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Scientific Note

First record of the enigmatic *Bruchodape ignota* Burks, 1971 (Hymenoptera: Eurytomidae) from Minas Gerais, Brazil, with notes on its distribution

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Abstract. *Bruchodape ignota* Burks, 1971, the sole species of the genus *Bruchodape* Burks, 1971 (Hymenoptera: Eurytomidae), is a poorly known parasitoid wasp from the Neotropical Region. Previously recorded from Guatemala, French Guiana, and the Brazilian state of Santa Catarina, we report the first occurrence of *B. ignota* from Minas Gerais state, southeastern Brazil, based on a female specimen collected with a Moericke trap in a gallery forest in the municipality of Pratápolis. This new record extends the known distribution of the species approximately 850 km northeast of the type locality.

Keywords: Chalcidoidea, geographic distribution, new record, parasitoid wasp.

The monotypic genus *Bruchodape* Burks, 1971 (Hymenoptera: Eurytomidae) exhibits highly specialized structures, most notably on the metasoma, where the fourth tergite dorsally bears a semicircular, keel-shaped structure inserted within a tegumentary depression (Fig. 1B, C). The genus comprises the single species *B. ignota* Burks, 1971 (Fig. 1A), which occurs in the Neotropical Region, with recorded occurrences in Guatemala, French Guiana and the Brazilian state of Santa Catarina (type locality) (Burks 1971; Lotfalizadeh et al. 2007; UCD Community 2023).

According to Lotfalizadeh et al. (2007), the main autapomorphies of *Bruchodape* are: (1) upper tooth of mandible truncate and separated from mid-tooth by a broad emargination; (2) gena with a sharp tooth on posterior margin, associated with an evident depression of the postgena; (3) ITS and ocellar triangle broad, in comparison with the transverse head; (4) adscrobal area convex; (5) propodeum long, bearing large spiracles and a fairly deep median furrow; (6) mesopleuron with ventral shelf and differentiated epicnemium, with the remainder of the mesopleuron otherwise densely and finely strigose on femoral scrobe and mesepimeron; (7) forewing veins short; (8) T4 large, bearing a spherical projection at the center of a depressed area; (9) apical angulation of the gaster, the apex of T4, and following segments vertical.

Although the biology of *Bruchodape* remains entirely unknown, Burks (1971), based on the distinctive abdominal morphology, suggested that this species is likely associated with bruchid beetles, presumably as a parasitoid. According to M. Gates (pers. comm. in Lotfalizadeh et al. 2007), *Bruchodape* might be associated with xylophagous beetles as at least one specimen was reared in Guatemala from dead wood.

The present study aims to provide new geographic distributional data for *B. ignota* in Brazil.

The studied material consisted of one female collected using a Moericke trap in an area of gallery forest in the municipality of Pratápolis, state of Minas Gerais, Brazil. The specimen is deposited at the Entomological Collection of the Laboratório de Sistemática e Bioecologia de Predadores e Parasitoides (LRRP), Instituto Biológico, Ribeirão Preto, SP, Brazil (N. W. Perioto, curator).

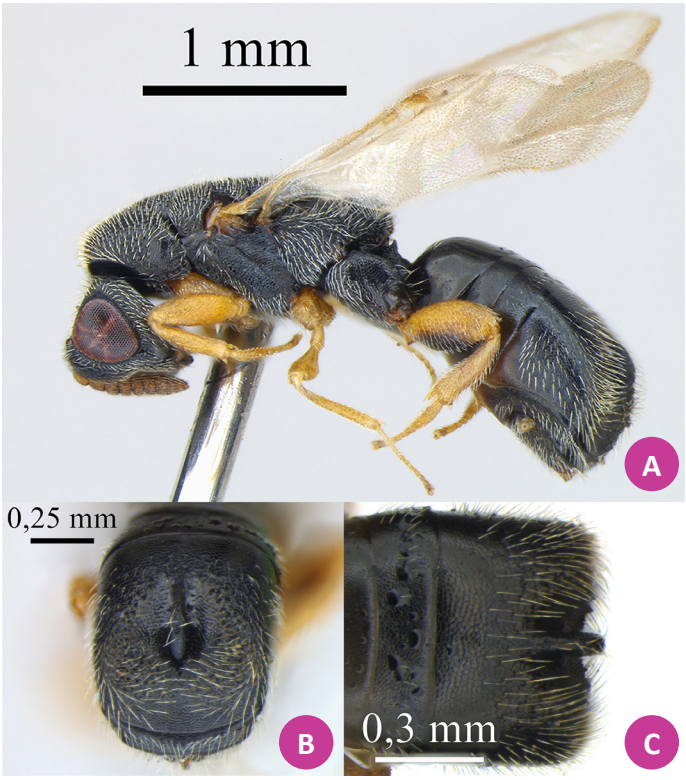


Figure 1. *Bruchodape ignota* Burks, 1971 (Hymenoptera: Eurytomidae), female. A. Habitus lateral; B. Apex of metasoma, frontal view; C. Apex of metasoma, dorsal view.

Observations were made using a stereomicroscope Leica S APO and color images were captured with a Leica DFC295 digital camera attached to a Leica M205C APO stereomicroscope, under Leica LED5000 HDI high diffuse dome illumination. Serial images were taken from multiple focal planes using Leica Application Suite software (LAS version 4.12.0) and later merged with Helicon Focus software (v. 5.3). Plates were created using Adobe Photoshop software (v. 11.0).

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Identification was performed following Burks (1971) and supplemented by comparison with images of holotype, available at https://collections.nmnh.si.edu/search/ento/?ark=ark:/65665/38bd04237ff0b431fa52674561e271c13.

Species distribution was compiled into a dataset and integrated into a distribution map. Geographic coordinates not present on species labels or in bibliographic references were obtained using Google Earth software (https://www.google.com/earth). For localities defined only at the country level, coordinates were assigned to geographic centroid of that country. Whenever a smaller administrative unit was identifiable (e.g., state or municipality), the centroid of that unit was preferentially used. These approximated coordinates were employed solely for mapping purposes at a regional scale and should not be interpreted as precise collection site. The distribution map was generated using the web software SimpleMappr (Shorthouse 2010).

The acronyms MG and SC denote the Brazilian states of Minas Gerais and Santa Catarina, respectively; CIRAD refers to Centre de Coopération Internationale en Recherche Agronomique pour le Développement (French Agricultural Research for International Development), while ITS and T4 refer, respectively, to intertorular space (= interantenal projection, interantennal space – see fig. 10 in Lotfalizadeh et al. (2007) – and fourth metasomal tergite.

Bruchodape ignota Burks, 1971
Figs. 1-2

New distributional record: Pratápolis (MG), Brazil (Fig. 2).

Material examined: one female. "BRA / MG / Pratápolis \ 2041.6'44°"S, 4637.6'52°"W \ mata de galeria / arm. Moericke \ 27 / VI / 2010 \ A. L. Martins e eq., cols."; "LRRP# 22653"; "*Bruchodape ignota* Burks, 1971 \ NW Perioto, det. July 2026" (deposited at LRRP).

Distribution: Guatemala, French Guiana, Brazil (MG – this study, SC) (Burks 1971; Lotfalizadeh et al. 2007; UCD Community 2023) (Fig. 2).

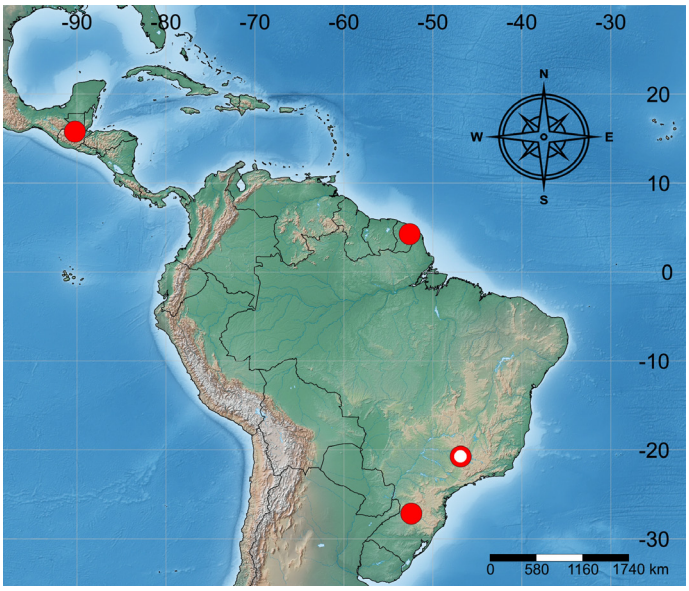


Figure 2. Map of part of Central and South America, showing the known distribution of *Bruchodape ignota* Burks, 1971 (Hymenoptera: Eurytomidae) (red dots: known distributional records; red dot with a white center: new distributional record).

Biology: Unknown (see text above).

The studied specimen was obtained in a gallery forest habitat using a Moericke trap, which suggests that adults may be active in lower vegetation strata or are attracted to yellow surfaces, although their precise microhabitat preferences remain speculative given the paucity of available data.

Records of *B. ignota* in entomological collections are scarse. The species was described by Burks (1971) based on two specimens collected in Santa Catarina, Brazil, on an unspecified date. The holotype (#70627) is deposited in the National Museum of Natural History (USNM), whereas the whereabouts of the paratype is not mentioned in the original publication. Subsequently, Lotfalizadeh et al. (2007) expanded the known distribution of *B. ignota* by reporting the occurrence of specimens from French Guiana, deposited at CIRAD, and others from Guatemala, with no indication of repository. This scarcity of records reinforces how poorly understood the real distribution of this monotypic genus remains.

Considering the highly specialized morphology of *Bruchodape* and its apparently low abundance in conventional entomological surveys, future studies employing targeted rearing protocols from dead wood, seeds, and pods, combined with extensive Malaise and Moericke traps in Neotropical gallery forests, will be essential to elucidate the biology, host associations and actual distribution of this enigmatic parasitoid wasp.

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Authors' Contributions

NWP: Conceptualization, formal analysis, writing original draft, review & editing; RIRL: Conceptualization, formal analysis, writing original draft, review & editing.

Conflict of Interest Statement

The authors declare no conflicts of interest.

Ethical Approval

This study was conducted in accordance with Brazilian legislation regarding scientific research and biodiversity collection. The specimens examined were obtained using a passive collection method that does not involve direct manipulation or experimentation on animals. All collection activities complied with the relevant national and institutional guidelines for the ethical study of insects.

Data Availability

The datasets generated and analyzed during the current study, including specimen data and occurrence records, are included in this published article. No separate data repository was used.

Generative AI Statement

During the preparation of this manuscript, the authors used Reverso and DeepSeek software (https://reverso.net and https://deepseek.com, respectively) exclusively for the purpose of language review and to improve the clarity and readability of the text. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content and originality of the publication.

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