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Description of the First Genus of Physoderine Assassin Bugs (Reduviidae, Hemiptera) from the New World

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ABSTRACT

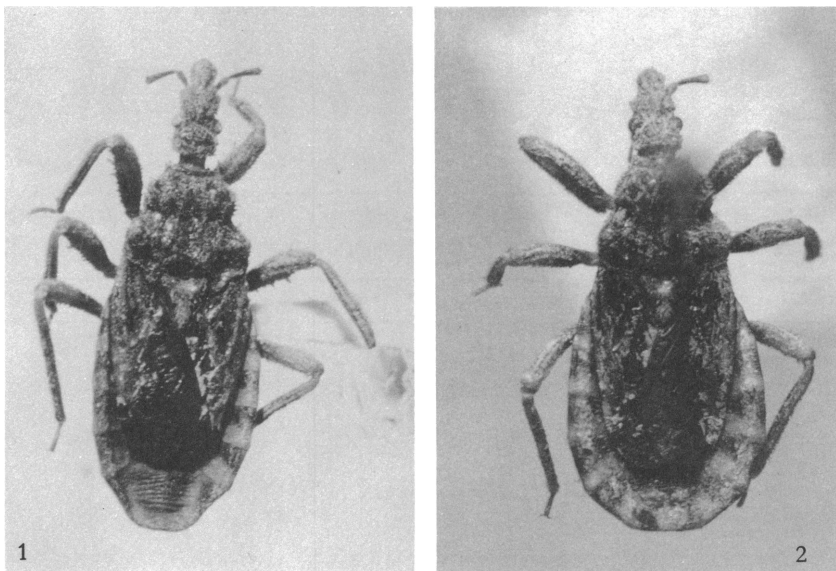
The reduviid subfamily Physoderinae was known to consist of the large genus *Physoderes* Westwood, ranging over the Oriental Region and Mauritius, and 11 additional small genera, restricted to Madagascar and the Comoro Islands. The present paper contains the description of the first New World physoderine bug, *Cryptophysoderes fairchildi*, new genus and new species, based on a male and a female collected in a hollow tree in the Canal Zone of Panama. The authors cannot advance any opinion on the zoogeographical relationships of the new genus and its position within the physoderines, because a cladistic system of the subfamily does not yet exist.

RESUMEN

La subfamilia Physoderinae de la familia Reduviidae se conocía hasta la fecha solamente de la región Oriental, con un género de numerosas especies, y de Madagascar, con 11 géneros menores. Se describe ahora el primer representante de la subfamilia del Nuevo Mundo, *Cryptophysoderes fairchildi*, nuevo género y nueva especie, de la zona del Canal de Panamá. Como no se ha elaborado aún un sistema cladístico de la subfamilia, no es posible establecer las relaciones filogenéticas y zoogeográficas del nuevo género.

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FIGS. 1, 2. *Cryptophysoderes fairchildi*, general aspect. 1. Male. 2. Female.

A new genus of the reduviid subfamily Physoderinae is described from the Canal Zone of Panama. This discovery extends considerably the range of the subfamily, known until now only from the Old World. One genus, *Physoderes*, ranges with numerous species over the Oriental Region including Mauritius. The remaining 11 genera, all monotypic or with very few species, are restricted to Madagascar and the Comoro Islands; no physoderine has been reported from the African continent. The discovery of a genus of this subfamily in the Western Hemisphere came as a surprise. It might be argued that the Panamanian specimens represent a recent introduction, but because they belong to an undescribed genus and were found in almost virgin forest in a quite isolated area (Fairchild, *in litt.*), this hypothesis is hardly tenable. The present case is somewhat comparable to the discovery, a few years ago, of an undescribed genus of the otherwise Old World subfamily Holoptilinae in Guyana (Wygodzinsky and Usinger, 1963).

Where known, the habits of the members of the subfamily Physoderinae are cryptic: specimens have been found in vegetable debris, behind the bases of banana and *Pandanus* leaves, or in caves; the insects here described were found in a hollow tree.

We are much obliged to Mr. A. Mendez, of the Gorgas Memorial

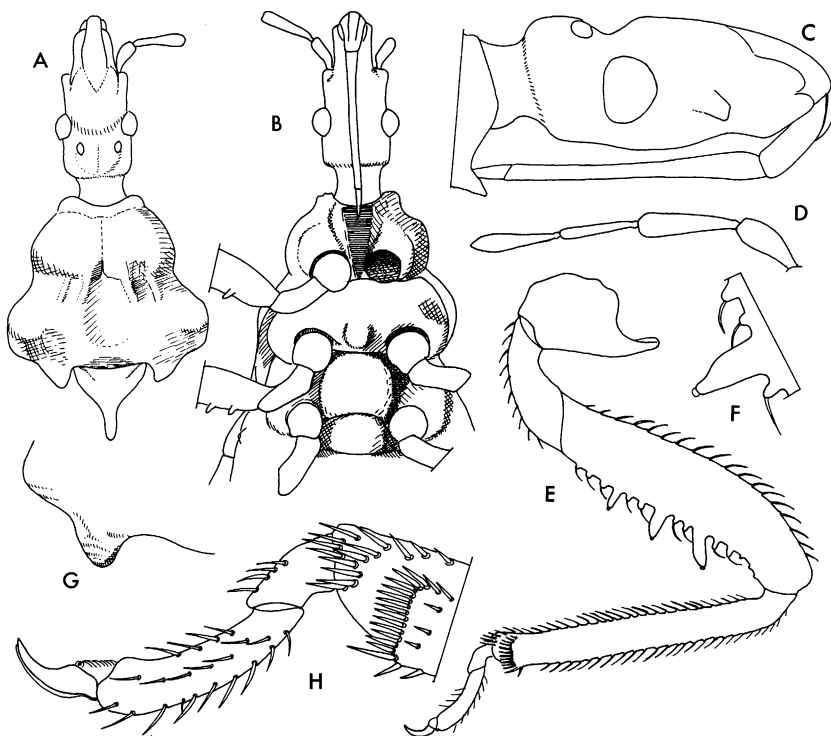


FIG. 3. *Cryptophysoderes fairchildi*. A. Female, head and thorax, dorsal. B. Male, head and thorax, ventral. C-F. Male. C. Head, lateral. D. Antenna. E. Foreleg. F. Detail of underside of fore femur. G. Female, lateral portion of posterior part of pronotum. H. Male, fore tarsus.

Laboratory, Panamá, for bringing this material to our attention and for allowing us to retain the holotype, and to Dr. A. Villiers, of the Muséum National d'Histoire Naturelle, Paris, for providing us with needed data on Old World Physoderinae.

CRYPTOPHYSODERES, NEW GENUS

DESCRIPTION: Body shape wide. Head, body, and legs densely covered with small setiferous tubercles. Overall color from yellowish brown to piceous.

Head about as long as thorax, distinctly narrowed before insertion of antennae. Anteocular portion of head much longer than wide, and longer than postocular portion; latter wider than long. Apex of clypeus not

salient. Undersurface of head not flattened; rostrum not closely adpressed to gula. First and second antennal segments thick, widened apically; third slender; fourth clavate.

Pronotum about as long as wide. Fore lobe of pronotum more elevated than hind lobe, but not prominent at center. Scutellum apically with long, subcylindrical, horizontal projection. Mesosternum with distinct rounded bulge posteriorly at center. Metasternum with large, flattened, elevated area at center.

Legs stout. Spongy fossae absent. Fore femora incrassate, ventrally with a few large and several small setiferous tubercles. Mid-femora similar to fore femora; hind femora more slender, without large tubercles. Tibiae with minute tubercles bearing long, stiff setae. Tarsi two-segmented.

Hemelytra with basal portion of Cu distinct. Basal portion of P_{cu} sharply angled toward claval suture, then parallel to it. Hind wings infumate.

Abdomen with three dorsal gland openings. Spiracles of first abdominal segment dorsally situated; spiracles of remaining segments in normal position on sterna, situated at some distance from connexival suture. Abdomen ventrally with intersegmental sutures faintly carinulate.

Pygophore with posterior process small, subtriangular. Dorsal bridge of pygophore very short. Parameres stout, with long hairs on outer and shorter spinelike setae on inner surface. Articulatory apparatus short and wide. Phallus with basal plate struts absent. Phallothea with several dorsal and ventral sclerotized areas; endosome lacking sclerotized portions, entirely membranous. Female with genital sclerites forming postero-ventrally directed shieldlike structure.

TYPE SPECIES: *Cryptophysoderes fairchildi*, new species.

ETYMOLOGY: From Greek *krypto*, to hide, conceal, in allusion to the habits of this insect, and *Physoderes*, type genus of the subfamily Physoderinae.

DIAGNOSIS: *Cryptophysoderes* differs from *Physoderes*, among other characters, by the lack of a dorsal excavation on the scutellar process, and by the two-segmented tarsi.

The only other genera with two-segmented tarsi are *Physoderoides* Miller and *Rodepirea* Villiers, both from Madagascar.

Cryptophysoderes can be distinguished from *Physoderoides* by the shape of head which in *Physoderoides* has a much shorter preantennal portion not extending beyond the apex of the first antennal segment; in *Physoderoides*, furthermore, the gular region is flat and carinate laterally, and the meso-sternal projection is carinate instead of bulge-shaped. *Cryptophysoderes* differs from *Rodepirea*, which has a narrow body, by its comparatively greater width, the less elongate second and much thicker fourth antennal segment; in *Rodepirea* there is an excavation on the undersurface of the

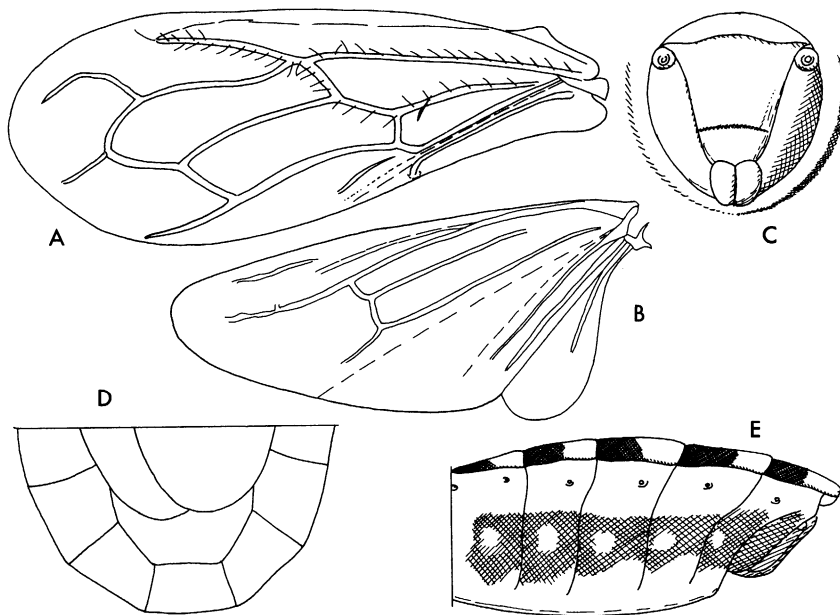


FIG. 4. *Cryptophysoderes fairchildi*. A, B. Male. A. Forewing, schematic. B. Hind wing. C-E. Female. C. Genital region, posteroventral view. D. Apex of abdomen, dorsal. E. Abdomen, lateral.

head, and the rostrum is closely adpressed to the gula. The most obvious difference is in the strongly thickened legs of *Cryptophysoderes* with the strongly tuberculate femora; the legs of *Rodepirea* are slender and the femora are not conspicuously tuberculate.

The above comparisons are based on obvious differences; an interpretation of the similarities between physoderine genera, where they exist, has not yet been made and therefore the cladistic relationships between the different genera are not known. The study of the male genitalia may be of special value in this connection. Because the phyletic relationships among the various groups of Physoderinae are not known, the systematic position of our genus cannot be discussed meaningfully. For the same reason, it is impossible to speculate on the zoogeographical significance and history of the genus, except to say that it seems to us that the presence of the genus in Central America may be explained either as the result of long-distance dispersal in geological time, or as the consequence of the shrinking of a formerly much wider range comprehending great parts of the northern land masses. The latter hypothesis has been made quite

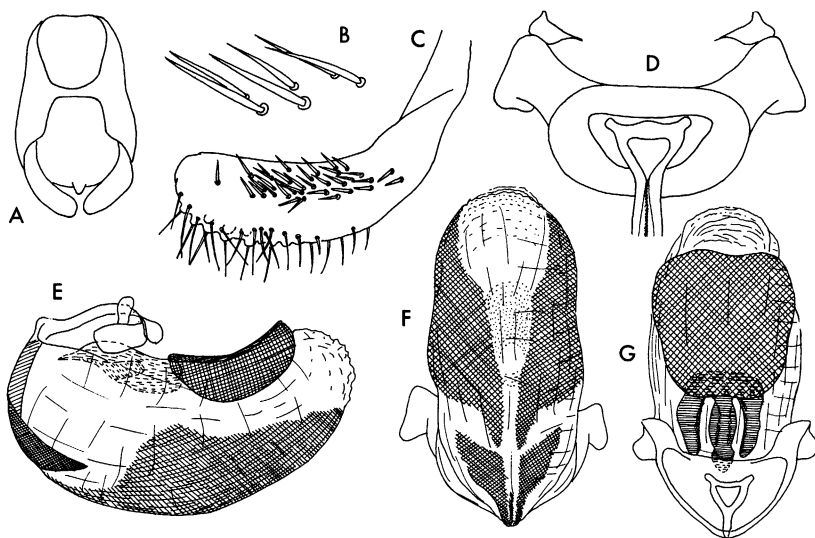


FIG. 5. *Cryptophysoderes fairchildi*, male. A. Pygophore, dorsal. B. Spinelike setae of paramere. C. Paramere. D. Articulatory apparatus of aedeagus. E-G. Aedeagus, various views. E. Lateral. F. Ventral. G. Dorsal.

probable for the case of the isolated neotropical holoptiline reduviid mentioned above (Wygodzinsky and Usinger, 1963).

***Cryptophysoderes fairchildi*, NEW SPECIES**

Figures 1-5

Length of male 8.9 mm.; maximum width of abdomen 3.3 mm. Length of female 8.8 mm.; maximum width of abdomen 3.5 mm. General color yellowish brown. Head and rostrum of general color; antennae with basal two-thirds of second segment, all of third segment except narrow basal annulus, and basal two-fifths of fourth segment, piceous. Pronotum and pleura of sterna of entire thorax, piceous, polished. Scutellum piceous or yellowish. Hemelytra with clavus and corium piceous; membrane castaneous; veins concolorous. Abdomen with connexival segments dark on anterior, light colored on posterior half. Terga castaneous. Sterna yellowish, with 1+1 wide sublateral bands dark; dark area on each segment with lighter spot at center (fig. 4E).

Head as in generic description and in figures 1, 2, 3A-C. Eyes small, in lateral view remote from levels of dorsal and ventral surface of head. Synthlipsis equal to three times the width of eyes, in dorsal view, in either sex. Antennae as in generic description and figure 3D. Head including

neck as long as pronotum to level of apex of posterior lobular projections.

Thorax and scutellum as in generic description and figures 1, 2, 3A, B. Hind lobe slightly wider than total length of pronotum. Anterior angles of collar blunt.

Hemelytra and hind wings as in generic description and figures 1, 2, 4A, B; abbreviated although probably functional, falling short of apex of abdomen by 1 mm.

Legs as in generic description and in figures 1, 2, 3E, H. Fore femora with 2-3, mid-femora with 1-2 larger and numerous smaller processes; larger processes with small, rounded spine apically, smaller processes with long distal setae (fig. 3E, F).

Abdomen and genitalia as in generic description and in figures 4C-E, 5.

MATERIAL EXAMINED: *Panama* (Canal Zone): Limbo, Gamboa, in hollow tree, April, 1970 (G. B. Fairchild), one male, holotype, in the American Museum of Natural History, one female, allotype, in the Gorgas Memorial Laboratory, Panama.

ETYMOLOGY: This species is named for its collector.

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