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GARGAPHIA PAULA (HETEROPTERA: TINGIDAE): FIRST HOST PLANT RECORD, NEW GEOGRAPHIC DATA AND DISTRIBUTION SUMMARY

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Gargaphia Stål (Heteroptera: Tingidae) is a New World genus composed by almost 70 species. Most species of *Gargaphia* are distributed in the Neotropical region from Mexico to Argentina (Drake & Ruhoff 1965). Some species of *Gargaphia* are known to be potential pests of some economically important crops, such as one of the most recently described species, *G. sanchezi* Froeschner, 1972, which attacks *Phaseolus vulgaris* (Fabaceae) in Colombia (Neal & Schaefer 2000). Also, maternal care behavior has been described for some *Gargaphia* species, e. g., *G. solani* Heidemann, 1914 (Tallamy & Denno 1981). It is believed that more species within this genus may present this ethological trait (Tallamy & Iglay 2004). Biological parameters and descriptions of immatures are known for only a few species (Tallamy & Denno 1982; Aldrich et al. 1991; Montemayor & Dellapé 2010). Despite the large number of species, the peculiar parental care behavior and the unusual ease of collecting specimens, to this date most of the species of *Gargaphia* have barely been studied.

Some members of the genus *Gargaphia* are associated with plants from different botanical orders, such as *G. concursa* Drake, 1930, which is associated with Malpighiales and Magnoliales (Monte 1939), while others are associated with a single group of plants, e.g., Fabales: Fabaceae, *G. lunulata* (Mayr, 1865) (Drake & Hambleton 1934); Solanales: Solanaceae, *G. decoris* Drake, 1931 (Drake & Poor 1939) and Ranunculales: Menispermaceae, *G. flexuosa* (Stål, 1858) (Drake & Hambleton 1934). Besides this highly diverse host plant record, there is no information about host plants for almost half of the species of *Gargaphia*. For instance, in Brazil, the following 10 species have no such record: *G. argilacea* Monte, 1943; *G. comosa* Monte, 1941; *G. dissortis* Drake, 1930; *G. holoxantha* Monte, 1942; *G. implicata* Drake & Hambleton, 1940; *G. lanei* Monte, 1940; *G. nexilis* Drake & Hambleton, 1940; *G. nociva* Drake & Hambleton, 1940; *G. paula* Drake, 1939 and *G. trichoptera* Stål, 1873 (Drake & Ruhoff 1965). The host plant record is very important for Tingidae because the majority of species complete their whole life cycle on the same plant specimen, sometimes in the same part of the plant. This information allows further sampling to conduct studies regarding ecological, biological and ethological traits. Here, we report for *G. paula* the first host plant data and first distribution records for 2 countries and 2 Brazilian states.

Gargaphia paula Drake, 1939 (Fig. 1), described from Canal Zone, Panama shows some traits similar to those of *G. schulzei* Drake, 1954. In fact, we found specimens of *G. schulzei* determined as *G. paula* in the Smithsonian's National Museum of Natural History (NMNH) insect collection (Guidoti, personal observation). *Gargaphia paula* was also reported for Peru and Brazil (Drake & Ruhoff 1965). Aside from the Brazilian record listed for the first time in the catalog of Drake & Ruhoff (1965), no further bibliographical or geographical information was provided about that record at that time. In the NMNH, where Drake's collection is housed, we could find only a single specimen from Brazil (state of Minas Gerais) collected 20 years after the catalog's publication, therefore, the catalog's record of *G. paula* for Brazil remains uncertain and this specimen is a new Brazilian record. Also, deposited in the NMNH collection we found records for Costa Rica (Ríncon, Osa Península, Puntarenas Province) and Ecuador (Los Rios and Zamora-Chinchipe Provinces), which are two new country records for the species.

Gargaphia paula was also found in the County of Rio Branco, State of Acre, Brazil on accessions of *Arachis* spp. (Fabaceae) located at the Embrapa's (Brazilian Agricultural Research Corporation) Active Germplasm Bank (S 10°01'43.9" W 67°42'21.2"). Specimens of this tingid were collected through the year, in accessions of *A. appressipila* Krapov. & W.C. Greg., *A. glabrata* Benth., *A. helodes* Mart. ex Krapov. & Rigoni, *A. pintoi* Krapov. & W. C. Greg., *A. repens* Handro, *A. vallsii* Krapov. & W. C. Greg. and in hybrids of *A.*

Fig. 1. Dorsal habitus of *Gargaphia paula* Drake, 1939. This specimen was collected in Viçosa, state of Minas Gerais, Brazil (13.X - 1.XI.1985), and is deposited in the NMNH. Scale bar: 0.5 mm.

pintoi with these other species. They were found especially in accesions numbers BRA-015083 (*A. pintoi*), BR-032280 (*A. repens*) and BR-038911 (*A. appressipila* x *A. pintoi*). Both *Arachis* species (*A. pintoi* and *A. repens*) are native to Brazil, occurring in different biomes, such as Mata Atlântica and Cerrado. *Arachis pintoi* is found on the Brazilian central plains, in the state of Goias and on the coast of Bahia state. *Arachis repens* has a more restricted distribution and occurs mainly in the state of Minas Gerais (Valls 1983). These are the first records of *G. paula* in the state of Acre, and also the first host plant records for the species.

Further studies on ecological, biological and population aspects of this species may confirm its pest potential and the presence or absence of maternal care, which is considered to be a frequent behavior within this genus.

Summary

Gargaphia paula Drake, 1939 is a neotropical species, which according to the literature, occurs in Brazil, Panama and Peru. Here we present 6 species of *Arachis* (Fabaceae) as the first host plant records, as well as two new country records, Costa Rica and Ecuador, and two new state records for Brazil.

Key Words: Acre, *Arachis* spp., Brazil, Costa Rica, Ecuador, Fabaceae, pest

Resumo

Gargaphia paula Drake, 1939 é uma espécie neotropical que, de acordo com a literatura, têm registro para o Brasil, Panamá e Peru. Nesta contribuição apresentamos os primeiros registros de planta hospedeira em seis espécies de *Arachis* (Fabaceae), bem como novos registros geográficos em dois estados brasileiros e dois países, Costa Rica e Equador.

Palavras Chave: Acre, *Arachis* spp., Brasil, Costa Rica, Equador, Fabaceae, praga

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