margin shallowly concave; scutellum one-third longer than pronotum. Crown apple-green, with three orange-red spots, the median one reaching from the base to the face and continuous with the median stripe of pronotum and scutellum, the other two shorter; face with a median longitudinal stripe extending from crown to meet a transverse band between ocelli, a large oval spot between the median stripe and the eye; ocelli black; remaining part of face, clypeus, gena, and lorum stramineous; apex of clypellus dusky; pronotum with three longitudinal orange-red stripes; scutellum with a median longitudinal stripe reaching to disc; base and inner border of clavus dark brown, remaining part gradually fading to lighter brown toward outer margin; remaining parts of forewing hyaline with a pale brownish tinge, two small fuscous spots at base, a longer one on mid costal border, and a shorter one on disc closer to base than to apex, apical veins darker; thoracic pleura and sterna, legs, and abdominal sterna pale greenish or dirty white. Female: crown relatively
short, anterior and posterior margins parallel; face as long as wide, lateral suture of clypeus as in male, lateral margin curved mesad near base of clypellus; clypellus very slightly wider at base than apically, one and one-half times as long as basal width; lora reaching to middle of lateral margins of clypeus. Pronotum twice as long as crown, slightly more than two and one-half times as wide as long, hind margin almost straight; scutellum as long as crown and pronotum combined. Crown, face, clypellus, clypeus, gena, and lorum colored as in the male; inner border of clavus brown, commissure greenish white; outer part of clavus and remaining parts of forewing transparent with a fuscous tinge, smoky at apex; a small spot at base of corium and a dot on the disc dark fuscous; veins concolorous, darker near apex. Thoracic pleura and sterna, legs, abdominal sterna and genital sclerites pale gray. Length: male, 3.5 mm.; female, 4.0 mm. (See figs. 200, 201.)

Male genitalia: style with well developed inner caudal process, slender as seen from above; connective shallowly concave on basal margin; aedeagus slender, almost straight, slightly bent cephalad near middle, with a short fine serration on hind margin before apex, apex slightly bent downward; pygofer subtriangular, caudal angle with an inward projection (figs. 195, 196, 197, 202). Second abdominal sternal apodeme almost rectangular, inner apical angle with a short projection (fig. 198). Female genitalia: seventh sternum short, as long as preceding, shortly produced medianly; ovipositor surpassing pygofer by one-fourth its own length (fig. 199).

The median stripe running from the transverse band on the face
across the crown and pronotum to the disc of the scutellum distinguish this species. The aedeagus is similar to that of *Idioceropsis himertus* sp. nov. and *I. multilineatus* sp. nov. but other parts of their genitalia are different.

Holotype - female, and allotype, male, from Brazil, Fort Principe, Rio Guaporé, August 1909, Carnegie Museum (Acc. No. 4043), Haseman collector.

*Idioceropsis exquisitus* (Osborn) n. comb.


Male: crown relatively long, longer at middle than next to eye; face longer than wide; lateral suture of clypeus not attaining ocellus, lateral margin gently arcuate, clypeus slightly widened distally, subquadrate; lora broad, reaching to middle of lateral margin of clypeus. Pronotum one and one-half times as long as crown, slightly over three times as wide as long, hind margin very shallowly concave; scutellum equal in length to crown and pronotum together. Abdomen very short, reaching slightly beyond apex of clavus. Crown and pronotum greenish white, with a longitudinal fulvous stripe medianly on crown and pronotum; face stramineous, ocelli dark brown; scutellum with pale fulvous triangular spot on each basal angle, a small patch of fulvous on disc; forewing transparent with a large fuscous spot on the costal margin slightly beyond the middle, and a smaller dusky patch on the inner border at end of clavus, wing with a smoky tinge from the line formed by these two spots to apex, veins inconspicuous. Thoracic pleura and sterna, and legs stramineous; abdominal sterna yellow; first two or
three abdominal terga black along median line, last two black on the sides and with apical margins yellowish; genitalic segments dark fuscous. Female: proportions and coloration of crown, pronotum, face, legs, and forewing as in male; pro- and metapleura fuscous; first three abdominal terga yellow, last three yellow along median area and black on sides; pygofer and ovipositor dark fuscous contrasting with the yellow of the abdominal sterna. Length: both sexes 2.5 mm. (See fig. 207.)

Male genitalia: styles short, slightly longer than aedeagus, both inner and outer apical processes of style well developed; connective shallowly concave on basal margin; aedeagus wide at base, apical two-thirds very slender, straight, slightly bent cephalad near apex; pygofer triangular, apical angle with an upwardly directed spine-like process (figs. 203, 204, 205, 208). Second abdominal sternal apodeme rectangular, short, reaching to apex of second sternum, apical inner angle with a small inward projection (fig. 206). Female genitalia: seventh sternum short, apical margin straight; ovipositor slightly surpassing the pygofer; pygofer with a pair of long yellow spines closer to inner margin near apex (fig. 209).

This small species can be separated from others by the contrasting black and yellow of the abdominal terga, and the yellow abdominal sterna, and dark genital segments; its small size and the two fuscous spots of the forewing are also very distinctive.

Idioceropsis flammeus (Osborn) n. comb.


Females: head distinctly arched above; crown short, anterior and posterior margins parallel, lateral suture of clypeus not attaining ocellus, lateral margin of clypeus arcuate; clypellus slightly widened distally, twice as long as basal width; lora short, reaching to below middle of lateral margin of clypeus. Pronotum three times as long as crown, two and one-half times as wide as long, hind margin broadly concave; scutellum slightly longer than crown and pronotum together. Crown pale yellowish tinged with reddish, with two broad fulvous spots extending over margin to inner side of ocelli, spots narrower toward face; remaining parts of face, clypellus, lora, and gena straw-colored; pronotum yellowish, tinged with reddish, with a transverse fulvous band close to hind margin; scutellum reddish, with two oblique whitish spots on disc almost meeting on anterior margin; forewing transparent with a very pale fulvous tinge, veins concolorous, and inconspicuous; abdomen above more or less tinged with reddish; thoracic pleura and sterna, and abdominal sterna yellowish, tip of hind tibia and tarsal claws fuscous. Length: 3.0 mm. (See figs. 210, 211.)

Female genitalia: seventh sternum elongate, convex, with a small median notch; ovipositor slightly exceeding pygofer; pygofer with a pair of yellowish long spines near apex (fig. 212).

The uniformly distributed reddish tinge helps to separate this species from other small species with two spots on the crown. The pronota of the paratypes show slightly different colorations.
Holotype - female, Bolivia, Provincia del Sara, November 1912, Steinbach collector, Carnegie Museum (Acc. No. 5064). Paratypes - two females with same collecting data as holotype, and two additional females from Provincia del Sara, Bolivia, 450 m., November 1909, Steinbach collector, in Carnegie Museum (Acc. No. 4549). On page 395 (Osborn 1923) Osborn states that there is one male among the type material but all the specimens have been found to be females.

Idioceropsis fulvotinctus (Osborn) n. comb.


Male: crown relatively short, anterior and posterior margins parallel; face longer than wide, lateral sutures of clypeus not attaining ocelli, lateral margin strongly arcuate, frontoclypeal suture slightly discernible; clypellus widened distally, nearly twice as long as basal width; lora reaching to about middle of lateral margin of clypeus. Pronotum less than three times as long as crown, two and one-half times as broad as long, hind margin broadly and shallowly concave; scutellum longer than crown and pronotum together. Osborn's description of the coloration follows: "Greenish yellow, deeply tinted with orange or fulvous; crown hind border and median line, pronotum hind border and indistinct median line greenish; forewing subhyaline, greenish, deeply tinged with orange; face mostly fulvous; cheeks greenish; ocelli reddish; abdomen and thorax ventrally fulvous." Length: 3.0 mm. (See figs. 218, 219.)

Male genitalia: style from above not straight, outwardly bent near middle, inner apical process well developed and raised above shaft of style; connective with basal margin almost straight; aedeagus with a
bulbous swelling at middle, from here tapering and curving cephalad to apex, basal half stouter and with a short anterior accessory lobe; pygofer subquadrate, with a Y-shaped ridge or apodeme on inner surface, upper apical angle with a short, broad, blunt inner projection (figs. 213, 214, 215, 216, 220). Second abdominal sternal apodeme triangular, reaching to middle of third sternum, inner margin biconcave (fig. 217).

This species resembles *Idioceropsis fulvus* (Osborn) and *I. ocellatus* (Osborn) in being uniformly colored, but these two species have dark dots on the forewing. Figure 216 shows the aedeagus of one of the paratypes, which is different from that of the type but their pygofer are similar.

Holotype - male, from Bolivia, Provincia del Sara, 450 m., November 1909, in Carnegie Museum (Acc. No. 4549), Steinbach collector. Two paratypes from same locality, one December 1918, Carnegie Museum (Acc. No. 6443), the other Carnegie Museum (Acc. No. 5864), same collector.

*Idioceropsis tumidulus* (Osborn) n. comb.


Female: crown short, front and hind margins parallel; face tumid, slightly longer than wide, the large eyes making the head much wider than long; lateral margins of clypeus not attaining ocelli, lateral margins of clypeus slightly arcuate; clypellus longer than wide, slightly wider at base than at apex; lora reaching to middle of lateral margins of clypeus. Pronotum almost two and one-half times as long as crown, less than twice as wide as long, hind margin concave; scutellum as long as crown and pronotum combined. Overall color dull yellowish-
brown; clypeus and lora deeper brown, crown with two very faint, small, elongate pinkish spots; ocelli fuscous, each set in a small yellowish spot; antennal pit fuscous; pronotum lighter anteriorly with five faint brownish markings in shallow depressions; scutellum yellowish with small triangular brownish spots near basal angles, two L-shaped brownish spots from anterior margin to discal depression; forewing brownish translucent to basal half, apical half fuscous, a small yellowish area on costal margin before center, outer apical cell yellowish translucent. Pleural areas black; abdominal sterna brownish with yellow posterior margins; seventh sternum brownish with a median longitudinal yellow line; pygofer and ovipositor brown (figures 221, 222). Length: 3.5 mm.

External female genitalia: seventh sternum almost a third as long as broad, hind margin shallowly concave, ovipositor longer than remaining abdominal segments together (fig. 223).

The tumid frons and the faint brown markings in depressions near the anterior margin of the pronotum serve to distinguish this species. It is close to *Idioceropsis oncercus* sp. nov. but can be separated by the characters in the key. This species agrees with the generic description in every respect except in having only four strong spines on the posteroventral margin of the hind tibia.

Holotype - female, from Chapada, Brazil, November, collected by H. H. Smith, in Carnegie Museum (Acc. No. 2966).
Idioceropsis myrciae (Caldwell) n. comb.


Caldwell's description follows: "Length, male 2.8 mm., female 3.2 mm. Head and pronotum greenish yellow without markings. Forewing very lightly infuscate to hyaline, with dark veins from hind wing visible through membrane; a dark area present at apex of clavus and a darker spot present between first and second sectors at midlength; appendix and apical cells clear hyaline.

Vertex (crown) twice as broad as long. Pronotum little longer than vertex. Female sternum VII very gently sinuate on posterior margin, very short. Male pygofer with three terminal processes on either latero-posterior margin, the more dorsal process projecting over the other two. Plate long, gradually enlarged apically in lateral aspect. Style simple, rounded apically with apex abruptly bent outward. Aedeagus stout basally; caudal portion long, slender." (Figs. 224 to 227 from Caldwell.)

Idioceropsis maricensis (Caldwell) n. comb.


Caldwell's description of the female holotype follows: "Length of female 4.3 mm. Head, pronotum and scutellum bright yellow. Eyes and lateral margins of pronotum black. Apex of scutellum white. Forewing generally infuscate (inner margin of clavus from base to apex of second claval vein black). Apex of clavus and apex of claval veins ivory white. A hyaline spot present in basal half of wing along costa, bounded along costa by a yellowish band around, remainder by a black band slightly broadened posteriorly. A black area present along costa at apex of
outer apical cell. Appendix and apical area lighter than rest of infuscate areas. Abdomen yellow ventrally, with yellow color overlapping sides near the base, rest of abdomen brown to black.

Vertex approximately two and one-half times as broad as long; more arcuate cephalad than in other species. Pronotum over twice as broad as long. Abdomen, not including genital segments, scarcely reaching as far as apex of clavus. Female sternite VII short, truncate caudad."

Clypeellus fuscous, apically with two blackish areas; gena fuscous, darker under each eye and on area bordering each lorum (figs. 233, 234).

Male: coloration as in female. Forewing with blackish areas before and after the hyaline spot on basal half along costa.

Male genitalia; style with anterior end pointed; posterior process of style not curved as in all other species but angularly bent near base, inner margin with short serration before apex; outer process of posterior end produced, with relatively long setae; connective basal margin deeply concave, sides undulate; aedeagus broad to near center, from center to apex very slender and curved cephalad; pygofer wider than long, apical margin indented near center, with a small thumb-like projection from upper side of the indentation (figs. 228 to 232). Second abdominal sternal apodeme reaching to base of third sternum, semicircular (fig. 235).

Like *Idioceropsis flavidus* (Osborn) the pale color of the head, pronotum, and scutellum contrasts with the dark color of the forewing but *I. maricensis* (Caldwell) has the lateral margins of the pronotum black while *I. flavidus* (Osborn) has the pronotum uniformly colored.
The genitalia of these two species are different.

Holotype - female, Maricao-Sabana Grande Road, Puerto Rico, Km. 11.8, altitude 2,200 ft., November 19, 1947, from unidentified bushes, J. S. Caldwell and L. F. Martorell collectors. Hypotype - male, from San German, Puerto Rico, collected by J. Maldonado-Capriles, September 15, 1954.

**Idioceropsis rugifrons** (Osborn) n. comb.


As we have not seen this species Osborn's description follows:

"Face, vertex, pronotum, and scutellum minutely rugose; head wider than pronotum, scarcely produced before; vertex broadly subangulate; ocelli scarcely farther from each other than from margin of eye; front broad, rounded to clypeus; clypeus contracted at middle; lora elongate, reaching border of cheek; cheek rather broad, rounded, scarcely sinuate on border. Pronotum short; lateral margin reduced to an angle; hind border truncate; elytra with short oval antepalcal cell. Genitalia: male, plates narrow at base, divergent, and contracted behind middle, compressed, rounded and blunt at tip.

Dark olive-green, tip of scutellum brighter green; elytra subhyaline, suffused with brownish; cross-vein, base and apex of outer apical, and the apical veins fuscous; lower part of face bright green; thorax dark brown; abdomen and legs lighter brown. Male plates brownish, inner borders greenish with a discal fuscous dot.

Length: 3.5 mm.

Described from one male specimen, type, in the author's col-
lection, collected by H. S. Parish, at Bartica, British Guiana, March 20 - 30, 1901.

This species is near to Bythoscopus in shape, but the vertex and pronotum are minutely rugose, instead of striate, and the face agrees better with the species of Idiocerus."
Conclusions

A new genus, *Idioceropsis* gen. nov., is described in this dissertation. The new genus is a member of the subfamily Idiocerinae of the Cicadellidae and at present it includes 43 species.


Thirty other species previously included in *Idiocerus* Lewis by Osborn (1923, 1924, 1935) and by Caldwell (1950) have been redescribed and transferred to *Idioceropsis* gen. nov.

*Idiocerus vittatus* Osborn has been reduced to a synonym of *Idioceropsis principensis* (Osborn).

All the species in *Idioceropsis* gen. nov. are Neotropical.

A study of the second abdominal sternal apodeme suggests the possibility of its use as a diagnostic character in other genera because it is of specific value in this genus.

Information is given on how to separate the new genus from the other 21 genera included by Evans (1947) in the *Idiocerinae*. 
**Idioceropsis parvulus** (Osborn) - Fig. 1, dorsal view of style. Fig. 2, lateral view of style. Fig. 3, lateral view of aedeagus. Fig. 4, lateral view of genital capsule. Fig. 5, frontal view of head. Fig. 6, dorsal view of head, pronotum, and scutellum.
Idioceropsis beryllinus sp. nov. - Fig. 7, dorsal view of style.
Fig. 8, lateral view of style. Fig. 9, lateral view of aedeagus.
Fig. 10, ventral view of right second abdominal sternal apodeme of male. Fig. 11, ventral view of last abdominal segments of female.
Fig. 12, lateral view of pygofer. Fig. 13, forewing venation.
Idioceropsis almaculatus sp. nov. - Fig. 14, dorsal view of style.
Fig. 15, lateral view of style. Fig. 16, lateral view of aedeagus.
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Idioceropsis multilineatus sp. nov. - Fig. 22, dorsal view of style. Fig. 23, lateral view of style. Fig. 24, lateral view of aedeagus. Fig. 25, lateral view of pygofer. Fig. 26, ventral view of connective. Fig. 27, frontal view of head. Fig. 28, dorsal view of head, pronotum, and scutellum.
Idioceropsis carmenae sp. nov. - Fig. 29, dorsal view of head, pronotum, and scutellum. Fig. 30, frontal view of head. Fig. 31, seventh sternum of female.
**Idioceropsis multimaculatus** sp. nov. - Fig. 32, dorsal view of style. Fig. 33, lateral view of style. Fig. 34, lateral view of aedeagus. Fig. 35, ventral view of right second abdominal sternal apodeme of male. Fig. 36, frontal view of head. Fig. 37, lateral view of pygofer. Fig. 38, venation of hindwing. Fig. 39, dorsal view of head, pronotum, and scutellum. Fig. 40, forewing venation and cell terminology.
Idiocerops aurantilineatus sp. nov. - Fig. 41, dorsal view of style. Fig. 42, lateral view of pygofer. Fig. 43, lateral view of aedeagus. Fig. 44, rear view of aedeagus. Fig. 45, ventral view of right second abdominal sternal apodeme of male. Fig. 46, lateral view of pygofer. Fig. 47, frontal view of head. Fig. 48, dorsal view of specimen.
Idioceropsis oncercus sp. nov. - Fig. 49, dorsal view of style.

Fig. 50, lateral view of apex of inner apical process of style.

Fig. 51, lateral view of aedeagus. Fig. 52, dorsofrontal view of connective. Fig. 53, ventral view of right second abdominal sternal apodeme of male. Fig. 54, lateral view of head. Fig. 55, dorsal view of head, pronotum, and scutellum. Fig. 56, frontal view of head. Fig. 57, lateral view of pygofer.
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Idioceropsis cuprinus sp. nov. - Fig. 66, dorsal view of style. Fig. 67, lateral view of style. Fig. 68, lateral view of aedeagus. Fig. 69, lateral view of pygofer. Fig. 70, ventral view of right second abdominal sternal apodeme of male. Fig. 71, frontal view of head. Fig. 72, dorsal view of head, pronotum, and scutellum. Fig. 73, seventh sternum of female.
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Idioceropsis hyalinus (Osborn) - Fig. 102, dorsal view of style. Fig. 103, lateral view of style. Fig. 104, lateral view of aedeagus. Fig. 105, ventral view of connective. Fig. 106, frontal view of head. Fig. 107, dorsal view of head, pronotum, and scutellum. Fig. 108, lateral view of pygofer and dorsal view of apex.
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Bibliography

Baker, C. F.


Caldwell, J. S. and Martorell, Luis F.


China, W. E.


DeLong, D. M. and Caldwell, J. S.

1937. Check list of the Cicadellidae Homoptera of America, North of Mexico. The Ohio State Univ. (Nov.) IV:93. (under Bythoscopinae).

DeLong, D. M.


Distant, W. L.


Evans, J. W.


Kirkaldy, G. W.


Lewis, R. H.


Metcalf, Z. P.


Maldonado-Capriles, J.

Nast, Janusz


Matsumura, S.


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I, Jenaro Maldonado-Capriles, was born in Yauco, Puerto Rico, September 21, 1916. I received my primary and secondary school education in the public schools of my home town. My undergraduate training was obtained at the College of Agriculture and Mechanic Arts of the University of Puerto Rico at Mayaguez, from which I received the degree of Bachelor of Science in Agriculture in 1939. From the School of Tropical Medicine of the University of Puerto Rico, I obtained the degree of Master in Sanitary Science in 1941. From this date until August, 1948, I worked as entomologist in the Bureau of Malaria Control of the Insular Department of Health. In August, 1948, I received an appointment as Assistant Professor in the Biology Department of the College of Science in the above-mentioned College of Agriculture. I have held this position up to this date.