# Pseudorhysipolis gen. nov. (Hymenoptera: Braconidae: Rhysipolinae), with nine new species from Brazil, Suriname and Panama

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*Pseudorhysipolis* gen. nov. (type species: *Pseudorhysipolis fenix* spec. nov. from Brazil and Panama) is described and illustrated. A key to nine new species is added; one new subgenus is described (*Pararhysipolis* nov.; type species: *Pseudorhysipolis mellinotum* spec. nov.) and the first host record for a member of the new genus is given. In addition, an aberrant species of the genus *Rhysipolis* Foerster from Brazil is described.

#### Introduction

The subfamily Rhysipolinae Belokobylskij, 1984 (van Achterberg, 1995), (or tribe Rhysipolini: van Achterberg, 1993; Belokobylskij, 1995) includes a few small genera of solitary ectoparasitoids of leaf-mining Lepidoptera: in the New World it concerns *Cantharoctonus* Viereck, 1912, *Rhysipolis* Foerster, 1862, and *Pseudorhysipolis* gen. nov. described in this paper. The group is poorly known both taxonomically and biologically at the generic and species level, especially in the New World (Spencer & Whitfield, 1999). The group is often included in the subfamily Hormiinae Foerster, 1862 s.l. with several other groups (e.g., Whitfield & Wharton, 1997). forming a diverse assemblage of external parasitoids of larval Lepidoptera, Coleoptera and less commonly Hymenoptera and Diptera. Based on a phylogenetical analysis van Achterberg (1995, 1997) treated it as a separate subfamily. It is considered to be a more derived group than the other parts of the assemblage, probably near the tribe Clinocentrini van Achterberg, 1991 of the subfamily Rogadinae Foerster, 1862 or near the subfamily Exothecinae Foerster, 1862, despite its rather weakly sclerotised third metasomal tergite and comparatively large pronotum.

*Pseudorhysipolis* gen. nov. is obviously related to the genus *Rhysipolis* Foerster, e.g. by the comparatively large collar-like pronotum without pronope and weakly emarginate eyes.

It can be separated from each other as follows:

Inner apex of hind tibia with conspicuous comb of modified bristles (figs 15, 27, 38); mesoscutum and propodeum antero-dorsally, granulate (figs 16, 28, 86); lunula of side of scutellum semi-circular (figs 28, 40); occipital carina remain ventrally comparatively far removed from hypostomal carina (figs 2, 30, 34, 63, 69); vein 1M of hind wing 1.5-2.2 times as long as vein M+CU (figs 4, 20, 32, 46, 54); precoxal sulcus smooth (fig. 1); pedicellus somewhat larger compared to scapus (figs 14, 25, 50, 65)
 Inner apex of hind tibia without comb or with a comparatively narrow comb of modified bristles (fig. 98); propodeum antero-dorsally and mesoscutum smooth (fig. 96); lunula of side of scutellum comparatively narrow (figs 96, 103); occipital carina running ventrally closely parallel to hypostomal carina (fig. 99); vein 1M of hind wing usually 1.3 times as long as vein M+CU or less; precoxal sulcus variable, in Neotropical species finely crenulate; pedicellus somewhat smaller compared to scapus (fig. 97)

The genus *Pseudorhysipolis* nov. consists of two subgenera: *Pararhysipolis* subgen. nov. is similar to *Pseudorhysipolis* s.s., but it has the occipital carina reaching the base of the mandible or nearly so, the dorsal carinae of the first tergite if distinctly developed remain separated basally, the precoxal sulcus is less oblique, and the second submarginal cell of fore wing is more slender (figs 12, 23, 41).

For the identification of the subfamily Rhysipolinae and similar groups, see van Achterberg (1993, 1997) and the terminology used in this paper and a key to the genera, see Wharton et al. (1997).

### Descriptions Pseudorhysipolis gen. nov. (figs 1-94)

Type species.— *Pseudorhysipolis fenix* spec. nov.

Etymology.— From "pseudes" (Greek for "false") and "*Rhysipolis*" (based on the generic name *Rhysipolis* Foerster, 1862) for its superficial similarity. Gender: masculine.

Diagnosis.— Antenna with 32-35 segments, much longer than fore wing with distinct apical spine; scapus robust, hardly longer than pedicellus; apex of scapus truncate in lateral view; maxillary palp slender or enlarged (figs 7, 13, 79, 87); labial palp slender; ventrally clypeus protruding outwards (fig. 45); labrum distinctly concave; ocelli in equilateral triangle; eyes large and at inner side emarginate; temple directly narrowed behind eye (fig. 2); no anteriorly directed setae near occipital carina; ventrally occipital carina remain distinctly removed from hypostomal carina (figs 30, 34, 63); malar space short; malar suture present; pronotum comparatively large (figs 1, 62); pronope absent; mesoscutum sharply raised anteriorly, at almost right angle with pronotum; prepectal carina complete and situated high antero-dorsally; precoxal sulcus smooth, slightly impressed, strongly oblique, almost meeting prepectal carina; pleural sulcus smooth; mesoscutum granulate (figs 1, 10); notauli at least anteriorly distinctly developed, narrow, only notaulic area with setae; surface of propodeum finely granulate, with some irregular carinae, without complete areas antero-dorsally (figs 5, 10); fore wing: vein 1RS short, vein m-cu far antefurcal and converging to 1-M

(fig. 4), vein r arising from middle of pterostigma, vein M+CU straight, vein 1cu-a postfurcal, veins r-m, 3M and most part of 2CUb unsclerotised and more or less unpigmented, vein 3RSa distinctly shorter than 2M, resulting in an anteriorly narrowed second submarginal cell (fig. 4), but anteriorly about as wide as posteriorly in P. notaulicus spec. nov.; hind wing: veins RS and m-cu indistinct (fig. 4), vein 2M faintly pigmented, vein cu-a straight, vein 1M about twice as long as vein M+CU, vein mcu short; hind tarsus long and slender (figs 8, 9, 66), but sometimes rather robust (fig. 27); hind tibia long setose (fig. 8); inner side of hind tibia with a distinct apical comb of flattened setae (figs 15, 27); hind tibial spurs slender, slightly curved; tarsal claws simple (figs 26, 43), but with tooth in P. notaulicus (fig. 18); first tergite with curved transverse basal carina connected to median carina and deep dorsope (fig. 3) or carinae less developed and separated (figs 22, 33); second and third tergites smooth or granulate; remaining tergites smooth dorsally or nearly so, ventrally more membranous; hypopygium of female medium-sized; ovipositor long and straight (fig. 3); ovipositor sheath about as long as hind tibia or somewhat shorter (= 0.3-0.5 times fore wing), slender and completely setose.

Distribution.— Neotropical (nine species in two subgenera).

Biology.— One species (*P. angiclypealis* spec. nov.) has been reared from *Cerconota anonella* (Sepp, 1852) (Lepidoptera: Oecophoridae).

# Key to species of the genus Pseudorhysipolis nov.

- Occipital carina more or less developed ventrally (figs 30, 34); hind tarsus less slender (figs 8, 9, 15, 27, 38); second metasomal suture absent (figs 11, 22); second metasomal tergite weakly sclerotised or membranous and smooth; subgenus *Pararhysipolis* nov.
  Occipital carina absent ventrally (figs 1, 2, 63, 69); hind tarsus very slender (figs 48,

- Notauli largely absent (fig. 28); second submarginal cell of fore wing anteriorly distinctly narrower than posteriorly (fig. 23); basal 0.6 of pterostigma yellowish; length of ovipositor sheath 0.4-0.5 times fore wing; mesoscutum brownish-yellow; OOL about equal to diameter of posterior ocellus (figs 31, 42); vein 1M of hind wing 1.3-1.5 times as long as vein M+CU (fig. 32)
- 3. Clypeus narrow (figs 29, 30); antenna completely brownish-yellow; scutellum (except medially), metanotum dorsally, propodeum posteriorly and first tergite (except medially largely) dark brown; hypoclypeal depression 0.7 times width of face (fig. 29); apex of pterostigma yellowish; hind basitarsus more robust (fig. 27); propodeum without distinct areola (fig. 28); Brazil ....... *P. angiclypealis* spec. nov.
- Clypeus comparatively wide (figs 34, 36); antenna largely rather dark brown;

scutellum, metanotum dorsally, propodeum posteriorly and first tergite completely brownish-yellow; hypoclypeal depression 0.6 times width of face (fig. 36); apex of pterostigma dark brown; hind basitarsus more slender (fig. 38); propodeum with more or less developed irregular areola (fig. 35); Panama ... *P. mellinotum* spec. nov.

- Posterior half of notauli absent; fourth-sixth segments of maxillary palp slender (fig. 7); median carina of propodeum short (fig. 10); pterostigma largely brownish-yellow, unicoloured or nearly so; length of ovipositor sheath about 0.4 times fore wing; second tergite smooth or nearly so, shiny; second metasomal suture weakly developed; dorsal carinae of first tergite joined to median carina (fig. 3); median length of third tergite about 0.7 times median length of second tergite (fig. 3); Brazil, Panama
- Mesoscutum largely yellowish-brown, at most near notauli darkened; notauli deep (also posteriorly), resulting in distinctly convex mesoscutal lobes (figs 51, 62); second metasomal tergite strongly widened (figs 44, 61); basal 0.3-0.6 of pterostigma yellow; apex of hind femur yellowish, rarely somewhat darkened; ocelli comparatively large (figs 53, 59)
- Mesoscutum completely blackish brown; notauli less impressed and posteriorly obsolescent, resulting in weakly convex lobes (figs 68; 75, but rather convex in *P. areolaris*: fig. 86); second tergite at most moderately widened posteriorly (figs 67, 74, 85); basal 0.2-0.3 of pterostigma yellow; apex of hind femur more or less infuscate; ocelli comparatively small (figs 76, 88)
- 6. Frons and face medially dark brown; in dorsal view head less robust; areola of propodeum irregular, more or less developed (fig. 51); length of first metasomal tergite of ♀ 1.2-1.4 times its apical width (fig. 44); Panama ...... *P. granulatus* spec. nov.
- Frons and face completely yellowish-brown; head in dorsal view somewhat more robust; open areola of propodeum wide posteriorly (fig. 62); length of first tergite of ♀ 1.0-1.2 times its apical width (fig. 61); Panama; Suriname

P. mellifacies spec. nov.
 Antenna without subapical ivory band, completely dark brown subapically;

- Propodeum distinctly rugose posteriorly (fig. 68); vein r of fore wing somewhat longer (fig. 73); length of maxillary palp about 1.3 times height of head; Panama ...... P. fuscapicalis spec. nov.
- Propodeum mainly rugulose-granulate posteriorly, without distinct areola (fig. 75); fourth antennal segment of ♀ about 2.7 times as long as wide (fig. 77); hind basitarsus less elongate (fig. 78); pedicellus and scapus similarly coloured; Panama *P. signatus* spec. nov.

Propodeum mainly smooth posteriorly and with a distinct areola (fig. 86); fourth antennal segment of φ about 3.2 times as long as wide (fig. 90); hind basitarsus more elongate (fig. 89); pedicellus distinctly paler than scapus; French Guyana .......
 *P. areolaris* spec. nov.

### Subgenus Pseudorhysipolis nov.

(figs 1-10, 44-94)

Type species.— *Pseudorhysipolis fenix* spec. nov.

Diagnosis.— Occipital carina absent ventrally and remaining far removed from base of mandible and from hypostomal carina (figs 1, 2, 79, 87); hind tarsus very slender (figs 9, 58, 78, 89); second metasomal suture distinct (figs 44, 61, but may be shallow in *P. fenix*) and more or less curved; second metasomal tergite distinctly sclerotised and more or less granulate.

Distribution.- Neotropical (six species).

### Pseudorhysipolis areolaris van Achterberg, spec. nov. (figs 85-94)

Material.— Holotype, <sup>ç</sup> (RMNH), "**Guyana** française, Montagne de Kaw, Relais Patawa, 5.iv.1999, (Malaise [trap]), A.E.I. guyane, J. Cerda".

Description.— Holotype, <sup>Q</sup>, length of body 3.0 mm, of fore wing 2.4 mm.

Head.— Antenna incomplete, with 24 remaining segments, rather long and densely bristly setose; third antennal segment 3.2 times as long as wide (fig. 90); head 1.5 times wider than mesoscutum; length of maxillary palp equal to height of head, its fourth-sixth segments somewhat swollen (fig. 87); length of eye in dorsal view 4.6 times temple; length of malar space 0.8 times basal width of mandible; head superficially granulate, but face laterally, temple, clypeus and frons medially largely smooth; clypeus rather narrow (fig. 87); hypoclypeal depression 0.6 times as wide as face.

Mesosoma.— Length of mesosoma 1.5 times its height; side of pronotum mainly superficially granulate, shiny; mesopleuron granulate dorsally and smooth and polished ventrally, with precoxal sulcus strongly oblique, rather long and smooth, but widely absent posteriorly; mesoscutum and scutellum finely granulate, notauli complete, anteriorly deep, but posteriorly shallowly impressed (fig. 86); propodeum distinctly granulate antero-dorsally and largely smooth and shiny posteriorly, with distinct and rather long median carina and with a regular areola (fig. 86).

Wings.— Fore wing: m-cu::2RS:3RSa = 13:7:10:15 (fig. 94); vein 3RSa 2.1 times as long as vein r-m; vein 1CUb:1CUa = 1:10; vein 1M rather curved. Hind wing: vein cua short, reclivous; vein 1M 3.7 times as long as M+CU (fig. 93); m-cu indistinct. Legs.— Hind coxa superficially granulate dorsally, largely smooth laterally, hind coxa 15 times as long as wide: length of femure tibia and hasitarsus 4.8, 9.4 and 11.0 times

1.5 times as long as wide; length of femur, tibia and basitarsus 4.8, 9.4 and 11.0 times their width, respectively.

Metasoma.— Length of first tergite 1.1 times its apical width and apically 2.1 times wider than basally, its surface completely granulate and with several rugulae dorsal carinae obsolescent, with weak median carina; dorsope rather large (fig. 85); second

tergite distinctly granulate and rather matt, third and following tergites mainly smooth, and shiny; second suture distinct and curved; second tergite medially 2.2 times as long as third tergite; second tergite moderately widened posteriorly (fig. 85); length of ovipositor 0.6 times length of hind tibia; ovipositor sheath 0.15 times as long as fore wing.

Colour.— Dark brown or blackish (including stemmaticum); scapus brown, pedicellus brownish-yellow, at least 20th-24th antennal segments ivory and remaining segments (as far as present) dark brown; palpi, tegulae, coxae, trochanters and trochantelli pale yellowish, remainder of legs (but hind femur infuscate subapically), eighth tergite, metasoma ventrally, and ovipositor sheath basally brownish-yellow; veins rather dark brown; basal 0.3 of pterostigma yellow, and remainder dark brown; wing membrane slightly infuscate.

Distribution.— Guyana.

# Pseudorhysipolis fenix Scatolini & Penteado-Dias, spec. nov. (figs 1-10)

Material.— Holotype,  $\Im$  (DZUP), "**Brasil**, Paraná, Fênix, Reserva Est.-ITO, 4.xi.1986, Lev. Ent. PROFAUPAR, lâmpada [= at light]". Paratypes (2  $\Im$   $\Im$ ): 1  $\Im$  (RMNH), same data as holotype; 1  $\Im$  (RMNH), "M. **Panama**, Barro Colorado Isl., level I, 9°9′30″N-79°51′W, 30.xi-6.xii.1977, H. Wolda, at light, Museum Leiden".

Description.— Holotype, 9, length of body 2.4 mm, of fore wing 2.6 mm.

Head.— Antenna with 32 segments, long and densely bristly setose; antenna 1.6 times longer than fore wing; head wider than mesoscutum; length of maxillary palp 1.2 times height of head, its segments slender; length of eye in dorsal view 8.0 times temple; length of malar space 0.4 times basal width of mandible; head completely smooth with scattered setosity.

Mesosoma.— Length of mesosoma 1.4 times its height (fig. 1); side of pronotum smooth, but anteriorly granulate; mesopleuron smooth and polished, with precoxal sulcus strongly oblique, long and smooth, absent posteriorly; mesoscutum and scutellum finely granulate, with short setae; basal third of notauli deeply impressed, remainder shallow (fig. 10); propodeum finely granulate (figs 5, 10), with long setae, short and weak median carina and with some carinae forming an irregular areola.

Wings.— Fore wing: veins m-cu, 2RS and 3RSa of equal length (figs 4, 6); vein 3RSa twice as long as vein r-m; vein 1CUb:1CUa = 1:2.7. Hind wing: vein cu-a straight; vein 1M 2.2 times as long as M+CU (fig. 4); m-cu indistinct.

Legs.— All legs rather densely setose; hind coxa finely granulate (fig. 8), hind coxa 2.5 times as long as wide; length of femur, tibia and basitarsus about 6, 9 and 12 times their width, respectively (figs 8, 9).

Metasoma.— Length of first tergite 1.5 times its apical width and apically 1.7 times wider than basally, its surface completely granulate, dorsal carinae joined to median carina; dorsope rather large (fig. 3); following tergites smooth (but base of second tergite superficially granulate), shiny, and sparsely setose; length of ovipositor 1.2 times length of hind tibia; ovipositor sheath 0.4 times as long as fore wing.

Colour.— Head, propleuron, pronotum anteriorly, mesopleuron and legs yellow; side of pronotum dark brown dorsally, ventrally honey-yellow; flagellomeres and

stemmaticum dark brown; maxillary and labial palpi pale yellow; scapus, pedicellus, scutellum and metanotum yellowish-brown; apex of mandible, apex of trochantellus and base of femur of all legs narrowly darkened; mesoscutum, propodeum and ovipositor honey-yellow; ovipositor sheath light brown; first tergite honey-yellow but latero-posteriorly brown; second and base of third tergites dark brown; remaining tergites light yellow with posterior margins brown; veins of fore wing honey-yellow except for pterostigma, (RS+M)a, 1m-cu, 2RS, 3RSa, 3RSb, 2-1A and basal half of (RS+M)b light brown; veins of hind wing honey-yellow except for M+CU, 1A and cu-a pale yellow; wing membrane subhyaline.

Variation.— Length of body 2.4-3.4 mm, of fore wing 2.6-3.1 mm; antenna of  $\mathcal{Q}$  with 32(1) or 35(1) segments, length of first tergite 1.4-1.5 times its apical width; length of ovipositor sheath 0.41-0.48 times fore wing; precoxal sulcus strongly oblique and straight or S-shaped, vein 1M of hind wing 2.1-2.3 times vein M+CU; vertex may be largely dark brown and face medio-dorsally paler than remainder of face.

Distribution.— Brazil, Panama.

## Pseudorhysipolis fuscapicalis van Achterberg, spec. nov. (figs 64-73)

Material.— Holotype, ♀ (RMNH), "N. **Panama**, Boquete Alto Lino, 1300 m, 8°48'N-82°26'W, 11-17.i. 1978, H. Wolda, at light, Museum Leiden".

Description.— Holotype, 9, length of body 3.2 mm, of fore wing 2.6 mm.

Head.— Antenna with 30 segments, rather long and densely bristly setose; third antennal segment 4.0 times as long as its width (fig. 65); antenna 1.7 times longer than fore wing; head 1.4 times wider than mesoscutum; length of maxillary palp 1.3 times height of head, its fourth-sixth segments distinctly enlarged (fig. 69); length of eye in dorsal view 3.1 times temple; length of malar space 0.6 times basal width of mandible; head granulate, but face laterally, temple, clypeus and frons medially largely smooth; clypeus rather narrow (fig. 69); hypoclypeal depression 0.6 times as wide as face.

Mesosoma.— Length of mesosoma 1.5 times its height; side of pronotum granulate; mesopleuron granulate dorsally and smooth and polished ventrally, with precoxal sulcus strongly oblique, rather long and smooth, but widely absent posteriorly; mesoscutum and scutellum finely granulate, notauli completely and deeply impressed anteriorly, and shallowly depressed posteriorly (fig. 68); propodeum distinctly granulate antero-dorsally and distinctly granulate-rugose posteriorly, with distinct and rather short median carina and with an irregular areola (fig. 68).

Wings.— Fore wing: m-cu:r:2RS:3RSa = 9:7:7:11 (fig. 73); vein 3RSa 2.4 times as long as vein r-m; vein 1CUb:1CUa = 1:22; 1M distinctly curved. Hind wing: vein cu-a short, reclivous; vein 1M 3.2 times as long as M+CU (fig. 71); m-cu indistinct.

Legs.— Hind coxa finely granulate dorsally, largely smooth laterally, hind coxa 1.6 times as long as wide; length of femur, tibia and basitarsus 5.3, 9.6 and 15.5 times their width, respectively (fig. 66).

Metasoma.— Length of first tergite 1.1 times its apical width and apically 2.1 times wider than basally, its surface completely granulate and posteriorly with some additional rugulae, dorsal carinae obsolescent, no distinct median carina; dorsope

rather large (fig. 67); second tergite granulate and rather matt, slightly widened posteriorly (fig. 67); third tergite (and superficially fourth tergite) coriaceous and shiny; following tergites mainly smooth, and shiny; second suture distinct and curved; second tergite medially 2.4 times as long as third tergite; length of ovipositor 0.8 times length of hind tibia; ovipositor sheath 0.30 times as long as fore wing.

Colour.— Dark brown or chestnut-brown (including stemmaticum); antenna rather dark brown, but scapus and pedicellus yellowish-brown; face laterally, vertex and frons laterally, malar space, temple ventrally, mandible, yellowish-brown; palpi, tegulae and legs (but hind femur slightly darkened subapically), and metasoma ventrally, brownish-yellow; veins rather dark brown; basal 0.3 of pterostigma and eighth tergite yellow, and remainder of pterostigma dark brown; wing membrane slightly infuscate.

Distribution.— Panama.

# *Pseudorhysipolis granulatus* van Achterberg, spec. nov. (figs 44-53)

Material.— Holotype,  $\Im$  (RMNH), "M. **Panama**, Barro Colorado Isl., level I, 9°9'30"N-79°51'W, 13-19.vii. 1977, H. Wolda, at light, Museum Leiden". Paratypes (17  $\Im$   $\Im$ ; RMNH, DCBU, FUSAGx): topotypic, but 6-12.vii.1977 (1, level III), 10-16.viii.1977 (1), 3-9.viii.1977 (1), 21-27.ix.1977 (2, level III), 5-11.x.1977 (4, but 2 level III), 26.x-1.xi.1977 (1), 9-15.xi.1977 (1, level III), 16-22.xi.1977 (2), 18-24.i.1978 (1), 7-13.iii.1978 (2), and 16-22.v.1978 (1).

Description.— Holotype, 9, length of body 3.8 mm, of fore wing 3.1 mm.

Head.— Antenna with 31 segments, long and densely bristly setose; antenna 1.5 times longer than fore wing; head 1.4 times wider than mesoscutum; length of maxillary palp 1.3 times height of head, its fourth-sixth segments rather swollen (fig. 45); length of eye in dorsal view 3.7 times temple; length of malar space 0.4 times basal width of mandible; head granulate, but temple, clypeus and frons medially largely smooth; clypeus rather narrow (fig. 45); hypoclypeal depression 0.5 times as wide as face.

Mesosoma.— Length of mesosoma 1.6 times its height; side of pronotum granulate; mesopleuron granulate dorsally and smooth and polished ventrally, with precoxal sulcus strongly oblique, rather long and smooth, but widely absent posteriorly; mesoscutum and scutellum finely granulate; notauli completely and deeply impressed (fig. 51); propodeum distinctly granulate antero-dorsally and rugose posteriorly, mainly glabrous, with distinct and rather long median carina and with an irregular areola (fig. 51).

Wings.— Fore wing: m-cu:r:2RS:3RSa = 9:6:7:9 (fig. 52); vein 3RSa 1.9 times as long as vein r-m; vein 1CUb:1CUa = 1:11. Hind wing: vein cu-a short, reclivous; vein 1M 3.9 times as long as M+CU (fig. 46); m-cu rather distinct.

Legs.— Hind coxa finely granulate dorsally, largely smooth laterally, hind coxa 1.7 times as long as wide; length of femur, tibia and basitarsus 5.5, 10.2 and 14.7 times their width, respectively (fig. 48).

Metasoma.— Length of first tergite 1.2 times its apical width and apically 2.2 times wider than basally, its surface completely granulate, dorsal carinae obsolescent, no median carina; dorsope medium-sized (fig. 44); second and third tergites granulate and rather matt, following tergites mainly smooth, and sparsely setose; second suture distinct and curved; second tergite medially 2.7 times as long as third tergite; second

tergite distinctly widened posteriorly (fig. 44); length of ovipositor 0.7 times length of hind tibia; ovipositor sheath 0.26 times as long as fore wing.

Colour.— Dark brown or blackish (including stemmaticum); antenna (but medially somewhat darkened), face laterally, vertex and frons laterally, malar space, temple, mandible, mesoscutum (except notaulic area and laterally narrowly), mesopleuron ventrally, mesosternum, fourth and following tergites, yellowish-brown; palpi, fore and middle coxae, trochanters and trochantelli ivory; tegulae, remainder of legs (but hind femur somewhat darkened subapically), metasoma ventrally, and ovipositor sheath (except dark apex) pale yellowish; veins rather dark brown; basal 0.6 of pterostigma yellow, and remainder dark brown; wing membrane slightly infuscate.

Variation.— Length of body 3.0-3.8 mm, of fore wing 2.6-3.1 mm; antenna of  $\mathcal{Q}$  with 29(1), 30(1), 31(4), 32(1), 33(3) and 34(1) segments, length of first tergite 1.2-1.4 times its apical width, middle of tergite with weak median carina and often with some rugae posteriorly; length of ovipositor sheath 0.24-0.31 times fore wing; vein 1M of hind wing 2.8-3.9 times vein M+CU; scutellum medially, third and partly second tergite may be brown; antenna more or less darkened (except basally), but apical 5-6 segments usually more or less ivory; ovipositor sheath may be largely darkened; basal 0.3-0.6 of pterostigma yellowish; fourth-sixth segments of maxillary palp slender to distinctly inflated.

Distribution.— Panama.

### Pseudorhysipolis mellifacies van Achterberg, spec. nov. (figs 54-63)

Material.— Holotype,  $\Im$  (RMNH), "M. **Panama**, Barro Colorado Island, level I, 9°9′30″N-79°51′W, 10-16.viii. 1977, H. Wolda, at light, Museum Leiden". Paratypes (6  $\Im$   $\Im$ ; RMNH, DCBU): topotypic, but 6-12.vii.1977 (1, level III), 5-11.x.1977 (1), 30.xi-6.xii.1977 (1), and 11-17.iv.1978 (1); 1  $\Im$ , "**Suriname**, Distr[ict] Nickerie, km 30 weg naar [= road to] Amotopo, 2-13.ix.1980, Hoogmoed & Paats, Museum Leiden"; 1  $\Im$ , "Surinam, Phedra, rainforest in hilly interior, 7-14.xii.1964, D.C. Geijskes, Museum Leiden".

Description.— Holotype, <sup>2</sup>, length of body 3.8 mm, of fore wing 3.1 mm.

Head.— Antenna with 32 segments, long and densely bristly setose; antenna 1.5 times longer than fore wing; head 1.5 times wider than mesoscutum; length of maxillary palp 1.3 times height of head, its fourth-sixth segments somewhat swollen (fig. 63); length of eye in dorsal view 4.0 times temple; length of malar space 0.5 times basal width of mandible; head granulate, but temple, clypeus and frons medially largely smooth; clypeus rather narrow, but slightly higher than in *P. granulatus;* hypoclypeal depression 0.6 times as wide as face.

Mesosoma.— Length of mesosoma 1.6 times its height; side of pronotum granulate; mesopleuron granulate dorsally and smooth and polished ventrally, with precoxal sulcus strongly oblique, rather long and smooth, but widely absent posteriorly; mesoscutum and scutellum finely granulate; notauli completely and deeply impressed (fig. 62); propodeum distinctly granulate antero-dorsally and transversely rugose posteriorly, mainly glabrous, with distinct and rather long median carina and with a rather regular but not well defined areola (fig. 62).

Wings.— Fore wing: m-cu:r:2RS:3RSa = 9:5:6:9 (fig. 55); vein 3RSa twice as long as

vein r-m; vein 1CUb:1CUa = 1:14. Hind wing: vein cu-a short, reclivous; vein 1M 3.5 times as long as M+CU (fig. 54); m-cu rather distinct.

Legs.— Hind coxa finely granulate dorsally, largely smooth laterally, hind coxa 1.6 times as long as wide; length of femur, tibia and basitarsus 5.6, 10.2 and 13.3 times their width, respectively (fig. 58).

Metasoma.— Length of first tergite 1.0 times its apical width and apically 2.5 times wider than basally, its surface completely granulate and posteriorly with some oblique rugae and a weak median carina, dorsal carinae obsolescent; dorsope large (fig. 61); second and third (except posteriorly) tergites granulate and rather matt, following tergites mainly smooth, and sparsely setose; second suture distinct and curved; second tergite medially 2.6 times as long as third tergite; second tergite distinctly widened posteriorly (fig. 61); length of ovipositor 0.6 times length of hind tibia; ovipositor sheath 0.24 times as long as fore wing.

Colour.— Yellowish-brown; antenna medially and apically somewhat darkened; side of pronotum largely, mesopleuron dorsally, metapleuron ventrally, metanotum, second and third tergites largely, propodeum posteriorly, first tergite (except large basal patch), apex of ovipositor sheath dark brown; second tergite antero-laterally and narrowly posteriorly, third tergite anteriorly and laterally, fourth tergite laterally, fifth-seventh tergites yellow; palpi, tegulae, fore and middle coxae, trochanters and trochantelli ivory; remainder of legs, metasoma ventrally, and ovipositor sheath (except dark apex) pale yellowish; veins rather dark brown; basal 0.4 of pterostigma yellow, and remainder dark brown; wing membrane slightly infuscate.

Variation.— Length of body 3.5-3.9 mm, of fore wing 2.9-3.2 mm; antenna of  $\mathcal{Q}$  with 32(2) segments, length of first tergite 1.0-1.2 times its apical width, middle of tergite with weak median carina and more or less rugulose posteriorly; length of ovipositor sheath 0.25-0.33 times fore wing; vein 1M of hind wing 3.2-3.5 times vein M+CU; scutellum more or less infuscate laterally; ovipositor sheath may be largely darkened; basal 0.4-0.6 of pterostigma yellowish; fourth-sixth segments of maxillary palp usually comparatively slender but sometimes distinctly inflated.

Distribution.— Panama, Suriname.

Pseudorhysipolis signatus van Achterberg, spec. nov. (figs 74-84)

Material.— Holotype, ♀ (RMNH), "M. **Panama**, Barro Colorado Island, level III, 9°9′30″N-79°51′W, 18-24.v. 1977, H. Wolda, at light, Museum Leiden″.

Description.— Holotype, <sup>Q</sup>, length of body 3.0 mm, of fore wing 2.3 mm.

Head.— Antenna with 30 segments, rather long and densely bristly setose, third antennal segment 2.7 times as long as wide (fig. 77); antenna 1.5 times longer than fore wing; head 1.7 times wider than mesoscutum; length of maxillary palp 1.1 times height of head, its fourth-sixth segments distinctly enlarged (fig. 79); length of eye in dorsal view 4.4 times temple; length of malar space 0.8 times basal width of mandible; head granulate, but temple, clypeus and frons largely smooth; clypeus narrow (fig. 80); hypoclypeal depression 0.5 times as wide as face.

Mesosoma.- Length of mesosoma 1.5 times its height; side of pronotum granu-

late, shiny; mesopleuron granulate dorsally and smooth and polished ventrally, with precoxal sulcus strongly oblique, rather long and smooth, but widely absent posteriorly; mesoscutum and scutellum finely granulate; notauli complete, anteriorly rather deeply and posteriorly shallowly impressed (fig. 75); propodeum distinctly granulate antero-dorsally and rugulose-granulate posteriorly, with distinct and rather long median carina and without a distinct areola (fig. 75).

Wings.— Fore wing: m-cu:r:2RS:3RSa = 9:6:7:12 (fig. 81); vein 3RSa 2.3 times as long as vein r-m; vein 1CUb:1CUa = 1:15; vein 1M rather curved. Hind wing: vein cu-a short, reclivous; vein 1M 2.8 times as long as M+CU (fig. 83); m-cu indistinct.

Legs.— Hind coxa finely granulate dorsally, largely smooth laterally, hind coxa 1.7 times as long as wide; length of femur, tibia and basitarsus 5.0, 9.4 and 10.0 times their width, respectively (fig. 78).

Metasoma.— Length of first tergite equal to its apical width and apically 2.1 times wider than basally, its surface completely granulate, dorsal carinae obsolescent, posteriorly with a weak median carina; dorsope rather large (fig. 74); second tergite granulate and rather matt, and third tergite superficially coriaceous and shiny, following tergites mainly smooth, and strongly shiny; second suture distinct and curved (fig. 74); second tergite medially 2.7 times as long as third tergite; second tergite moderately widened posteriorly (fig. 74); length of ovipositor 0.6 times length of hind tibia; ovipositor sheath 0.22 times as long as fore wing.

Colour.— Dark brown or blackish (including stemmaticum); palpi, coxae, trochanters and trochantelli, tegulae, and metasoma baso-ventrally, pale yellowish; scapus and pedicellus brownish-yellow (but pedicellus paler than scapus), third-18th antennal segments and both apical segments more or less dark brown, and 19th-28th segments ivory; frons laterally, part of malar space, mandible, posterior half of fifth and following tergites, and remainder of legs (but hind femur somewhat darkened subapically) brownish-yellow; veins rather dark brown; basal 0.2 of pterostigma yellow, and remainder dark brown; wing membrane slightly infuscate.

Distribution.- Panama.

### Subgenus Pararhysipolis van Achterberg, nov. (figs 11-43)

Type species: *Pseudorhysipolis mellinotum* spec. nov.

Diagnosis.— Occipital carina more or less developed ventrally and close to base of mandible (figs 13, 30, 34), remaining far removed from hypostomal carina; hind tarsus normal to rather slender (figs 15, 26, 38); second metasomal suture absent (fig. 11); second metasomal tergite weakly sclerotised or membranous and smooth (figs 11, 22, 33).

Distribution.— Neotropical (three species).

*Pseudorhysipolis angiclypealis* van Achterberg & Penteado-Dias, spec. nov. (figs 22-32)

Material.— Holotype, 9 (DCBU), "**Brazil**: AL, Maceió, ex *Cerconota anonella*, ix.1997, SMF, B. Micheletti, USFCar".

Description.— Holotype, 9, length of body 3.1 mm, of fore wing 2.9 mm.

Head.— Antenna with 29 segments, medium-sized and densely bristly setose; antenna 1.1 times longer than fore wing; length of maxillary palp 1.1 times height of head, its segments slender (fig. 30); length of eye in dorsal view 3.8 times temple; length of malar space 0.3 times basal width of mandible; head completely finely granulate and rather matt; occipital carina complete ventrally and dorsally obsolescent, area above malar space aciculate; hypoclypeal depression 0.7 times width of face (fig. 29); OOL about equal to diameter of posterior ocellus; clypeus narrow (fig. 30).

Mesosoma.— Length of mesosoma 1.6 times its height; side of pronotum mainly granulate; mesopleuron mainly smooth and polished but antero-dorsally granulate, with precoxal sulcus smooth, only medially distinct and anteriorly obsolescent; mesoscutum and scutellum finely granulate; notauli only anteriorly narrowly impressed, with indistinct and rather short shallow median groove (fig. 28); propodeum finely granulate, with long and rather strong median carina and with no closed areola (fig. 28).

Wings.— Fore wing: m-cu:r:2RS:3RSa = 9:9:11:15 (fig. 23); vein 3RSa 1.9 times as long as vein r-m; vein 1CUb:1CUa = 10:36. Hind wing: vein cu-a rather curved, vein 1M 1.3 times as long as M+CU (fig. 32); m-cu rather distinct.

Legs.— Tibiae long setose, setae of remainder of legs mainly medium-sized; hind coxa finely granulate dorso-basally, remainder largely smooth; hind coxa 1.3 times as long as wide; length of femur, tibia and basitarsus 3.5, 7.9, and 6.5 times their width, respectively (fig. 27).

Metasoma.— Length of first tergite 1.3 times its apical width, its surface completely granulate, dorsal carinae short, converging but not joined, no median carina; dorsope rather large (fig. 22); following tergites smooth, shiny, and sparsely setose; second-fourth tergites dorsally moderately sclerotised; length of ovipositor 1.3 times length of hind tibia; ovipositor sheath 0.43 times as long as fore wing.

Colour.— Brownish-yellow (including antenna); stemmaticum, telotarsi apically, scutellum (except medially), metanotum dorsally, propodeum posteriorly and first tergite (except medially largely), most veins, apical half of pterostigma (but apex of pterostigma yellowish) and apical fifth of ovipositor sheath rather dark brown; palpi, fore and middle coxae, trochanters and trochantelli pale yellowish; basal half of pterostigma and metasoma dorsally (without first tergite) yellow; wing membrane subhyaline.

Distribution.— Brazil.

### Pseudorhysipolis mellinotum van Achterberg, spec. nov. (figs 33-43)

Material.— Holotype, <sup>♀</sup> (RMNH), "M. **Panama**, Barro Colorado Island, 9°9′30″N-79°51′W, 13-19.iv.1977, at light, level III, H. Wolda, Museum Leiden″.

Description.— Holotype, 9, length of body 3.7 mm, of fore wing 3.4 mm.

Head.— Antenna with 31 segments, medium-sized and densely bristly setose; antenna 1.3 times longer than fore wing; length of maxillary palp 1.3 times height of head, its segments slender (fig. 34); length of eye in dorsal view 4.8 times temple;

length of malar space 0.5 times basal width of mandible; head completely finely granulate and rather matt; occipital carina complete ventrally and dorsally obsolescent, area above malar space granulate; hypoclypeal depression 0.6 times width of face (fig. 36); OOL about equal to diameter of posterior ocellus; clypeus rather wide (fig. 34).

Mesosoma.— Length of mesosoma 1.4 times its height; side of pronotum mainly granulate; mesopleuron mainly smooth and polished but antero-dorsally granulate, with precoxal sulcus smooth, posteriorly absent; mesoscutum and scutellum finely granulate; notauli only anteriorly narrowly impressed, with long shallow median groove (fig. 35); propodeum finely granulate, with medium-sized and strong median carina and with some carinae forming a slender and irregular areola (fig. 35).

Wings.— Fore wing: m-cu:r:2RS:3RSa = 9:8:12:15 (fig. 41); vein 3RSa 1.7 times as long as vein r-m; vein 1CUb:1CUa = 10:24. Hind wing: vein cu-a straight; vein 1M 1.5 times as long as M+CU; m-cu indistinct.

Legs.— Tibiae long setose, setae of remainder of legs medium-sized; hind coxa finely granulate dorso-basally, remainder largely smooth; hind coxa 1.7 times as long as wide; length of femur, tibia and basitarsus 4.1, 8.4 and 11.0 times their width, respectively (fig. 38).

Metasoma.— Length of first tergite 1.1 times its apical width, its surface completely granulate (but rugulose posteriorly), dorsal carinae short, converging but not joined, median carina indistinct; dorsope rather large (fig. 33); following tergites smooth, shiny, and sparsely setose; second-fourth tergites dorsally largely weakly sclerotised, submembranous; length of ovipositor 1.4 times length of hind tibia; ovipositor sheath 0.49 times as long as fore wing.

Colour.— Brownish-yellow; scapus and pedicellus largely yellowish, remainder of antenna, stemmaticum, telotarsi apically, most veins, apical half of pterostigma and apical fifth of ovipositor sheath rather dark brown; palpi, fore and middle coxae, trochanters and trochantelli pale yellowish; basal half of pterostigma and metasoma dorsally (without first tergite) yellow; wing membrane subhyaline.

Distribution.— Panama.

# Pseudorhysipolis notaulicus van Achterberg & Penteado-Dias, spec. nov. (figs 11-21)

Material.— Holotype, <sup>Q</sup> (DCBU), "[**Brazil**], PR [= Paraná], Ilha do Mel, Fortaleza, 9.x.[19]88, Renato Dutra".

Description.— Holotype, 9, length of body 3.3 mm, of fore wing 3.0 mm.

Head.— Antenna with 29 segments, medium-sized and densely bristly setose; antenna 1.5 times longer than fore wing; length of maxillary palp 1.3 times height of head, its segments slender; length of eye in dorsal view 4.4 times temple; length of malar space 0.4 times basal width of mandible; head completely granulate and rather matt; occipital carina complete and distinct dorsally, area above malar space granulate; hypoclypeal depression about 0.6 times width of face (fig.17); OOL more than diameter of posterior ocellus (fig. 21).

Mesosoma.- Length of mesosoma 1.5 times its height; side of pronotum mainly

granulate and medially obliquely striate; mesopleuron smooth and polished but antero-dorsally granulate, with precoxal sulcus only medially impressed, smooth; mesoscutum and scutellum finely granulate; notauli deeply impressed, complete, with median groove (fig. 16); propodeum finely granulate, with short and strong median carina and with some carinae forming an irregular areola, with several transverse rugae (fig. 16).

Wings.— Fore wing: m-cu::2RS:3RSa = 9:7:8:12 (fig. 12); vein 3RSa twice as long as vein r-m; vein 1CUb:1CUa = 1:4. Hind wing: vein cu-a straight; vein 1M 1.6 times as long as M+CU (fig. 20); m-cu indistinct.

Legs.— Moderately setose; hind coxa finely granulate dorsally, remainder largely smooth; hind coxa 1.7 times as long as wide; length of femur, tibia and basitarsus 4.4, 8.8 and 7.8 times their width, respectively (fig. 15).

Metasoma.— Length of first tergite 1.1 times its apical width, its surface completely granulate, dorsal carinae converging but not joined to median carina; median carina irregular, dorsope rather large (fig. 11); following tergites smooth, shiny, and sparsely setose; second-fourth tergites dorsally largely weakly sclerotised, submembranous; length of ovipositor 0.8 times length of hind tibia; ovipositor sheath 0.27 times as long as fore wing.

Colour.— Brownish-yellow; base of pedicellus, third-fifteenth and 23rd-29th antennal segments dark brown; 16th-22th antennal segments ivory; palpi, coxae, trochanters and trochantelli yellowish-white; pronotum dorso-posteriorly, remainder of mesosoma dorsally and first tergite blackish; telotarsi infuscate; metasoma ventrally, remainder of legs, seventh and eighth tergites pale yellowish; ovipositor sheath brown, but apically dark brown; second-sixth tergites, veins and pterostigma rather dark brown; wing membrane subhyaline.

Distribution.— Brazil.

### Rhysipolis Foerster, 1862 (figs 95-106)

*Rhysipolis* Foerster, 1862: 235; Shenefelt, 1975: 1133-1137; Spencer & Whitfield, 1999: 299. Type species (by original designation): *Rogas meditator* Haliday, 1836.

*Rhysipolis annulator* van Achterberg & Penteado-Dias, spec. nov. (figs 95-106)

Material.— Holotype, ♀ (DZUP), "**Brazil**, PR, S. José Pinhais, Ser. Mar. Br. 277 KM 54, 1.xii.1986, Lev. Ent. PROFAUPAR, Lâmpada".

Description.— Holotype, ♀, length of body 3.4 mm, of fore wing 3.5 mm.

Head.— Antenna with 33 segments, medium-sized and densely bristly setose; third segment 1.2 times as long as fourth segment; third, fourth and penultimatte segments 4.6, 4.0, and 1.6 times their width, respectively (figs 97, 105); antenna 1.4 times longer than fore wing; length of maxillary palp 1.5 times height of head, its segments slender (fig. 99); length of eye in dorsal view 4.4 times temple; length of malar space 0.8 times basal width of mandible; temple directly narrowed behind eye,

2.2 times as long as eye in dorsal view; head (including face) completely smooth and shiny; face with long setae, setae partly directed upward; hypoclypeal depression 0.4 times as wide as face (fig. 101); near occipital carina without setae directed outward; occipital carina complete ventrally (running closely parallel to hypostomal carina: fig. 99) and dorsally; mandible coarsely punctate basally.

Mesosoma.— Length of mesosoma 1.7 times its height; side of pronotum mainly smooth and antero-medially with some short crenulae; mesoscutum steeply raised anteriorly; mesopleuron smooth and polished, with precoxal sulcus nearly completely impressed, and finely crenulate; only ventral half of pleural sulcus distinctly crenulate; mesoscutum and scutellum smooth, but mesocutum medio-posteriorly with V-shaped striae; notauli deeply impressed, complete, medially with long longitudinal groove (fig. 96); propodeum largely smooth between carinae, with rather long and strong median carina and with a slender regular areola, with some rugae dorsally (fig. 96).

Wings.— Fore wing: m-cu:r:2RS:3RSa = 9:5:10:14 (fig. 102); vein 3RSa 2.4 times as long as vein r-m; vein 1CUb:1CUa = 1:8. Hind wing: vein cu-a straight; vein 1M 1.3 times as long as M+CU (fig. 106); m-cu short, distinct.

Legs.— Moderately setose; hind coxa finely granulate dorsally, remainder largely smooth; hind coxa 1.4 times as long as wide; length of femur, tibia and basitarsus 5.0, 10.7 and 7.8 times their width, respectively (fig. 98); inner side of apex of hind tibia with moderately developed comb of bristles (fig. 98).

Metasoma.— Length of first tergite 1.3 times its apical width, its surface shiny and posteriorly with some longitudinal rugae, basal carinae converging but not joined, no median carina; dorsope large (fig. 95); following tergites smooth (except a few punctures) and normally sclerotised, shiny, and sparsely setose; second tergite anterolaterally slightly depressed; length of ovipositor 0.6 times length of hind tibia; ovipositor sheath 0.17 times as long as fore wing.

Colour.— Yellowish-brown; palpi and metasoma ventrally pale yellowish; legs brownish-yellow, but hind femur apically, telotarsi, hind tibia subbasally and apically and hind tarsus more or less dark brown; stemmaticum, mesoscutum (but notaulic area and medio-posteriorly yellowish-brown), pronotum, mesopleuron, mesosternum (except medio-posteriorly), scutellum and metanotum laterally, second tergite medially and ovipositor sheath (except basally) dark brown; scapus and pedicellus brown and partly infuscate, third-16th and 24th-33rd antennal segments dark brown; 17th-23rd segments ivory or white but 23rd segment brownish apically; veins and pterostigma brown; wing membrane slightly infuscate.

Distribution.— Brazil.

Note.— Differs from other *Rhysipolis* species by the white ring of the antenna, the narrow and finely crenulate precoxal sulcus and is the first species described from the Neotropical region.

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### References

- Achterberg, C. van, 1993. Illustrated key to the subfamilies of the Braconidae (Hymenoptera: Ichneumonoidea).— Zool. Verh. Leiden 283: 1-189, figs 1-66, photos 1-140, plts 1-102.
- Achterberg, C. van, 1995. Generic revision of the subfamily Betylobraconinae (Hymenoptera: Braconidae) and other groups with modified fore tarsus.— Zool. Verh. Leiden 298: 1-242, figs 1-857.
- Achterberg, C. van, 1997. Braconidae. An illustrated key to all subfamilies.— ETI World Biodiversity Database CD-ROM Series.
- Belokobylskij, S.A., 1995. On the classification and phylogeny of the braconid wasp families Doryctinae and Exothecinae (Hymenoptera, Braconidae). Part 1. On the classification 2.— Ent. Review 74(4): 26-48.
- Spencer, L. & J.B. Whitfield, 1999. Revision of the Nearctic Species of *Rhysipolis* Foerster (Hymenoptera: Braconidae).— Trans. Am. ent. Soc. 125 (3): 295-324.
- Wharton, R.A., P.M. Marsh & M.J. Sharkey (eds), 1997. Identification manual to the New World genera of the family Braconidae (Hymenoptera).— Int. Soc. Hym., Spec. Publ. 1: 1-439.
- Whitfield, J.B. & R.A. Wharton, 1997. Subfamily Hormiinae: 284-301. In: Wharton, R.A., P.M. Marsh & M.J. Sharkey (eds). Identification manual to the New World genera of the family Braconidae (Hymenoptera).— Int. Soc. Hym., Spec. Publ. 1: 1-439.

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Figs 1-10, *Pseudorhysipolis fenix* gen. nov. & spec. nov.,  $\Im$ , holotype, but 6-10 of paratype from Brazil. 1, head, mesosoma and first metasomal tergite, lateral aspect; 2, head, latero-posterior aspect; 3, metasoma, dorsal aspect; 4, wings; 5, propodeum, dorsal aspect; 6, detail of second submarginal cell of fore wing; 7, maxillary palp; 8, hind leg; 9, hind basitarsus; 10, mesosoma, dorsal aspect. 1, 2: 1.0 × scale-line; 3-5: 0.7 ×; 6, 8: 1.7 ×; 7, 9: 3.7 ×; 10: 2.3 ×.



Figs 11-21, *Pseudorhysipolis notaulicus* gen. nov. & spec. nov.,  $\Im$ , holotype; figs 22-28, *P. angiclypealis* gen. nov. & spec. nov.,  $\Im$ , holotype: 11, 22, first-third metasomal tergites, dorsal aspect; 12, 23, detail of second submarginal cell of fore wing; 13, maxillary palp; 14, 25, basal segments of antenna; 15, 27, hind basitarsus; 16, 28, mesosoma, dorsal aspect; 17, clypeus and hypoclypeal depression, frontal aspect; 18, outer hind tarsal claw; 19, clypeus, lateral aspect; 20, detail vein of veins M+CU and 1M of hind wing; 21, detail of ocelli, dorsal aspect; 24, first subdiscal cell of fore wing; 26, inner hind tarsal claw. 11, 12, 16, 17, 20, 22-24, 28: 1.0 × scale-line; 13-15, 18, 21, 25-27: 1.5 ×; 19: 2.3 ×.



Figs 29-32, *Pseudorhysipolis angiclypealis* gen. nov. & spec. nov.,  $\Im$ , holotype; figs 33-43, *P. mellinotum* gen. nov. & spec. nov.,  $\Im$ , holotype. 29, 36, clypeus and hypoclypeal depression, frontal aspect; 30, 34, maxillary palp; 31, 42, detail of ocelli, dorsal aspect; 32, detail vein of veins M+CU and 1M of hind wing; 33, first-third metasomal tergites, dorsal aspect; 35, mesosoma, dorsal aspect; 37, basal segments of antenna; 38, hind basitarsus; 39, first subdiscal cell of fore wing; 40, detail of side of scutellum, lateral aspect; 41, detail of second submarginal cell of fore wing; 43, inner hind tarsal claw. 29, 32, 33, 35, 36, 39, 41: 1.0 × scale-line; 30, 31, 34, 37, 38, 40, 42, 43: 1.5 ×.



Figs 44-53, *Pseudorhysipolis granulatus* gen. nov. & spec. nov.,  $\Im$ , holotype; figs 54-60, *P. mellifacies* gen. nov. & spec. nov.,  $\Im$ , holotype. 44, first-third metasomal tergites, dorsal aspect; 45, maxillary palp; 46, 54, detail vein of veins M+CU and 1M of hind wing; 47, 60, first subdiscal cell of fore wing; 48, 58, hind basitarsus; 49, 57, inner hind tarsal claw; 50, 56, basal segments of antenna; 51, mesosoma, dorsal aspect; 52, 55, detail of second submarginal cell of fore wing; 53, 59, detail of ocelli, dorsal aspect. 44, 46, 47, 51, 52, 54, 55, 60: 1.0 × scale-line; 45, 48-50, 53, 56-59: 1.5 ×.



Figs 61-63, *Pseudorhysipolis mellifacies* gen. nov. & spec. nov.,  $\mathfrak{P}$ , holotype; figs 64-73, *P. fuscapicalis* gen. nov. & spec. nov.,  $\mathfrak{P}$ , holotype: 61, 67, first-third metasomal tergites, dorsal aspect; 62, 68, mesosoma, dorsal aspect; 63, 69, maxillary palp; 64, outer hind tarsal claw; 65, basal segments of antenna; 66, hind basitarsus; 70, detail of ocelli, dorsal aspect; 71, detail vein of veins M+CU and 1M of hind wing; 72, first subdiscal cell of fore wing; 73, detail of second submarginal cell of fore wing. 61, 62, 67, 68, 71-73: 1.0 × scale-line; 63-66, 69, 70: 1.5 ×.



Figs 74-84, *Pseudorhysipolis signatus* gen. nov. & spec. nov.,  $\mathfrak{P}$ , holotype; figs 85-94, *P. areolaris* gen. nov. & spec. nov.,  $\mathfrak{P}$ , holotype. 74, 85, first-third metasomal tergites, dorsal aspect; 75, 86, mesosoma, dorsal aspect; 76, 88, detail of ocelli, dorsal aspect; 77, 90, basal segments of antenna; 78, 89, hind basitarsus; 79, 87, maxillary palp; 80, clypeus, lateral aspect; 81, 94, detail of second submarginal cell of fore wing; 82, 91, inner hind tarsal claw; 83, 93, detail vein of veins M+CU and 1M of hind wing; 84, 92, first subdiscal cell of fore wing. 74, 75, 81, 83-86, 92-94: 1.0 × scale-line; 76-80, 82, 87-91: 1.5 ×.



Figs 95-106, *Rhysipolis annulator* spec. nov., <sup> $\circ$ </sup>, holotype. 95, first-third metasomal tergites, dorsal aspect; 96, mesosoma, dorsal aspect; 97, basal segments of antenna; 98, hind basitarsus; 99, maxillary palp; 100, outer hind tarsal claw; 101, clypeus and hypoclypeal depression, frontal aspect; 102, detail of second submarginal cell of fore wing; 103, detail of side of scutellum, lateral aspect; 104, clypeus, lateral aspect; 105, apex of antenna; 106, detail vein of veins M+CU and 1M of hind wing. 95, 96, 101, 102, 106: 1.0 × x scale-line; 97-100, 103-105: 1.5 ×.