

A NEW SPECIES OF BROMELIAD LYGAEID
FROM JAMAICA^{1,2}

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ABSTRACT

A new species of *Ozophora* from Jamaica, West Indies is described and figured. The immature stages are also described. This species appears to be restricted to mature seed heads of bromeliads in the genus *Hohenbergia*. This restricted habitat is unusual since most species in the Rhyparochrominae are litter insects that feed upon fallen seeds on the ground.

The diverse and abundant bromeliad flora of the Neotropics presents a series of habitats to which many different animals have become adapted. Within the Heteroptera most associated species either suck the sap from leaves and flowers (Tingidae, Miridae etc.), are predaceous upon other insects associated with bromeliads (Anthocoridae) or live on the surface of the water present in the "cups" of many species (Veliidae).

In this paper we report a species of rhyparochromine lygaeid that lives on the mature seed of large Jamaican bromeliads while the seed heads are still present on the plant. This represents a marked modification of habits as the species belongs to a genus and subfamily the majority of whose members are litter insects that feed upon fallen seeds on the ground.

Ozophora hohenbergia Slater and Baranowski, NEW SPECIES
(Fig. 1)

Head and anterior pronotal lobe chiefly dark chocolate brown, the former with a conspicuously paler red brown median stripe on vertex and reddish yellow tylus, anterior pronotal lobe with a broad yellow macula on anterior collar on either side of meson and with inner area of calli reddish brown. Posterior pronotal lobe with a broad ovoid median dark chocolate brown fascia, a 2nd longitudinal stripe midway between meson and a sublateral stripe also chocolate brown these latter semi-coalescing posteriorly but leaving posterior margin yellow, intervening areas yellow to light reddish yellow. The scutellum dark chocolate brown, apex white and a large yellowish white macula laterally midway from base. Hemelytra marked in rather typical *Ozophora* variegated fashion; clavus with a pale elongately trianguloid macula on either side of distal half of claval commissure, somewhat suffused with reddish brown at level of anterior half of claval commissure. Corium with a conspicuous subapical dark macula, a 2nd broad macula along lateral margin at distal 3rd extending in-

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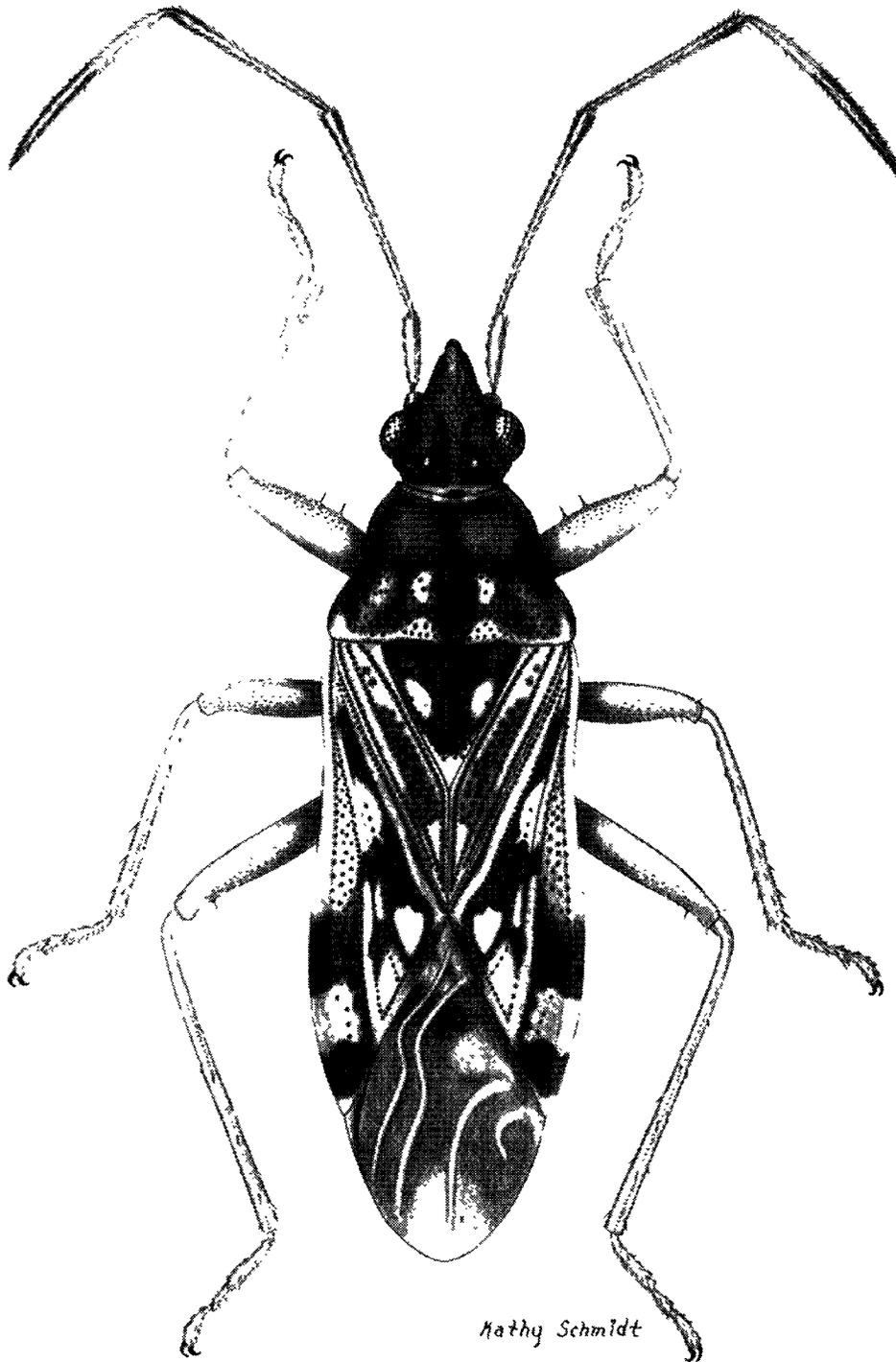


Fig. 1. Dorsal view of *Ozophora hohenbergia*, holotype.

ward to at least level of radial vein, inner angle of corium with a large yellow macula surrounded by dark chocolate brown, this dark marking extending antero-laterad to level of middle of claval commissure, a 2nd dark chocolate macula between radial vein and media at level of distal half of scutellum. Membrane chiefly pale fumose slightly infuscated with darker subbasally, the veins nearly white; apical corial margin pale yellow at apex and in middle, otherwise suffused with dark brown both anteriorly and adjacent to subapical dark patch. Ventral and pleural surfaces dark reddish brown, acetabula slightly paler, caudo-dorsal angle of metapleuron pale yellow. Abdomen reddish brown. Legs and labium nearly uniformly pale yellow, apex of labium reddish brown, an obscure ill-defined dusky annulus present near distal ends of hind femora. First antennal segment, distal end of segment III and distal one-half to two-thirds of segment IV plus extreme proximal end of segment IV dark reddish to chocolate brown, segment II and all but distal end of segment III yellowish, a very broad conspicuously differentiated white annulus present subproximally on segment IV. Punctures typical for *Ozophora*. Nearly glabrous above, at most with extremely minute inconspicuous hairs arising from punctures, lacking distinct upstanding hirsute appearance.

Head elongate, acuminate, nondeclivent; tylus reaching to or slightly beyond middle of 1st antennal segment, vertex moderately convex; eyes set slightly away from antero-lateral pronotal angles; head length 0.75 (all measurements in millimeters), width 0.88, interocular space 0.43. Pronotum with lateral margins prominently calloused, not sharply carinate, deeply sinuate; transverse impression deep and complete; posterior margin nearly straight, very slightly sinuate, humeral angles not prominently notched, pronotum length 0.95, width 1.78; scutellum anteriorly depressed in meson, calloused areas not strongly differentiated, scutellum length 0.80, width 0.78; hemelytra with lateral corial margins serrated anteriorly, moderately explanate, not strongly reflexed and slightly sinuate, apex clavus-apex corium distance 1.25, apex corium-apex membrane distance 0.88; fore femora moderately incrassate, armed below with 4 or 5 sharp reddish brown spines. Labium elongate extending far beyond hind coxae and onto anterior portion of abdominal sternum 4, 1st segment slightly exceeding base of head, 3rd segment reaching well between and nearly to posterior end of hind coxae, labial segments I 0.90, II 0.93, III 1.05, IV 0.25 long, respectively. Antennae typical, terete, slender, antennal segments I 0.48, II 1.35, III 1.0, IV 1.30 long, respectively; total length 5.50.

HOLOTYPE: male Jamaica: Faith's Pen 1.1 mi. S., Parish St. Ann, 10-XII-1970. (J. A. Slater & R. M. Baranowski). In National Museum of Natural History, no. 73788.

PARATYPES: Jamaica: 20 males 27 females Linstead, Parish of St. Catherine 2-VII-1971 (Slater, Baranowski, Harrington)—5 males same 7-IV-1971 (R. M. Baranowski) (blacklight trap)—2 males 3 females same data as holotype—2 males 1 female same 20-VII-1972 (R. M. Baranowski)—2 males 7 females Mandeville, Parish of Manchester 1-VII-1971 (Baranowski, Slater, Harrington). In Florida State Collection of Arthropods, National Museum of Natural History, American Museum of Natural History, James A. Slater and Richard M. Baranowski collections.

Many specimens have the posterior lobe of the pronotum much more extensively darkened than does the holotype so that it gives the appearance

of 3 large chocolate brown lobes, 1 mesal and 1 on each side laterally with an irregular pale yellow longitudinal streak between them. Sometimes this streak is separated into a pair of maculae on the anterior portion of the posterior lobe and a pair along the posterior margin similar to the condition found in *Ozophora burmeisteri* (Guerin) and other species. In the majority of specimens the membrane is somewhat more fumose or darkened than in the holotype and has a conspicuous white trianguloid apex. The number of fore femoral spines is somewhat variable and in a number of cases the 3rd from the proximal spine is absent leaving a distinct gap.

Despite the frequently dark appearance of the pronotum, *hohenbergia* is closely related to *Ozophora quinquemaculata* (Barber). It is readily distinguishable, however, by the more acuminate head and especially by the elongate labium which, in this species, reaches the 4th abdominal sternum whereas in *quinquemaculata* it at most only slightly exceeds the hind coxae.

So far as is known this species is restricted to the mature seed heads of species of bromeliads of the genus *Hohenbergia*. At Faith's Pen it was taken on *H. polycephala* (Baker) Mez.; at Linstead it was taken on *H. penduliflora* (A. Rich) Mez.; and at Mandeville on *H. urbaniana* Mez. Both *polycephala* and *urbaniana* are endemic while *penduliflora* is also known from Cuba.

FIFTH INSTAR NYMPH (Linstead, Jamaica): Body broadened, elliptical. General coloration light testaceous yellow with intermixed darker markings but these latter still a light brown. Head nearly uniformly yellowish brown with a conspicuous pale stripe running through vertex to base of tylus and a pale macula behind each epicranial arm. Pronotum yellowish brown mesally, laterally and midway between meson and margin, these 2 latter brown markings coalescing anteriorly and becoming relatively dark brown near antero-lateral angles but not including explanate margin. Scutellum and wing pads variegated with yellowish brown and nearly white testaceous. Abdomen extremely conspicuously irrorate, segments 2 and 3 not completely fumose or dark gray as in many species of *Ozophora* but uniformly irrorate. Legs completely pale yellow. Antennal segments I, II and III yellow, 1st segment slightly infuscated, distal end of II very slightly infuscated, distal 5th of III dark chocolate brown as is distal two-thirds of IV, a conspicuous broad white annulus on proximal 3rd of segment IV. Body below reddish brown on pleural area except dorso-lateral edges of metapleuron and white to pale yellow on extreme meson of vertex. Abdomen below also uniformly irrorate.

Form and color as in most *Ozophora*. Labium very elongate, usually extending to sternum 6, tylus reaching at least to distal 3rd of 1st antennal segment. Fore femora often with only 3 ventral spines present. Head length 0.75, width 0.83, interocular space 0.48; pronotum length 0.68, width 1.28; wing pad length 1.25; abdomen length 1.93; labial segments I 0.83, II 0.88, III 0.90, IV .45 long, respectively; antennal segments I 0.35, II 0.95, III 0.78, IV 1.10 long, respectively; total length 4.10.

INSTAR FOUR (same): General form and color as in instar 5. Labium relatively more elongate usually reaching to abdominal sternum 7 with segment 3 reaching sternum 4. Head length 0.60, width 0.68, interocular space .40; pronotum length 0.43, width 0.88; wing pad length 0.53; abdomen length 1.80; labial segments I 0.60, II 0.65, III 0.70, IV 0.38 long, respectively; antennal segments I 0.28, II 0.60, III 0.53, IV 0.80 long, respectively; total length 3.40.

INSTAR THREE (same): Form and color similar to instar 4. Irrorate markings on abdomen frequently suffused with reddish. Infusate distal end of antennal segment II more prominent. Head length 0.50, width 0.58, interocular space 0.35; pronotum length 0.33, width 0.75; abdomen length 1.23; labial segments I 0.50, II 0.55, III 0.55, IV 0.38 long, respectively; antennal segments I 0.23, II 0.50, III 0.45, IV 0.63 long, respectively; total length 2.40.

INSTAR TWO (same): Form and color similar to instar 3. Head length 0.40, width 0.42; interocular space 0.30; pronotum length 0.20, width 0.52; abdomen length 1.02; labial segments I 0.44, II 0.44, III 0.40, IV 0.30 long, respectively; antennal segments I 0.18, II 0.20, III 0.36, IV 0.46 long, respectively; total length 1.74.

INSTAR ONE (same): Form and color similar instar 2. Head length 0.30, width 0.28; interocular space 0.20; pronotum length 0.14, width 0.32; abdomen length 0.46; labial segments I 0.32, II 0.30, III 0.24, IV 0.40 long, respectively; antennal segments I 0.14, II 0.26, III 0.26, IV 0.42 long, respectively; total length 1.10.

We are aware of only a few references to Rhyparochrominae associated with bromeliads. Mumford (1965) reported *Ozophora concava* (Distant) as intercepted in Texas in quarantine on bromeliads and Hunt (1958) reported a similar occurrence for *Cryphula apicalis* (Distant) [sic] *apicata*. Neither of these establish the species as more than casually associated with bromeliads. Champion (1913) in an important paper which treated many bromeliad insects described a new lygaeid as *Pamera alboannulata* (now in the genus *Lygofuscanellus*) which was definitely associated with bromeliads in Costa Rica. A breeding population was present as a male, 3 females and 2 nymphs are mentioned in the original description. Unfortunately Champion does not mention where these insects occurred on the host plants. He did not actually collect the insects but received them from a Monsieur C. Picado of Paris.

It is interesting that both *O. concava* and *L. alboannulata* belong to the tribe Ozophorini (there has been some confusion concerning *O. concava* and Mumford's (1965) record may actually refer to *Peggichisme consanguinea* (Distant), also an ozophorine).

Our acquaintance with *Ozophora hohenbergia* began on 10 December 1970 when we were collecting along a very steep hillside 1 mi. S. of Faith's Pen, near the base of Mt. Diablo in the interior of Jamaica. We were surprised that upon striking *Hohenbergia* seed heads over our nets several specimens of *Ozophora* dropped into the nets. Eventually we were able to obtain several nymphs, indicating that the species was indeed breeding in the seed heads. The insects were scarce, however, and while most rhyparochromines have food preferences and some are very restricted in food utilization, others are more oligophagous and occasional breeding takes place on peripheral, almost accidental, food sources.

In July 1971 we returned to Jamaica and attempted to discover how closely associated with bromeliads this species of *Ozophora* actually was. In most habitats the giant *Hohenbergia* bromeliads grow high in the trees and it is difficult to reach them. At Linstead and Mandeville as well as Faith's Pen by climbing into the trees and throwing the seed stalks into nets below we were able to obtain many adults and many more nymphs. The insects were not present in "green" seed heads nor in stalks from which the

seeds had fallen but were restricted to relatively fresh but completely mature heads.

Adults are very similar in appearance to many other species of *Ozophora* but the nymphs are quite distinctive. The nymphs of most species of *Ozophora* are dark chocolate brown to almost black on the head and pronotum with a strongly contrasting variegated abdomen. The nymphs of *Ozophora hohenbergia* by contrast are almost uniformly pale yellowish brown. The "typical" *Ozophora* color pattern is still present but has become so pale that the nymphs appear unicolorous to the eye in the field and are very cryptic among the seed heads of the bromeliads. Not only is the color indicative of specialization to the host plant but the latter instar nymphs (especially the 5th instar) are noticeably more flattened dorso-ventrally than are most species of *Ozophora*.

The adaptation of rhyparochromines to habitats well above the ground will probably prove to be relatively common in tropical rainforests. We already know of species feeding upon seeds in bird droppings on leaves, in the leaf axils of palms, in the understory, etc. The forest floor with its high humidity that causes fallen seeds to either germinate rapidly or be destroyed by fungi makes the litter habitat a very temporary one for lygaeids. It is thus not surprising that various species adapt to the abundant food supply present on plants above the ground particularly where the plants retain their seeds for a considerable period of time after they become mature.

Although we have examined bromeliads in several genera over the past 7 years on many of the West Indian islands we have not found any other hemipteran associated with the seed heads.

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