

The Genus *Heza* (Hemiptera:Reduviidae)^{1, 2}

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ABSTRACT

A study of specimens of *Heza* from different sources resulted in the description of eight new species. Three of Stal's species are redescribed from type material. Morphological details of 26 of the 31 known species are illustrated. A key to 28 of the 31 known species in the genus is presented.

INTRODUCTION

This study of the genus *Heza* has been made possible, by the loan of abundant material for study by different persons.⁴ Dr. Per Inge Persson wrote: "Though all specimens are labeled as types or paratypes I think that it is not in all cases quite correct. The type labels were put on by a non-specialist and can not be regarded as lectotype designations. *Heza sericans*, the original description notes, Rio de Janeiro, (Mus Berol.), *H. similis*, original description, Ega, Brasiliae (Mus. Brit.). I think that the specimens of these three species in our collection, which are labeled as types, are the specimens mentioned by Stal in Enumeratio and they are determined by Stal". The new species from Puerto Rico was kindly presented to the author by Dr. R. Lavigne. The new species from Trinidad was sent by Dr. Pedro Wygodzinsky. Dr. Thomas H. Farr presented a specimen of the new species from Haiti and sent for study specimens from Jamaica. Mrs. G. M. Black, now retired from the British Museum, loaned a paratype of *Ricolla jamaicensis*. Dr. P. H. van Doesburg permitted the study of abundant material belonging to the Leiden Museum.

The type material is deposited in the United States National Museum (USNM), at Washington, D.C., the AMNH, NRS, or in the author's collection (JMC).

¹ Manuscript submitted to Editorial Board May 16, 1975.

² Support of this study was provided by National Science Foundation Grant GB-7382.

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⁴ The author is indebted to Dr. Per Inge Persson, from Naturhistoriska Riksmuseet (NRS), Stockholm, Sweden; to Dr. Lavigne, from the University of Wyoming at Laramie; to Dr. Pedro Wygodzinsky, from the American Museum of Natural History (AMNH) at New York; to Dr. Thomas H. Farr, from the Institute of Jamaica; to Mrs. G. M. Black, formerly at the British Museum (Natural History) (BMNH); to Dr. P. H. van Doesburg, from the Leiden Museum (LM); and to Dr. R. C. Froeschner, from the U.S. National Museum (USNM) for their cooperation.

In the measurements that follow, 10 micrometer units are equivalent to 0.8 mm. The anterior width of the pronotum is measured across to the outside of the spine or small projection on each anterior angle, and the posterior width is measured to the posterior angle behind the lateral spine of the posterior lobe. Depth of head means depth of head in front of the eyes. The antecular space is measured from anterior margin of eye to apex of head. Unless otherwise stated, the plica is pointed.

RESULTS

Genus *Heza* Amyot & Serville, 1843(1) (Redescription).

Type of the genus *Reduvius binotatus* L & S., 1825(13).

Head usually long, bispinous at base of antennae; genae unarmed or slightly armed; antennae slightly longer than body, filiform in both sexes; postocular area longer than preocular; shorter than length of pronotum; rostrum curved, first segment slightly longer than second, third about half as long as second; ocelli not so far apart as the eyes. Anterior lobe of pronotum bilobed, posteriorly moderately sulcate between lobes; with poorly or well-developed pattern of carinae, sometimes carinae densely covered with short pilosity; disc of each lobe with or without a very short or relatively long spine (table 1); anterior angles short or long produced. Posterior lobe of pronotum not inflated; finely transversely corrugate, irregularly corrugate or closely finely pitted, not smooth; with four long sharp spines, discal spines sometimes preceded by inconspicuous carinae, outer spine above lateral angle; posterior margin excavated above scutellum. Side of mesosternum with a plica, usually as a pointed tubercle or sometimes as a small fold reaching over the margin of the pronotum. Scutellum horizontal, higher than postscutellum; postscutellum ending in a horizontal spine, in a few cases upcurved. Two moderately long or very short spines on apex of femora; apex of anterior tibia somewhat roundly produced medially. Body slightly to moderately wide; abdomen usually spatulate, slightly widening to before apex; connexivum not dilate; apical angle of each segment spined or unspined, spines short or long, only in some of the insular species spines on fourth and/or fifth segment dilated basally. Hindfemur longer than forefemur; forefemur the thickest; femora linear, not granulate, without spines; forelegs with trochanter, femur, and tibia ventrally with a dense longitudinal mat of short, vertical, sensory hairs. Wings usually slightly surpassing apex of abdomen in both sexes. Pilosity on body very short or moderately long, moderately abundant or scarce; legs and antennae usually scarcely long pilose.

Heza is close to *Ricolla* and *Rocconota* both of which lack a plica on the mesopleuron. A few of the species of *Heza* have the plica broad, as a fold, instead of pointed, and in *H. canizaresi* and *H. havanensis* it is obsolete.

TABLE 1.—*Species of Heza by shape and size of spines on disc of anterior lobe of pronotum and number of spines on connexivum*

	Spines on connexivum
A. No spines or an inconspicuous mere tubercle	
<i>acantharis</i> (Linnaeus, 1767)	5
<i>angustata</i> Bruner, 1931(3)	3
<i>cañizaresi</i> Bruner, 1946(4)	3
<i>clavata</i> (Guerin, 1857)(10)	5
<i>haitiana</i> n. sp.	3
<i>havanensis</i> Bruner, 1931(3)	5
<i>jamaicensis</i> (Distant, 1903) (7)	5
<i>ornata</i> n. sp.	5
<i>polita</i> n. sp.	5
B. Short sharp spines	
<i>angulifer</i> Barber, 1939(2)	1
<i>oculata</i> Stal, 1859(16) ⁶	3
<i>perarmata</i> (Kirby, 1901)(12)	1
<i>pulchripes</i> Stal, 1859(16)	3
<i>ruber</i> n. sp. ♂	1
<i>rubromarga</i> n. sp.	1
C. Medium-sized blunt spines	
<i>ephippium</i> (Lichtenstein, 1797)(14)	1
<i>binotata</i> (Lepeletier & Serville, 1825)(13)	1
<i>ferox</i> Stal, 1863(18)	1
<i>insignis</i> Stal, 1859(16)	1
<i>leucothorax</i> n. sp.	1
<i>multiguttata</i> Champion, 1899(6)	1
<i>ocellata</i> n. sp.	1
<i>punctigera</i> (Herrich-Schaeffer, 1853)(11) ⁶	?
<i>ruber</i> n. sp. ♀	1
<i>signoreti</i> (Fallou, 1887)(9) ⁶	?
<i>similis</i> Stal, 1859(16)	1
<i>sphinx</i> Stal, 1863(18)	1
<i>ventralis</i> Stal, 1872(19)	0
D. Medium-sized sharp spines	
<i>aurantia</i> n. sp.	5
<i>multiannulata</i> Stal, 1869(17)	4
E. Long sharp spines	
<i>fuscinerervis</i> Champion, 1899(6)	3
<i>sericans</i> Stal, 1859(16)	3

⁶ Not included in key.

At least one species, *H. jamaicensis* n. comb., has the apex of the femora long bispinous, a character used to separate *Ricolla*. A study of the internal genitalia of this genus and some allied genera, like *Ricolla* and *Rocconota*, did not reveal ways of separating these genera.

The species can be separated by the morphological characters used in the key. The process of the hind margin of the hypopygium, together with the general appearance of the latter and the shape of the last abdominal

tergum, offer good diagnostic characters that make dissection of the internal genitalia unnecessary.

The eighth tergum of the female is of limited use in separating the species. This sclerite has very modest, shallow, and inconspicuous ornamentation, most of the time somewhat difficult to discern.

Key to species of *Heza*

1. First five connexival segments armed with a spine on its apical angle, first spine much smaller than the rest in some species2
 First four or less connexival segments spined on apical angle8
2. Abdomen broadest at fourth segment where apical angle is produced into a very large spine directed outward which in turn is armed on either side with a small tooth (Plate I, fig. 17); 10 mm long; Cuba *clavata*
 Abdomen parallel-sided or broadest on third or fifth segment, with a simple spine on fourth3
3. Anterior angle of pronotum not produced into a vertical spine4
 Anterior angle of pronotum produced into a vertical spine7
4. Orange-colored; spines of pronotum arising from black spot (Plate I, fig. 12); spines of anterior lobe of pronotum medium-sized, sharp; 19 to 23 mm long; Trinidad *aurantia* n. sp.
 Yellow and reddish, or fuscous and testaceous; anterior lobe of pronotum unarmed or with small elevations on disc; spines of posterior lobe not arising from black spot5
5. Highly polished, red and brown, discal spines of posterior lobe horizontal, produced caudad (Plate IV, fig. 53); 15 mm long; Jamaica *polita* n. sp.
 Yellow and reddish or uniformly brownish, not polished; discal spines of posterior lobe vertical6
6. Yellow and reddish or reddish-brown; spines on connexival margin vertical, long, simple (Plate IV, fig. 63); 17 to 22 mm long; Jamaica *jamaicensis*
 Brownish; spine on fifth segment dilated and produced into a point directed backward (Plate II, fig. 28); 17 to 18 mm long; Cuba *havanensis*
7. Anterior angle of pronotum produced into a short vertical spine (Plate I, fig. 4); claspers clavate, hairy; spine of upper margin of hypopygium long, slender, exposed; 14 to 17 mm long; Cuba *acantharis*
 Anterior angle of pronotum produced into a long vertical spine (Plate III, fig. 44); clasper long and slender, less hairy; spine of hypopygium short, stout, blunt, receding from apex; 17 to 19 mm long; Puerto Rico *ornata* n. sp.

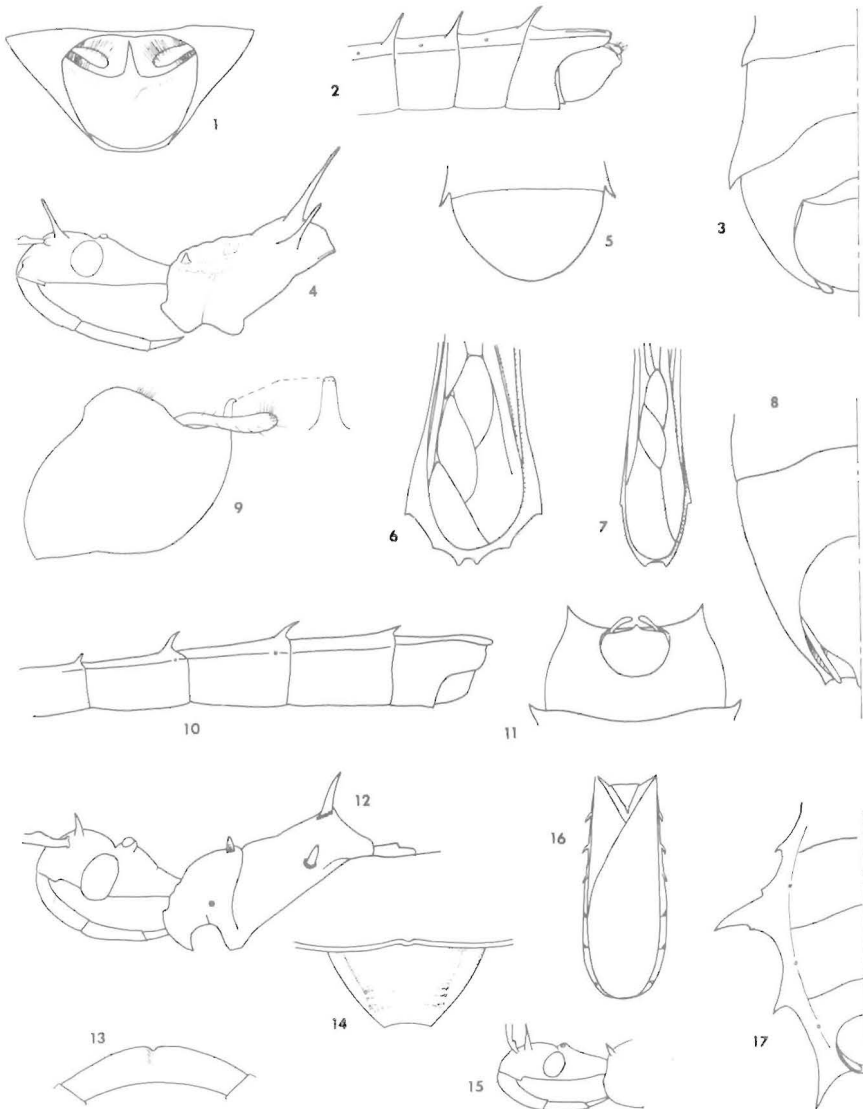


Plate I (figs. 1-17). *H. acantharis* (figs. 1-5), (fig. 1) apex of abdomen, caudal, ♂; (fig. 2) last four segments of abdomen, lateral, ♂; (fig. 3) abdominal segments, ventral, ♂; (fig. 4) head and pronotum, lateral, ♂; (fig. 5) sixth tergum, dorsal, ♂; *H. angulifer* (figs. 6-7; (fig. 6) abdomen, dorsal, ♀; (fig. 7) abdomen, dorsal, ♂; *H. angustata* (fig. 8) last two abdominal segments, ♂, ventral, after Brunner; *H. aurantia* (figs. 9-12); (fig. 9) genital capsule, lateral, ♂; (fig. 10) abdomen, lateral, ♂; (fig. 11) last sternum and genital capsule, ventral, ♂; (fig. 12) head and pronotum, lateral, ♂; *H. binotata* (figs. 13-14); (fig. 13) seventh tergum dorsal, ♀; (fig. 14) eighth tergum caudal, ♀. *H. cañizaresi* (figs. 15-16); (fig. 15) head, lateral, ♂; (fig. 16) abdomen, dorsal, ♂, after Brunner; *H. clavata* (fig. 17) last abdominal segments, ♂, ventral, after Brunner.

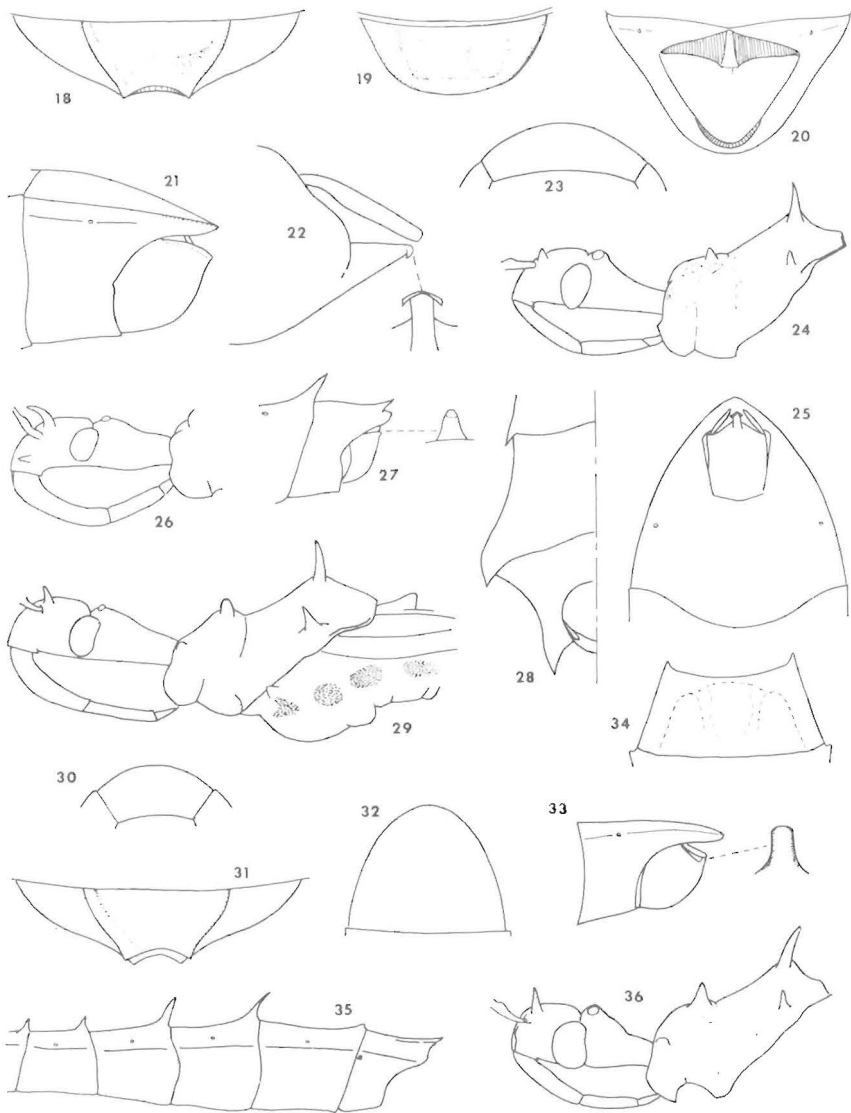


Plate II (figs. 18-36). *H. ephippium* (fig. 18) eighth tergum, ♀; *H. haitiana* n. sp. (figs. 19-21); (fig. 19) eighth tergum, ♀, caudal; (fig. 20) apex of abdomen, caudal ♂; (fig. 21) apex of abdomen, lateral ♂; *H. insignis* (figs. 22-25); (fig. 22) apex of hypopygium, lateral, ♂; (fig. 23) seventh tergum, dorsal, ♀; (fig. 24) head and pronotum, lateral, ♂; (fig. 25) last sternum and genital capsule, ventral, ♂; *H. jamaicensis* (figs. 26-27); (fig. 26) head, lateral, ♂; (fig. 27) last abdominal segments, lateral, ♂; *H. havanensis* (fig. 28) last abdominal segments, ventral, ♂; after Brunner; *H. leucothorax* (figs. 29-30); (fig. 29) head and thorax, laterally, ♀; (fig. 30) last abdominal tergum, dorsal, ♀; *H. multi-guttata* (figs. 31-33); (fig. 31) eighth tergum, caudal, ♀; (fig. 32) seventh tergum, dorsal, ♂; (fig. 33) apex of abdomen, lateral, ♂; *H. multiannulata* (figs. 34-36); (fig. 34) sixth tergum, dorsal, ♂; (fig. 35) abdomen, lateral, ♂; (fig. 36) head and pronotum, lateral, ♂.

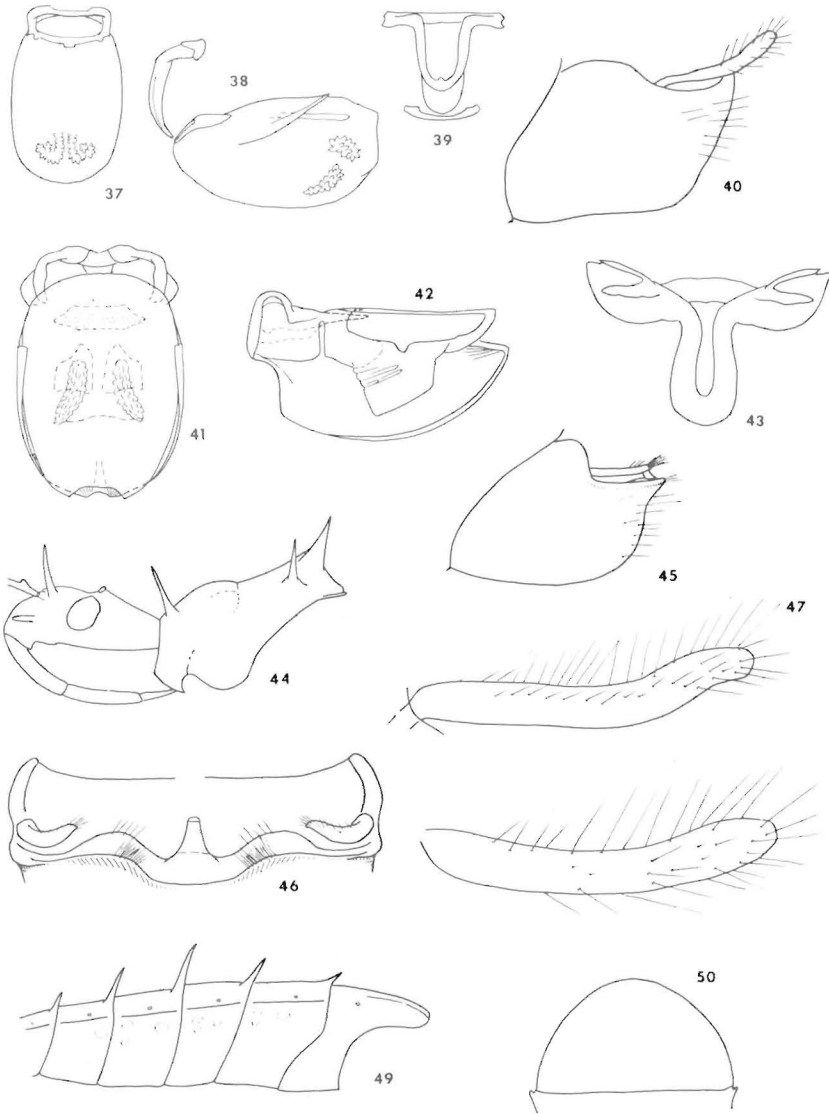


Plate III (figs. 37-50). *H. multiannulata* (figs. 37-40); (fig. 37) aedeagus, ventral, ♂; (fig. 38) aedeagus, lateral, ♂; (fig. 39) articular apparatus of phallus, caudal, ♂; (fig. 40) genital capsule, lateral, ♂; *H. ornata* (figs. 41-50); (fig. 41) aedeagus, ventral; (fig. 42) aedeagus, lateral; (fig. 43) articular apparatus of phallus, caudal, ♂; (fig. 44) head and pronotum, lateral, ♂; (fig. 45) genital capsule, lateral, ♂; (fig. 46) hypopygial margin and claspers, caudal, ♂; (fig. 47) left clasper, lateral; (fig. 48) left clasper, dorsal; (fig. 49) abdomen, lateral, ♂; (fig. 50) sixth tergum, dorsal, ♂.

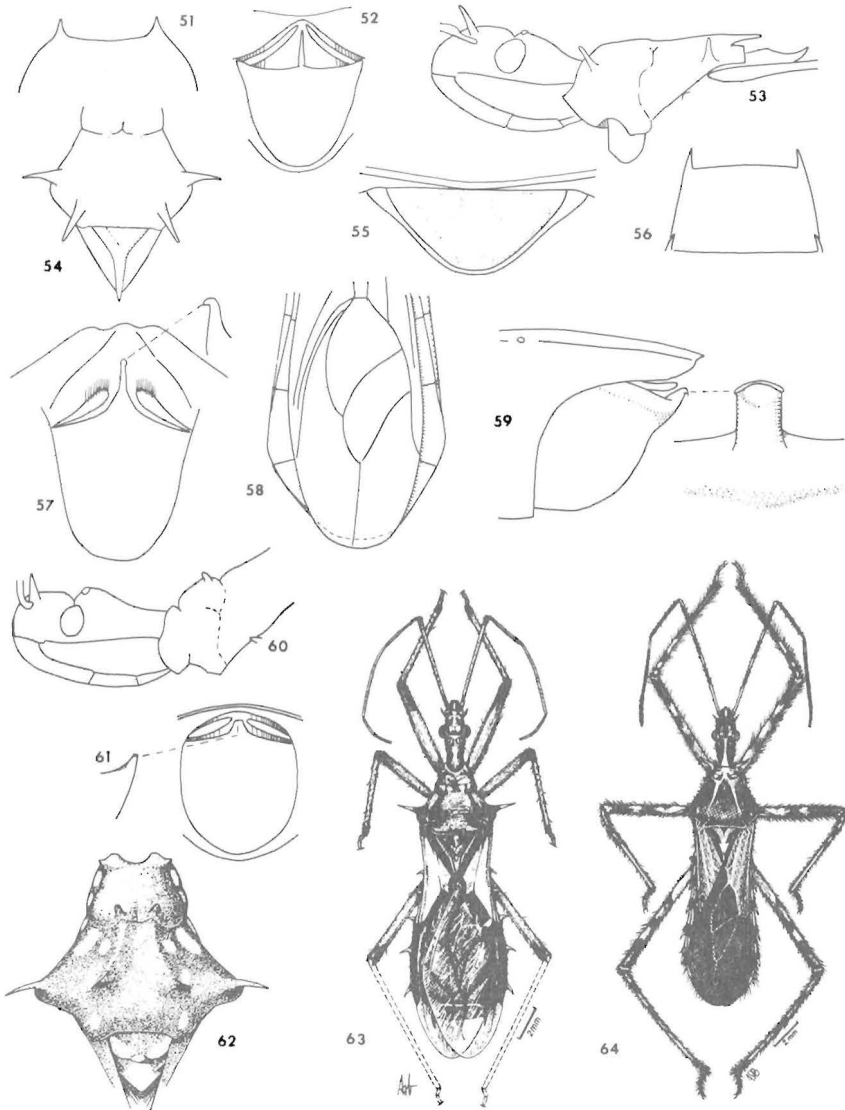


Plate IV (figs. 51-64). *H. perarmata* (figs. 51-52); (fig. 51) sixth tergum, dorsal, ♂; (fig. 52) hypopygium, caudal, ♀; *H. polita* (figs. 53-56); (fig. 53) head and thorax, lateral, ♂; (fig. 54) pronotum and scutellum, dorsal, ♀; (fig. 55) eighth tergum, caudal, ♀; (fig. 56) seventh tergum, dorsal, ♀; *H. pulchripes* (figs. 57-58); (fig. 57) apex of abdomen, caudal, ♀; (fig. 58) abdomen from above, ♀; *H. rubromarga* (figs. 59-60); (fig. 59) genital capsule, lateral, ♂; (fig. 60) head, lateral, ♂; *H. ocellata* (figs. 61-62); (fig. 61) hypopygium, caudal, ♂; (fig. 62) pronotum and scutellum, dorsal, ♂; *H. jamaicensis* (fig. 63) habitus; *H. ornata* (fig. 64) habitus.

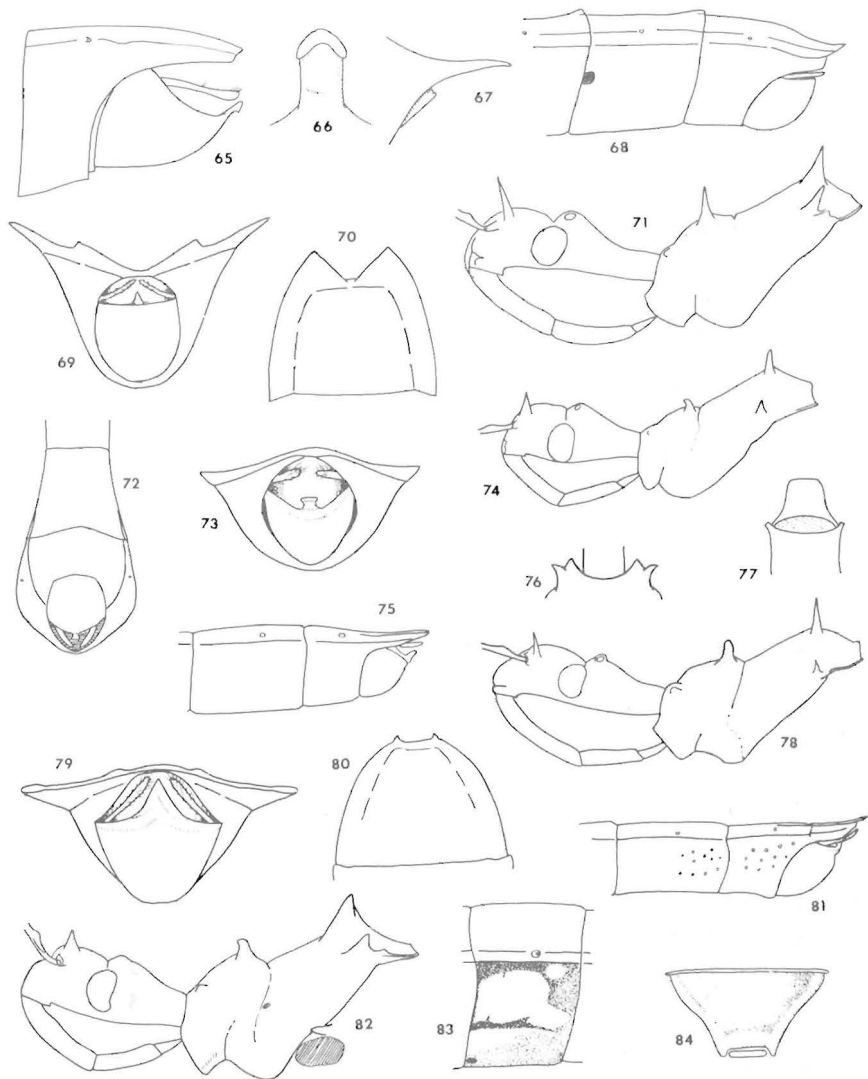


Plate V (figs. 65-84). *H. ruber* (figs. 65-66); (fig. 65) apex of abdomen, lateral, ♂; (fig. 66) apical process of hypopygium, caudal, ♂; *H. sericans* (figs. 67-71); (fig. 67) postero-lateral angle of pronotum, dorsal, ♂; (fig. 68) abdomen, lateral, ♂; (fig. 69) apex of abdomen, caudal, ♂; (fig. 70) sixth tergum, dorsal, ♂; (fig. 71) head and pronotum, lateral, ♂; *H. similis*; (figs. 72-75); (fig. 72) last segments of abdomen, ventral, ♂; (fig. 73) apex of abdomen, caudal, ♂; (fig. 74) head and pronotum, lateral, ♂; (fig. 75) last segments of abdomen, lateral, ♂; *H. sphinx* (figs. 76-81); (fig. 76) detail of anterior margin of pronotum, ♂; (fig. 77) posterior "knee", dorsal, ♂; (fig. 78) head and pronotum, lateral, ♂; (fig. 79) apex of abdomen, caudal, ♂; (fig. 80) sixth tergum, dorsal, ♂; (fig. 81) last three segments of abdomen, lateral, ♂; *H. ventralis* (figs. 82-84); (fig. 82) head, pronotum, and plica, lateral, ♀; (fig. 83) sericeous areas on abdominal sternum, ♀; (fig. 84) eighth tergum, caudal, ♀.

8. First four connexival segments spined apically; last tergum broadly concave apically, posterior angles sharp (Plate II, fig. 34); spine of hypopygium short; (Plate II, figs. 34-36, Plate III figs. 37-40); 17 to 19 mm long; Brasil *multiannulata*
 Three or less connexival segments spined apically 9
9. Three connexival segments spined apically 10
 Two, one, or no connexival segments spined 15
10. Disc of anterior lobe of pronotum with two long spines 11
 Disc of anterior lobe of pronotum unarmed or with two short spines 12
11. Last tergum of male broadly concave apically, body thickly griseo-pubescent; female with veins of membrane blackish to midlength; Mexico-Panamá *fuscinervis*
 Last tergum of male narrowly concave apically (Plate V, fig. 70); body moderately short pilose; both sexes with veins of membrane whitish basally; 22 to 24 mm long; Brasil *sericans*
12. Anterior lobe of pronotum with two short spines; connexival segment 3 with a short spine, fourth slightly produced; dull brownish; pronotum laterally and pleura with patches of scalelike hairs; ♀ 17 mm long; ♂ 14 mm long; Puerto Rico *pulchripes*
 Anterior lobe unarmed; another set of characters 13
13. Anterior angle of pronotum not spined; last tergum of male with sides rounded to a narrow straight apical margin, with a small toothlike prominence on each apical angle (Plate I, fig. 8); reddish-testaceous; 14 to 15 mm long; Cuba *angustata*
 Anterior angle shortly spined 14
14. Legs uniformly yellow; connexivum broadly marked with brown at junctures; apex of scutellum long upcurved; (Plate II, figs. 19-21); 15 to 16 mm long; Haiti *haitiana* n.sp.
 Legs light olive-yellow largely washed with fuscous, anterior tibiae dark; connexivum with small dark spot on apical angle of segments 4 and 5; scutellum with apex rounded, horizontal; (Plate I, figs. 15-16); 16 mm long; Cuba *cañizaresi*
15. Corium and clavus basally tomentose, with abundant clusters of golden or silvery scalelike hairs; subantennal spine short 16
 Corium and clavus not so ornamented 19
16. Pronotum white, densely covered with white scalelike hairs; meso- and metapleura each with two large patches of golden scalelike hairs (Plate II, fig. 29); Brasil, Surinam *leucothorax* n. sp.
 Pronotum golden-brown or brown, pleurae with different ornamentation 17
17. Blackish-brown; with reddish antennae, beak, legs, connexival

- margin, and spines of posterior lobe; two large clusters of scalelike hairs laterally on posterior lobe of pronotum contiguous to anterior lobe; heavily covered with short appressed silvery pilosity; 21 to 22 mm long; Argentina *binotata*
Brownish species with straw-colored appendages and brownish spines or females with pale reddish legs only 18
18. Male: mid- and hindlegs inconspicuously banded with pale reddish at apex of femora and at base of tibiae; anterior lobe of pronotum mostly bare, posterior with or without 3 + 3 small patches of scalelike hairs; tomentosity of clavus in patches; (Plate II, figs. 31-32); 17 to 22 mm long; Colombia *multiguttata*
Male: mid- and hindfemora with conspicuous apical brownish band, tibiae unmarked; anterior lobe of pronotum with conspicuous pattern of golden scales, posterior lobe laterally above with an extensive patch of scales contiguous to anterior lobe; tomentosity on clavus uniformly distributed. Female ornamented as male, scales on pronotum ivory; legs pinkish; (Plate II, figs. 22-25); 17 to 21 mm long; Brasil *insignis*
19. Spines on anterior lobe of pronotum short, blunt, black tipped (Plate V, fig. 78); spine of hypopygium large, triangular (Plate V, fig. 79); 22 to 25 mm long; Brasil *sphinx*⁵
Spines on anterior lobe not black-tipped, either short, long or absent; spine of hypopygium short or long but not triangular 20
20. Abdominal sterna with extensive sericeous white areas (Plate V, fig. 83), a relatively large similar spot below plica; 22 to 23 mm long (female); Patria ignota *ventralis*
Abdominal sterna without sericeous areas 21
21. Anterior lobe of pronotum with short sharp spines 22
Anterior lobe with medium-sized blunt spines 24
22. Abdomen of male and female angularly expanded at apex of fifth segment, more evident in the female (Plate I, figs. 6-7); only scutellum tomentose; dull fuscous species; 13 to 16 mm long; Puerto Rico *angulifer*
Abdomen of both sexes not angularly expanded at apex of fifth segment 23
23. Brown; head, except last two segments of beak, pronotum laterally, meso- and metapleura, parts of corium, and coxa, trochanter, and femur of forelegs red; only first segment of connexivum spined; 21 mm long; Bolivia *rubromarga* n.sp.
Brown; not ornamented with red; anterior lobe of pronotum with a

⁵ *Heza signoreti* (Fallou) has similar shaped and colored spines; Fallou's description is insufficient to identify this species whose type the author has not been able to locate.

- pattern of blackish and golden carinae; (Plate IV, figs. 51-52) 23 mm long; Guiana *perarmata*
24. Pronotum laterally and mesopleura extensively covered with areas of yellowish or golden scalelike hairs; clavus and corium grayish and sparsely covered with small patches of scales; membrane brownish; largest species, 29 to 30 mm long *ferox*
Without lateral patches of golden scales; shorter species, under 23 mm long 25
25. Pronotum above with two rows of white spots (Plate IV, fig. 62) *ocellata* n. sp.
Pronotum without rows of white spots 26
26. Clavus, costal margin, and some areas of abdominal sterna reddish; 13 to 14 mm long *ruber* n. sp.
Clavus, costal margin, and abdominal sterna not reddish; over 17 mm long 27
27. Brown, with golden hue due to abundant fine short pilosity; spine of hypopygium short, broad, slightly expanded apically (Plate V, fig. 73); spines on disc of anterior lobe stout, sometimes slightly bulbous apically; males 17 to 18 mm long; females 22 to 23 mm long; South America *similis*
Brown, with scant fine golden pilosity; spine of hypopygium long; slender, exposed; spines on disc of anterior lobe of pronotum slender; (Plate II, fig. 18); males 22 to 23 mm long, females over 24 mm long; Colombia and Central America *ephippium*

Descriptions, redescrptions, and notes about some species of *Heza*

Heza angulifer Barber, 1939 (2)

Described from PUERTO RICO; abdomen of female and male as in Plate I, figures 6 and 7, respectively.

Heza binotata (L. & S., 1825) (13)

Other species ornamented with red are *H. ruber* n. sp. and *H. rubromarga* n. sp. Specimens studied: ARGENTINA, Loreto, Misiones, in JMC; BRASIL, São Paulo, NR (Plate I, figs. 13 and 14).

Heza clavata (Guerin, 1857) (10)

A small species with clavate abdomen. Specimens studied: CUBA, San José de Nepomuceno, and Lomas Correcer, Jaroco, Habana, presented to the author by Dr. R. Alayo. DOMINICAN REPUBLIC, Josua, Provincia La Vega, a new record for this island, in JMC (Plate I, fig. 17).

Heza ephippium (Lichtenstein, 1974) (14)

The eighth tergum of the female is brown and densely covered with appressed moderately long silvery pilosity (Plate II, fig. 18). Specimens

studied: COLOMBIA, Palmira, 4 ♀♀., in JMC (Plate II, fig. 18). *H. macilentus* (Burmeister) (5) and *H. octospinosus* (Fabricius) (8) are synonyms of this species.

Heza ferox Stal, 1863 (18)

The characters in the key suffice to identify this species, the largest in the genus. It has a well-developed plica and the apex of the femora is not bispined. The anterior lobe of the pronotum is heavily covered laterally with long golden pilosity; the posterior lobe laterally, contiguous to plica, with a large inconspicuous patch of grayish pubescence. The mesopleura have a large patch of similar pilosity that extends over the plica. Plica stout. The eighth tergum of the female is quite similar in shape to that of *ephippium* but it is covered by long fine erect pubescence. Specimens studied: BOLIVIA, San Antonio, in LM.

Heza multiguttata Champion, 1899 (6)

The eighth tergum of the female is polished, yellowish, and glabrous (Plate II, fig. 31). Specimens studied: COLOMBIA, Palmira, three ♀♀; VENEZUELA, San Fernando de Atabapo, 1 ♀ and 1 ♂, in JMC; EL Limón, one ♀; GUIANA, Wales, one ♀, in JMC; SURINAM, one ♀, in LM (Plate II, figs. 31-33).

Heza pulchripes Stal, 1859 (16)

Genital capsule and spine of apical margin of hypopygium as in Plate IV, fig. 57, abdomen from above as in Plate IV, fig. 58. PUERTO RICO, one specimen each from Lares, Mayagüez, and Barranquitas, in JMC.

Heza similis Stal, 1859 (16)

This species is quite close to *H. ephippium* but they can be separated by the characters in the key. It has a small plica. Specimens studied: SURINAM, Paramaribo, 2 ♂♂ and 6 ♀♀, in LM; PARAGUAY, one of each sex, COLOMBIA, Palmira, one ♀; EL SALVADOR, Santa Tecla, one ♀; COSTA RICA, San José, one of each sex and one ♀ from Puerto Viejo; in JMC (Plate V, figs. 72-75).

Heza acantharis (Linné) (Redescription)

Heza acantharis, Linné 1758:444(15).

Male—overall color brown ornamented with yellow or ivory. Head brown; subantennal spine reddish-brown, yellow at apex; first antennal segment stramineous; second reddish-brown, yellow at base; third reddish-brown, narrowly yellow at base and at apex; fourth reddish-brown. Tylus yellow. First two segments of beak stramineous, third irregularly reddish-brown. Eyes silvery; ocelli vitreous. Pronotum dark

reddish-brown; lateral margin of anterior lobe, spine of anterior angle, discal carinae extending from anterior to posterior lobe, and apices of spines of posterior lobe yellowish; posterior margin near posterior angle grayish. Coxae reddish-brown. Anterior femur stramineous; mid- and hindfemora lighter, with or without a greenish tinge. Scutellum reddish-brown, carina and apical spine yellow. Clavus and contiguous cell of corium reddish-brown, rest of corium yellowish with lighter veins, membrane hyaline with a brownish tinge. Abdomen medianly reddish-brown fading toward margins; connexival margin yellow, spines pinkish.

Spines on head long, slightly curved outward, slightly shorter than depth of head (5.5:6); ocelli slightly elevated. Head: length 19, width across eyes 9, interocular space 4.5; postocular area $1\frac{1}{2}$ times as long as anteocular (9:6). Pronotum: anterior width 7, posterior width 18; length 17.5, of anterior lobe 6. Anterior lobe without discal spines, two small conical projections instead; anterior angles shortly vertically spined; posterior lobe slightly corrugate, spines relatively long (Plate I, fig. 4). Plica broad, foldlike. Posterior angles of connexival margins produced into a spine (Plate I, fig. 2). Abdomen slightly widening to apex of penultimate segment; last tergum semicircular, as in Plate I, fig. 5. Length 15 to 16 mm.

Genitalia: claspers clavate and densely covered with long fine pilosity; projection at apex of upper margin of hypopygium long, fine, spinelike, inclined cephalad.

This species and the Puerto Rican *H. ornata* are close and should have a common origin; their coloration is basically the same, differing in details. Morphologically they differ in the shape of the claspers, the shape and position of the spine of the upper margin of the hypopygium, shape of the last tergum, lack of glabrous areas on the abdominal sterna, and size. *Heza haitiana* is also similarly colored. Specimen illustrated and described from Cienfuegos, CUBA; another specimen from Valle del Yumurí, in JMC.

Heza aurantia new species

Male—overall coloration orange, ornamented with 12 black spots. Head, thorax above and laterally, most of legs including coxae, antennae, beak, and most of abdomen ventrally orange. Eyes blackish-red, ocelli vitreous, ocellar elevation black behind. First antennal segment with a barely discernible lighter long preapical annulus, joint of first and second segment lighter, third and fourth segment yellowish-red. Beak with second segment lighter, third slightly darker than first. Spine near base of antenna concolorous with head, spines on disc of anterior lobe of pronotum black, and spines on posterior lobe of pronotum arising from

black base, black basally and then yellow to apex. A small black spot each on pronotum laterally, above forecoxa frontally, and on pleurae above mid- and hindcoxae. Forecoxa with a black anterior dot. Foretibia fading to yellow towards apex; midtibia uniformly orange, and hindtibia yellowish towards base. Tarsi yellow, claws black. Clavus apricot-orange; corium with a deeper tinge, standing out from rest of forewing; membrane with a rose tinge; delicately lined with blackish on clavus along clavo-corial suture, parallel to anal vein, and veins of cells of membrane except the inner or Cu vein. Abdomen irregularly ornamented with small yellow areas.

Anterior angle of pronotum developed into a small conical laterad pointing elevation, not spined; anterior lobe not globose, smooth, not ornamented, the depression between the discal spines deep, discal spines short and sharp; posterior lobe finely and inconspicuously corrugate, spines moderately long, sharp, the two discal ones not preceded by a carina but the disc elevated in front of them. Scutellum with carina well developed and elevated, ending in a short sharp horizontal spine, glabrous. Mesopleuron with poorly developed plica. Forefemur slightly curved on apical half. Abdomen gradually widening to apex of fifth segment, last two segments as in Plate I, fig. 10. Spine on apical angle of first two connexival segments small, fingerlike, apical angle on third to fifth segment slightly flaring laterally and ending in a moderately long somewhat curved spine, because of the flaring at the base of the spine the connexival margins are slightly curved. Sixth tergum with margin convex; apical margin broad, concave, and with apical angles produced into sharp points. Genital segments and hypopygium as in Plate I, figs. 99 and 11. Body covered with very sparse delicate vertical pilosity, legs with more abundant pilosity.

Head: length 18, width across eyes 11.2, interocular space 6; postocular margin twice as long as anteocular (6:3); eyes surpassing lower margin of head. Subantennal spine about one-half depth of head (3:7). Ocelli large, elevated, on a well-developed ocellar base. Antennal segments: 57:12:44:24. Beak: 9:7:4. Pronotum: length 25, anterior lobe 7; width: anteriorly 8, posteriorly 24. Length 19 mm to tip of wings, wings surpassing apex of abdomen.

Female—general coloration as in male but slightly deeper. Head, antennae, legs, and corium as in male; most of abdomen ventrally polished red. Pronotum, pleurae, scutellum, clavus, and membrane brownish. Veins and black lines of forewing as in male. Metasternum, first abdominal, and genital segments yellow. Black spot on base of spines of pronotum, laterally on thorax, and anteriorly on coxa as in male. Sensory hairs of foretrochanter, femur, and tibia yellow. Spines on

pronotum as in male. Spine on posterior angle of first connexival segment very short, on next three segments each successively longer, spine on fifth a mere projection as in male (Plate I, fig. 10). Abdomen gradually widening to apex of fifth segment, fifth slightly wider than fourth, sixth with margins convex, apical margin of abdomen convex (Plate I, fig. 11). Forefemur straight from apex to before midlength, slightly out-curved thence to base.

Head: length 19.5; width across eyes 12; interocular space 5; depth of head in front of eyes 8; spine near base of antennae 3. Antennal segments: 60:17:?:?. Beak: 10:9:3:5. Pronotum: anterior width 9, posterior width 30; length 27, of anterior lobe 9. Scutellum with short horizontal spine. Length 23 mm; forewings surpassing apex of abdomen.

Holotype, male, in the AMNH; from TRINIDAD, W. I., Arima Valley, 800 to 1200 ft, February 10-20, 1964, Rozen and Wygodzinsky collectors. Allotype, female, TRINIDAD, W. I., March 5, 1952, at light, in AMNH. Paratypes, male, TRINIDAD, Arima Valley, 800 to 1200 ft, February 1966, J. G. Rozen collector, in JMC; four from Río Pan, TRINIDAD, W. I., in the USNM.

The overall orange-color and the 12 small black dots on the thorax are sufficient to separate this species from all others, specially those few with four to five spines along the connexival margin.

Heza haitiana new species

Male—overall coloration brown and light-brown with yellow spines. Head brown, dorsally behind eyes with yellow narrow median line; first antennal segment light-brown with three inconspicuous brownish annuli, last three light-brown; subantennal spine brown on basal half, yellow apically; beak with first two segments yellowish; third brown. Thorax: anterior lobe with elevated irregular areas shiny brown, low intervening areas golden pilose thus looking light-brown, anterior spines and lateral carinae yellow; posterior lobe light-brown, anteriorly with 2 + 2 yellow carinae that start before posterior margin of anterior lobe, surface finely corrugated, spines with basal third dark-brown, apically yellow, posterior margin yellow; pronotum laterally as above, slightly darker above forecoxa. Scutellum brown basally, Y-shaped carina yellow from near base to apex. Forewing: clavus brownish, corium yellowish, veins still lighter; membrane translucent, with a brownish tinge, veins brown. Meso- and metapleura reddish-brown, slightly darker than posterior lobe of pronotum. Coxae brown. Trochanters yellow, each with two longitudinal narrow brown stripes. Femora yellow, with two incomplete preapical brownish annuli, on apical half above with two narrow longitudinal brown stripes. Tibiae yellow on basal two-thirds, apical third gradually

darkening to light-brown, with two inconspicuous brownish postbasal annuli. Tarsi brown, claws dark-brown. Abdomen ventrally brown; connexivum yellowish, slightly darkening toward apex, spines blackish basally and yellow apically, apex and base of connexival segments 2 to 6 broadly banded with brown; thickly covered with fine golden appressed pilosity and scattered long vertical pilosity; three glabrous round areas under each connexival segment.

Head densely covered with fine short appressed golden pilosity; length 18, width across eyes 9.5, interocular space 4.5, postocular space slightly longer than preocular (7.5:6), subantennal spine slightly curved outward and half as long as depth of head (3:6). Antennae: 38:15:29:19; first segment with scattered subvertical pilosity about as long as thickness of segment, last three segments mostly bare. Beak: 10:10:4. Pronotum with anterior angles spined, spine half as short as subantennal spine, produced at about 45° forward and upward; anterior width 8, posterior width 21, length 18.5, anterior lobe 6.5; spines of posterior lobe not too long, about 1.6 × as long as subantennal spine, slightly inclined backward. First three connexival segments with spines slightly shorter than subantennal spine, fourth slightly angularly produced. Last abdominal segment as in figure 20; genital capsule as in Plate II, figs. 20 and 21. Length 15 mm.

Female—colored as male, slightly paler; abdomen ventrally without small glabrous areas. Head: length 19, across eyes 9.5, interocular space 4.5, anteocular space 5.5, postocular 9, subantennal spine 3, depth of head 6. Pronotum: anterior width 7.5, posterior width 21; length 20, anterior lobe 6.5. Antenna: first segment 40.5; pilose, other segments missing. Beak: 9.5:9:3. Last abdominal segment as in Plate II, fig. 19. Length 16 mm.

Holotype male, HAITI, Daiquini, W. M. Mann collector, in USNM Cat. No. 73333. Allotype female, HAITI, 10 miles SE of Gonaïves, July 1956, B & B, Valentine collectors, in JMC.

Even though keying at different places *H. haitiana* is closer to *H. ornata* and *H. acantharis* as they are brownish with yellow-tipped spines, a combination not found in the other species.

Heza insignis Stal (Redescription)

Heza insignis. Stal 1859:198 (16).

Male—head, anterior femora, and pronotum of same shade of dark fuscous; anterior lobe of pronotum and base of forewings lighter due to abundant pilosity; corium dark gray, membrane hyaline, veins blackish; foretibia and hindlegs stramineous, mid- and hindfemur apically banded with fuscous; thorax and abdomen ventrally stramineous, lighter

than body above. Thorax ventrally of same shade of dark-fuscous as pronotum above; abdominal sterna light fuscous.

Length of head 20, width across eyes 9, interocular space 4, subantennal spine one-third depth of head (2:6.5) pronotum: anterior width 8, posterior width 25, length 23, length of anterior lobe with conspicuous pattern of golden scales, posterior lobe dorsally and laterally with an extensive patch of scales contiguous to anterior lobe (Plate II, fig. 24); rest of body mostly bare, legs with moderately abundant long vertical pilosity. Anterior lobe with short, blunt discal spines; first connexival segment with small blunt spine, other segments unarmed, apical angles not produced. Hypopygium as in Plate II, figs. 22 and 25. Length 18 mm.

Female—head above, pronotum except most of anterior lobe, and base of forewing dark fuscous; anterior lobe of pronotum with a conspicuous pattern of whitish scalelike hairs that extends as a round area on antero-lateral surface of posterior lobe; corium dark gray, membrane hyaline, veins blackish; legs, head below, and abdominal sterna light fuscous; femora with apical blackish annulus.

Length of head 22, width across eyes 10, interocular space 4.5, subantennal spine one-half depth of head (4:8); pronotum: anterior width 10, posterior width 31, length 27, length of anterior lobe 9. Length 21 mm. Pilosity as in male; pattern of scales on pronotum similar to that of male but composed of lighter colored hairs. Discal spines of anterior lobe of pronotum as in male. Seventh tergum as in Plate II, fig. 23.

Specimens studied from BOLIVIA, in the AMNH.

Closer to *Heza multiguttata*, they can be separated by the pattern of scales on the pronotum as in the key.

Heza jamaicensis (Distant) new combination

Ricolla jamaicensis Distant 1903:360 (7).

Distant's description slightly modified follows: "Luteus; head, pronotum, clavus, base, and apical angular area (connected inwardly) of corium, membrane, (excluding apex, and apices of femora carmine-red); antenna with apex of first and second segments piceous; apex of abdomen sometimes piceous. Abdominal marginal spines in all segments very long and strong; head about as long as pronotum, with a long spine on each side at base of antennae; posterior lobe of pronotum with four long spines (two forming the lateral angles and two discal); spines at apices of femora distinct; membrane passing the abdominal apex. Long 14 to 15 mm" Habitus in Plate IV, fig. 63; head as in Plate II, fig. 26. Plica small, anterior lobe unarmed, apex of femora bispinous, hypopygium as in Plate II, fig. 27.

Apparently more common in the higher elevations of Jamaica. Easily distinguished from all other species by its carmine-red and yellow or luteous coloration.

Types in the BM(NH); specimens in the collection of the Ohio State University, the Institute of Jamaica, USNM, and JMC.

Heza leucothorax new species

Male—head anteriorly and below, foreleg, and antennae brown; head dorsally behind eyes darker, second segment of beak lighter. Pronotum blackish-brown, some areas between carinae of anterior lobe light-brown; laterally densely covered with white scalelike hairs; dorsally with many smaller patches on posterior lobe, anterior lobe mostly bare. Thorax laterally with four large round spots of golden scale-like hairs as follows: one below plica, two above mesocoxa, and one above metacoxa (Plate II, fig. 29). Mid- and hindlegs lighter than anterior. Scutellum blackish-brown, laterally thickly covered with white scales. Forewings: clavus and corium blackish-brown, clavus with many moderately large patches of white scales; corium with fewer and smaller similar patches; membrane shiny brown. Abdomen ventrally straw-colored, blackish-brown under connexal segments, connexivum yellowish-white; blackish-brown area with a few small clusters of white scales.

Head: length 20, width across eyes 10, interocular space 5, postocular margin $1.3 \times$ as long as anteocular (9:7); lower margin of eyes level with under surface of head. Ocelli large, elevated. Antennal segments 60:12:85:?. Beak 12:8:4. Pronotum: length 20, anterior lobe 6, anterior width 7, posterior width 24. Length 17 mm, tip of forewing reaching apex of abdomen.

Anterior angle of pronotum slightly produced laterally; anterior lobe with slightly elevated carinae, depression between the discal spines deep, discal spines slightly shorter than subantennal spines and rounded apically. Posterior lobe transversely finely corrugate, with short carinae extending caudal behind spines of anterior lobe, spines long and slender. Scutellum with well-developed carina, apex horizontal. Mesopleura with well-developed sharp plica. Abdomen slightly widening to penultimate segment; last tergum rounded to apex, apical margin nearly straight between the two apical short spines (Plate II, fig. 30). Only first connexal segment spined, spine short and round apically. Spine of hypopygium vertical, broad, and wider apically than basally.

Female—general coloration and shape much as in male. Pronotum with area between discal spines of anterior lobe and collar blackish-brown, remaining parts and all of posterior lobe totally white. Areas of

golden scales on pleurae and patches of scales on scutellum and forewings as in male. Abdomen ventrally as in male, patches of scales more abundant.

Armature of pronotum as in male. Abdomen widening to apex of fifth segment, sixth narrowing to apex as in Plate II, fig. 30. First connexivum with a round-pointed spine at apex, second very slightly produced, third not produced, fourth and fifth slightly angularly produced.

Head: length 26, width across eyes 12, interocular space 6, postocular space $1.3 \times$ as long as anteocular (12:9), subantennal spine one-fourth depth of head (2:8). Antennal segments 68:21:78:12. Beak 14:10:5. Thorax: anterior width 8, posterior width 34, length 28, length of anterior lobe 8. Length 23 mm to tip of forewings that slightly surpass tip of abdomen.

Holotype male, BRASIL, Amazon sup Pebas, in NRS. Allotype female, BRASIL, Juanfué, in NRS. Paratypes: one female, Sarayacú, in JMC, one male, SURINAM, van Doesburg collector in LM.

The extensive white areas on the pronotum and the four golden areas on the pleurae characterize this species.

Heza polita new species

Female—overall color polished blackish-brown and reddish-orange. Head glabrous and polished, dark reddish-brown slightly darkening from base to apex; first broad antennal segment blackish, two dark-orange annuli near midlength; second light reddish-brown on basal two-thirds; apically dark-brown; beak reddish-brown basally, fading gradually towards apex. Pronotum including spines and mesopleura dark reddish-brown, polished, glabrous; metapleura slightly lighter. Coxae, trochanters, and femora dark-orange; femora apically dark reddish-brown. Tibiae dark reddish-brown on basal two-thirds, apical third yellowish-brown, apically blackish-brown. Tarsi yellowish-brown basally, darkening to reddish-brown apically. Mesoscutum dark reddish-brown, spine light reddish-brown. Forewing: clavus brown; corium dark-orange; membrane translucent, with a brownish tinge, veins brown. Abdomen ventrally reddish-brown or dark-orange, slightly lighter than corium spines dark-orange, blackish at tip.

Head: length 20, width across eyes 10, interocular space 4.7, anteocular space as long as postocular, subantennal spine two-thirds depth of head (4:6). Pronotum glabrous; anterior lobe smooth, without carinae, sulcus contiguous to posterior lobe deep; anterior spine as long as subantennal spine; posterior lobe transversely striate, humeral spines vertical, discal spines horizontal, directed backward (Plate IV, figs. 53 and 54); anterior width 8, posterior width 20.5, length 19.5, length of anterior lobe 7.5.

Antennal segments very short pilose; 30:15.5; last two missing. Beak: 10:8.5:3.5. Connexival segments 1 to 5 with apical angles long-spined. Pilosity scarce, very short, appressed, few vertical long hairs on legs. Seventh abdominal tergum with hind-margin straight, broad, long-spined lateral angles (Plate IV, fig. 55); eighth tergum as in Plate IV, fig. 55; plica small; length 16.5 mm to tip of forewing.

Holotype female, JAMAICA, St. Elizabeth, about 3 mi., N. W. of Luana Mt., Charles Estate, April 16, 1955, T. H. Farr, in the Institute of Jamaica.

This species is unique in having the two discal spines of the posterior lobe of the pronotum horizontal. The dark reddish-brown, polished, glabrous body is also distinctive.

Heza multiannulata Stal (Redescription)

H. multiannulata. Stal 1860:78(17).

Male paratype—overall color pale-brown or yellowish-brown. Head above on preocular half pale-brown; behind ocelli, laterally, and below with or without a reddish tinge. Antenna of same color as head above, first segment with a basal, midlength, and subapical broad inconspicuous reddish annuli; second reddish with base and apex yellowish-brown, third and fourth uniformly pale-reddish. Beak pale-brown, third segment reddish apically. Eyes reddish or golden-reddish; ocelli vitreous. Pronotum with anterior lobe of same color as head, posterior lobe slightly lighter; spines on anterior lobe concolorous, on posterior lobe the outer basally shiny blackish-brown, the inner two blackish-brown on basal three-fourths; apex of all spines of same shade of pale-brown as posterior lobe; prosternal groove blackish-brown. First two legs yellowish-brown, of same shade as posterior lobe, the hind slightly lighter; femora with post basal, middle, and subapical broad reddish annuli, the post basal annulus missing on the hindfemur, in the forefemur the three bands coalesce irregularly below; tibiae of same color as femora, the hind the lightest, foretibia with a broad post basal reddish inconspicuous annulus, the rest of the segment either uniformly pale-reddish or with a subapical narrower inconspicuous annulus; mid- and hindtibia with reddish narrow post basal and middle annuli. Thorax laterally and ventrally, scutellum and postscutellum light pale-brown. Abdomen ventrally brownish, darker than pronotum, paler toward lateral margins; connexival margin with first two spines stramineous, third and fourth spines shiny blackish-brown; the angularly produced last two posterior angles of connexivum and the posterior margin of last tergum blackish-brown. Forewing stramineous; veins on apical angle of corium, around membrane, veins

of cells of membrane except along inner side of basal cell, and a narrow area on corium along claval margin, brown.

Anterior angles of pronotum conical but not produced as a short spine; anterior lobe well defined, subglobose, with a deep median depression between the spines, discal spines short and sharp; posterior lobe finely rugose, not transversely coarsely corrugate as in some species, spines long, sharp, the two discal spines not preceded by carinae. Mesoscutellum ending in a short sharp horizontal spine. Mesopleuron with poorly developed plica. Abdomen gradually widening to apex of fifth segment, thence narrowing to apex; first four terga with a sharp spine on posterior angle, fifth angularly produced (Plate II, fig. 35); sixth tergum narrower apically than basally, broadly and deeply concave apically between the two caudal sharp projections (Plate II, fig. 34). With abundant moderately long, fine pilosity on thorax and head.

Genitalia as in Plate III, figs. 37, 38, 40.

Head: length 17, width across eyes 10.3, interocular space 5; postocular longer than anteocular (8:5); subantennal spine relatively short and stout, much shorter than depth of head (4:7). Antennal segments 48:10:47:20. Segments of beak 10:7:4. Pronotum: posterior width 24, at posterior projections of hindmargin 13; length 20, anterior lobe 7. Length 17 to 18 mm. Specimen from BRASIL, identified by Stal.

The uniform light-brown or yellowish-brown coloration, the annuli of the first antennal segment, and the shape of the last tergum separate this species from others with four spines on the connexival margin. The outer genitalia is somewhat similar to that of *ornata*, their claspers are quite similar but those of *ornata* are more pilose, the projection of the hindmargin of the hypopygium is stouter in *multiannulata*. Their aedeagi are totally different; *ornata* has a well-developed shield formed by the struts of the aedeagus (Plate III, figs. 41-42) and the basal plates are heavy and with two-pronged projections near their bases (Plate III, fig. 43), *multiannulata* lacks this shield and the basal plate is slender.

Additional material studied: 1 ♂ and 1 ♀ from Paramaribo, SURINAM (LM).

Heza ocellata new species

Nearly uniformly brownish dorsally; ventrally and mid- and hind-femur slightly lighter than dorsally; a row of white spots on pronotum (Plate IV, fig. 62). Scutellum with a short vertical conical spine and metascutellum with a short horizontal spine, apically white. Eyes black. Forewing with brown veins on corium and membrane; corium with a large oval patch of yellowish scalelike hairs (these scales could be whitish

or white in life). A small white dot of scalelike hairs each on mesopleura and close to anterior margin on sides of first four abdominal sterna.

Anterior angle of pronotum shortly produced laterally; spine of anterior lobe of medium length, blunt, apex slightly bent forward; anterior lobe smooth, posterior lobe irregularly shallowly wrinkled; spines of posterior lobe long and sharp, each discal spine preceded by a carina that reaches the anterior lobe. Well-developed plica. Mesoscutellum with apex shortly produced upward, metascutum horizontal. Body with very scarce short pilosity; legs with abundant vertical and subvertical moderately long hairs; antenna bare. Abdomen slightly wider at apex of fourth segment; a short spine on posterior angle of first connexival segment only.

Head: length 20, width across eyes 9.5, interocular space 5, subantennal spine nearly half depth of head (4:7); posterior margin $1.5 \times$ as long as antecular (10:7). Antennal segments: 57:14:80:?. Pronotum: anterior width 8, posterior width 24; length 22, anterior lobe 8. Beak: 12:9:4. Hypopygium caudally as in Plate IV, fig. 61. Length 18 mm.

Holotype: SURINAM, collected by P.H. van Doesburg, Jr., in LM. The row of white spots on the pronotum identifies this species.

Heza ornata new species

Male—overall color blackish-brown conspicuously ornamented with yellowish. Head blackish-brown, above lighter due to the presence of abundant very fine, appressed, short pilosity; below and laterally polished, glabrous; posterior lobe above with a median yellowish line that widens toward base of head. Tylus yellowish. Antenna brown; first segment with preapical, median and postbasal yellowish inconspicuous bands; second brown; third with a short basal yellowish annulus; fourth brown, looking lighter because of a more abundant pilosity; first two segments with moderately abundant vertical or slightly decumbent fine pilosity of about or slightly longer length than diameter of segment; third and fourth with copious very short fine decumbent pilosity. Subantennal spine yellowish on apical two-thirds. Beak with first and second segments brownish-yellow; third polished blackish-brown, lighter at tip. An oval polished glabrous area laterally in front of each eye. Eyes reddish-brown; ocelli vitreous. Anterior lobe of pronotum blackish-brown; anterior spines, lateral carina from base of anterior spine to posterior lobe, carina near anterior margin, and carina extending to posterior lobe yellowish; laterally with abundant short appressed pilosity thus looking lighter. Posterior lobe of pronotum dull brown; posterior spines shiny blackish-brown to midlength, apically yellowish; posterior

margin narrowly grayish. Meso- and metapleura and meso- and metasterna blackish-brown, with very fine and short decumbent golden pilosity. Coxae blackish-brown. Trochanters straw-colored. Forefemur brown, with basal fourth and a preapical band straw-colored; mid- and hindfemur straw-colored, with three brownish bands on apical two-thirds. Foretibia brown, with knee and two post basal straw-colored annuli. Midtibia lighter brown on apical half; basal half with three dark-brown annuli. Hindtibia brownish yellow, with three short dark-brown annuli on basal half. Scutellum blackish-brown, v-shaped carina and apical spine yellowish. Forewing with clavus dark-brown; corium with innermost cell dark-brown, remaining cells lighter because of the dense cover of short golden pilosity, pilosity in clusters on disc of cells; veins contrastingly yellowish; M and veins of quadrate cell thicker and therefore more outstanding; stigma blackish-brown; membrane polished-brown.

Gena slightly produced. Anterior angle of pronotum produced into a long vertical spine (Plate III, fig. 44); anterior lobe with a deep median depression behind, somewhat globose posteriorly, ornamented with broad carinae; disc of anterior lobe without spines. Posterior lobe coarsely grained, not transversely corrugated as in some species; spines long, sharp, and with broad bases, the two discal ones preceded by distinct carinae; scutellum ending in a long upcurved spine. Mesopleuron with a small plica. Abdomen gradually widening to apex of penultimate tergum, last tergum semicircular, very shallowly roundly emarginate apically (Plate III, fig. 50); posterior angles of segment of connexiva ending in long sharp spine (Plate III, fig. 49).

Head: length 21, width across eyes 10.5, interocular space 6.0, postocular area slightly longer than antocular (8:7.5); subantennal spine slightly shorter than depth of head in front eyes (6:6.5); antennal segments: 40:16:--:--; segments of beak: 11:11:5. Thorax: anterior width 11, posterior width 24; length 22, anterior lobe 9. Length 18 to 19 mm.

Genital capsule and aedeagus as in Plate III, figs. 41, 42, 47-49. Posterior margin of hypopygium as in Plate III, fig. 46.

Female—coloration as in male. Length of head, width across eyes, interocular space as in male; postocular and antocular margins 9:8; subantennal spine shorter than depth of head 5.5:6. Antennal segments 42:17:32:17. Beak 11:11:5. Pronotum: width as in male; length 21, length of anterior lobe 9.

Holotype—male; PUERTO RICO, near El Yunque, El Verde, km 22 hm 3, Rd. 186, May 1970, R. Lavigne collector, at light, in the USNM, Catalog No. 73334. Allotype—female, same collecting data, November 27, 1969, R. Lavigne collector, in the USNM. Paratypes, two females in JMC, same collecting data, different dates.

The outstanding ornamentation with yellow lines and annuli, and the two long spines anteriorly on pronotum easily distinguish this species from *Heza acantharis* and *H. multiannulata*, the other species with long spines on the margin of the connexival segments. See discussion under *H. acantharis*.

Heza ruber new species

Male—head, beak, antennae, thorax, scutellum, and forefemur light-brown; legs stramineous, lighter than head, femora subapically ringed with reddish-brown. Forewing: clavus, costal margin between Cu and A, and thick vein along outer margin of membrane wine-red; membrane transparent with a light-brown tinge. Abdominal sterna light-brown irregularly ornamented with red.

Gena somewhat produced anteriorly. Anterior angle of pronotum produced laterally into a moderately long spine, longer than subantennal spine; anterior lobe with an inconspicuous pattern formed by lines of short golden pilosity; discal spines of moderate length, blunt tipped. Posterior lobe slightly corrugate, spines of moderate length and preceded by carinae that reach to anterior lobe. Scutellum horizontal, discally slightly elevated. Mesopleuron with well-developed plica. Abdomen nearly parallel-sided, slightly widening to apex of penultimate segment, last round-sided to apex; only first connexival segment spined.

Head: length 15, width 8, interocular space 4, postocular space about $1.5 \times$ longer than anteocular (7:5); subantennal spine one-third as long as depth of head (2:6). Antennal segments: 38:10:45:10.5. Beak: 9:6:4. Thorax: anterior width 7, posterior width 20; length 19, anterior lobe 6. Apex of forewing reaching apex of abdomen. Genital capsule as in Plate V, fig. 65; spine of margin of hypopygium vertical, slightly widening apically (Plate V, fig. 66). Length 13 to 14 mm.

Holotype male, SURINAM, Dutch Guiana, in LM. Paratype male, same data, in JMC.

The wine-red areas on the forewing easily identify and separate it from all other having only the first connexival segment spined. As mentioned above, *H. binotata* and *H. rubromarga* are also ornamented with red.

Heza rubromarga new species

Male—head including subantennal spine, base of antenna, and first segment of beak red; antenna deep reddish-brown; second and third segment of beak straw-colored or brownish. Pronotum brownish, area above forecoxa and base of spines of posterior lobe red. Mesosternum reddish except medianly where it is straw-colored; pleura above meso- and metacoxa reddish. Forecoxa, trochanter, and femur red; foretibia

brown, tarsi brown, claws reddish. Mid- and hindcoxae and trochanters straw-colored; mid- and hindfemora green; mid- and hindtibiae greenish basally thence brown or brownish to apex. Scutellum brownish, same shade as pronotum. Forewing: clavus, corium, and membrane brown; R, area between R and M, and base of veins of membrane red. Abdomen ventrally straw-colored. Pronotum, pleura, and abdominal sterna with abundant very short golden pilosity; long fine vertical hairs except on forewing.

Head: length 17.5, width across eyes 9, subantennal spine about two-thirds depth of head (4:6), interocular space 8, postocular margin about $1.5 \times$ as long as anteocular (8:5), lower margin of eye not surpassing lower surface of head. Antennal segments: 48:9:55:?. Beak: 10:8:4. Pronotum: length 22.5, anterior width 6, posterior width 23, anterior lobe 6. Length 20 mm to apex of forewing.

Anterior angle of pronotum sharply and shortly produced laterally; spine of anterior lobe short, sharp, shorter than diameter of foretibia; depression between spines deep; posterior lobe coarse, not transversely corrugate, discal spines preceded by carinae that reach anterior lobe, the four spines stout basally and relatively short, posterior margin as in *multiannulata*. Mesoscutellum horizontal; apex short, rounded. Mesopleuron with well-developed plica. Abdomen slightly widening to apex of penultimate segment, last segment with sides curved to a sharp point, narrower than widest part of forewing; only first connexival segment spined apically, spine short, round-tipped. Forewing extending well beyond apex of abdomen.

Genital segment as in Plate IV, fig. 59; hindmargin of hypopygium with a horizontal ledge, apical spine inclined backwards, short, slender, sides parallel, round-tipped.

Female—coloration and pilosity as in male. Shape of head and thorax as in male (Plate IV, fig. 60). Abdomen wider than in male gradually widening to apex of fifth segment, sixth with sides roundly narrowing to last, last medianly shallowly indented; from base of second abdominal segment to just before apex wider than wings.

Head: length 20, width 10, interocular space 5, postocular space $1.5 \times$ as long as anteocular (10:7), subantennal spine shorter than depth of head (5:8). Antennal segments 51:16:42:?. Beak 12:8:4. Thorax: anterior width 9, posterior width 27; length 26, anterior lobe 8. Length 21 mm, to tip of wing that slightly surpasses tip of abdomen.

Holotype male, BOLIVIA, El Chaco. Allotype female, same data, both in Stockholm, Sweden. One paratype, same data, in JMC.

This species, because of its reddish spines and appendages, should be related to *binotata*. The latter has clusters of scales on the clavus. The trivial name makes reference to the reddish margin of the forewing.

Heza sericans Stal (Redescription)

H. sericans Stal 1859:199(16).

Male—head, pronotum including spines, and forelegs reddish-brown. First antennal segment brown, with a post basal and a preapical conspicuous, long, yellow annulus; second yellowish, apically brown; third stramineous. Beak with first segment stramineous, second and third blackish. Subantennal spine dark. Anterior lobe of pronotum with a pattern formed by slightly elevated yellow- or golden-pilose carinae and intervening blackish-brown low areas. Coxae blackish-brown. Mid- and hindfemora stramineous with blackish-brown apices; mid- and hindtibiae brownish, darker toward apices. Clavus and corium pale-brownish, slightly paler than pronotum; membrane hyaline, with a brownish tinge; veins brown, basally whitish. Thoracic and abdominal sterna dark reddish-brown, the latter with a small patch of whitish scales on basal margin about midway from connexival margin to median line. Second to sixth connexival segments inconspicuously whitish on basal half.

Anterior angles of pronotum sharply and shortly produced laterad; anterior lobe with a deep depression between the two long sharp spines; posterior lobe although transversely corrugate, smoother than in *multiannulata*, spines long and fine, posterior angle produced behind lateral spine (Plate V, fig. 67); posterior margin as in *multiannulata*. Mesoscutellum shortly produced into a blunt spine. Mesopleuron with well-developed plica. Abdomen slightly widening to apex of fifth tergum, last tergum roundly narrowing to apex, posterior margin ending in two broad sharp projections (Plate V, fig. 70); first three connexival segments shortly spined apically, the next two slightly angularly produced (Plate V, fig. 68). Last abdominal segments as in Plate V, fig. 75. Head, legs, pronotum, sterna, clavus, and corium with abundant short appressed whitish pilosity; long fine vertical pilosity scarce except on legs. on legs.

Head: length 27, width across eyes 12, interocular space 6; postocular space $1\frac{1}{2}$ times as long as anteocular (13:8); subantennal spine shorter than depth of head (5:8); antennal segments: 60:15:59:— . Thorax: anterior width 9, posterior width 27, length 29, anterior lobe 8. Length 22 to 23 mm.

Hypopygium as in Plate V, fig. 68; spine of posterior margin of hypopygium slender, long, inclined cephalad.

Specimen described from BRASIL. The conspicuous annuli of the first antennal segment, the coloration of the beak and connexival segments, and the shape of the last tergum of the male separate this species from *fuscinervis* and the few others having short spines on the first three connexival segments.

Other material examined: SURINAM, Paramaribo 3 ♂♂ and 4 ♀♀ (LM). VENEZUELA, Rancho Grande, Aragua one ♂ (LM).

Female—overall color light-brown. Antenna as in male. Beak as in male, second segment yellowish beneath. Pronotum as in male. Coxae brown. Mid- and hindfemora stramineous with reddish-brown apices; mid- and hindtibiae brownish, darker toward apices. Clavus and corium pale brownish, paler than pronotum; membrane hyaline, with a brownish tinge, veins brown and basally whitish for a longer distance than in male. Thoracic and abdominal sterna dark reddish-brown, small patches of whitish scales not present in the only specimen studied. All connexival segments yellowish on basal half, light area successively larger and more conspicuous, that of penultimate segment visible from above.

Head much as in male. Pronotum with anterior lobe and anterior angle as in male. Mesopleuron with a well-developed plica. Abdomen widening to apex of penultimate segment; last tergum with apex three-sided; connexival margin as in male. Pilosity as in male.

Head: length 27, width across eyes 13, interocular space 7, postocular space 1.5 as long as antecular (13:8); subantennal spine shorter than depth of head (6:8); antennal segments: 60:20:48:?. Thorax: anterior width 9, posterior width 31, length 29, length of anterior lobe 10. Length 25 mm.

Specimen studied from BRASIL, Brasilia, in the collection of the University of Helsinki, Finland.

Additional material studied: BRASIL, Brasilia, one ♀; COLOMBIA, one ♀; VENEZUELA, Los Chorros, one ♀; all in JMC.

Heza similis Stal (Redescription)

H. similis Stal 1859:199(16).

Male—light-brown, with a golden hue due to abundant short, fine appressed pilosity. Head, thorax, abdomen, forefemora of same shade of light-brown; scutellum, clavus, and corium darker brown; membrane hyaline with a pale brownish tinge and reddish-brown veins. Mid- and hindfemora greenish. Foretibia reddish-brown; hindtibia with basal half greenish, apical half pale brown; hindtibia greenish on basal two-thirds, apically brownish. Hypopygium yellowish. First antennal segment greenish or pale-brown, inconspicuously banded with yellow. A small spot of white scales close to basal margin midway from connexival margin to median line on the first two abdominal sterna.

Anterior angle of pronotum produced but not forming a spine; discal spines on anterior lobe short and blunt; spines of posterior lobe relatively short. Mesoscutellum shortly horizontally produced. Connexival margins

with a short spine on first segment only, others not produced. Abdomen narrowing to apex of fourth segment, thence expanding to about middle of sixth which is rounded at apex.

Head: length 19.5, width across eyes 9, interocular space 4.5, postocular area longer than anteoal (9:6). Spine at base of antenna relatively short, about half depth of head (3:7), Plate V, fig. 74. Antennal segments: 49:10:51:-. Thorax: anterior width 8, posterior width 23, to apices of projections of hindmargin 13; length 21, anterior lobe 6. Beak: 10:8:3. Length 17 to 18 mm.

Hypopygium as in Plate V, figs. 73 and 75.

Description is that of a male paratype from Bogotá, COLOMBIA. The coloration, the shape of the genitalia, and the shape of the last abdominal tergum separate this species from others with only the first connexival segment spined.

Heza sphinx Stal (Redescription)

H. sphinx Stal 1863:30(18).

Male—strikingly light-brown above and brown below. Antenna brown, first segment with yellow inconspicuous long basal, post basal, and anteapical annuli. Legs brown as thorax ventrally; forefemur with blackish-brown apical annulus, a poorly defined annulus about midlength; foretibia with a yellowish annulus at about midlength; mid- and hindlegs with same pattern of annuli but these poorly defined, inconspicuous. Apices of spines of pronotum black. Forewings with membrane and veins of membrane deeper brown than clavus and corium, with small dots formed by clusters of short yellowish hairs. Connexival margin of first segment mostly dark, apex and its spine yellowish; margins of remaining connexival segments yellowish with black apex. Abdominal sterna with small yellow spots. Hypopygium yellowish-brown.

Head: length 21, width across eyes 12, interocular space 6; postocular space slightly longer than anteoal (11:9); subantennal spine half as long as depth of head (3:7.5), (Plate V, fig. 78). Antennal segments: 66:19:66:30. Beak: 13:9:5. Thorax: anterior margin as in Plate V, fig. 76; anterior width 9; posterior width 25.5; length 23.5, of anterior lobe 8. Apices of femora with short projections, as in Plate V, fig. 77. Pronotum: anterior lobe with short blunt discal spines; posterior lobe transversely corrugate, posterior angles sharply produced laterally, spines relatively short. Scutellum shortly and sharply horizontally produced. Connexival margin with spine of first segment distinct, of second a mere wart, the others not developed. Abdomen slightly widening to apex of penultimate segment; last tergum as in Plate V, fig. 80; last abdominal segments as in

Plate V, fig. 81. Pilosity very scarce on body, legs moderately long pilose. Length: male 21 to 22, female 26 to 27 mm.

Hypopygium as in Plate V, figs. 79 and 81.

Specimens studied, labeled *typus*, from Amazon. The shape of the last tergum, the large size, the black-tipped spines of the anterior lobe of the pronotum, and especially the very large carinated triangular spine of the hindmargin of the hypopygium distinguish this species from others with only one spine on the connexivum. Fallou's poor description of *Heza signoreti* mentions that the spines of the pronotum are short and black at tip as in *sphinx*. At this moment there is no way of knowing if these are the same or two different species.

Heza ventralis Stal (Redescription)

H. ventralis Stal 1872:76(19).

Female—antenna, head, beak, thorax including spines, and legs yellowish-brown or dark-stramineous. Clavus, corium, and connexival segments brownish-gray, darker brown than previously mentioned parts, membrane still darker, veins of membrane reddish-brown. Abdominal sterna with extensive areas of white serosity from below line of spiracles to before median line, whitish area delimited above by an elongate blackish line, interrupted at about midlength by a thumblike blackish area, and ending at a blackish spot (white represented by hatched areas in Plate V, fig. 83) before median line. Smaller areas of white, laterally and ventrally on thorax.

Anterior angle of pronotum sharply produced but not forming a spine; anterior lobe smooth, not globose as in *ornata*, spines relatively short, blunt, depression between spines not very deep; posterior lobe transversely corrugate, spines somewhat short, the two discal ones not preceded by carinae. Mesoscutellum with broad apex hidden by a dense cluster of hairs. Mesopleuron with well-developed plica. Abdomen spatulate, gradually widening to apex of fourth segment, thence roundly narrowing to truncate apex of last tergum (Plate V, fig. 84); margin of connexivum smooth, not spined. Short and fine long pilosity very scarce on head and body.

Head: as in Plate V, fig. 82; length 24, width across eyes 10, interocular space 5; postocular margin longer than anteocular (11:8). Subantennal spine about one-third as long as depth of head (3:8). First antenal segment 53, others missing. Beak: 14:10:4. Thorax: anterior width 10, posterior width 31; length 27, anterior lobe 9. Length 23 mm. Eighth tergum as in Plate V, fig. 84, smooth, pink-colored.

Specimens studied, from Amazon, labeled *typus*. The extensive sericeous areas on the abdominal sterna characterize this species.

Judging from similar cases in other reduviid genera the males should have sericeous areas but probably less extensive and in a different pattern.

RESUMEN

Este artículo es un estudio del género *Heza*, del orden de los hemipteros, en el cual se describen ocho nuevas especies, *Heza aurantia*, *H. polita*, *H. ornata*, *H. haitiana*, *H. leucothorax*, *H. rubromarga* y *H. ruber*. Tres especies originalmente descritas por Stal se redescriben del material tipo. Se ilustran detalles morfológicos de 26 de las 31 especies descritas y además se da una clave para 28 de las 31 especies conocidas de este género.

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