

# *... et d'ailleurs / ... en van andere streken*

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## Description of several unknown Galápagos male and female spiders

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### Abstract

The species dealt with in this paper were in former publications described either from male or female specimens. The opposite sex is now illustrated. The males of *Mastophora rabida* Levi, 2003, *Hogna hendrickxi* Baert & Maelfait, 2008, *Ero gemelosi* Baert & Maelfait, 1984, *Speocera jacquemarti* Baert & Maelfait, 1986 and the female of *Anopsicus banksi* (Gertsch, 1939) are described. The female of *Modisimus modicus* (Gertsch & Peck, 1992) is finally illustrated.

**Keywords :** Galápagos, Araneae, males, females, descriptions.

### Résumé

Certaines espèces d'araignées des Galápagos ont été récemment décrites sur base d'individus d'un seul sexe. Des individus de l'autre sexe ayant été découverts dernièrement, sont illustrés dans le présent article. Les mâles de *Mastophora rabida* Levi, 2003, *Hogna hendrickxi* Baert & Maelfait, 2008, *Ero gemelosi* Baert & Maelfait, 1984, *Speocera jacquemarti* Baert & Maelfait, 1986 et la femelle de *Anopsicus banksi* (Gertsch, 1939) sont décrits. La femelle de *Modisimus modicus* (Gertsch & Peck, 1992) est illustrée pour la première fois.

### Samenvatting

De soorten die hier worden opgenomen werden in vroegere publicaties op basis van één van beide geslachten beschreven. Het ander geslacht wordt nu geïllustreerd. De mannetjes van *Mastophora rabida* Levi, 2003, *Hogna hendrickxi* Baert & Maelfait, 2008, *Ero gemelosi* Baert & Maelfait, 1984, *Speocera jacquemarti* Baert & Maelfait, 1986 en het wijfje van *Anopsicus banksi* (Gertsch, 1939) worden beschreven. Het wijfje van *Modisimus modicus* (Gertsch & Peck, 1992) wordt voor het eerst geïllustreerd.

### Introduction

Thirty years of intense study by the author of the spider fauna of the Galápagos archipelago since 1982 reveal at the moment 175 species distributed over 32 families (BAERT, in press). The studied material contained the material sampled before 1982 and deposited in several museums (AMNH, BM, CAS, MCZ, RBINS, TM and ZMO) and recent material sampled during this period of study by several research teams (Baert *et al.*, Peck *et al.*, Schatz *et al.*, Hernandez J. and members of the CDRS) (BAERT, in press).

When described as new species, the species here included were only known from the female or the male known at that time. This paper bridges this gap by finally describing the other sex of these species, which were found on a later date.

## Material and methods

*Origin of the material studied* (sampled before 1982)

AMNH : American Museum of Natural History, New York, USA ; BM : British Museum of London, UK ; CAS : California Academy of Sciences, San Francisco, USA ; MCZ : Museum of Comparative Zoology, Cambridge, USA ; RBINS : Royal Belgian Institute of Natural Sciences, Brussels, Belgium ; TM : Texas Memorial Museum, Austin, USA ; ZMO : Zoological Museum Oslo, Norway.

*Composition of the several sampling teams* (sampled after 1982)

Baert *et al.* : L. Baert, J.-P. Maelfait, K. Desender, P. Verdyck, F. Hendrickx & W. Dekoninck ; Peck *et al.* : S. Peck, J. Peck-Kukalova, J. Heraty ; Schatz *et al.* : I. & H. Schatz ; CDRS<sup>1</sup> members : S. Abedrabbo, L. Roque, H. Herrera & several students.

<sup>1</sup>Charles Darwin Research Station

*Abbreviations used in the text for the morphological characters*

MOQ = Median Ocular Quadrangle, AW = Width of Anterior eye row, MW = Width of Median eye row, PW = Width of Posterior eye row, LMP = Length between hind border of Posterior eye and front border of Median eye, Cl = Clypeus length, DAME = Diameter of Anterior Median Eye, Fe = Femur, Pa = Patella, Ti = Tibia, Mt = Metatarsus, I = leg I, IV = leg IV, TiL L/D = Length to Diameter of Tibia I, d = dorsal, r = retrolateral, p = prolateral, (d) = distal.

*Abbreviations used in the figures*

ma = median apophysis, ta = terminal apophysis, em = embolus.

*Remarks :*

No length scales are given with the drawings but measurements of vital structures can be found in the written text. All specimens are deposited at the RBINS.

## Taxonomical part

### ARANEIDAE

#### *Mastophora rabida* Levi, 2003

(Figs 1-5)

*Mastophora rabida* : LEVI, 2003 : 366, Figs 343-350 (♀).

*Mastophora rabida* : BAERT, MAELFAIT, HENDRICKX & DESENDER, 2008 : 48, Map 18 (♀).

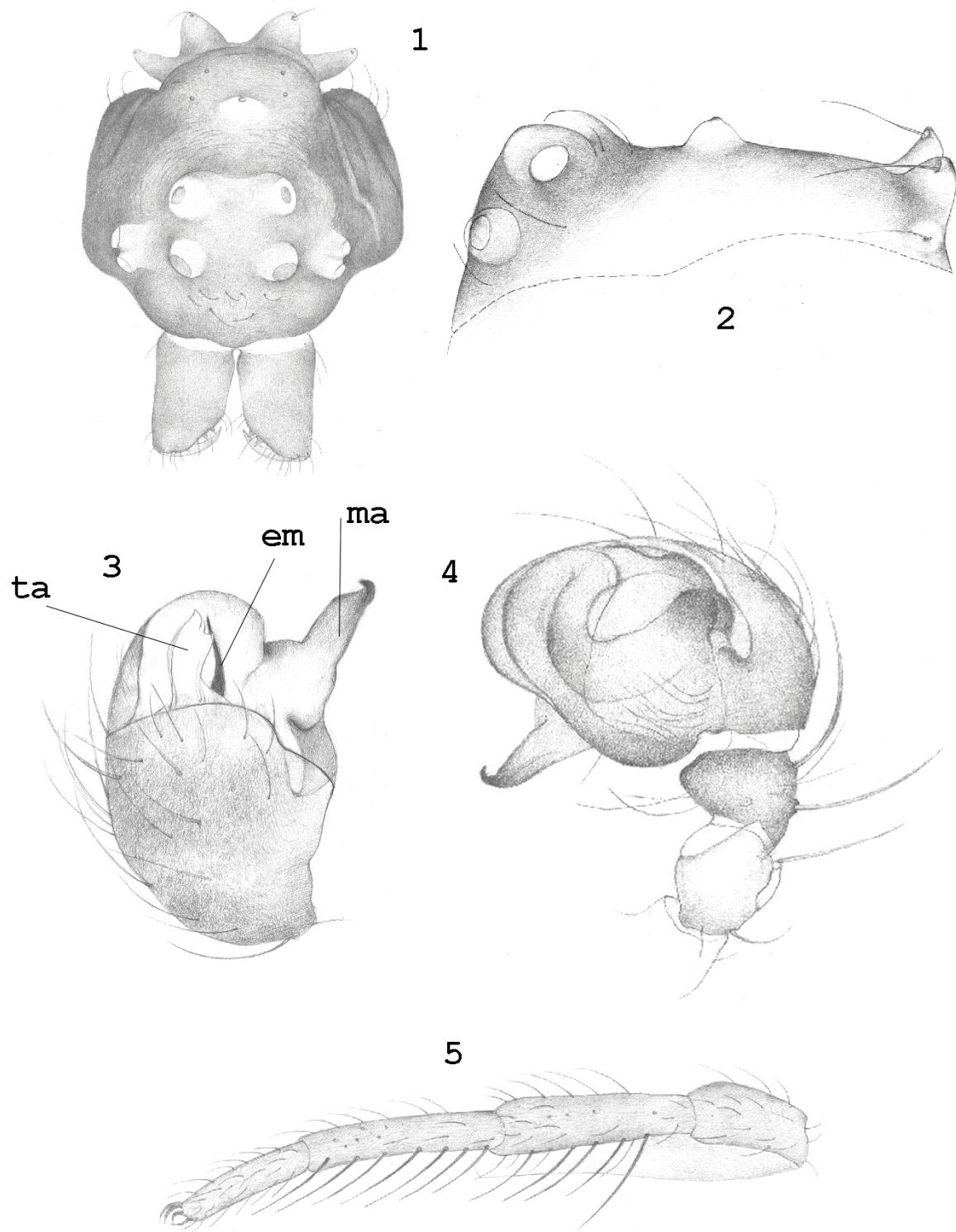
MATERIAL EXAMINED (♂) : ECUADOR : GALÁPAGOS ISLANDS : Isla Isabela, Volcán Alcedo, W-slope, West of lava flow, sweeping shrubs (*Darwiniothamnus*, *Clerodendron*, *Croton* and *Waltheria*), 23.V.1980, 1♂, leg. W. G. Reeder ; E-rim at 1045 m of altitude, *Zanthoxylum-Tournefortia* association, 17.V.1980, 1♂, leg. W.G. Reeder.

DESCRIPTION :

*Male* : Total length : 1.52 mm ; carapace length : 0.64 mm, width : 0.62 mm, height : 0.50 m (including tubercle) ; abdomen length : 0.88 mm, width : 0.93 mm (including the hump) ; Clypeus : 0.21 mm high ; AME : 0.08 mm diameter ; chelicerae : 0.27 mm.

*Carapace and appendages* : Carapace color (in alcohol) : median yellow-orange band (tubercles included), sides strongly suffused with black. 1 central tubercle and 4 tubercles on a row along hind border, each with a terminal seta (Figs 1, 2). Appendages color : yellow-orange but lighter than carapace. Chelicerae with 3 pro-marginal teeth and 1 small retro-marginal tooth. All eyes on shallow elevation ; lateral eyes small.

*Legs* : Measurements : I : Fe 0.68 mm, Pa 0.33 mm, Ti 0.45 mm, Mt 0.43 mm, Ta 0.29 mm ; II : Fe 0.56 mm, Pa 0.29 mm, Ti 0.37 mm, Mt 0.33 mm, Ta 0.25 mm ; III : Fe 0.35 mm, Pa 0.18 mm, Ti 0.19 mm, Mt 0.17 mm, Ta 0.17 mm ; IV : Fe 0.37 mm, Pa 0.23 mm, Ti 0.36 mm, Mt 0.27 mm,



Figs 1-5. *Mastophora rabida* Levi, 2003. 1. Male cephalothorax, frontal view - 2. Male cephalothorax, lateral view - 3. Male palp, dorsal view - 4. Male palp, retrolateral view - 5. Ti, Mt of leg I with setae.

Ta 0.19 mm. Spinulation : Ti I : 7 prolaternal spines (proximal one longest), Mt I : 7 prolaternal spines ; Ti II : 5 prolaternal spines, Mt II : 7 prolaternal spines (Fig. 5).

*Abdomen* : Pale with greyish tinge, with 2 dorsal humps.

*Pedipalp* (Figs 3-4) : Median apophysis broad with short strongly hooked tip, in perpendicular position to bulbus ; terminal apophysis broad and short ; embolus slender as long as terminal apophysis. Length of cymbium = 0.29 mm.

DISTRIBUTION : Known from the coastal arid zone on Volcán Darwin (Isla Isabela), Isla Floreana, Isla Rábida and Isla Santa Cruz, but has been found on Volcán Alcedo (Isla Isabela) from the coast up to the rim (1045 m of altitude).

## LYCOSIDAE

### ***Hogna hendrickxi* Baert & Maelfait, 2008**

(Figs 6-8)

*Hogna* species 6 (H6) : BAERT, HENDRICKX & MAELFAIT, 2008 : 413, Figs 1,2.

*Hogna hendrickxi* (♀) : BAERT, MAELFAIT & HENDRICKX, 2008 : 22-26, Figs 31,32, 47, Map 8.

*Hogna hendrickxi* (♀) : BAERT, MAELFAIT, HENDRICKX & DESENDER, 2008 : 54, Map 57.

MATERIAL EXAMINED (♂) : ECUADOR : GALÁPAGOS ISLANDS : ISLA SANTA CRUZ, Bahía Tortuga, at beach border under a Manzanilla tree, 15-28.IV.1991 (pitfall trap) : 2♂, 28.IV-18.V.1991 : 1♂ (leg. J.-P. Maelfait) ; Playa Las Palmas, 26.III.2009 : 2♂ (leg. L. Baert *et al.*), 26.I.2010 : 1♂ (leg. F. Hendrickx *et al.*). ISLA PINZÓN, Upper caldera valley area, 7.II.1964 : 1♂ (leg. Cavagnero).

#### DESCRIPTION

*Male* : Total length (voucher specimen) : 12.3 mm ; carapace length : 6.7 mm, width : 5 mm, height : 2.1 mm.

*Colour* : Variable between specimens. Carapace chestnut brown with broad yellow-orange median band, broadest in first half behind posterior eyes, densely covered with short white hairs. MOQ with sparsely dispersed long black hairs and more densely covered with short white hairs. At each side a faint yellow-orange sub-marginal band covered with short white hairs. Chelicerae chestnut brown to black. Labium dark brown ; endites yellow brown suffused with black. Sternum light brown with median yellow stripe. Legs yellow brown with irregular black suffused stains giving a tigered appearance ; Ti, Mt and Ta of legs I and II brown. Pedipalps : Fe, Pa & Ti yellowish suffused with black patches, cymbium brown.

Abdomen greyish with faint black patches ; dorsum with broad median light patch in its centre with a proximal long ovoid greyish patch followed by three greyish chevrons distally ; venter pale.

*Eyes* : MOQ : AW = 0.66 PW, AW = 1.01 LAP, CI = 0.58 DAME. Anterior eye row almost straight.

*Legs* : Measurements : Leg I : 23.0 mm, Fe : 5.7 mm, Pa : 2.9, Ti : 5.2, Mt : 6, Ta 3.2 ; Leg IV : 24.8 mm, Fe : 6.4, Pa : 2.5, Ti : 5.2, Mt : 7.5, Ta : 3.2 ; TiL L/D : ca. 7.4. Spination of Leg I : FeL : d1, 1, 1 r1, 1 p2(d) ; TiL : d0 r1, 1 p1, 1 v2, 2, 2 ; MtL : d0 r1, 1, 1 p1, 1, 1 v2, 2, 1 ; Ta, Mt and first half of Ti with dense scopulae.

*Pedipalp* (Figs 6-7) : Cymbium slender with 1 very fine dorsal spine and 3 spines at prolateral base, 3 darker and stouter macrosetae at tip, Fe with 2 dorsal and an apical row of 4 spines, Pa with 2 dorsal and 1 prolateral spines, Ti with 1 dorsal, 1 dorsoprolateral and 1 prolateral spines. Terminal apophysis blade-shaped with blunt tip ; embolus short and thin, median apophysis with broad blunt tip (Fig. 8). Length of cymbium = 1.81 mm.

DISTRIBUTION : Isla Santa Cruz and Isla Pinzón.

## MIMETIDAE

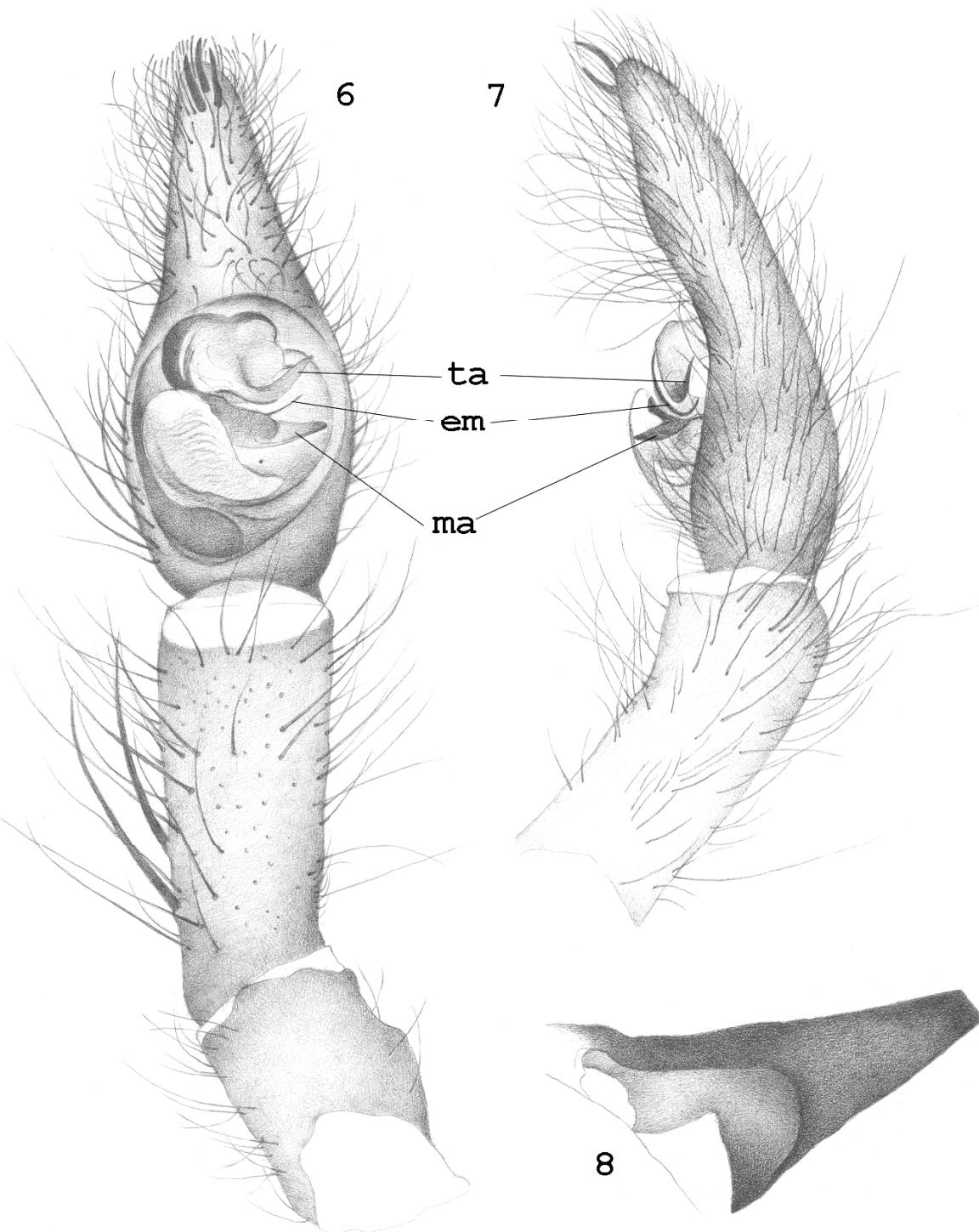
### ***Ero gemelosi* Baert & Maelfait, 1984**

(Figs 9-12)

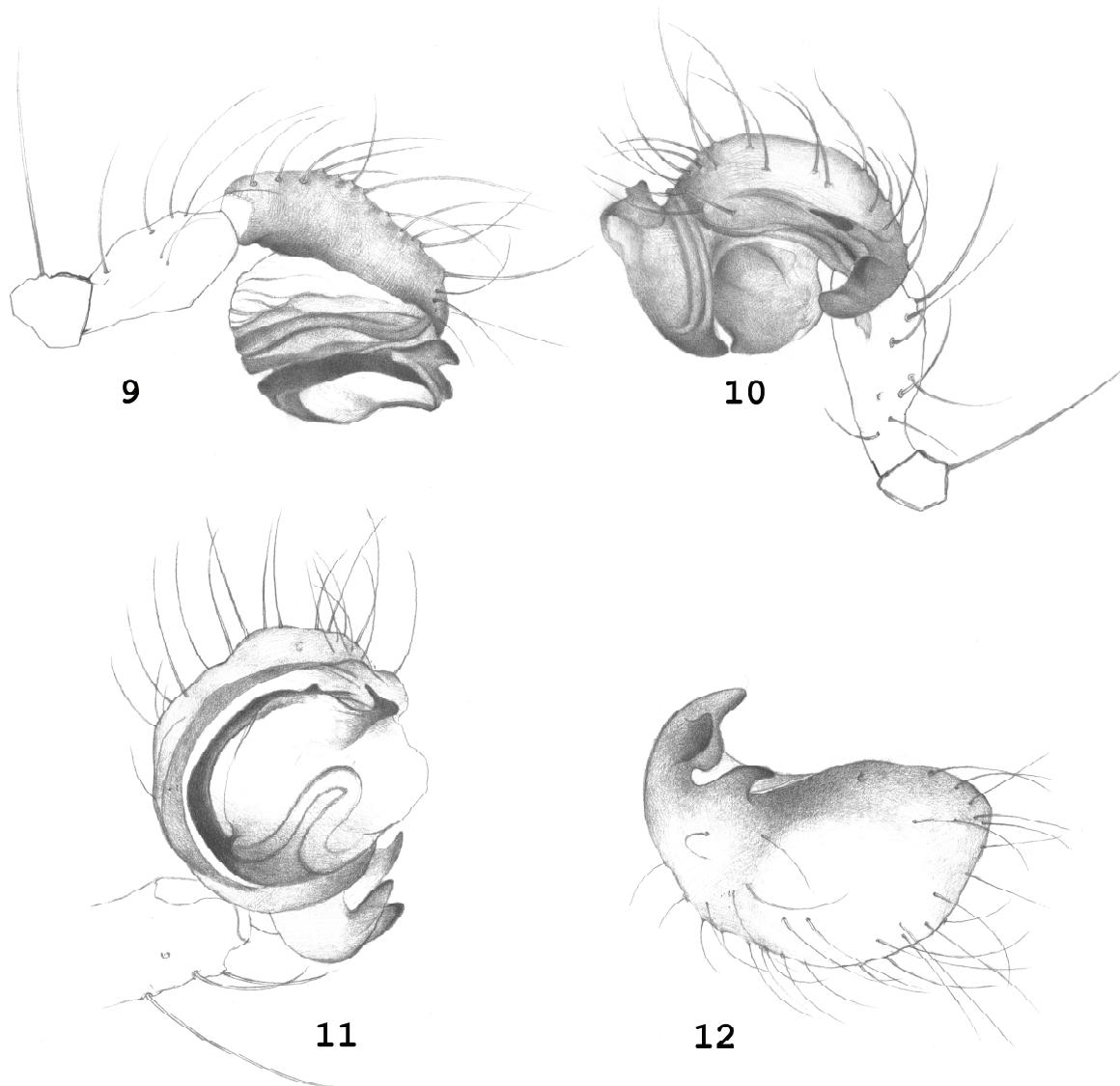
*Ero gemelosi* : BAERT & MAELFAIT, 1984 : 159-162, Figs 1-4 (♀).

*Ero gemelosi* : BAERT, MAELFAIT, HENDRICKX & DESENDER, 2008 : 54, Map 61.

MATERIAL EXAMINED (♂) : ECUADOR : GALÁPAGOS ISLANDS : Isla Santa Cruz, 1.7 km North of Santa Rosa village, 550 m alt., 1-30.VI.1991, 1♂, leg. S. Peck ; Isla Santa Cruz, top of Cerro Crocker, 875 m alt., 16.V-15.VI.1993 (pitfall trap), 1♂, leg. S. Abedrabbo.



Figs 6-8. *Hogna hendrickxi* Baert & Maelfait, 2008. 6. Male palp, ventral view - 7. Male palp, retrolateral view - 8. Male palp, median apophysis, ventral view.



Figs 9-12. *Ero gemelosi* Baert & Maelfait, 1984. 9. Male palp, prolateral view - 10. Male palp, retrolateral view - 11. Male palp, ventral view - 12. Male palp, cymbium, dorsal view.

#### DESCRIPTION

*Male* : Total length : 2.20 mm ; carapace length : 1.02 mm, width : 0.92 mm, height : 0.66 mm ; abdomen length : 1.18 mm.

*Colour* : Cephalothorax yellow with cephalic region and dorsal thoracic region black, a yellow spot just behind each PME, bordered with broad black margin. Chelicerae yellowish brown. Sternum yellow with black suffused stains in front of coxae. Labium yellow. Endites yellow with blackly suffused base. Legs yellow, blackly annulated ; coxae whitish. Abdomen : creamy with irregular pattern of grey spots, 4 tubercles (more conspicuous than in female). Pedipalp yellowish.

*Legs* : Measurements : I : Fe 1.82 mm, Pa 0.50 mm, Ti 1.74 mm, Mt 1.16 mm, Ta 1.02 mm ; II : Fe 1.50 mm, Pa 0.44 mm, Ti 1.28 mm, Mt 0.90 mm, Ta 0.82 mm ; III : Fe 0.94 mm, Pa 0.36 mm, Ti 0.68 mm, Mt 0.54 mm, Ta 0.58 mm ; IV : Fe 1.40 mm, Pa 0.36 mm, Ti 0.90 mm, Mt 0.60 mm, Ta 0.68 mm.

*Pedipalp* (Figs 9-12) : Cymbium with trifid basal extension (Fig 12). Measurement : Pa+Ti 0.40 mm, cymbium 0.40 mm.

*DISTRIBUTION* : Isla Fernandina, Isla Isabela (Volcán Wolf), Isla Santiago and Isla Santa Cruz.

## OCHYROCERATIDAE

### *Speocera jacquemarti* Baert & Maelfait, 1986 (Figs 13-14)

*Speocera jacquemarti* : BAERT & MAELFAIT, 1986 : 53-54, Fig 3 (♀).

*Speocera jacquemarti* : BAERT, MAELFAIT, HENDRICKX & DESENDER, 2008 : 55, Map 65.

MATERIAL EXAMINED (♂) : ECUADOR : GALÁPAGOS ISLANDS : Isla Isabela, Volcán Sierra Negra, Giant fern (label with no precise indication of altitude nor which cave), 16.IV.1990, leg. J.J. Hernandez.

This specimen is totally bleached, with only the two pedipalps and the first right leg left, all three appendages nearly transparent. Being the unique male specimen caught till now I find it important and necessary to publish a drawing of the male palp and the few measurements which were possible to take. Even the locality is not clear at all, but having in mind that Dr. J. Hernandez focused his research on the cave fauna of the Galápagos, I suppose it must be in the fern litter at the entrance of a cave or in its vicinity.

#### DESCRIPTION

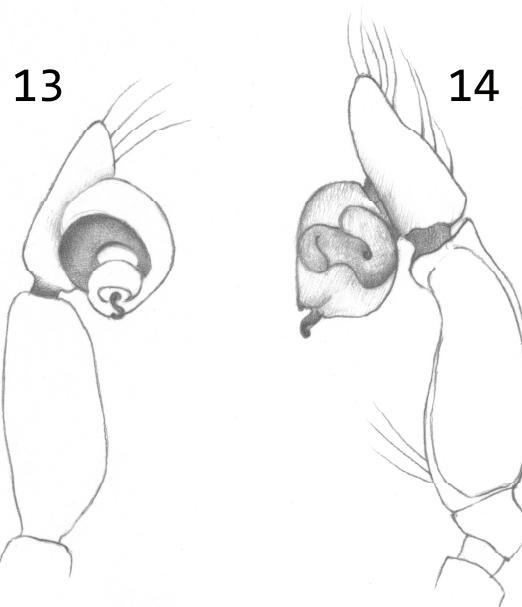
*Male* : Total length : 0.93 mm ; carapace length : 0.53 mm, width : 0.33 mm, height : 0.23 m ; abdomen length : 0.40 mm.

*Colour* : Totally bleached with transparent palps and legs.

*Legs* : Measurements : I : Fe 0.43 mm, Pa 0.12 mm, Ti 0.43 mm, Mt 0.27 mm, Ta 0.33 mm ; II : Fe 0.43 mm.

*Pedipalp* (Figs 13-14) : Cymbium cone-shaped ; bulbus pear-shaped with slightly curled embolus. Length Fe 0.25 mm, Pa 0.08 mm, Ti 0.23 mm, Ta 0.14 mm.

DISTRIBUTION : Isla Isabela : Volcán Sierra Negra and Volcán Alcedo.



Figs 13-14. *Speocera jacquemarti* Baert & Maelfait, 1986. 13. Male palp, ventral view - 14. Male palp, retro-lateral view.

## PHOLCIDAE

### *Anopsicus banksi* (Gertsch, 1939) (Figs 15-18)

*Spermophora placens* : BANKS, 1930 : 273, Plate II, Figs 3 and 6 (♂).

*Pholcophorina banksi* : GERTSCH, 1939 : 4 (♂) (replacement name for *Spermophora placens* Banks).

*Pholcophorina banksi* : ROTH & CRAIG, 1970 : 118 (♂).

*Anopsicus banksi* : GERTSCH & PECK, 1992 : 1191, Figs 50-52 (♂).

*Anopsicus banksi* : BAERT, MAELFAIT, HENDRICKX & DESENDER, 2008 : 58, Map 82 (♂).

MATERIAL EXAMINED : (4 females – first leg pair missing in all four specimens) : ECUADOR : GALÁPAGOS ISLANDS : Isla Floreana, Black Beach, alt. 3-5m, 19.II.1977, leg. W.G. Reeder (Voucher ♀ - description, drawings) ; Isla Española, Punta Cevallos, radar site, alt. 100m, under lava block, 8.II.1977, leg. W.G. Reeder ; Isla Española, “100 M Hill”, alt. 90m, under lava slabs in lava sand in *Bursera-Cordia-Prosocpis-Lantana* association, 8.II.1977, leg. W.G. Reeder ; Islote Gardner near Isla Española, alt. 20m, litter of *Opuntia* in *Bursera-Croton-Cordia* community, 13.II.1977, leg. W.G. Reeder. Specimens are deposited in the collections of the RBINS.

#### DESCRIPTION

As in male (described by GERTSCH & PECK, 1992) : Eye triad separated by diameter of anterior eye ; clypeus broadly rounded around chelicerae, without apical spur ; pars cephalica of carapace with thin linear median suture and shallow cephalic grooves defining prominent rounded elevation bearing the six eyes ; chelicerae with strong tooth at inner base (Fig. 17).

*Female* : Total length : 1.42 mm ; carapace length : 0.72 mm, width : 0.68 mm, height : 0.25 mm.

*Carapace and appendages* : pale yellow, eyes narrowly fringed with black. *Legs II-IV* : pale yellow.

*Abdomen* : suboval, 0.91 mm high, pale yellow.

*Eyes* : diameter of triad : 0.12 mm, distance between triads : 0.06, diameter AE = 0.06 mm, AE > PEs, CI = 4 DAME.

*Legs* : Measurements : I : missing ; II (5.94 mm) : Fe 1.77 mm, Pa 0.25 mm, Ti 1.48 mm, Mt 1.88 mm, Ta 0.56 mm ; III (5.14 mm) : Fe 1.57 mm, Pa 0.25 mm, Ti 1.17 mm, Mt 1.65 mm, Ta 0.50 mm ; IV (6.28 mm) : Fe 1.94 mm, Pa 0.25 mm, Ti 1.53 mm, Mt 2.02 mm, Ta 0.54 mm.

*Epigynum* (Figs 15, 16, 18) : Nearly heart shaped in ventral view (Fig. 16), half longer (0.135 mm) than broad (0.270 mm at epigynal fold) ; epigastric area = 0.19 mm.

DISTRIBUTION : Isla Floreana, Isla Española and his satelite island Gardner.

### *Modisimus modicus* (Gertsch & Peck, 1992) (Fig. 19)

*Hedypsilus modicus* : GERTSCH & PECK, 1992 : 1192 (♂, ♀), Figs 27, 28 (♂).

*Hedypsilus* = *Modisimus* : HUBER, 1996 : 233-240.

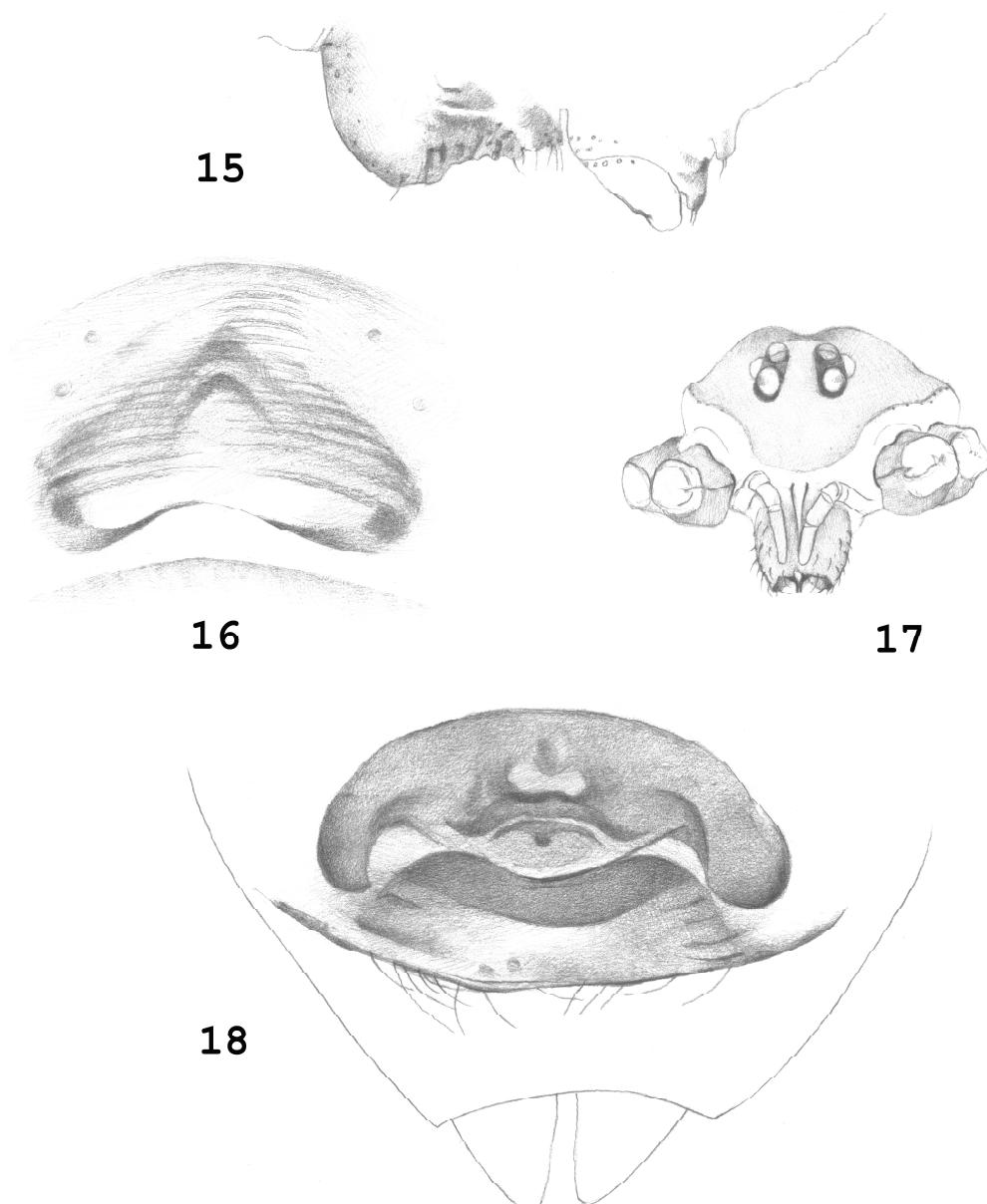
*Modisimus modicus* : BAERT, MAELFAIT, HENDRICKX & DESENDER, 2008 : 59, Map 92 (♂, ♀).

No figure of the female epigyne was given in GERTSCH & PECK, 1992.

MATERIAL EXAMINED (♀) : ECUADOR : GALÁPAGOS ISLANDS : Isla Santiago, Playa Espumila, Arid zone, 10 m of altitude, dung trap, 3-9.VI.1991 (leg. S. & J. Peck ; 91-187).

#### DESCRIPTION

*Female* : Total length (voucher specimen) : 1.03 mm ; carapace length : 0.47 mm, width : 5 mm, height : 2.1 mm ; abdomen length : 0.66 mm, width : 0.59 mm, height : 0.72 mm ; Clypeus : 0.17 mm high ; AME separated by 0.04 mm, LE separated by 0.16 mm, PME separated by 0.06 mm ; Chelicerae : 0.23 mm.



Figs 15-18. *Anopsicus banksi* (Gertsch, 1939). 15. Female abdomen, lateral view of epigynal area - 16. Female epigynal area, ventral view - 17 - Female cephalothorax, frontal view - 18. Female, cleared epigyne.



Fig. 19. *Modisimus modicus* (Gertsch & Peck, 1992), female epigynal area, ventral view.

*Carapace and appendages* (in alcohol) : Carapace color : yellowish with light orange tinge, pars cephalica slightly suffused with black, eye region black and on slight elevation ; chelicerae dusky ; labium, endites and sternum whitish ; legs yellowish with light orange tinge ; abdomen white with purplish tinge.

*Legs* : Measurements : I (3.66) : Fe 0.97 mm, Pa 0.16 mm, Ti 1.01 mm, Mt 1.13 mm, Ta 0.39 mm ; II (2.95) : Fe 0.85 mm, Pa 0.16 mm, Ti 0.74 mm, Mt 0.89 mm, Ta 0.31 mm ; III (2.39) : Fe 0.66 mm, Pa 0.16 mm, Ti 0.56 mm, Mt 0.76 mm, Ta 0.25 mm ; IV (2.13) : Fe 0.60 mm, Pa 0.16 mm, Ti 0.50 mm, Mt 0.66 mm, Ta 0.21 mm.

*Epigyne* (Fig. 19) : wide slit opening, slit width : 0.27 mm ; dark rounded structures centrally and laterally of the slit ; 2 median converging dark canallike structures ; 10 long setae along slit ridge.

DISTRIBUTION : Isla Santiago, Isla San Cristóbal and Volcán Sierra Negra (Isla Isabela).

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