

BRACONID WASPS FROM THE CAPE VERDE ISLANDS (HYMENOPTERA, BRACONIDAE) 1. CHELONINAE, EXOTHECINAE, HOMOLOBINAE, MICROGASTRINAE, ROGADINAE

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With 36 figures and 3 maps

ABSTRACT. A short account of HEDQVIST's first report on the braconid wasps of the Cape Verde Islands. The present paper gives a list of fifteen braconid species of which three exothecines are new to the science (*Parahormius caloptiliae* sp. n., *P. harteni* sp. n., *Rhysipolis longulus* sp. n.). Seven species are new to the fauna for the Islands. New synonym: *Hormius moniliatus* (NEES, 1812) = *H. insularis* HEDQVIST, 1965 jun. syn. Taxonomical comments of the genus *Parahormius* Nixon. Key to four *Parahormius* and one *Pseudohormius* species distributed in the tropical Africa.

RESUMO. No presente artigo são referidas 15 espécies de braconídeos, das quais três constituem novos registos para a ciência. Sete destas espécies constituem primeiros registos para a área em estudo acrescentando-se ainda uma proposta de sinonímia para uma delas (*Hormius moniliatus* = *H. insularis*). O autor discute alguns aspectos taxonómicos referentes ao género *Parahormius* e apresenta uma chave para identificação de 4 espécies de *Parahormius* e uma espécie de *Pseudohormius*.

INTRODUCTION

The first comprehensive report of the braconid wasps of the Cape Verde Islands was published by the Swedish entomologist, K.-J. HEDQVIST, in 1965 (see also References). In it HEDQVIST has reported a total of 38 species belonging to twelve genera or eight subfamilies. From among the 38 species 27 (71%) proved to be new to science. HEDQVIST emphasized very reasonably that a proper caution should be used in the handling of braconids (as well as other arthropods) because natural migration from the African continent as well as shipping- and air-traffic of our modern eras from America and other continents might have introduced species into the Cape Verde Islands.

In the years 1982-1985 the Dutch entomologist, Dr. ANTON VAN HARTEN, has collected insects in the Cape Verde Islands. Apart from these the braconids amount to

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about six hundred specimens that were gathered partly in light-traps at night and partly by sweeping and suction-traps in daylight. The braconid material was kindly sent me by VAN HARTEN to be worked out for which I express my sincere gratitude to him. In the present paper I contribute the first account of the results of my taxonomical survey. Altogether fifteen species with their faunistic data are listed as belonging to the five subfamilies indicated in the title. From among the fifteen species three exothecines are new to science, their descriptions are given too. Furthermore, seven species proved to be new for the fauna of the Cape Verde Islands.

The braconid wasps had been collected by VAN HARTEN at eighteen localities of five islands in Cape Verdes. The islands and the localities are figured in the Maps 1-3.

The exploration of the hymenopterous parasitoids in the Cape Verde Islands is in a considerable progress from the viewpoint of the applied entomology too. The manifold results of this project were summarized in a report by VAN HARTEN (1987).

Abbreviations used in the present text: CU2 = second cubital cell; ♀ = female (♀); ♂ = male (♂); n = nervulus; n. par. = parallel nerv; n. rec. = recurrent nerv; OOL = ocellular line (i.e. shortest distance between ocellus and compound eye); POL = postocellar line (shortest distance between the two hind ocelli); r1, r2 and r3 = first, second and third sections of the radial vein.

Acknowledgment. - It is pleasure to me to acknowledge my indebtedness to Dr. A. ALBRECHT (Zoological Museum of the University, Helsinki) and to Dr. R. TOMS (Transvaal Museum, Pretoria) who were kind enough to loan to me the type-series of several *Hormius* and *Parahormius* species by HEDQVIST and CAMERON, respectively.

FAUNISTIC RESULTS

Subsequently twelve species are listed completed with faunistic and eventually with bionomical etc. contribution. A small portion of the chelonine *Phanerotoma flavitestacea* and the two rogadine species came from the Senckenberg Museum, Frankfurt, this is indicated as "in Frankfurt" at the respective data. The braconid material taken by VAN HARTEN in Cape Verde Islands is deposited in the Hungarian Natural History Museum, Budapest and partly in the Nationaal Natuurhistorisch Museum, Leiden.

Cheloninae

Microchelonus caboverdensis (HEDQVIST, 1965) - 5 ♀ + 3 ♂: Santa Cruz, VIII 1983. 2 ♀ + 3 ♂: V-VII, IX and XII 1983.

Phanerotoma flavitestacea FISCHER, 1959 (= *Ph. caboverdensis* HEDQVIST, 1965; synonymized by ZETTEL 1992: 1992: 293); all specimens were determined by H. ZETTEL

in 1988. - 8 ♀ + 3 ♂: São Jorge, V-XII 1983. 1 ♀ + 1 ♂: Godim, 16 VII 1984. 1 ♀ + 1 ♂: Moia-Moia, 18 X 1983. 1 ♀: Ribeira Mangue, 14 V 1984. 5 ♀: Santa Cruz, 14 VI 1982 (2 ♀) and 1-5 VIII 1983 (3 ♀). 1 ♀ (in Frankfurt) + 1 ♂: Fogo, San Filipe, 24 X 1979, leg. Grohlobin. 1 ♂ (in Frankfurt): Fogo, San Jorge, 300 ♂, 29 X 1979, leg. Grohlobin. 1 ♂: Sal, X 1979, leg. Grohlobin. 3 ♀ (in Frankfurt): San Antao, Ribeira Grande, 5 XI 1979, leg. Grohlobin. 1 ♀ (in Frankfurt) + 1 ♀: San Tiago, Tarrafal, X 1979, leg. Grohlobin.

Exothecinae

Gnaptodon bini VAN ACHTERBERG, 1983 - 2 ♀: São Jorge, v 1983 (1 ♀) and IX 1983 (1 ♀). - Described from Somalia, new to the fauna of Cape Verde Islands; this is the second country reported, supposedly widely distributed in tropical Africa.

Hormius NEES, 1818

HEDQVIST (1965) has described two new species of *Hormius* from the Cape Verde Islands, they are as follows: *H. caboverdensis* and *H. insularis*. The examination of the type-series of the two taxa (*H. caboverdensis*: holotype ♀ and 6 ♀ + 3 ♂ paratypes, *H. insularis*: holotype ♀ + 1 ♀ paratype) led me to the conclusion that *H. caboverdensis* is a distinct species very near to *H. moniliatus* (NEES) and *H. insularis* is conspecific (**syn. n.**) ** with *H. moniliatus*. The two species may be separated by the following few features keyed below:

1 (2) Head in dorsal view Fig. 12 less transverse, (1.6-)1.8 times as broad as long, eye 1.8-2 times as long as temple, occiput excavated. Pterostigma issuing radial vein (or r) more or less distally from its middle, r1 shorter than r2, r2 usually distinctly longer than r1, pterostigma opaque yellow (Fig. 13). (= *H. insularis* HEDQVIST, 1965, **syn. n.**)

H. moniliatus (NEES, 1812)

2 (1) Head in dorsal view (Fig. 10) transverse, twice to 1.9 times as broad as long, eye 2-2.1 times as long as temple, occiput hardly excavated. Pterostigma issuing radial vein (or r) from its middle, r1 and r2 either equal in length or r2 somewhat longer (Fig. 1).

H. caboverdensis HEDQVIST, 1965

** *Bracon moniliatus* NEES, 1812: Mag. Ges. nat. Fr. Berl. 5 (1811): 36 ♀, type locality: ?Sickershausen (Franken) Germany, syntypes destroyed. - *Hormius moniliatus*: NEES, Nova Acta Leop. Carol. 1819 9 (1818): 305 (comb. n.).

Hormius insularis HEDQVIST, 1965: Coment. biol. (HELSINKI) 28 (2): 7 ♀, type locality: "Antão, Campo de Cao" (Cape Verde Islands), holotype in Zoological Museum of the University, Helsinki, examined; **syn. n.**

Hormius caboverdensis HEDQVIST, 1965 - 2 ♀: Boa Entrada, 30 VI 1983. 2 ♀: Santa Cruz, 14 VI 1982. 18 ♀ + 1 ♂: São Jorge, 7-31 X 1982 (1 ♀), 8 XII 1982 (4 ♀), 2 IX 1983 (2 ♀), 8 X 1983 (4 ♀), X 1984 (3 ♀) taken with suction trap, XI 1987 (4 ♀ + 1 ♂).

Hormius moniliatus (NEES, 1812) - 1 ♀: Brava, X 1984.

Parahormius caloptiliae sp. n.: description see p. ooo.

Parahormius harteni sp. n.: description see p. ooo.

Pseudhormius epaphus (NIXON, 1940) - 1 ♀: Santa Cruz, 14 VI 1982. 7 ♀: São Jorge, VI-VII 1983 (4 ♀), VI-VII 1987 (3 ♀). - Antenna with 20-23 antennomeres (20: 2 ♀, 21: 1 ♀, 22: 3 ♀, 23: 2 ♀). Ground colour of body brownish yellow to yellow with brown to dark brown pattern on mesosoma. Described from the Republic of South Africa by NIXON (1940: 489-490), reported from Vietnam by BELOKOBYSKIY (1990: 123). New to the fauna of the Cape Verde Islands. I have a female from Tanzania (Lake Natron) too.

Rhysipolis longulus sp. n.: description see p. ooo.

Homolobinae

Homolobus truncatoides VAN ACHTERBERG, 1979 - 52 ♀ + 3 ♂: São Jorge, VIII-I 1981 and 1983. - Very similar to *H. truncator* (SAY). Distributed in the Ethiopian, South Palaearctic and Oriental Region, reported from many countries of these regions. New to the fauna of the Cape Verde Islands.

Microgastrinae

Apanteles hemara NIXON, 1965 - 1 ♀ + 1 ♂: São Jorge, ex larva *Hymenia recurvalis* (Lep. Pyralidae) (foodplant of the host: *Achyranthes asper*) 25 XI 1982, leg. et educ. VAN HARTEN. 1 ♀: São Jorge, 2-3 I 1983, taken at light. - Widely distributed in the Mediterranean Subregion. New to the fauna of Cape Verde Islands.

Diolcogaster austrina (WILKINSON, 1929) - 2 ♀ + 6 ♂: Pico de Antonia, ex larva *Marasmia trapezalis* GUENEÉ (Lep. Pyralidae), 26 I 1985 (3 ♂) and 23 II 1985 (2 ♀ + 3 ♂), leg. et educ. VAN HARTEN. 1 ♀ + 1 ♂: São Jorge, 8 X 1983 (1 ♀) and IX 1984 (1 ♂). - Distributed in the tropical Africa. New to the fauna of the Cape Verde Islands. Its host, *Marasmia trapezalis*, was first reported by DE SAEGER (1944: 109-110).

Dolichogenidea litae (NIXON, 1972) - 3 ♀ + 1 ♂: Cha de Caldeiros, ex larva *Harpiapteryx xylostella* LINNAEUS (Lep. Pyralidae) 16 IX 1982, food-plant of the host *Diptotaxis* sp. 3 ♀: São Jorge, ex larva *Olethreutes wahlbergiana* ZELLER (Lep. Tortricidae) 10 IV 1984 (host new), leg. et educ. VAN HARTEN. - Distributed in Europe, frequent in the Mediterranean Subregion. New to the fauna of the Cape Verde Islands. Kotenko (1986: 428) placed the name *D. litae* in synonymy with *Apanteles* (or *Dolichogenidea*) *appellator* TELENGA. I consider *D. litae* as representing a valid species with the remark that the two species are very similar to each other. HEDQVIST's name *Apanteles* (or *Dolichogenidea*) *salverdensis* is a subjective junior synonym of *D. appellator* (PAPP 1978: 276).

Rogadinae

Aleiodes (Aleiodes) caboverdensis HEDQVIST, 1965 - 3 ♀ (2 ♀ in Frankfurt): Fogo, São Jorge, 100 m, taken at light, 29 X 1979, leg. Grohlobin. 1 ♀ (in Frankfurt): San Tiego, Tarrafal, X 1979, leg. Grohlobin. 7 ♀ + 1 ♂: São Jorge, 10 I 1983 (2 ♀) and X 1983 (5 ♀ + 1 ♂). - Up to now known only from the Cape Verde Islands.

Aleiodes (Aleiodes) gastritor (THUNBERG, 1822) - 1 ♀: Fogo, Chardas Calderas, 25 X 1979, leg. Grohlobin. 4 ♂ (3 ♂ in Frankfurt): Santo Antão, 1400 ♂, taken at light, 6 XI 1979, leg. Triebe. - In Europe frequent to common. New to the fauna of the Cape Verde Islands.

DESCRIPTION OF THE NEW SPECIES

Taxonomic position of the genus *Parahormius* and the descriptions of the three new species are presented. Paratypes of the new species are deposited in the Museums Budapest, Helsinki, Leiden, London and Sankt Petersburg, holotypes in the Museum Budapest.

Parahormius NIXON

Parahormius NIXON, 1940: Ann. Mag. Nat. Hist. 11/5: 473-493. - BELOKOBYSKIJ & TOBIAS in TOBIAS 1986: 26 (subfamily Doryctinae: p. 21-28). WHARTON 1993: 121-123 and 150-155.

The interpretation of the genus *Parahormius* differ in the judgements of its generic features. In the original description NIXON (l.c.) has stated that "nervus parallelus variable in position of its origin" (i.e. either interstitial or not), on one hand, and recently

BELOKOBYLSKIJ & TOBIAS (l.c.) unambiguously separated this genus giving priority to the interstitial position of n. par., i.e. issuing from the outer vein of the discoidal cell (Fig. 21) and they disregard the presence or absence of the epicnemial carina, on the other. Wharton (l.c.), on the contrary, characterized unambiguously the genus in question that its epicnemial carina is absent and taking not into consideration of the position of n. par. - hence he follows NIXON's idea of this genus. Pondering this taxonomic divergence of opinions I accept WHARTON's standpoint concerning the generic feature of the genus *Parahormius*.

Parahormius caloptiliae sp. n. ♀
(Figs 1-5)

Material examined. - Holotype ♀: Cape Verde Islands, Boa Entrada, ex larva *Caloptilia soyella* VAN DEVENTER 30 June 1983, leg. et educ. A. VAN HARTEN. Holotype is deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. No. 1382.

Etymology. - The species name *caloptiliae* refers to the host from which the new species was reared.

Description of the holotype ♀. - Body 2.2 mm long. Head in dorsal view (Fig. 1) transverse, 1.72 times as broad as long, temple strongly constricted, eye nearly three times as long as temple, occiput hardly excavated. Ocelli small and elliptic, POL : OOL as 1:3. Eye in lateral view large and nearly round, i.e. one-fourth higher than wide, 2.5 times as wide as temple (cf. Fig. 17). Malar space somewhat shorter than basal width of mandible. Occipital carina weak. Head smooth and shiny. - Antenna about one-third longer than body and with 22 antennomeres. First flagellomere three times as long as broad.

Mesosoma in lateral view 1.5 times as long as high. Pronope, notaulix and precoxal furrow absent. Mesonotum posteriorly without a medio-longitudinal sulcus. Epicnemial carina absent. Prescutellar furrow shallow and uncrenulated. Propodeum rugose, area petiolaris relatively wide (Fig. 2). Mesosoma smooth and shiny. - Hind femur four times as long as broad distally. Hind basitarsus as long as hind tarsomeres 2-4.

Fore wing as long as body. Pterostigma (Fig. 3) almost four times as long as wide, issuing radial vein (r) from its middle, r1 and r2 equal in length, r3 five times as long as r2 and reaching tip of wing; n. rec. postfurcal, n. par. not interstitial, i.e. issuing from middle of outer vein of first discoidal cell (cf. Fig. 21 see arrow).

Metasoma about as long as mesosoma. First tergite distinctly broadening posteriorly, somewhat wider behind than long medially (Fig. 4), smooth and shiny. Further tergites more or less weakly sclerotized. Hypopygium pointed; ovipositor sheath long, in lateral view as long as middle tibia, apically clubform, ovipositor as in Fig. 5.

Ground colour of body brownish yellow with yellow tint. Metasoma ivory white, tergites 4-6 brown. Antenna yellow. Palpi and legs whitish, last tarsomeres brown. Wings hyaline, pterostigma opaque yellow, veins brownish.

Male unknown. - Host: *Caloptilia soyella* W. VAN DEVENTER (Lep. Gracillariidae), foodplant of the host *Cajanus indicus* Spr.

The new species, *Parahormius caloptiliae* sp. n., is nearest to *P. harteni* sp. n. considering their conspicuously constricted temple, the two species are distinguished by the following few features:

P. caloptiliae sp. n.: 1. Temple in dorsal view strongly constricted (Fig. 1). 2. First flagellomere three times as long as broad. 3. Area petiolaris relatively wide and ending anteriorly near to fore margin of propodeum (Fig. 2). 4. First tergite distinctly broadening posteriorly (Fig. 4). 5. Ovipositor sheath long, in lateral view as long as middle tibia (Fig. 5). 6. Basal half of metasoma ivory white.

P. harteni sp. n.: 1. Temple in dorsal view constricted (Fig. 16). 2. First flagellomere twice as long as broad. 3. Area petiolaris relatively narrow and ending anteriorly less near to fore margin of propodeum (Fig. 18). 4. First tergite moderately broadening posteriorly (Fig. 22). 5. Ovipositor sheath short, in lateral view clearly shorter than middle tibia (or about as long as hind basitarsus). 6. Basal half of metasoma yellow.

With the help of NIXON's key (1940: 476-478) to the Indian and tropical African species of *Parahormius* the new species runs to *P. leucopterae* NIXON, 1940 (Tanzania), the distinctive specific features between them are as follows:

P. caloptiliae sp. n.: 1. Temple in dorsal view strongly constricted (Fig. 1). 2. Mesonotum without a sulcus medio-posteriorly. 3. First tergite distinctly broadening posteriorly (Fig. 4). 4. Legs whitish.

P. leucopterae NIXON: 1. Temple in dorsal view less constricted (Fig. 6). 2. Mesonotum posteriorly with a medio-longitudinal sulcus. 3. First tergite posteriorly from spiracles subparallel-sided (Fig. 7). 4. Legs pale honey-yellow.

Parahormius harteni sp. n. ♀ ♂
(Figs 16-23)

Material examined. - Holotype ♀: Cape Verde Islands, São Jorge, 8 October

1983, leg. A. van Harten. - Paratypes (17 ♀ + 10 ♂): 3 ♀ + 3 ♂: Cape Verde Islands, Santa Cruz, 14 June 1982, leg. A. VAN HARTEN. 2 ♀: Cape Verde Islands, Sao Jorge, May 1983, leg. A. VAN HARTEN. 4 ♀: same locality, 2 September 1983, leg. A. VAN HARTEN. 7 ♀ + 6 ♂: same locality, 8 October 1983, leg. A. VAN HARTEN. 1 ♀: same locality, December 1 ♂: same locality, taken with suction trap, September 1984, leg. A. VAN HARTEN.

Holotype ♀ and 10 ♀ + 7 ♂ paratypes are deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. Nos 7662 (holotype) and 7663-7678 (paratypes); 3 ♀ + 1 ♂ paratypes in the Nationaal Natuurhistorisch Museum, Leiden; 2 ♀ + 1 ♂ paratypes in the Zoological Institute, Sankt Petersburg; 2 ♀ + 1 ♂ paratypes in The Natural History Museum (Department of Entomology), London and 1 ♀ paratype in the Zoological Museum of the University, Helsinki.

Etymology. - The new species is dedicated to Dr. ANTON VAN HARTEN, ardent collector of the (parasitoid) insects of Cape Verde Islands.

Description of the holotype ♀. - Body 1.7 mm long. Head in dorsal view (Fig. 16) 1.8 times as broad as long, temple constricted, eye three times as long as temple. Ocelli small and elliptic, POL: OOL as 1:2. Eye in lateral view 1.35 times as high as wide, 3.5 times as wide as temple (Fig. 17). Malar space shorter than basal width of mandible. Occipital carina present. Head smooth and shiny. - Antenna about one-fourth longer than body and with 18 antennomeres. First flagellomere three times as long as broad.

Mesosoma in lateral view 1.4 times as long as high. Pronope and prescutellar furrow absent, notaulix faintly distinct. Epicnemial carina absent. Mesosoma smooth and shiny; propodeum rugose, its areola petiolaris distinct and relatively narrow (Fig. 18). - Hind femur (Fig. 19) 3.46 times as long as broad rather distally. Hind basitarsus almost as long as tarsomeres 2-5.

Fore wing about one-sixth longer than body. Pterostigma (Fig. 20) 3.5 times as long as wide, issuing radial vein proximally from its middle, r1 as long as width of pterostigma as well as r2, r3 five times as long as r2 and reaching tip of wing; n. rec. postfurcal, n. par. not interstitial, i.e. issuing from middle of outer vein of first discoidal cell (Fig. 21, sec arrow).

Metasoma about as long as mesosoma. First tergite somewhat longer than broad behind, moderately broadening posteriorly (Fig. 22). Further tergites medially weakly sclerotized. Hypopygium pointed, ovipositor sheath less long, as long as hind basitarsus + second tarsomere, apically not clubform, ovipositor as in Fig. 23.

Ground colour of body yellow with brownish suffusion on metanotum, propodeum and sclerotized parts of tergites 2-8. Flagellum greyish brownish, scape and pedicel yellow,

flagellomeres 1-2 yellowish. Palpi and legs whitish. Wings hyaline, pterostigma opaque yellow, veins yellowish.

Description of the female paratypes (17 ♀). - Similar to the holotype ♀. Body 1.7-1.9 mm long (1.7: 7 ♀, 1.8: 5 ♀, 1.9: 5 ♀). Head in dorsal view transverse, 1.75-1.9 times as broad as long (1.75: 3 ♀, 1.8: 10 ♀, 1.9: 4 ♀). Antenna with 17-20 antennomeres (17: 1 ♀, 18: 3 ♀, 19: 3 ♀, 20: 10 ♀). Hind femur 3.5-3.75 times, exceptionally 3.2-3.3 times, as long as broad rather distally. Pterostigma issuing radial vein usually clearly and rarely less clearly proximal from its middle. Ovipositor sheath as long as hind basitarsus + second tarsomere, exceptionally slightly shorter.

Description of the male paratypes (10 ♂). - Similar to the female. Body 1.3-1.7 mm long, (1.3: 3 ♂, 1.5: 5 ♂, 1.6: 1 ♂, 1.7: 1 ♂). Antenna with 16-19 antennomeres (16: 3 ♂, 17: 2 ♂, 18: 3 ♂, 19: 1 ♂; 1 ♂ with damaged antenna). First tergite 1.2-1.4 times as long as broad behind. Sclerotized parts of tergites 2-8 brown to brownish.

The new species, *Parahormius harteni* sp. n., is related to *P. areolaris* HEDQVIST, 1965 (Cape Verde Islands), the distinction of the two species restricts to a few features somewhat difficult to recognize:

P. harteni sp. n. ♀ ♂: 1. Head in dorsal view twice as broad as long, temple constricted, eye three times as long as temple (Fig. 16). 2. Eye in lateral view large and temple narrow, eye three times as wide as temple (Fig. 17). 3. Malar space distinctly shorter than basal width of mandible. 4. Antenna with 16-19 (males) and 18-20 (females) antennomeres. 5. N. par. not interstitial (Fig. 21, see arrow). 6. Hind femur broadest rather distally (Fig. 19). 7. First tergite moderately broadening posteriorly (Fig. 22).

P. areolaris HEDQVIST ♂: 1. Head in dorsal view 1.7 times as broad as long, temple rounded, eye 1.5-1.6 times as long as temple (Fig. 24). 2. Eye in lateral view not large and temple less narrow, eye one-third (or 1.5 times) as wide as temple (Fig. 25). 3. Malar space as long as basal width of mandible. 4. Antenna with 22 antennomeres. 5. N. par. interstitial (Fig. 28, see arrow). 6. Hind femur broadest medially (Fig. 26). 7. First tergite parallel-sided (Fig. 29).

The new species runs to *P. jason* NIXON, 1940 (India) with the help of NIXON's key (1940: 476-478), the specific distinction are tabulated as follows:

P. harteni sp. n.: 1. Temple in dorsal view strongly constricted (Fig. 16). 2. Areola petiolaris on propodeum distinct (Fig. 18). 3. Pterostigma wide, 3.5 times as long as wide,

issuing radial vein proximally from its middle (Fig. 20). 4. Ovipositor almost straight (cf. Fig. 5). 5. Ground colour of body brownish yellow with yellow tint.

P. jason NIXON: 1. Temple in dorsal view constricted (Fig. 8). 2. Areola petiolaris on propodeum indistinct. 3. Pterostigma less wide, 4-4.2 times as long as wide, issuing radial vein from its middle (Fig. 9). 4. Ovipositor evenly curved (Fig. 3 in NIXON 1940: 474). 5. Ground colour of body honey-brown with reddish tint.

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It seems reasonable to construct a concise key to the three *Parahormius* NIXON, 1940 and one *Pseudohormius* TOBIAS et ALEXEEV, 1973 species occurring in Cape Verde Islands completed them with the species *Parahormius testacea* (CAMERON) comb. n. distributed in South Africa and closely related to *P. areolaris* HEDQVIST:

1 (6) Eye in dorsal view less long and at most twice as long as temple, i.e. temple rounded (Fig. 24). N. par. interstitial (Fig. 28, see arrow).

2 (3) Notaulix evenly deep on disc of mesonotum and very finely crenulated, median pit of mesonotum sulciform and finely crenulated. r1 about twice as long as r2. Propodeum rugose and not areolated. First tergite beyond spirales parallel-sided and as long as broad at hind. Ovipositor sheath short, as long as half hind tibia or just longer than hind basitarsus. Antenna with 20-23 antennomeres. Ground colour of body yellow with brownish tints, legs whitish. ♀ ♂: 1.5-2 mm.

Pseudohormius epaphus (NIXON, 1940)

3 (2) Notaulix absent on disc of mesonotum, median pit present as a narrow furrow. r1 and r2 about equal in length (Figs 14, 27). Propodeum areolated.

4 (5) Pterostigma issuing radial vein (r) distally from its middle, r2 as long as r1 (Fig. 14). Hind femur distinctly five times as long as broad distally (Fig. 15). Precoxal furrow narrow and finely crenulated. Ground colour of body brownish yellow, head and legs light brownish yellow. ♀: 2.5 mm (♂ unknown).

Parahormius testaceus (CAMERON, 1911) comb. n.

5 (4) Pterostigma issuing radial vein (r) from its middle, r2 longer than r1 (Fig. 27). Hind femur 3.5 times as long as broad medially (Fig. 26). Precoxal furrow absent. Ground colour of body yellow with little brownish tint, legs pale yellow. ♂: 2 mm (♀ unknown).

Parahormius areolaris HEDQVIST, 1965

6 (1) Eye in dorsal view long, at least 2.5 times as long as temple, i.e. temple constricted (Figs 1, 16). N. par. not interstitial (Fig. 21, see arrow).

7 (8) First tergite distinctly broadening posteriorly (Fig. 4). Ovipositor sheath long, in lateral view as long as middle tibia. Temple in dorsal view strongly constricted (Fig. 1).

Area petiolaris of propodeum relatively wide (Fig. 2). First flagellomere three times as long as broad. ♀: 2.2 mm (♂ unknown).

Parahormius caloptiliae sp. n.

8 (7) First tergite moderately broadening posteriorly (Fig. 22). Ovipositor sheath short, in lateral view clearly shorter than middle tibia. Temple in dorsal view constricted (Fig. 16). Area petiolaris of propodeum relatively narrow (Fig. 18). First flagellomere twice as long as broad. ♀: 1.6-1.9 mm, ♂: 1.5-1.7 mm.

Parahormius harteni sp. n.

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By the kindness of R. TOMS (Pretoria) I had the privilege to examine one female paratype specimen (deposited in the Transvaal Museum, Pretoria) of *Hormius testaceus* CAMERON, 1911 which proved to belong to the genus *Parahormius*, hence the taxonomic position of the species in question changed as follows: *Parahormius testaceus* (CAMERON, 1911) comb n. With the help of NIXON's key (l.c.) *P. testaceus* seems to be nearest to *P. gylippus* NIXON, 1940 (RSA: Cape Province). The distinction between the two species (*P. gylippus* known to me only on the basis of NIXON's paper l.c.) is disclosed below:

P. testaceus (CAMERON): 1. Antenna with 22 antennomeres. 2. r2 slightly longer than r1 (Fig. 14). 3. Hind basitarsus about twice as long as second tarsomere. 4. Legs brownish yellow. 5. Wings hyaline.

P. gylippus NIXON: 1. Antenna with 19-20 antennomeres. 2. r2 one and one-third times as long as r1. 3. Hind basitarsus about three times as long as second tarsomere. 4. Legs very pale yellow, sometimes almost whitish. 5. Wings markedly brownish.

Rhysipolis longulus sp. n. ♀ ♂
(Figs 30-33)

Material examined. - Holotype ♀: Cape Verde Islands, São Jorge, taken with suction trap, August 1984, leg. A. VAN HARTEN. - Paratypes (4 ♀ + 4 ♂): 1 ♀: same data as for holotype. 2 ♀ + 1 ♂: Cape Verde Islands, Sao Jorge, 8 October 1983, leg. A. VAN HARTEN. 1 ♀ + 2 ♂: Cape Verde Islands, São Jorge, 1 November 1983, leg. A. VAN HARTEN. 1 ♂: Cape Verde Islands, São Jorge, taken with suction trap, September 1984, leg. A. VAN HARTEN.

Holotype and 3 ♀ + 3 ♂ paratypes are deposited in the Hungarian Natural History Museum (Department of Zoology), Budapest, Hym. Typ. Nos 7679 (holotype) and 7680-

7685 (paratypes); 1 ♀ + 1 ♂ are in the Nationaal Natuurhistorisch Museum, Leiden.

Etymology. - The species name "longulus" refers to the long second cubital cell of the fore wing.

Description of the holotype ♀. - Body 4.8 mm long. Head in dorsal view transverse (Fig. 30), 1.78 times as broad as long, temple strongly constricted, eye four times as long as temple. Occiput excavated, occipital carina strong and ventrally not meeting (though approaching) hypostomal carina. Ocelli large and elliptic, POL almost as long as OOL. Eye in lateral view one-fifth higher than wide (Fig. 31). Malar space short, half as long as basal width of mandible. Maxillar palp long, nearly twice as long as height of head. Head polished. - Antenna somewhat longer than body and with 37 antennomeres. Flagellum slightly attenuating, first flagellum 3.3 times and penultimate flagellomere just less than twice as long as broad.

Mesosoma in lateral view 1.8 times as long as high. Notaulix evenly deep, crenulaed. Prescutellar furrow crenulated. Mesosoma polished; pronotum anteriorly rugose, posteriorly crenulose, propodeum rugose with areolate-like elements. Metapleuron rugulose. - Hind femur five times as long as broad, hind tibia and tarsus equal in length, basitarsus as long as tarsomeres 2-3 and half of fourth tarsomere.

Fore wing as long as body. Pterostigma (Fig. 32) distinctly four times as long as wide, issuing radial vein from its middle, r1 just shorter than width of pterostigma, r3 one-fifth longer than r2, CU2 long, r3 reaching tip of wing. N. rec. antefurcal, n clearly postfurcal. - Hind wing: n. rec. absent.

Metasoma somewhat longer than mesosoma but shorter than mesosoma + head combined. First tergite slightly longer than broad behind, evenly broadening, pair of spiracles just before middle of tergite. First tergite rugose, pair of basal keels converging and merging into rugosity. Second and further tergites weakly sclerotized, i.e. more or less shrivelled. Hypopygium small, ovipositor sheath in lateral view almost as long as hind tibia, ovipositor distally as in Fig. 33.

Ground colour of body yellow. Scape laterally blackish. Mandible and palpi straw yellow. Pronotum medially blackish, laterally together with upper fifth of mesopleuron (or mesepisternum) brownish. Propodeum and first tergite brownish black. Ovipositor sheath blackish. Legs yellow, last tarsomeres fumous. Wings hyaline, veins medially dark brown, otherwise yellowish to yellow.

Description of the female paratypes (4 ♀). - Similar to the holotype. Body 4.5-4.8 mm long. Head in dorsal view 1.72-1.78 times as broad as long (1.72:1 ♀, 1.78: 3 ♀). Antenna with 34-37 antennomeres (34: 2 ♀, 36: 1 ♀, 37: 1 ♀). Hind femur 4.6-5.5 times as long as broad (4.6: 1 ♀, 5: 2 ♀, 5.5: 1 ♀). Pterostigma 4-4.2 times as long as wide (4: 2 ♀, 4.2: 2 ♀). Hind tarsus brownish fumous (1 ♀).

Description of the male paratypes (4 ♂). - Similar to the female. Body 4.2-4.6 mm long (4.2: 2 ♂, 4.3 : 1 ♂, 4.6: 1 ♂). Head in dorsal view 1.72-1.78 times as broad as long (1.72: 3 ♂, 1.78: 1 ♂). Antenna with 34-35 antennomeres (34: 1 ♂, 35: 2 ♂; 1 ♂ with damaged antenna). Pterostigma 4.8-5 times as long as wide (4.8:3 ♂, 5: 1 ♂). Propodeum and first tergite somewhat more brownish.

The new species, *Rhysipolis longulus* sp. n., seems to be nearest to *Rh. mediator* (HALIDAY, 1836), only a few features differentiate the two species as follows:

1 (2) In dorsal view head more transverse, 1.72-1.78 times as broad as long, temple strongly constricted, eye four times as long as temple; eye and ocelli large (Fig. 30). Second cubital cell long, r3 slightly longer than r2 (Fig. 32). Propodeum evenly rugose with areolate-like elements. N. rec. of hind wing absent. Ground colour of body yellow. ♀ ♂: 4.5-4.8 mm.

Rh. longulus sp. n.

2 (1) In dorsal view head less transverse, 1.6-1.65 times as broad as long; temple rounded to somewhat constricted, eye about 1.5 times as long as temple; eye and ocelli usual in size (Fig. 34). Second cubital cell less long, r3 one-third to nearly twice as long as r2 (Fig. 35). Propodeum rugose, anteriorly almost more or less smooth, frequently with areola petiolaris. N. rec. of hind wing present (Fig. 36, see arrow). Ground colour of body variable, i.e. yellow to almost black(ish). ♀ ♂: (2.5-)3-5 mm.

Rh. mediator (HALIDAY, 1836)

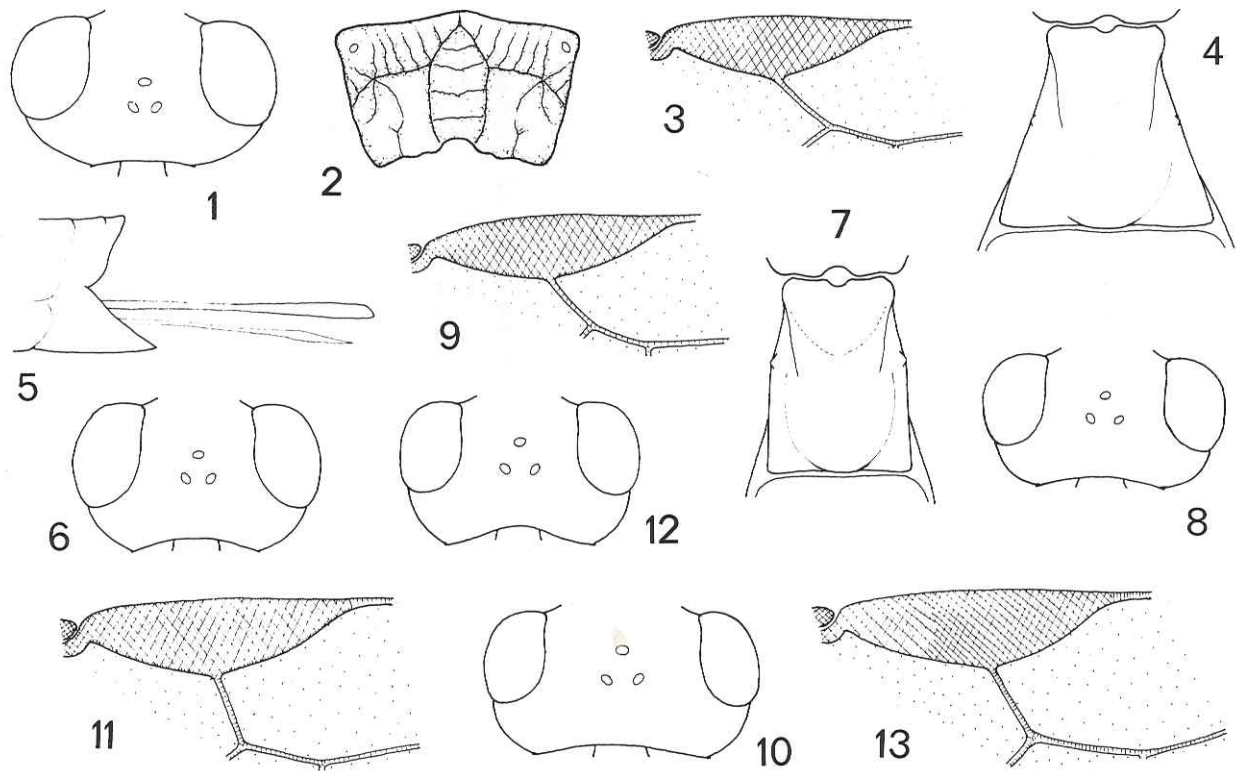
Considering the strongly constricted temple of the new species, *Rh. longulus*, it is related to *Rh. temporalis* BELOKOBYSKI, 1986 (Russia: Far East, Korea), the distinction of the two species is based on a few features not easy to recognize:

1 (2) Second cubital cell long, r3 slightly longer than r2 (Fig. 32). Propodeum rugose with areolate-like element. N. rec. of hind wing absent. Ocelli large, POL almost as long as OOL (Fig. 30). ♀: 4.5-4.8 mm, ♂: 4.2-4.6 mm.

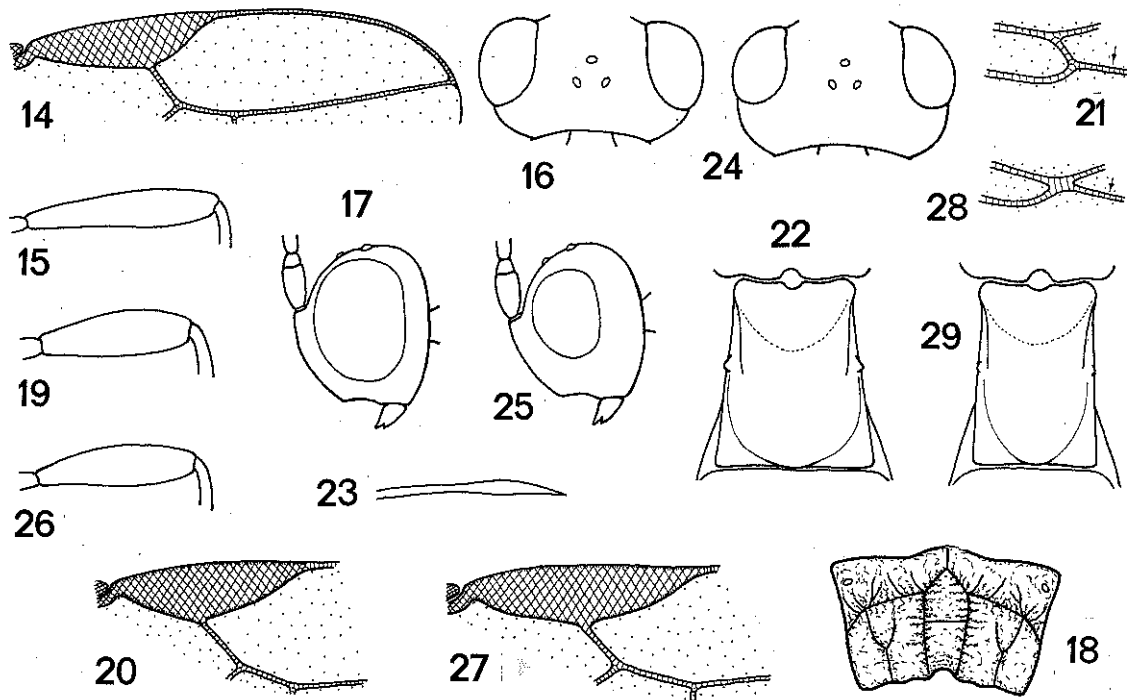
Rh. longulus sp. n.

2 (1) Second cubital cell less long, r3 about twice as long as r2 (cf. Fig. 35). Propodeum distinctly areolated. N. rec. of hind wing present (cf. Fig. 36, see arrow). Ocelli less large, usual in size, POL shorter than OOL. ♀: 4 mm.

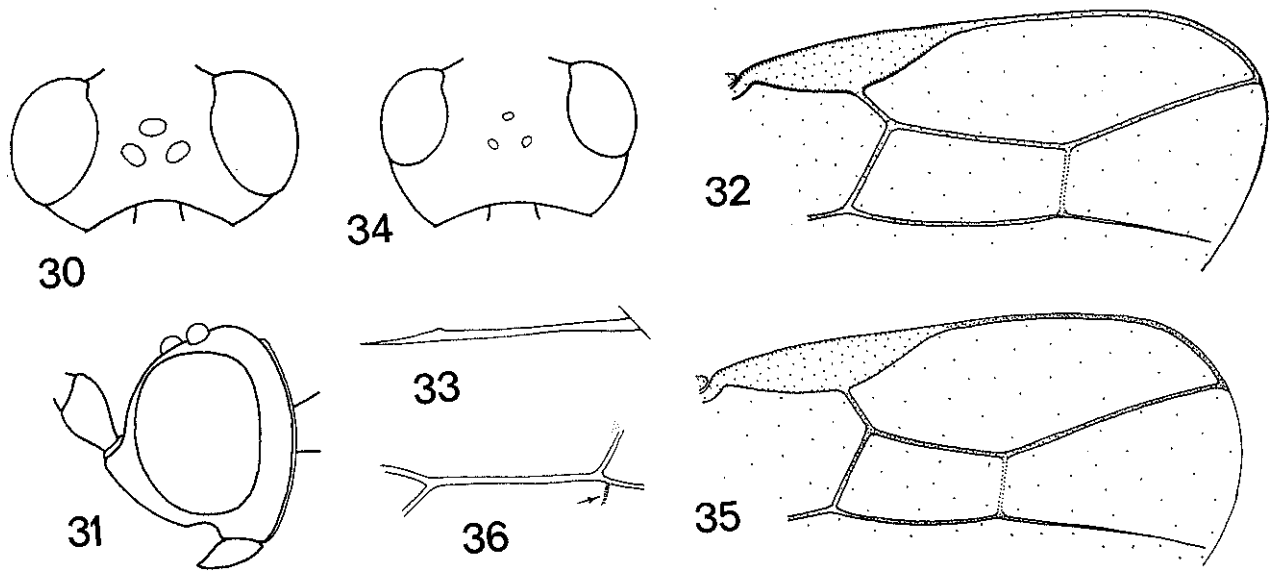
Rh. temporalis BELOKOBYSKI, 1986



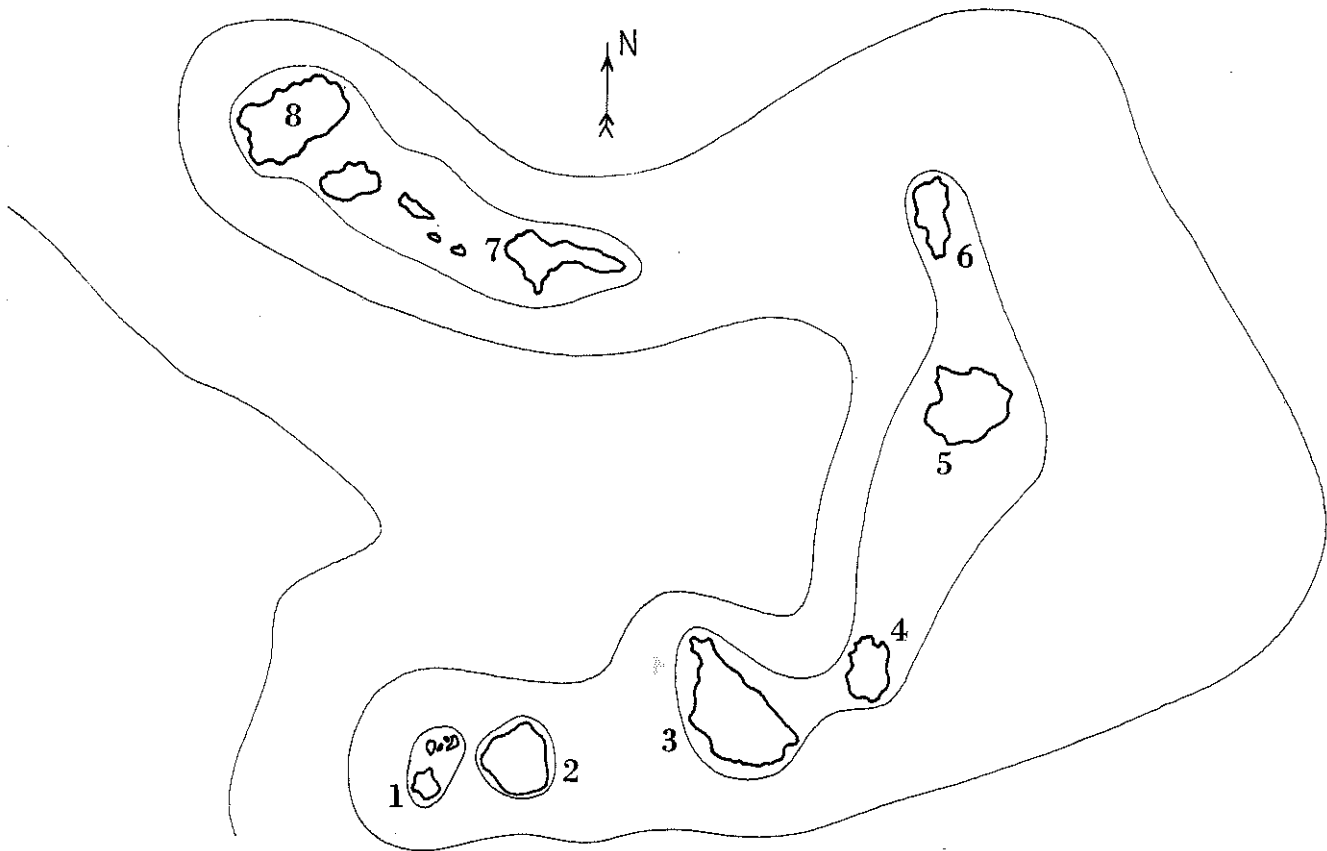
Figs. 1-13 - Figs. 1-5. *Parahormius caloptiliae* sp. n.: 1 = head in dorsal view, 2 = propodeum, 3 = distal part of right fore wing, 4 = first tergite, 5 = posterior end of metasoma. - Figs 6-7. *Parahormius leucopterae* NIXON: 6 = head in dorsal view, 7 = first tergite. - Figs 8-9. *Parahormius jason* NIXON: 8 = head in dorsal view, 9 = distal part of right fore wing. - Figs 10-11. *Hormius caboverdensis* HEDQVIST: 10 = head in dorsal view, 11 = distal part of right fore wing. - Figs. 12-13. *Hormius moniliatus* (NEES): 12 = head in dorsal view, 13 = distal part of right fore wing.



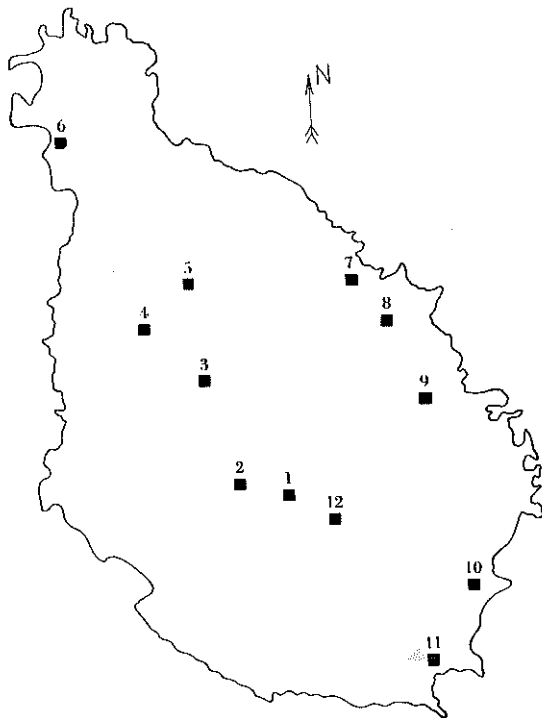
Figs. 14-29 - Figs. 14-15. *Parahormius testaceus* (CAMERON): 14 = distal part of right fore wing, 15 = hind femur. - Figs 16-23. *Parahormius harteni* sp. n.: 16 = head in dorsal view, 17 = head in lateral view, 18 = propodeum, 19 = hind femur, 20 = distal part of right fore wing, 21 = position of n. par. (see arrow) joining to first discoidal cell, 22 = first tergite, 23 = posterior end ovipositor. - Figs 24-29. *Parahormius areolaris* HEDQVIST: 24 = head in dorsal view, 25 = head in lateral view, 26 = hind femur, 27 = distal part of right fore wing, 28 = interstitial position of n. par. (see arrow) joining to first discoidal cell, 29 = first tergite.



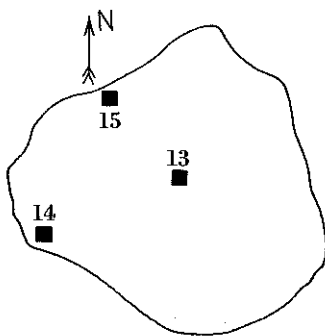
Figs. 30-36 - Figs. 30-33. *Rhysipolis longulus* sp. n.: 30 = head in dorsal view, 31 = head in lateral view, 32 = distal part of right fore wing, 33 = posterior end of ovipositor. - Figs 34-36. *Rhysipolis mediator* (HALIDAY): 34 = head in dorsal view, 35 = distal part of right fore wing, 36 = n. rec. (see arrow) of hind wing.



Map 1 - Cape Verde Islands: 1 = Brava, 2 = Fogo, 3 = Santiago, 4 = Maio, 5 = Boa Vista, 6 = Sal, 7 = Santo Nicolau, 8 = Santo Antão.



Map 2 - Santiago Island, localities: 1 = São Jorge dos Orgãos, 2 = Pico de Antonia, 3 = Boa Entrada, 4 = Aguada, 5 = Serra Malagueta, 6 = São Tiago, Tarrafal, 7 = Santa Cruz, 8 = Achada fazenda, 9 = Ribeira Mangue, 10 = Moia-Moia, 11 = Praia, 12 = Godim.



Map 3 - Fogo Island, localities: 13 = Cha de Caldeiras, 14 = São Filipe, 15 = São Jorge.

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