

Some taxonomic notes on named *Rogas* Nees species (Hymenoptera: Braconidae: Rogadinae) for the New World

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RESUMEN: Varios especímenes tipo del Nuevo Mundo y previamente asignados al género *Rogas* Nees se revisaron con las nuevas delimitaciones taxonómicas propuestas por Achterberg en 1991 para los géneros *Aleiodes* Wesmael, *Triraphis* Ruthe y *Rogas* Nees pertenecientes a la subfamilia Rogadinae.

PALABRAS CLAVE: *Aleiodes*, Nuevo Mundo, tipos, *Triraphis*.

ABSTRACT: A series of type specimens from the New World were previously assigned to the genus *Rogas* Nees were revised under the new delimitations proposed by Achterberg in 1991 for the rogado genera *Rogas* Nees, *Aleiodes* Wesmael and *Triraphis* Ruthe.

KEYWORDS: *Aleiodes*, New World, taxonomy, types, *triraphis*.

INTRODUCTION

The genus *Rogas* Nees is a cosmopolitan genus of nocturnal and solitary koinobiont endoparasitoids of exposed and semi-concealed Lepidoptera larvae of the families Limacodidae, Lycaenidae, Zygaenidae and Riodinidae (Shaw & Huddleston 1991; Shaw 1997; De Vries 1997). The genus *Rogas* was established after the genus *Aleiodes* Wesmael but these two taxa have been miss-identified and confused historically by taxonomists because of the lack of well established limits. Recently, van Achterberg (1991) redefined and synonymized *Rogas* with other existing genera, putting to an end the “overlap” of *Rogas* with its sister-group *Aleiodes* (see table 1). At the same time Achterberg resurrected the genus *Triraphis* Ruthe (1855) that previously was synonymized as a junior name for *Rogas* and *Pelecystoma* Wesmael (Shenefelt 1975). At present, there is no comprehensive revision or catalog about the

existing neotropical species belonging to the genus *Rogas*. However, there are some scattered records and poor descriptions of neotropical species in the past, but in many cases these species are miss-identifications of the genus *Aleiodes sensu* Achterberg (1991). The genus *Triraphis sensu* Achterberg (1991) has a cosmopolitan distribution and apparently the genus *Rogas* it is not present in the New World. Host records for the genus *Rogas* are scarce; additionally, most of the existing data correspond to mis-identifications of specimens belonging to other related genera (Shaw 1996; Fortier 1997).

The objectives of this paper is to revise and actualize the taxonomic status of the New World types that has been described for the New World using with the definition for the genera *Triraphis*, *Rogas* and *Aleiodes* presented by Achterberg (1991).

MATERIALS AND METHODS

The species treated in this paper can be identified as part of the subfamily Rogadinae with the keys presented by Shaw (1996), van Achterberg (1993), Sharkey (1997) and Wahl & Sharkey (1993). For classification to genus the keys presented by Chen & He (1997) and van Achterberg (1991) can be used. The names of the types cited are used according to Shenefelt (1969, 1975) and Marsh (1979). Terminology follows that used by Huber & Sharkey (1993) and Schuh (1989), except in the case of the description of the metapleuron and propodeum, which are used *sensu* Townes (1969). Sculpturing follows Harris (1979). Wing venation terminology follows Wharton *et al.* (1997; Fig. 1).

If the symbol “?” appears in the descriptions is because it was impossible to measure, record u observe the feature in question.

TAXONOMIC REVISION

Triraphis bifaciatus (Ashmead), comb. nov.

Rhogas bifaciatus Ashmead, 1895

Rogas bifasciatus, Dalla Torre, 1975

Female.- Body Color: yellow with mesonotum bright yellow as metasomal tergum 1 middle area, fore leg, mid femur distal 2/3 and femur₃. Forewing: 1-1A basal tip and C+SC+R basal tip brownish yellow as M+CU distal tip and 1-1A distal tip, reminder yellow; infumate areas at pterostigma (as a band) and at vein 1-Cua as an irregular spot; hind wing: union of veins 1M, r-m, 2M brownish yellow, reminder veins yellow, wing hyaline. Body length= 4.90 mm. forewing length= ?

Head: ?. **Mesosoma:** Length of mesosoma in dorsal view/width of mesosoma= 2.94; height of mesosoma= 1.38 mm; propleuron dorso-lateral area with defined colliculate

sculpturing basally and less defined colliculate sculpturing present medially, remainder nitid; notauli punctate, pits from smaller laterally to bigger medially, less defined medially; medio longitudinal pit present, with long punctate sculpturing present mesonotum distal 1/3 with less defined colliculate sculpturing present medially; sternauli striate as union with prepectal carina, area below with transversal lineate sculpturing present with few confused colliculate sculpturing; mesopleuron dorso-lateral area with long. lineate sculpturing, ventral area mesepimeron with defined colliculate sculpturing; remainder nitid; metapleuron granulate, ventral area with few rugose sculpturing; propodeum with defined colliculate sculpturing, spiracles sub-oval; first lateral areas of propodeum with light areolate-rugulose sculpturing, remainder with spaced areolate-rugulose sculpturing present; medial carina less than 1/4 propodeum height; areola triangular; ventral tubercles present, conspicuous, without carinae over them and densely granulate. **Wings:** forewing: 1Cub/RS+Ma= 1.10; 3RSa/1RS= 4.83; pterostigma length/width= 1.73; r= 0.31 mm. HW: 1M/r-m= 0.55; 1A/cu-a= 2.09; m+cu= 0.82 mm; m+cu antefurcal to 2RS; 2RS straight; angle at union of veins 2RS-2M wide; pterostigma black. **Metasoma:** Length of first metasomal tergum/width of first metasomal tergum= 0.77; length of second metasomal tergum/width of second metasomal tergum= 0.89; length of third metasomal tergum/width of third metasomal tergum= 0.38; basal width of first metasomal tergum= 0.47 mm; hypopygium= 0.57 mm. t1 dorso-basal triangular area of first metasomal tergum close with carinae present, medial carina cristate as 1/2 t1 length; t1 lineate sculpturing as t2 sculpturing; t3 lineate sculpturing denser and as conspicuous as t2 sculpturing, not reaching t3 distal edge; t4 with finer lineate sculpturing that one present at t3; ovipositor and ovipositor shields smaller than length of middle tibia.

Male.- Ocell-ocular distance $3/4$ Lateral ocellus width.; same sculpturing pattern and coloration as female, except the following measurements and ratios: Body length: 4.11 mm; distance between basal edges of tentorial pits and the basal area of toruli/Maximum width of face measured at dorsal edge of clypeus= 0.95; width of vertex/Minimal distance between toruli and the medial ocellus= 2.56; width of oral opening/height of oral opening= 1.37; distance between tentorial pits= 0.21 mm; minimal distance between external edge of tentorial pits and compound eye= 0.08 mm; length of mesosoma in dorsal view/width of mesosoma= 2.49; height of mesosoma= 0.71 mm; $3RSa/1RS= 4.0$; $1A/cu-a= 1.80$.

Type specimens examined.- From the BMNH, London, female holotype collected at West Indies, St. George's (Leeward side), Grenada, Col. H. Smith; male cotype, collected at Mountain Gay Est. (Leeward side), Grenada, W.I., Col. H.H. Smith; from the RMSEL, Laramie, 1 male compared with type by Prof. Scott Shaw.

Comments.- Female type without head; male cotype in good condition.

Triraphis brasiliensis comb. nov., reclassified by van Achterberg 1997.

Rogas brasiliensis Dalla Torre, 1975

Rogas brasiliensis Szépligeti, 1902

Female.- Body Color: yellow, with antenna brownish yellow as scape, pedicel, vertex, occiput, gena, femur distal $1/2$, hind coxae (except tips yellow), metasomal terga (except basal area of terga 1-2) and tarsal claws; dorso of mesosoma with a more dark yellow color than mesopleura. Wings with veins brownish yellow, light brownish yellow color present. Body length= 6.24 mm; forewing length= 4.76 mm.

Head: Width of oral opening/height of oral opening= 2.00; distance between tentorial

pits= 0.26 mm; minimal distance between external edge of tentorial pits and compound eye= 0.08 mm. Antenna, with more than 21 flagellomeres all longer than wide; malar space slightly narrower than basal width of mandible; occipital carina present dorsally and divided, not fused with hypostomal carina clearly separated; median ocellus as big as Lateral ocellus; space between lateral ocellus black; ocell-ocular distance $5/7$ of Lateral ocellus width. **Mesosoma**: Length of mesosoma in dorsal view/width of mesosoma= 2.60; height of mesosoma= 1.44 mm; propleuron dorso-lateral area with confused colliculate sculpturing throughout; notauli punctate, less defined medially; medio longitudinal pit present, elongate, conspicuous longitudinal punctate sculpturing present; remainder mesonotum nitid; sternauli striate, union with prepectal carina less conspicuous with few striate sculpturing present, area below this confused colliculate sculpturing present; mesopleuron immaculate except dorso-lateral area with few long. lineate sculpturing; metapleuron with rugose and confused fine colliculate sculpturing throughout; propodeum without granulate or colliculate sculpturing, spiracles sub-oval; first lateral areas of propodeum with light areolate-rugulose sculpturing, remainder with spaced areolate-rugulose sculpturing; medial carina less than $1/4$ Propodeum height; areola irregular; ventral tubercles present with carina over them and densely granulate. **Wings**: forewing: $3RSa/1RS= 3.80$; $r= 0.19$ mm. HW: $1M/r-m= 2.78$; $m+cu$ antefurcal to 2RS; 2RS slightly bent to wing base; angle at union of veins 2RS-RS+Mb wide; pterostigma with light brownish yellow color. **Metasoma**: Length of first metasomal tergum/width of first metasomal tergum= 1.19; length of second metasomal tergum/width of second metasomal tergum= 0.89; length of third metasomal tergum/width of third metasomal tergum= 0.40; basal width of first metasomal tergum= 0.50 mm; hypopygium= 0.66 mm. $t1$ dorso-basal triangular area of first metasomal tergum

open with carina present, medial carina normal; t1 lineate sculpturing as t2 sculpturing; t3 lineate sculpturing finer, closer and less conspicuous than t2 sculpturing, reaching t3 distal edge; t4-5 with fine lineate sculpturing

Specimens examined: From the HNHM, Budapest, female type collected at Fonteboa, Brasil.

Comments.- Type specimen with broken antennae. The pattern of coloration exhibited is diagnostic for this species. The male specimens of this species are unknown.

Triraphis limbativentris (Enderlein), comb. nov.

Rhogas limbativentris Enderlein, 1918

Rogas limbativentris Dalla Torre, 1975

Female.- Body Color: yellow, with antenna light brown; tibia₂ internal area brownish yellow as tibia₃ external lateral area, telotarsus and tarsal claws; mesosoma dorsal area light orange; hind coxae (except tips yellow), metasomal tergum 1 black (except distal-lateral borders), black area of second metasomal tergum with an "I" shaped area. Wings hyaline and veins brownish yellow. Body length= 7.22 mm; forewing length= 4.80 mm.

Head: Width of oral opening/height of oral opening= 2.0. Antenna, more than 38 flagellomeres all longer than wide, first flagellomere thin and elongate (length/wide= 4x) with distal edge conspicuously inclined to base; malar space wider than basal width of mandible; occipital carina present dorsally, divided, not fused with hypostomal carina, clearly separated; median ocellus as big as Lateral ocellus, sub-circular shape; Lateral ocellus sub-oval shape; space between lateral ocellus black; ocell-ocular distance 3/4 lateral ocellus width. **Mesosoma:** Length of mesosoma in dorsal view/width of mesosoma= 1.52; height of mesosoma= 1.73 mm; notauli punctate, not defined medially;

medio longitudinal pit present; sternauli striate as union with prepectal carina; mesopleuron immaculate; metapleuron ventral area with rugose sculpturing present, remainder with confused colliculate sculpturing; propodeum with areolate-rugulose sculpturing throughout, spiracles sub-oval; medial carina less than 1/4 Propodeum height; areola absent as ventral tubercles. **Wings:** forewing: 3RSa/IRS= 4.0; r= 0.15 mm. HW: 1M/r-m= 3.15; m+cu antefurcal to 2RS; 2RS straight; angle of union of veins 2RS-2M wide; pterostigma with anterior edge black, remainder light brownish yellow. **Metasoma:** Length of first metasomal tergum/width of first metasomal tergum=1.38; length of second metasomal tergum/width of second metasomal tergum= 0.93; length of third metasomal tergum/width of third metasomal tergum= 0.95; anterior width of first tergum=0.50 mm; hypopygium= 0.75 mm; t1 dorso-basal triangular area of first metasomal tergum close with carinae present, medial carina normal; t1 lineate sculpturing as t2-3 sculpturing; t3 lineate sculpturing denser and closer than t2 sculpturing; t4 with fine lineate sculpturing present.

Male.- Similar to females, sometimes bigger than females and medio-anterior area of propodeum reddish yellow; Body length= 7.10-7.44 mm; width of oral opening/height of oral opening= 1.75-1.88; length of mesosoma in dorsal view/width of mesosoma= 1.57-1.60; height of mesosoma= 1.63-1.79 mm.

Type specimens examined.- From WIZ, Warszawa, female holotype, male cotype and male paratype collected at Santa Catharina (Brasil).

Comments.- Specimens in good condition.

Triraphis maculipennis (Szépliget), comb. nov.

Rhogas maculipennis Szépliget, 1902

Rogas maculipennis Dalla Torre, 1975

Female.- Body Color: yellow, with antennal basal 7 flagellomeres light brownish yellow as tarsal claws, and remainder yellow; scape honey yellow as pedicel; mesosoma light yellow; metasoma slightly reddish yellow (t1-4). Forewing: M+CU with tips brownish yellow as 1-1A, C+SC+R with basal tip brownish yellow, remainder yellow, infumate areas at vein 1Cua as an irregular spot and at pterostigma as a band; hind wing: Union of veins 1M, r-m, 2M brownish yellow, infumate band at union veins. Body length= 5.67 mm; forewing length= 6.23 mm.

Head: Width of oral opening/height of oral opening= 1.71. Antenna, with more than 19 flagellomeres all longer than wide; malar space narrower than basal width of mandible; occipital carina present dorsally and divided, not fused with hypostomal carina clearly separated; median ocellus as big as Lateral ocellus; space between lateral ocellus black; ocell-ocular distance 1/2 of Lateral ocellus width. **Mesosoma:** Length of mesosoma in dorsal view/width of mesosoma= 2.59; height of mesosoma= 1.38 mm; propleuron dorso-lateral area, basal area with less defined colliculate sculpturing, remainder nitid; notauli finely punctate laterally, remainder ?; medio longitudinal pit ?; sternauli closely striate as union with prepectal carina, area below with less defined colliculate and transversal lineate sculpturing as dorso-lateral area of mesepimeron; mesepimeron ventral area with defined colliculate sculpturing area with long. lineate sculpturing; metapleuron with granulate and spaced rugose sculpturing throughout (more conspicuous ventrally); propodeum, spiracles sub-oval; first lateral areas of propodeum with light areolate-rugulose sculpturing ventrally, remainder with confused colliculate sculpturing, spaced areolate-rugulose sculpturing at medio transversal area, remainder with long. lieate sculpturing; medial carina 1/5 Propodeum height; areola triangular; ventral tubercles

present with carina over them and densely granulate. **Wings:** forewing: 3RSa/1RS= 3.71; r= 0.26 mm. HW: 1M/r-m= 2.29; 1A/cu-a= 1.60; m+cu= 0.82 mm; m+cu antefurcal to 2RS; 2RS slightly bent to wing base; angle at union of veins 2RS-RS+Mb wide; pterostigma black with yellow tips. **Metasoma:** Length of first metasomal tergum/width of first metasomal tergum= 1.12; length of second metasomal tergum/width of second metasomal tergum= 0.70; length of third metasomal tergum/width of third metasomal tergum= 0.33; basal width of first metasomal tergum= 0.47 mm; hypopygium= 0.69 mm. t1 dorso-basal triangular area of first metasomal tergum closed with carinae present, medial carina cristate basally; t1 lineate sculpturing more spaced and less dense than t2 sculpturing; t3 lineate sculpturing as t2 sculpturing, not reaching t3 distal edge; t4 with fine lineate sculpturing.

Type specimens examined.- from the HNHM, Budapest, female type collected at Fontoboa, Brasil.

Comments.- Mesonotum medially covered by the entomological pin. Type specimen with broken antennae.

Triraphis pulchricornis (Szépligeti), comb. nov.

Rhogas pulchricornis Szépligeti, 1902

Rogas pulchricornis Dalla Torre, 1975

Female.- Body Color: yellow with metasomal light yellow; antenna with basal flagellomeres black, remainder yellow; scape and pedicel (more yellow) brownish yellow as hind femur (except basal 1/3), tarsal claws. Forewing: C+SC+R dark brownish yellow as M+CU distal 1/3 and 1-1A; hind wing: union of veins 1M, r-m, 2M brownish yellow, remainder veins yellow. Wings hyaline. Body length= 6.90 mm; forewing length= 6.0 mm.

Head: Width of oral opening/height of oral opening= 2.25. Antenna with more than 27 flagellomeres, all longer than wide; malar space narrower than basal width of mandible; occipital carina present dorsally, not fused with hypostomal carina; median ocellus slightly bigger than lateral ocellus; space between lateral ocellus black; ocell-ocular distance 1/3 Lateral ocellus width. **Mesosoma:** Length of mesosoma in dorsal view/width of mesosoma= 4.32; height of mesosoma= 1.50 mm; propleuron dorso-lateral area, basally with defined colliculate sculpturing, medially with less defined colliculate sculpturing and distally nitid; notauli punctate, pits from smaller laterally to bigger medially; medio longitudinal pit ?; sternauli finely striate as union with prepectal carina, area below with less defined colliculate sculpturing as remainder mesopleuron; mesopleuron with dorso-lateral area with long. lineate sculpturing; metapleuron granulate, ventral area with rugose sculpturing almost complete absent; propodeum dorsal 1/2 with granulate sculpturing, remainder with less defined colliculate sculpturing; spiracles sub-oval; first lateral areas of propodeum without areolate-rugulose sculpturing, remainder with transversal lineate sculpturing; medial carina 1/3 Propodeum height; areola with irregular shape; ventral tubercles absent. **Metasoma:** Length of first metasomal tergum/width of first metasomal tergum= 0.81; length of second metasomal tergum/width of second metasomal tergum= 0.82; length of third metasomal tergum/width of third metasomal tergum= 0.34; basal width of first metasomal tergum= 0.50 mm; hypopygium= 0.73 mm. t1 dorso-basal triangular area of first metasomal tergum close with carinae present, medial carina normal; t1 lineate sculpturing closer and less dense than t2 sculpturing; t3 lineate sculpturing finer, closer and denser than t1 sculpturing, not reaching t3 distal edge; t4 with fine lineate sculpturing **Wings:** forewing: $1Cub/RS+Ma= 1.07$; $3RSa/1RS= 5.50$; pterostigma length/width= 1.83; $r= 0.32$

mm. HW: $1M/r-m= 1.85$; $m+cu= 0.88$ mm; $m+cu$ antefurcal to 2RS; 2RS bent to wing base; angle at union of veins 2RS-2M wide; pterostigma yellow.

Type specimens examined.- From the HNHM, Budapest, female holotype collected at Fonteboa, Brasil.

Comments.- Type specimen with antennae broken and the entomological pin covers the medial longitudinal pit of mesonotum and most of the medial area of the notauli.

In addition, the already named species *Rogas aztecus* Cameron 1905, *R. cameronii* Dalla Torre 1975; *R. fuscipennis Szépligeti* 1904; *R. insignipes* Brues 1912; *R. neotropicalis* (= *R. interstitialis*) Shenefelt 1975; *R. nigribasis* Enderlein 1920; *R. sanctivicentensis* (= *R. pectoralis*) Shenefelt 1975, and *R. scriptus* Enderlein 1920 are in fact *Aleiodes* species and not *Rogas* species *sensu* Achterberg (1991).

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