

The Wolf Spiders (Araneae, Lycosidae) from the Galápagos Archipelago

By Léon BAERT, Jean-Pierre MAELFAIT and Frederik HENDRICKX

Abstract

The lycosid fauna of the Galápagos Archipelago is studied. All species are assigned to the genus *Hogna* SIMON, 1885. The three species described by Banks in 1902, *H. albemarlensis*, *H. galapagoensis* and *H. snodgrassi*, are re-described. Four new species are described: *H. jacquesbreli*, *H. junco*, *H. española* and *H. hendrickxi*. Three species groups are recognized on the basis of morphological and ecological features. Neotypes are designated for *H. galapagoensis* and *H. snodgrassi*.

Key words: *Hogna*, new species, ecological species groups.

Introduction

Previous studies on the wolf spiders of the Galápagos Archipelago have revealed that all species belong to the genus *Hogna* (BAERT & MAELFAIT, 1997; MAELFAIT & BAERT, 1986). The genus consists of several highly related, or even cryptic, species. Based on somatic and small genital differences, a total of seven morpho-species can be distinguished. Reproductive isolation between the seven species was confirmed by allozyme cellulose acetate gel electrophoresis (BAERT, HENDRICKX & MAELFAIT, 2008), as well as by mt-DNA sequence analysis of a ~ 700 bp of the COI-gene (HENDRICKX *et al.*, in prep.).

Three species groups, each with a particular ecological niche, can be distinguished.

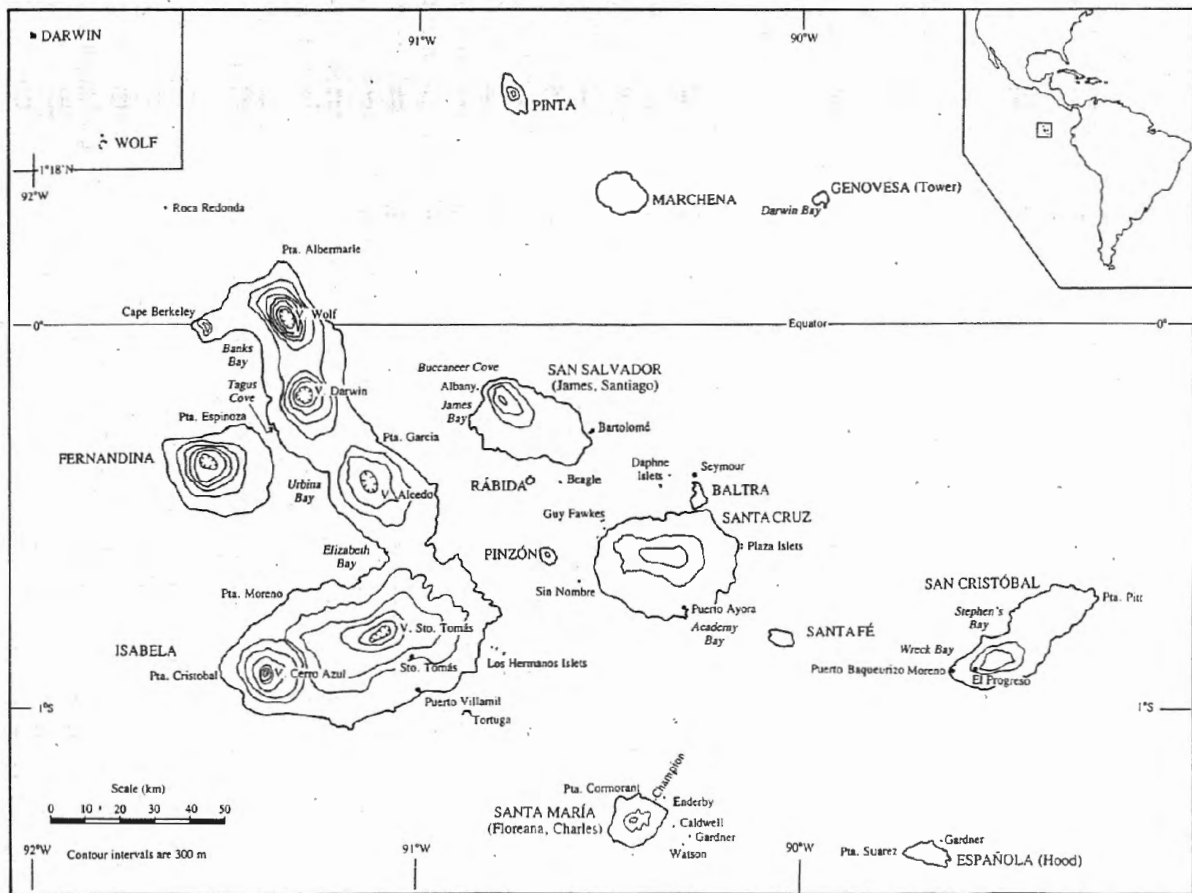
A first group of ecologically and morphologically similar species occurs on the top of the islands in the pampa vegetation zone and is called "high elevation fern-sedge zone species". Based on the morphology of the genital organs, three different species can be distinguished: *Hogna jacquesbreli* sp.n., living on both southern volcanoes Cerro Azul and Sierra Negra of one of the youngest islands (Isabela) (Map 5), *Hogna galapagoensis* (BANKS, 1902) which occurs on islands of intermediate age (Santa Cruz, Santiago, Volcán

Alcedo and Volcán Cerro Azul of Isabela) (Map 3), and *Hogna junco* sp.n., which occurs on the oldest island San Cristóbal (Map 6).

A second group, called "coastal dry species", lives in the dry supra-littoral and arid zone along the coast in vegetated dunes and in the *Opuntia* cactus zone. These morpho-species can only be found on the oldest islands San Cristóbal (*Hogna snodgrassi* (BANKS, 1902)) (Map 7), Española (*Hogna española* sp.n.) (Map 4) and Santa Cruz (*Hogna hendrickxi* sp.n.) (Map 8). *H. snodgrassi* was mostly found in the depressions overgrown with Sea Grass (*Spirobolus virginicus*) located behind the shore or on low vegetated dunes, while *Hogna española* sp.n. was only found in tall vegetation of the dry arid zone just adjacent to the littoral zone, but never in the adjacent depressions with salt grass. The Santa Cruz species was found in the *Opuntia* cactus zone in between dune and pure rocky soil.

The third group comprises populations of the generalist species *H. albemarlensis* (BANKS, 1902) that lives in saline habitats along the coast (salt marshes, bays), along permanent pools (e.g. El Chato on Isla Santa Cruz) and in permanent wetlands below 600m of altitude (e.g. Los Gemelos on Isla Santa Cruz). Scattered populations can also be found above the vegetation inversion zone in wet situations during El Niño years (years characterized by very heavy rainfall giving rise to temporary pools) (BAERT & MAELFAIT, 2000). They reach however their highest densities in the salt marshes. It is widely spread over the whole archipelago (Map 2), with the exception of the northern island Pinta and the south-eastern island Española (BAERT & MAELFAIT, 1997).

The "high elevation" and "coastal dry" species can be distinguished from each other by the pronounced difference in carapace colour pattern. The "coastal dry" species have both broad median and sub-marginal pale bands (these are also present in the generalist species,



Map 1 – Galápagos Archipelago (after JACKSON, 1985).

but not so obvious), while the “high elevation” species lack those clear sub-marginal bands.

Material and methods

Lycosid spiders were intensively sampled since 1982. The sampling data of the *Hogna* species, here described, are enumerated in Table form (Tables 1-5) with the following abbreviations:

Islands: ESP = Española, FER = Fernandina, FLO = Floreana, GEN = Genovesa, ICA = Isabela Volcán Cerro Azul, ISN = Isabela Volcán Sierra Negra, IVA = Isabela Volcán Alcedo, IVD = Isabela Volcán Darwin, IVW = Isabela Volcán Wolf, MAR = Marchena, PIZ = Pinzón, RAB = Rábida, SAN = Santiago, SCB = San Cristóbal, SCZ = Santa Cruz (see Map 1).

Altitude above sea-level is given in meters.

Column m = males, *Column f* = females, *Column j* = juveniles.

Sample: The sample code is composed of the first letter of the name of the collector, followed by the sample year and the sample number behind the slash. This column

corresponds also with the collector of the specimens as follows: A.86,87,88,91 = Leg. S. Abedrabbo; B.82 = Leg. Baert & Maelfait; B.86, 88, 91, 96, 00 = Leg. Baert, Maelfait & Desender; B.02 = Leg. Baert, Maelfait & Hendrickx; H.91 = Leg. J. Heraty; P.85, 89, 91, 92, 96 = Leg. S. Peck & collaborators; R.97, 98, 99 = L. Roque & collaborators; CDRS = Staff members of the Charles Darwin Research Station; CAS/64 = collection of California Academy of Sciences, Leg. D. Cavagnero; CAS/05 = collection of the Californian Academy of Sciences 1905 Expedition.

The abbreviations used for the morphological characters are:

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, TiI L/D = Length to Diameter of Tibia I.

Measurements: All measurements are given in mm. The values between brackets are population intervals.

The type-material of the newly described species is deposited at the Royal Belgian Institute of Natural Sciences (RBINS).

A general map of the Galápagos Archipelago is given in Map 1.

Taxonomical note

BANKS (1902) described three lycosid species from the material collected during the Hopkins Stanford Galápagos expedition of 1898-1899: *Lycosa albemarlensis*, *Lycosa galapagoensis* and *Lycosa snodgrassi*. *Lycosa albemarlensis* was found in January in the wet salt grass growing along the inner edge of the Turtle Point mangrove of Isla Isabela (known formerly as Isla Albemarle). *Lycosa snodgrassi* was collected at sea level at Iguana Cove (Volcán Cerro Azul, Isla Isabela) in June, at Wreck Bay and in the higher cultivated parts of Isla San Cristóbal in May and in the littoral zone under rocks near Gardner Bay on Isla Española in May. *Lycosa galapagoensis* was found together with *Lycosa snodgrassi* at Iguano Cove (Volcán Cerro Azul, Isla Isabela) in December and June, at Wreck Bay and in the higher cultivated parts of Isla San Cristóbal in May.

All species delimited in this paper are strictly bound to one of the 3 recognized ecotopes (see above) and, except *H. albemarlensis* and *H. galapagoensis*, endemic to one particular island (see Maps). BANKS (1902) apparently described a species of each ecotope, as defined by us above, in spite of the islands of origin. He might not have noticed the small morphological differences in male pedipalp and female vulvae between the different island populations.

Only the female type specimen of *Lycosa albemarlensis* still exists in the collections of the Museum of Comparative Zoology, Harvard University, Massachusetts, USA. This is the only species described by Banks for which we have certainty about its origin. It moreover happens to be the generalist having colonised nearly the whole Archipelago. According to the description of the carapace colour pattern given by Banks in 1902 *H. galapagoensis* is clearly a "high elevation species". In this paper the "high elevation" specimens found on the Islands Santa Cruz, Santiago and Volcán Alcedo are considered to be *H. galapagoensis*. The "coastal dry" specimens of Isla San Cristóbal fully match with the description given by BANKS (1902) for *H. snodgrassi*. His description is probably based on the

San Cristóbal (Chatham) specimens.

To make things worse and more complicated, ROEWER (1954, 1958, 1960) assigned the three species to a different new genus: *L. albemarlensis* became *Galapagosa albemarlensis*, *L. galapagoensis* became *Gnatholycosa galapagoensis* and *L. snodgrassi* became *Isohogna snodgrassi*. Remarkably, one genus for each ecotope as defined by us (see above). Fortunately ROTH & CRAIG (1970) did not follow further the generic split.

Taxonomic part

Genus *Hogna* SIMON, 1885

The wolf spiders of Galápagos are assigned to the genus *Hogna* as they all match the generic characters given by DONDALE & REDNER (1990).

Generic Characters (after DONDALE & REDNER, 1990): Carapace with same level between fovea and middle row of eyes; carapace with pale median and sub-marginal (faint in some species) bands on dark background; anterior row of eyes pro-curved, shorter than middle row in length; anterior median eyes almost evenly spaced in row; anterior median eyes larger than anterior lateral eyes; chelicerae with 3 teeth on retro-margin and pro-margin; leg formula: IV>I>II>III; Mt IV slightly to clearly shorter than TI IV + Pa IV; abdomen oval with anterior lanceolate mark; male pedipalp with tibia longer than wide, usually widest at tip; cymbium with more than 2 terminal macrosetae; terminal apophysis sickle shaped and double (second one not sclerotized and smaller), extending to tip of tegular lobe; tegular lobe large and ear-shaped; embolus long, slender and tapered, sometimes arched, arising in large arch and lying parallel to terminal apophysis; median apophysis large, with stout basal spur; epigynum with atrium; median septum in inverted T-shape; copulatory openings at anterior margin of median septum; copulatory tubes short, thick and dark; spermathecae globular.

Hogna albemarlensis (BANKS, 1902)

(Figs 1-5, 33, 37-38; Map 2)

Lycosa albemarlensis BANKS, 1902: 65, fig. 10.

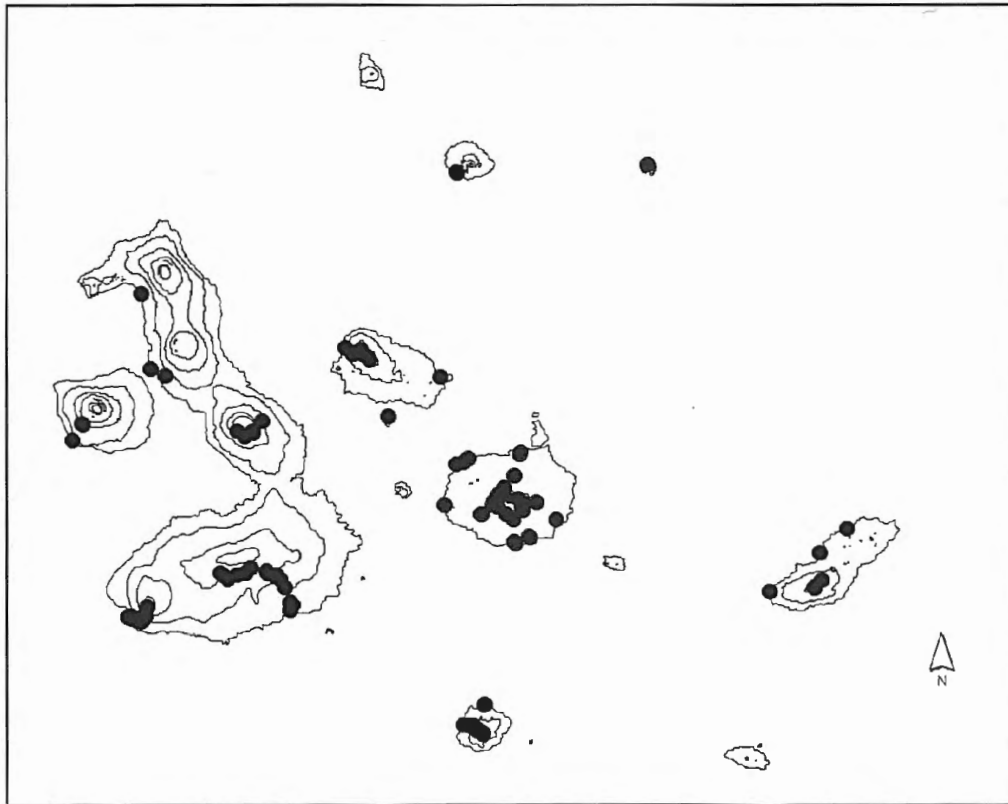
Galapagosa albemarlensis, ROEWER, 1954: 241.

Galapagosa albemarlensis, ROEWER, 1960: 864.

Lycosa albemarlensis, ROTH & CRAIG, 1970: 117.

Trochosa spec. 3, MAELFAIT & BAERT, 1986: 140-142.

Hogna albermarlensis, BAERT & MAELFAIT, 1997 (misspelling).



Map 2 – Distribution of *Hogna albemarlensis* BANKS, 1902).

Hogna albemarlensis, BAERT & MAELFAIT, 2000.

Hogna species 3, BAERT, HENDRICKX & MAELFAIT, 2008.

TYPE MATERIAL: ♀ Type (Holotype?) from the Nathan Banks collection deposited in the Museum of Comparative Zoology, (The Agassiz Museum), Harvard University, Cambridge, Massachusetts, USA (MCZ 20201). No locality label is accompanying the specimen (The loan form mentions "Several specimens, all from Albemarle, in Jan").

OTHER MATERIAL EXAMINED: See Table 1.

DIAGNOSIS: Males differ from the other species by the combination of a sickle shaped terminal apophysis with a short embolus, by the shape of the median apophysis and by the number of macrosetae at tip of cymbium. The females by having a supplementary bulbus at the base of the copulatory tube, slender spermathecae and broad median septum base.

RE-DESCRIPTION (Based on specimens from the Santa Cruz salt marsh population B91/817, loc. 081-measurements from 10♂♂ and 10♀♀)

Male: Total length: 7.0-10.0 mm; Carapace: 4.3-5.2 mm long, 3.2-3.9 mm wide;

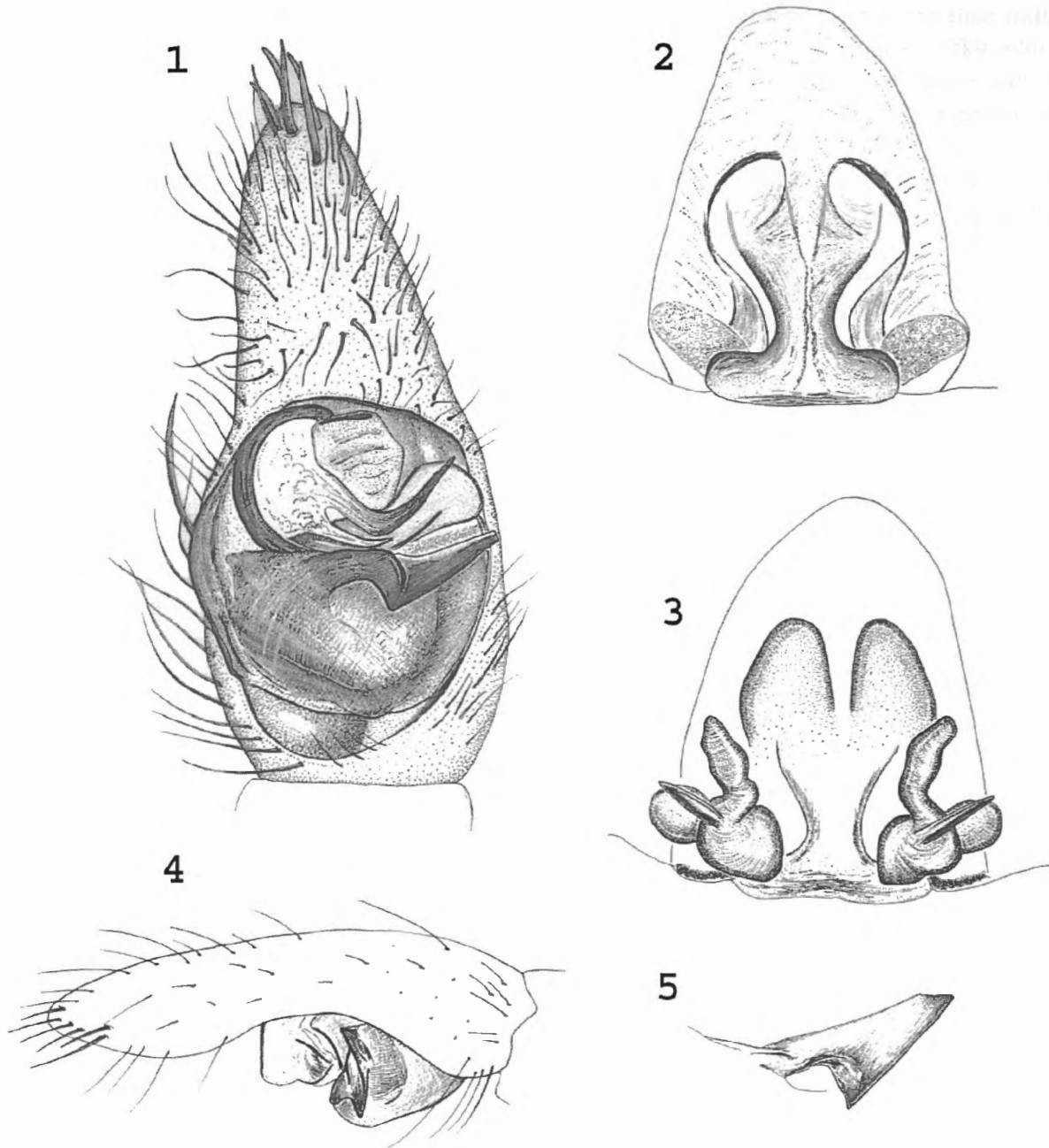
Colour: Carapace light brown covered with short black hairs with a median yellow longitudinal band, broad in its first apical half covered medially with white hairs and sparsely black hairs in the region behind the posterior eyes, and two yellow sub-marginal bands covered with short white hairs; faint black striae. Chelicerae yellowish with few faint blackly suffused striae. Gnathocoxae, labium and sternum pale yellowish. Legs pale yellow with irregular blackly suffused faint patches, especially on femora and tibiae. Pedipalps yellow.

Abdomen with grey to black dorsum with a median dark lanceolate patch bordered by two yellowish longitudinal bands interconnected in posterior half by means of chevrons; venter pale to yellowish.

Eyes: MOQ: MW = 0.81 PW, MW = 1.17 LMP, MW = 1.23 AW; Cl = 1.17 D A ME. Anterior eye row slightly pro-curved.

Legs: Measurements: Leg I: 14.2-17.4 mm, Ti I : 4.8-6.0 mm; Leg IV: 16.6-19.9 mm, Ti IV: 5.0-6.2 mm; TiI L/D: ca. 11 (10-12). Spination of Leg I: FeI: d2,2,2 p2(d); TiI: p1,1 r1,1 v2l, 2l, 2s ; MtI: p1,2(d) r1,2(d) v2l,2l,1s. MtI with sparse scopulae on basal half and dense scopulae on apical half.

Pedipalp: Cymbium with 1 dorsal spine and 2 spines along prolateral rim, ca 6 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,



Figs 1-5 – *Hogna albemarlensis* (BANKS, 1902). 1. Male palp, ventral view. 2. Epigyne, ventral view. 3. Epigyne, dorsal view. 4. Male palp, retrolateral view. 5. Male palp, Median apophysis. (Cymbium length: 1.4 mm; length of epigynum Median septum: 0.62 mm).

1 dorsoprolateral and 1 prolateral spine. Terminal apophysis sickle-shaped with sharp end; embolus short with truncate tip; median apophysis with broad blunt tip, basic spur concave and sharp; palea small.

Female: Total length: 10.5-12.5 mm; Carapace: 5.2-6.1 mm long, 4.1-4.5 wide.

Colour: As male but darker appearance; legs with darker Mt and Ta; chelicerae brown.

Eyes: MOQ: MW = 0.76 PW, MW = 1.03 LMP, MW

= 1.21 AW; CI = 1.17 DAME. Anterior eye row slightly pro-curved.

Legs: Measurements: Leg I: 14.7-17.1 mm, Ti I: 5.3-6.1 mm; Leg IV: 19-21.8 mm, Ti IV: 5.8-7 mm; Ti I L/D: ca. 8 (7.6-8.8). Spination of Leg I: FeI: d2,2,2 p2(d); TiI: p2 v2l, 2l,2s; MtI: p1(d) r1(d) v2l,2l,1s. MtI with sparse scopulae on basal half and dense scopulae on apical half.

Epigynum: Hooded, hoods oval shaped lying close to each other and not bowed, hood cavities shallow;

median septum with broad base; spermathecae slender, copulatory tube with a supplementary bulbus at base; fertilisation duct small, emerging between copulatory duct and spermatheca.

REMARK: Specimens from higher altitude are bigger and darker in appearance.

HABITAT: They live in highest densities in saline habitats along the coast (salt marshes, bays), along permanent pools and in permanent wetlands below 600m. Scattered populations can also be found on various islands above the vegetation inversion zone in wet situations during El Niño years (years characterized by very heavy rainfall giving rise to temporary pools) (BAERT & MAELFAIT, 2000).

DISTRIBUTION: See Table 1 and Map 2.

Hogna galapagoensis (BANKS, 1902)
(Figs 6-10, 34, 39-40; Map 3)

Lycosa galapagoensis BANKS, 1902: 64, fig. 3.

Gnatholycosa galapagoensis, ROEWER, 1954: 246.

Gnatholycosa galapagoensis, ROEWER, 1960: 759.

Galapagosa galapagoensis, ROEWER, 1959: 864.

Lycosa galapagoensis, ROTH & CRAIG, 1970: 117.

Trochosa spec. 4, MAELFAIT & BAERT, 1986: 140-142.

Hogna galapagoensis, BAERT & MAELFAIT, 1997.

Hogna galapagoensis, BAERT & MAELFAIT, 2000.

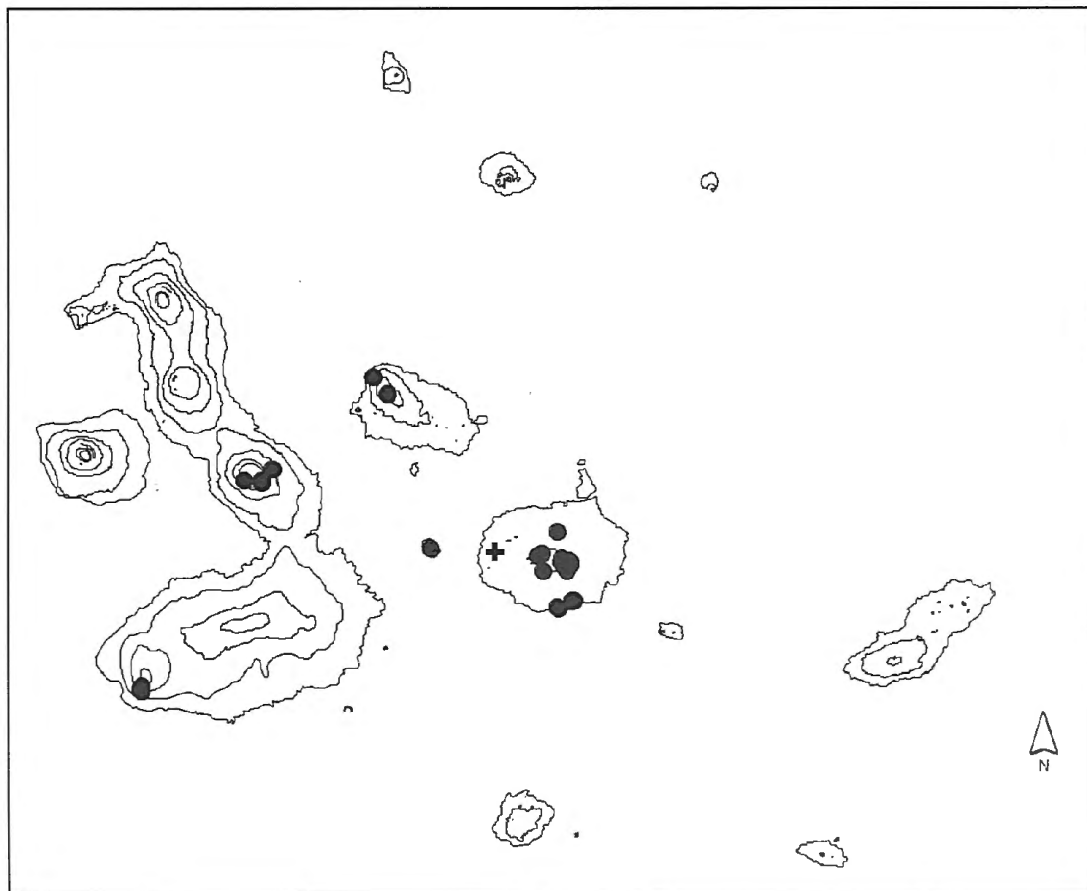
Hogna species 4, BAERT, HENDRICKX & MAELFAIT, 2008.

TYPE MATERIAL: The original type material could not be located and could not be examined (apparently lost). Designation of ♂ Neotype (see re-description).

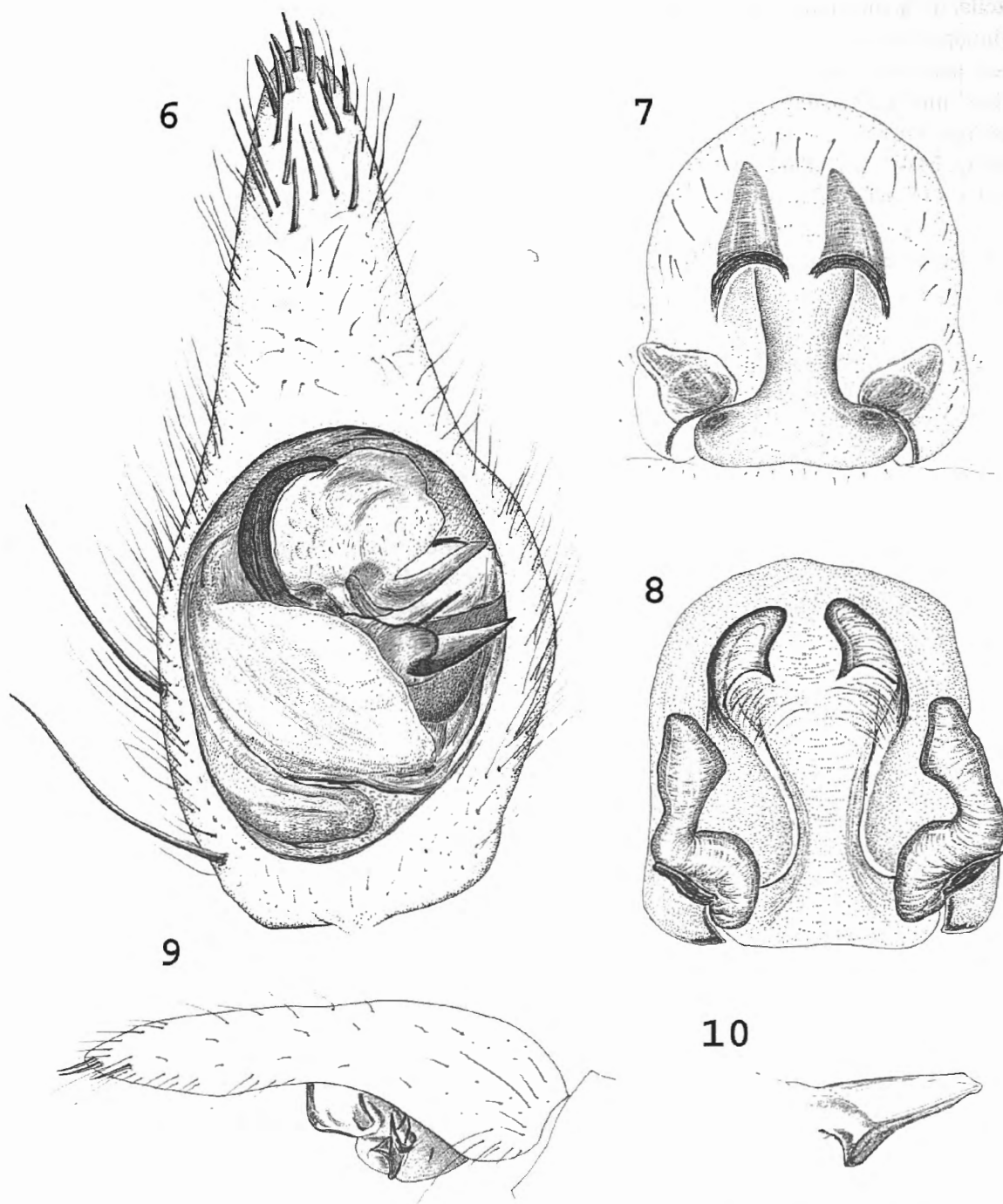
OTHER MATERIAL EXAMINED: See Table 2.

DIAGNOSIS: Males differ from the other species by the blade-shaped terminal apophysis, the large palea, the shape of the median apophysis and the number of macrosetae at the tip of the cymbium. The females by having a small median septum base and short bowed hoods.

RE-DESCRIPTION: Based on NEOTYPE ♂ and ♀ specimen belonging to the population A.91/A38, locality SCZ-048; Isla Santa Cruz, Top of Cerro Crocker, eastern side, alt. 875 m, Pampa vegetation, 15/4 – 15/5/1994



Map 3 – Distribution of *Hogna galapagoensis* (BANKS, 1902).



Figs 6-10 – *Hogna galapagoensis* (BANKS, 1902). 6. Male palp, ventral view. 7. Epigyne, ventral view. 8. Epigyne, dorsal view. 9. Male palp, retrolateral view. 10. Male palp, Median apophysis. (Cymbium length: 1.75 mm; length of epigynum Median septum: 0.49 mm).

(Pitfall trapping), Leg. S. Abedrabbo. (Measurements between brackets are based on specimens from the Santa Cruz- population A.91/A13, loc SCZ-048: 10♂♂, and 16♀♀)

Male: Total length: Total length: 10.5 mm (6.5-11.0); Carapace: 5.8 mm (4.5-6.4) long, 4.6 mm (3.4-4.8) wide and 2.1 mm high.

Colour: Carapace brown suffused with black and with clear black striae; one median yellow-orange longitudinal band, which is three times broader in anterior part just behind median eyes, with black suffused V; two extremely faint light marginal bands. Chelicerae brown stained with black. Gnathocoxae, labium and sternum brown. Legs yellow-brown with tigered appearance due to irregular black stains; femora

yellow; patella, tibia, metatarsus and tarsus of legs I & II brown. Pedipalps brown suffused with black patches.

Abdomen dark with median dark lanceolate patch surrounded by faint light stripes, followed by two white dots. Venter light brown.

Eyes: MOQ: MW = 0.78 PW, MW = 1.01 LMP, MW = 1.15 AW; CI = 0.77 DAME; Anterior eye row nearly straight.

Legs: Measurements: Leg I: 17.1 mm (13.6-18.4), Ti I: 3.9 mm; Leg IV: 19.1 mm (15.4-21.0), Ti IV: 4 mm; Ti I L/D: ca. 5.6. Spination of Leg I: FeI: d2,1,2 p2(d); TiI: p1,1 r1 v2l, 2l, 2s; MtI: p1,1(d) r1,1(d) v2l,2l,1s. Mt I with dense scopulae.

Pedipalp: Cymbium with 1 very fine dorsal spine and 3 spines at prolateral base, 4 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 thick; palea large.

Female: Total length: 13.8 mm (10-14); Carapace: 6.6 mm (4.4-6.8), 5.3 mm (3.2-5.5) wide and 2.24 high.

Colour: As the male but darker in appearance; Mt and Ta from legs I and II darker brown; abdomen with smaller bright yellow bands.

Eyes: MOQ: MW = 0.78 PW, MW = 1.00 LMP, MW = 1.15 AW; CI = 0.86 DAME. Anterior eye row nearly straight.

Legs: Measurements: Leg I: 17.2 mm (16.6-17.4), Ti I: 3.3 mm; Leg IV: 20.9 mm (13.7-20.6), Ti IV: 3.8 mm; Ti I L/D: ca. 3.7. Spination of Leg I: FeI: d2,1,1 p2(d); TiI: p1(in some specimens) v2fl, 2fl, 2s; MtI: p1(d) r1(d) (short) v2(= diameter MT),2(shorter than Mt diameter),1(very short). Mt I with dense scopulae (spines hardly visible).

Epigynum: Hoods slightly bowed to center and far apart; median septum with narrow base; spermathecae thicker than in *albemarlensis*, copulatory duct with no supplementary bulb; fertilisation duct small, emerging at base of copulatory duct.

HABITAT: Lives in the fern-sedge zone, also called pampa zone, at altitudes above 600m. It can sometimes also occur in the *Miconia* and *Scalesia* zones (woodland) beneath 600m on Isla Santa Cruz. A few specimens are recorded from lower elevations near the coast and in the Culture zone (literature).

DISTRIBUTION: See table 2 and Map 3.

Hogna española BAERT & MAELFAIT
new species

(Figs 11-15, 35, 45-46; Map 4)

Hogna species 7 (H7), BAERT, HENDRICKX & MAELFAIT, 2008.

TYPE MATERIAL: Holotype ♂ together with 3 ♀♀ Paratypes belonging to the population B.91/0681 (locality ESP-010: Isla Española, Second caleta west of Bahía Gardner, alt. 15m, 18/04/91, Leg. Baert, Maelfait & Desender) and Allotype ♀ together with 2 ♀♀ paratypes belonging to the population B.91/0671 (locality ESP-010: Isla Española, Second Caleta west of Bahía Gardner, alt. 15m, 16/04/91, Leg. Baert, Maelfait & Desender).

OTHER MATERIAL EXAMINED: 1 ♀ from Isla Gardner (near Española), 24 September 1905 (identified as *Lycosa albemarlensis*); 1 ♀ from Isla Gardner (near Española), May-June 1906 (identified as *Lycosa snodgrassi*) (Specimens belonging to the collections of the California Academy of Sciences, San Francisco, California). See Table 3.

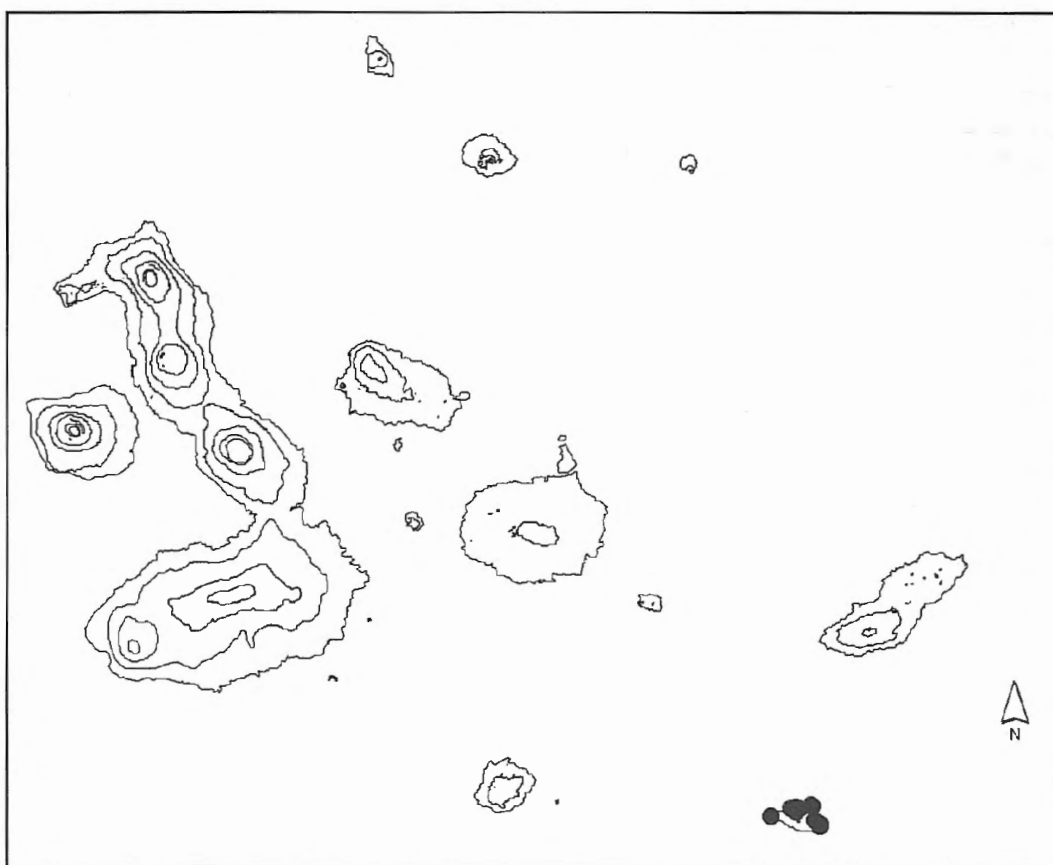
DIAGNOSIS: Males differ from the other species by the combination of a sickle shaped terminal apophysis with a short strongly bent embolus, by the shape of the median apophysis and by the number of macrosetae at tip of cymbium. The females by having very short hoods lying far apart and a moderate broad median septum base.

DESCRIPTION: Based on a ♂ specimen belonging to the population B.91/0681 (locality ESP-010: Isla Española, Caleta at second Bahía west of Bahía Gardner, alt. 15 m, dry arid zone, 18/4/1991, Leg. Baert, Maelfait & Desender) and a ♀ belonging to the population B.91/0671 (locality ESP-010: Isla Española, Caleta at second Bahía west of Bahía Gardner, alt. 15 m, dry arid zone, 16/4/1991, Leg. Baert, Maelfait & Desender).

(Measurements between brackets are based on specimens from the Española-populations B.88/0373, B.88/0369, B.91/0671, B.91/0681 and B.00/0053 (see Table 3): 7♂♂, and 7♀♀).

Male: Total length: 14.3 (13-16.3) mm; Carapace: 7.3 (6.4-8) mm long, 5.8 (5-6.3) mm wide and 1.7 high.

Colour: Carapace dark brown, with broad yellow-orange median band, broadest in first third behind posterior eyes, small indentation in front of fovea and than smaller till hind border of carapace. At each side a broad



Map 4 – Distribution of *Hogna española* n.sp.

yellow-orange sub-marginal band; brown parts densely covered with small black hairs, while yellow-orange bands are covered with short white hairs. Chelicerae dark brown. Sternum yellow. Gnathocoxae light brown. Legs with Ti yellow and other segments yellow-brown except TiI, Mti and TaI brown. Pedipalps yellowish.

Abdomen greyish with median greyish lanceolate patch margined by broad pale bands.

Eyes: MOQ: MW = 0.85 PW, MW = 1.02 LMP, MW = 1.29 AW; Cl = 0.45 D AME. Anterior eye row nearly straight.

Legs: Measurements: Leg I: 23.8 (21.9-25.4) mm, Ti I: 5.4 (5.1-6.3) mm; Leg IV: 27.4 (20-30.3) mm, Ti IV: 5 (3.9-6.4) mm; TiI L/D: ca. 5.7 (5.4-6.5). Spination of leg I: FeI: d2,2,2 p2(d); TiI: d1 p2 r2 v 2l, 2l, 2s (smaller than Ti diameter); Mti: p3, r3, v 2,2,1. Mti with dense scopulae.

Pedipalp: Cymbium with 1 fine dorsal spine and 2 fine spines along prolateral rim, ca 8 darker and stouter macrosetae at tip, Fe with 2 dorsal and an apical row of 4 spines, Pa with 2 dorsal and 1 prolateral fine spines, Ti with 1 dorsal, 1 dorsoprolateral and 1 prolateral fine spines. Terminal apophysis nearly blade-shaped; embolus long with strong bent tip; median apophysis with rounded tip, basic spur concave and sharp; palea small.

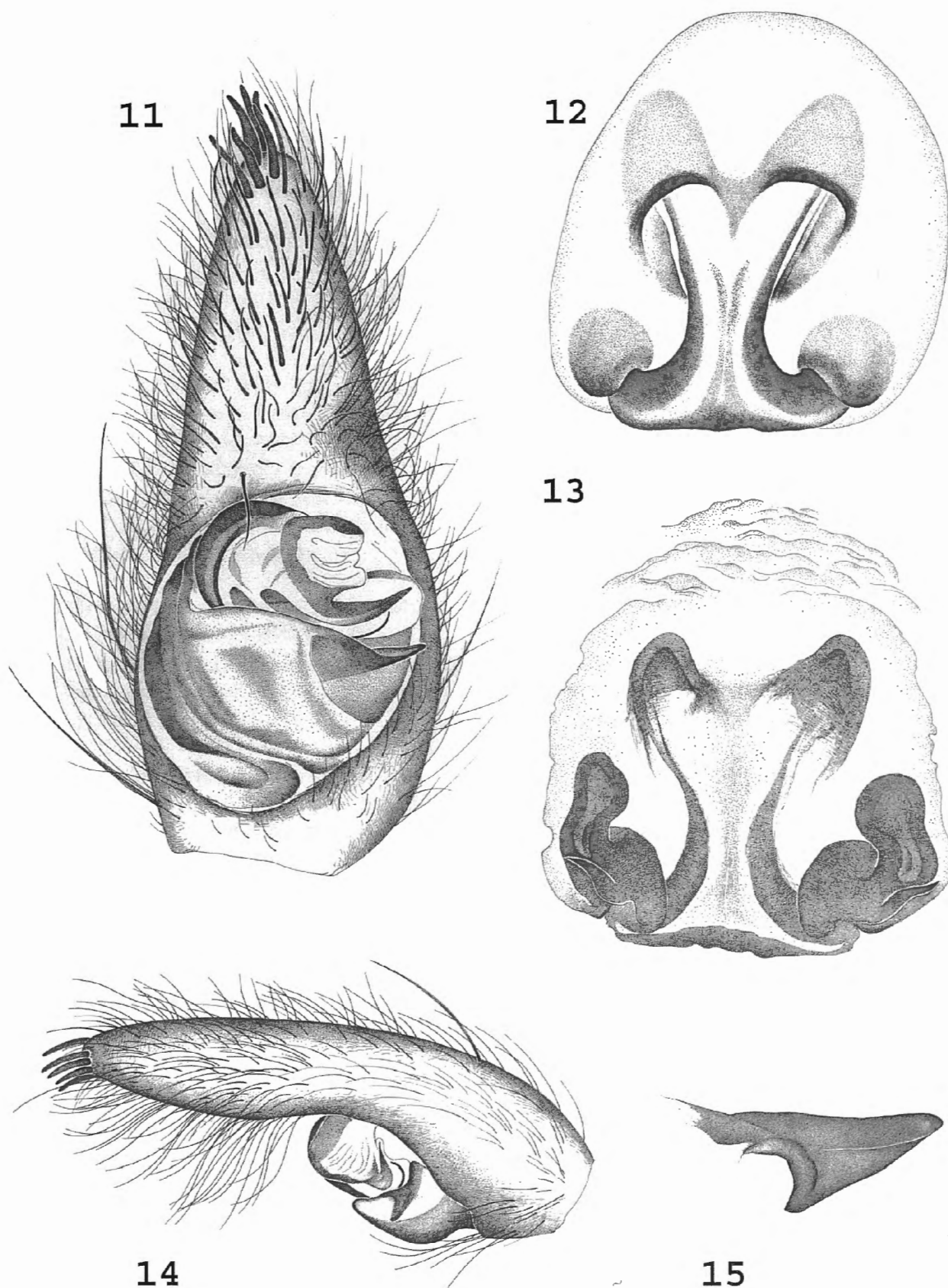
Female: Total length: 16.2 (15-18.7) mm; Carapace: 7.2 (7.2-9) mm long, 5.7 (5.6-6.3) wide and 2.1 high.

Colour: As in male, but all legs yellow with Mt and Ta of legs I & II with darker appearance due to dense cover of black hairs; abdomen with broad dorsal pale patch with two broken dark central stripes.

Eyes: MOQ: MW = 0.83 PW, MW = 0.98 LMP, MW = 1.28 AW; Cl = 0.76 DAME. Anterior eye row slightly pro-curved.

Legs: Measurements: Leg I: 19 (18.4-23.8) mm, Ti I: 4.4 (4.3-5.5) mm; Leg IV: 24 (24.1-29.3) mm, Ti IV: 5 (4.9-6.4) mm; Ti I L/D: ca. 4.2 (3.8-4.3). Spination of Leg I: FeI: d2,2,2 p2(d); TiI: p2 (very stout and short) v 2f, 2f, 2 (basal longer than median but smaller than Ti diameter, proximal very short and stout); Mti: v 2,2,1-0 (basal short, median medially short and proximal very short, all hardly visible through dense scopulae). Mti with very dense scopulae in the proximal 3/4th.

Epigynum: Hooded, short hoods oval shaped diverging from each other and lying far apart, hood cavities shallow; median septum with moderate broad base; spermathecae thick, copulatory tube with no supplementary bulbus at base; fertilisation duct small, emerging at base of spermatheca.



Figs 11-15 – *Hogna española* n.sp. 11. Male palp, ventral view. 12. Epigyne, ventral view. 13. Epigyne, dorsal view. 14. Male palp, retrolateral view. 15. Male palp, Median apophysis. (Cymbium length: 2.04 mm; length of epigynum Median septum: 0.58 mm).

ETYMOLOGY: The species name is a noun in apposition taken from the name of the island Española, type locality.

HABITAT: Lives between rocks in the dry arid zone along the coast (*Opuntia* cactus zone).

DISTRIBUTION: See table 3 and Map 4.

***Hogna jacquesbreli* BAERT & MAELFAIT**

new species

(Figs 16-20, 41-42; Map 5)

Hogna species 1 (H1), BAERT, HENDRICKX & MAELFAIT, 2008.

TYPE MATERIAL: Holotype ♂ together with 16 ♀♀ Paratypes belonging to the population B.86/020 (locality ISN-011: Isla Isabela, Volcán Sierra Negra, Western crater rim at 1150 m altitude, pampa vegetation, 19/2/1986, Leg. Baert, Maelfait & Desender) and Allotype ♀ (B.86/0017, locality ISN-012: Isla Isabela, Volcán Sierra Negra, eastern crater floor at an altitude of 925m, fern sedge zone, 19/2/1986, Leg. Baert, Maelfait & Desender).

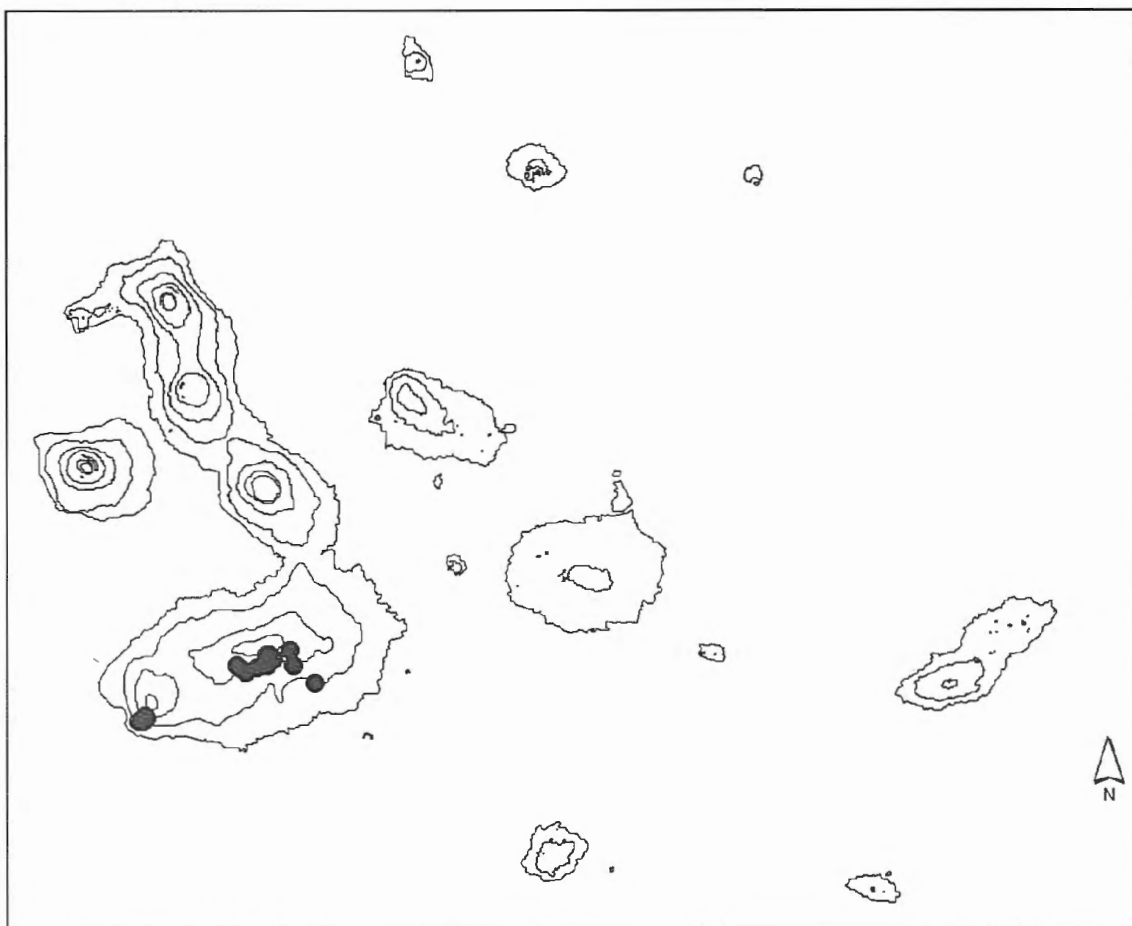
OTHER MATERIAL EXAMINED: See Table 4.

DIAGNOSIS: Males differ from the other species by the combination of a sickle shaped terminal apophysis with a long bent embolus, by the shape of the median apophysis and by the number of macrosetae at tip of cymbium. The females by having swollen spermathecae, bowed hoods lying close to each other and a moderate broad median septum base.

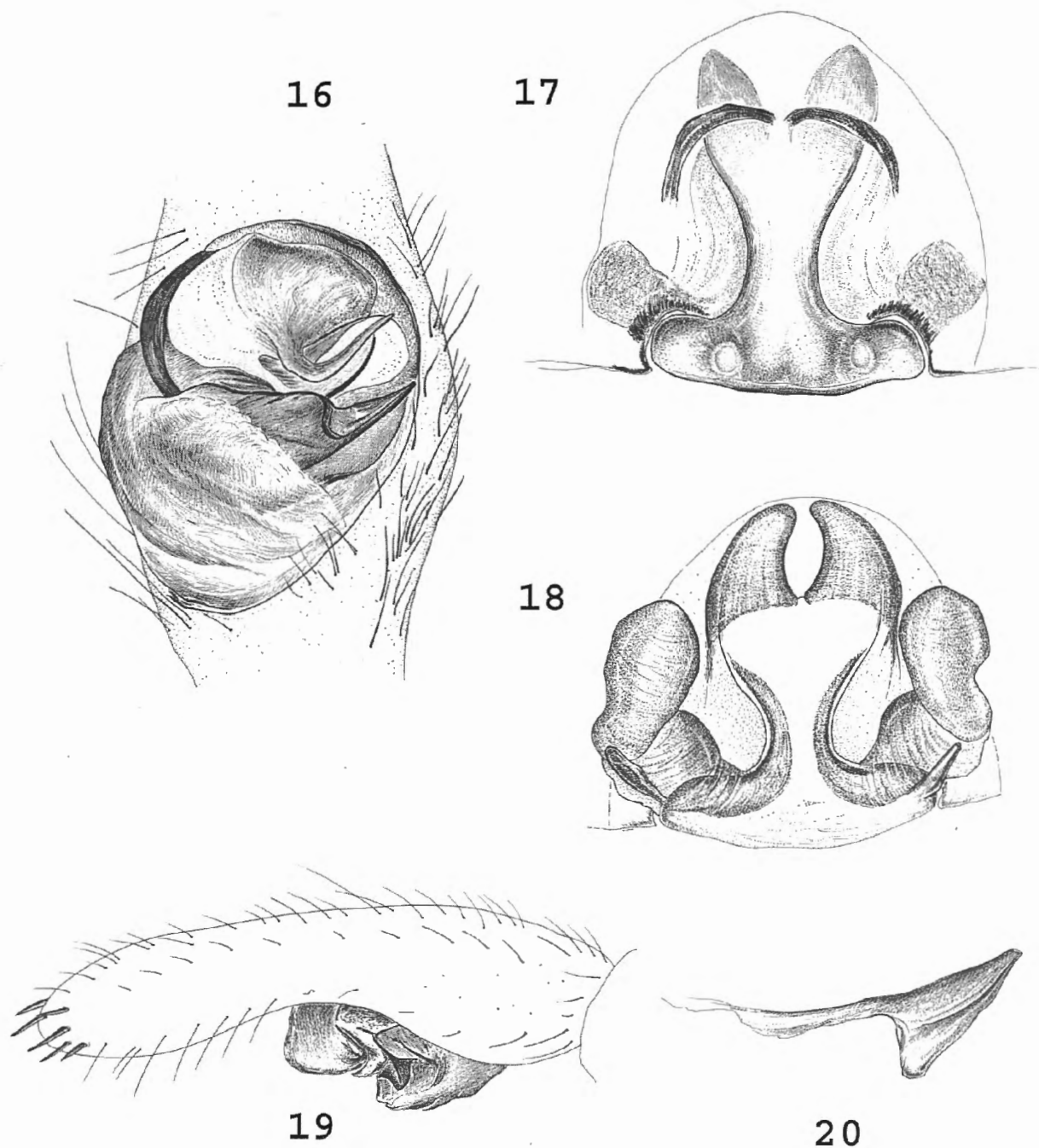
DESCRIPTION: (The measurements between brackets are based on 12♂♂ belonging to the populations P.89/0122 & 0123 and 15 ♀♀ belonging to the populations B.86/0017,0018,0020 (see Table 4)).

Male: Total length: 11.19 (9.1-11.2) mm; Carapace: 6.69 (4.68-6.69) mm long, 5.00 (3.38-5.00) mm wide.

Colour: Carapace brown with a median yellow longitudinal band broadening in its first apical third just behind the eyes with a faint blackly suffused V-mark; longitudinal band also slightly broadened around the fovea; at each side a lateral not very conspicuous lighter sub-marginal band; the brown areas are sparsely covered with short black hairs; black striae. Chelicerae brown. Gnathocoxae and labium brown; sternum yellow with



Map 5 – Distribution of *Hogna jacquesbreli* n.sp.



Figs 16-20 – *Hogna jacquesbreli* n.sp. **16.** Male palp, ventral view. **17.** Epigyne, ventral view. **18.** Epigyne, dorsal view. **19.** Male palp, retrolateral view. **20.** Male palp, Median apophysis. (Cymbium length: 2.14 mm; length of epigynum Median septum: 0.54 mm).

blackly suffused median stripe; Legs yellowish brown with blackly suffused patches giving an annulated appearance, very pronounced on the femora. Pedipalps: cymbium brown, other segments yellowish.

Abdomen: black mottled with very small pale spots; dorsum with a median brownish lanceolate figure in the first apical half, flanked surrounded apically by a pale horse-shoe shaped patch; pale venter.

Eyes: MOQ: MW = 0.85 PW, MW = 1.09 LMP, MW = 1.34 AW; CI = 0.08 DAME. Anterior eye row slightly pro-curved.

Legs: Measurements: leg I: 17.56 mm (14.0-19.9), Ti I: 7.2 mm (4.8-7.2); Leg IV: 21.13 (17.6-27.1)mm, Ti IV: 8.2 mm (5.5-8.2); Ti IL/D :8.1 (6.8-10.4). Spination of Leg I: FeI: d2,2,2 p2(d); TiI: p1,1 r1,1 v2l, 2l, 2s ; Mtl: p1,1(d) r1(d) v2l,2l,1s. Mt I with very sparse scopulae.

Pedipalp: Cymbium, Ti and Pa without spines, cymbium with ca 15 darker and stouter macrosetae at tip; Fe with 2 dorsal and an apical row of 4 spines, Pa with 2 dorsal and 1 prolateral very fine spines, Ti with 1 dorsal, 1 dorsoprolateral and 1 prolateral very fine spines. Terminal apophysis sickle-shaped with sharp end; embolus long with curled tip curving towards terminal apophysis; median apophysis with thin blunt tip, its finlike extension blunt; palea large.

Female: Total length: 9.2-19.5 mm; Carapace: 7.2-9.8 mm long, 5.3-7.1 mm wide.

Colour: Carapace and legs reddish brown, median and sub-marginal bands brown; Chelicerae chestnut brown; Gnathocoxae, labium and sternum reddish brown.

Eyes: MOQ: MW = 0.84 PW, MW = 1.08 LMP, MW = 1.51 AW; CI = 1.15 DAME.

Legs: Measurements: Leg I: 19.3-26.2 mm, Ti I: 7.2-9.9 mm; Leg IV: 23.4-31.0 mm, Ti IV: 8.2-10.2 mm; Ti I L/D: ca. 7.5 (6.7-9.2). Spination of Leg I: FeI: d2,2,1 p2(d); TiI: p1 v2l, 2l, 1s; MtI: p1(d) r1(d) v2l,2l,1vs. Mt I with very sparse scopulae.

Epigynum: Hooded, hoods conical shaped lying close to each other and tips converging to each other, hood cavities shallow; median septum of epigynum

with moderate broad base, scapus of epigynum mostly with two symmetrical impressions; spermathecae very swollen; copulatory tube without supplementary basal bulb; fertilisation duct small, emerging at base of copulatory ductus.

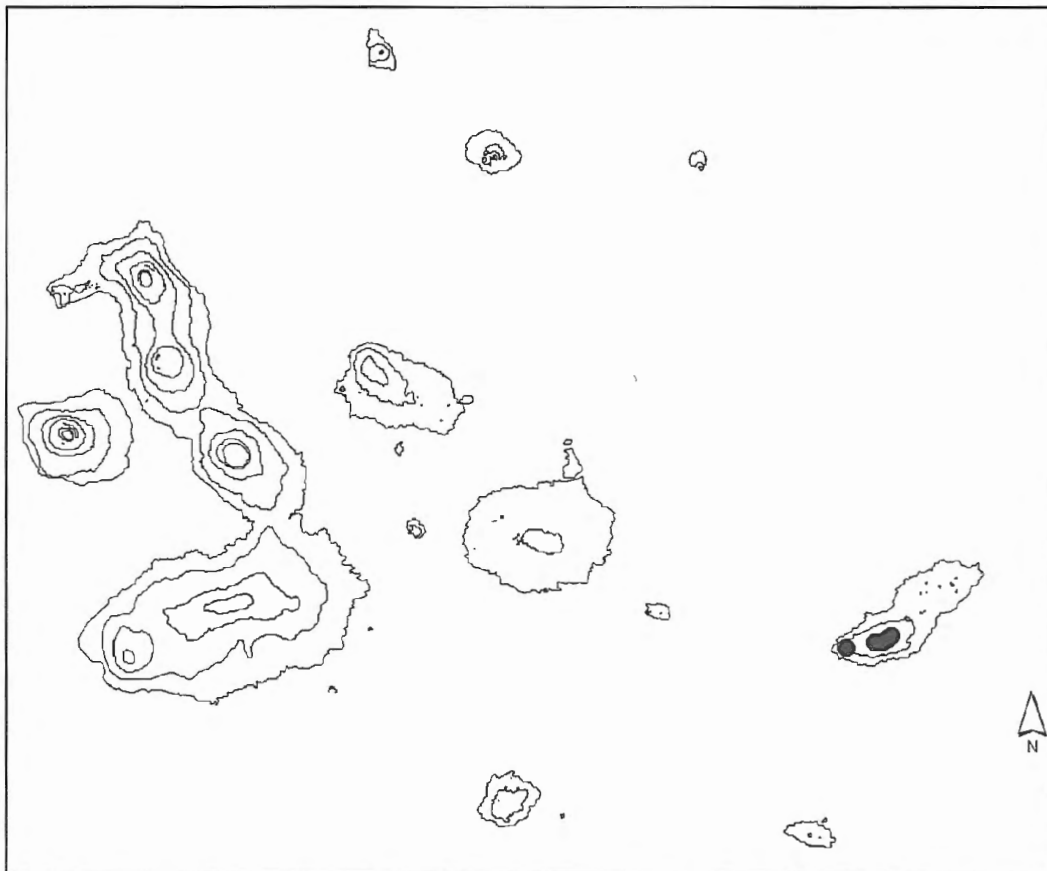
ETYMOLOGY: This species is named in honour of the most famous Belgian singer and poet Jacques Brel who lived the last years of his life on a remote island (Hiva Oa) in the Pacific Ocean. He died thirty years ago on the 9th of October 1978

HABITAT: Lives in the fern-sedge zone, also called pampa zone. On Volcán Cerro Azul in a pampa girdle located between 600 and 1100 m of altitude and on Volcán Sierra Negra above 700 m of altitude till the top of the crater.

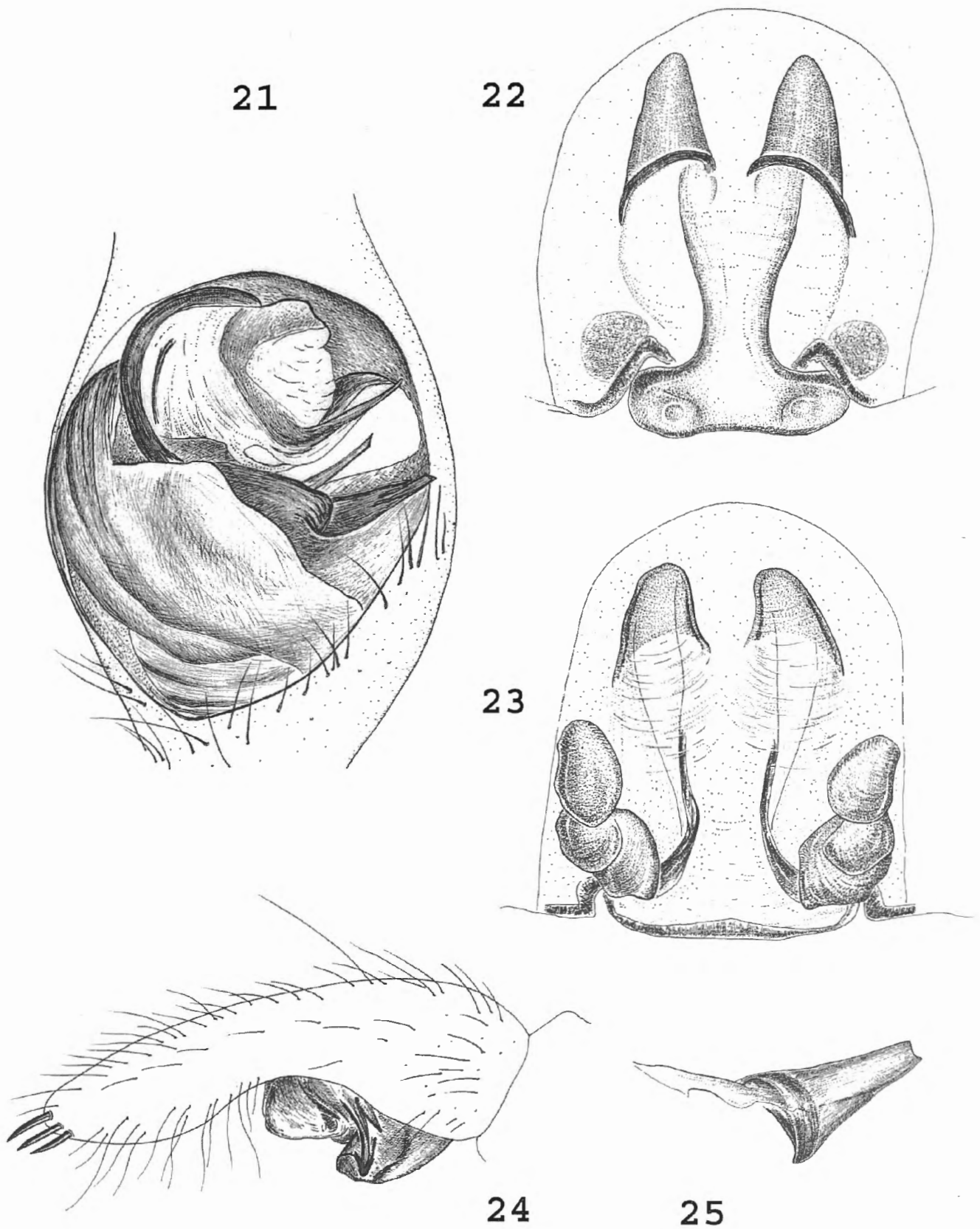
DISTRIBUTION: See Table 4 and Map 5.

Hogna junco BAERT & MAELFAIT
new species
(Figs 21-25, 43-44; Map 6)

Hogna species 2 (H2), BAERT, HENDRICKX & MAELFAIT, 2008.



Map 6 – Distribution of *Hogna junco* n.sp.



Figs 21-25 – *Hogna junco* n.sp. 21. Male palp, ventral view. 22. Epigyne, ventral view. 23. Epigyne, dorsal view. 24. Male palp, retrolateral view. 25. Male palp, Median apophysis. (Cymbium length: 1.79 mm; length of epigynum Median septum: 0.58 mm).

TYPE MATERIAL: Holotype ♂ together with Allotype ♀, 1♂ Paratype and 9♀♀ Paratypes belonging to the population B.86/0162 (locality SCB-018: Isla San Cristóbal, El junco crater, inside crater, alt. 625m, fern sedge vegetation, 27/3/1986, Leg. Baert, Maelfait & Desender).

OTHER MATERIAL EXAMINED: See Table 5.

DIAGNOSIS: Males differ from the other species by the combination of a sickle shaped terminal apophysis with a short and very thick embolus, by the shape of the median apophysis and by the number of macrosetae at tip of cymbium. The females by having slightly swollen spermathecae, short parallel hoods small median septum base.

DESCRIPTION: (Measurements between brackets are based on 8 ♂♂ belonging to the populations B.86/0162, B.88/0437, B.86/0172, 174 (see Table 5) and 10 ♀♀ belonging to the populations B.86/0162, 0164, 0174 (see table 5).

Male: Total length: 12.63 (10.52-13.26) mm; Carapace: 6.0 (5.30-6.79) mm long, 4.67 (4.12-4.97) mm wide.

Colour: Carapace brown with a median lighter longitudinal band broadened in the cephalic apical half of the carapace behind the eyes, covered with black hairs; with a lighter sub-marginal spot right under the posterior lateral eyes; black striae visible. Chelicerae brown. Gnathocoxae and labium brown with whitish tip; Sternum yellowish with 2 frontal black suffused stains and a median black suffused stripe. Legs light brown with blackly suffused patches giving an annulated appearance especially on the femora which are yellowish; Fe, Mt and Ta of legs I and II dark brown. Pedipalps: cymbium brown, rest of pedipalp yellowish, suffused with black.

Abdomen: Brown grey with a few black spots; dorsum with a median brown lanceolate figure surrounded by a paler horse-shoe mark in the first apical half; venter pale grey with a few small blackly suffused stains.

Eyes: MOQ: MW = 0.82 PW, MW = 1.11 LMP, MW = 1.32 AW; Cl = 0.82 DAME. Anterior eye row slightly pro-curved.

Legs: Measurements: Leg I: 18.73 mm (15.82-19.70), Ti I: 3.94 mm (3.33-4.24); Leg IV: 20.79 (17.94-22.06) mm, Ti IV: 4.12 (3.82-4.48); Ti IL/D (population: 9♂♂) 6.0 (5.6-6.5). Spination of Leg I: FeI: d2,2,2 p2(d); Ti I: p1,1 r1,1 v2l,2l,2s; Mt I: p1,1,1 r1,1 v2l,2l,1s. Mt with dense scopulae.

Pedipalp: Cymbium with 1 dorsal spine and 3 spines along prolateral rim, 7 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 sickle-shaped with sharp end; embolus short and thick and truncated at tip; median apophysis with thin blunt tip, basal spur sharp but convex; palea small.

Female: Total length: 14.5 (12.6-17.2) mm; Carapace: 6.56 (6.35-7.75) mm long, 5.63 (4.80-5.70) mm wide.

Colour: carapace darker in appearance; Chelicerae chestnut brown; labium and gnathocoxae dark brown; sternum wholly suffused with black, denser in apical part; Legs with Fe, Mt and Ta of legs I and II light brown; Abdomen as in male.

Eyes: MOQ: MW = 0.79 PW, MW = 1.05 LMP, MW = 1.32 AW; Cl = 1.08 DAME. Anterior eye row pro-curved.

Legs: Measurements: Leg I: 18.06 (15.5-19.1) mm, Ti I: 3.75 (3.1-4) mm; Leg IV: 22.19 (18.3-23.4); Ti IL/D: 3.75 (3.4-4.2). Spination of Leg I: FeI: d1,2,2 p2(d); TiI: p1,1 v 2l,2l,2s; MtI: p1(d) r1(d) v 2l,2l,1s. Mt with dense scopulae.

Epigynum: Hooded, short hoods conical shaped lying parallel to each other, hood cavities shallow; median septum of epigynum with small base, scapus of epigynum mostly with two symmetrical impressions; spermathecae slightly swollen; copulatory tube without supplementary cavity at base.

ETYMOLOGY: The species name is a noun in apposition taken from the name of the type locality "Lake El Junco".

HABITAT: Lives in the fern-sedge zone, also called pampa zone, above 500 m of altitude till top of the island San Cristóbal (Cerro San Joaquin, 700 m)

DISTRIBUTION: See Table 5 and Map 6.

Hogna snodgrassi (BANKS, 1902)
(Figs 26-30, 36, 48-49; Map 7)

Lycosa snodgrassi BANKS, 1902: 65, fig. 1.

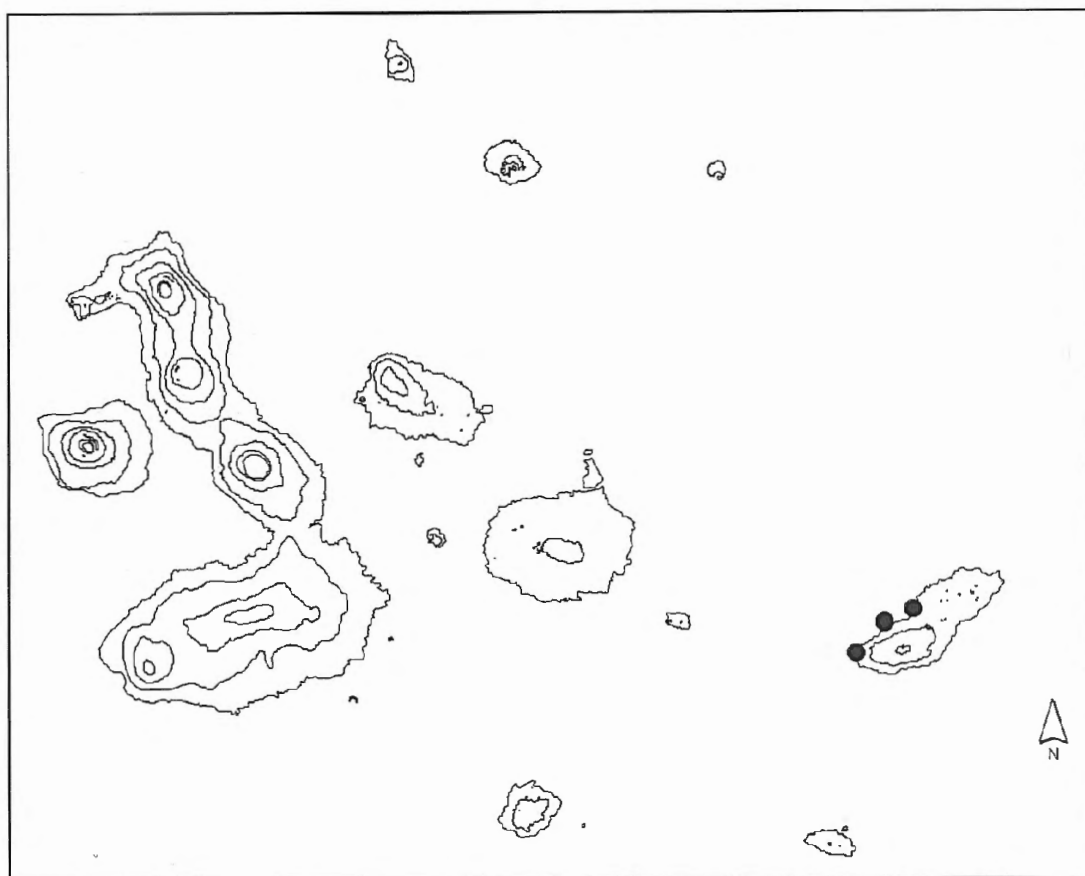
Isohogna albemarlensis, ROEWER, 1954: 262.

Lycosa snodgrassi, ROTH & CRAIG, 1970: 117.

Hogna albemarlensis, BAERT & MAELFAIT, 1997: 5.

Hogna species 5 (H5), BAERT, HENDRICKX & MAELFAIT, 2008.

TYPE MATERIAL: The original type material could not be



Map 7 – Distribution of *Hogna snodgrassi* (BANKS, 1902).

located and could not be examined (apparently lost). Designation of Neotype (see re-description).

MATERIAL EXAMINED: SAN CRISTOBAL, Caleta Sapho, *Spirobolus*-vegetation (population B.96/0034), 28/3/1996: 1♂, 11♀♀, 8 juvs.; (population B.96/0039), 28/3/1996: 1♂, 1♀; Caleta Sapho, alt. 2 m, Supra-littoral zone with *Spirobolus*-vegetation (population B.02/0010), 2/12/2002: 7♂♂, 7♀♀ Punto Basso, at frigate colony (population B.02/0012), 4/12/2002: 12♂♂, 4♀♀, 2SA♂♂, 2SA♀♀, 16 juvs.; Punto Basso, in dunes (population B.02/0013), 4/12/2002: 3♂♂, 4♀♀, 2SA♂♂, 32 juvs.; Punto Basso, *Sesuvium*-vegetation (population B.02/0014), 4/12/2002: 1 juv.; Puerto Baquerizo Moreno, La Lobería (population B.02/0018), 5/12/2002: 2♀♀.

DIAGNOSIS: Males differ from the other species by the combination of a sickle shaped terminal apophysis with a short embolus, by the shape of the median apophysis and by the number of macrosetae at tip of cymbium. The females by having strongly bowed spermathecae, moderately bowed long and a very broad median septum base.

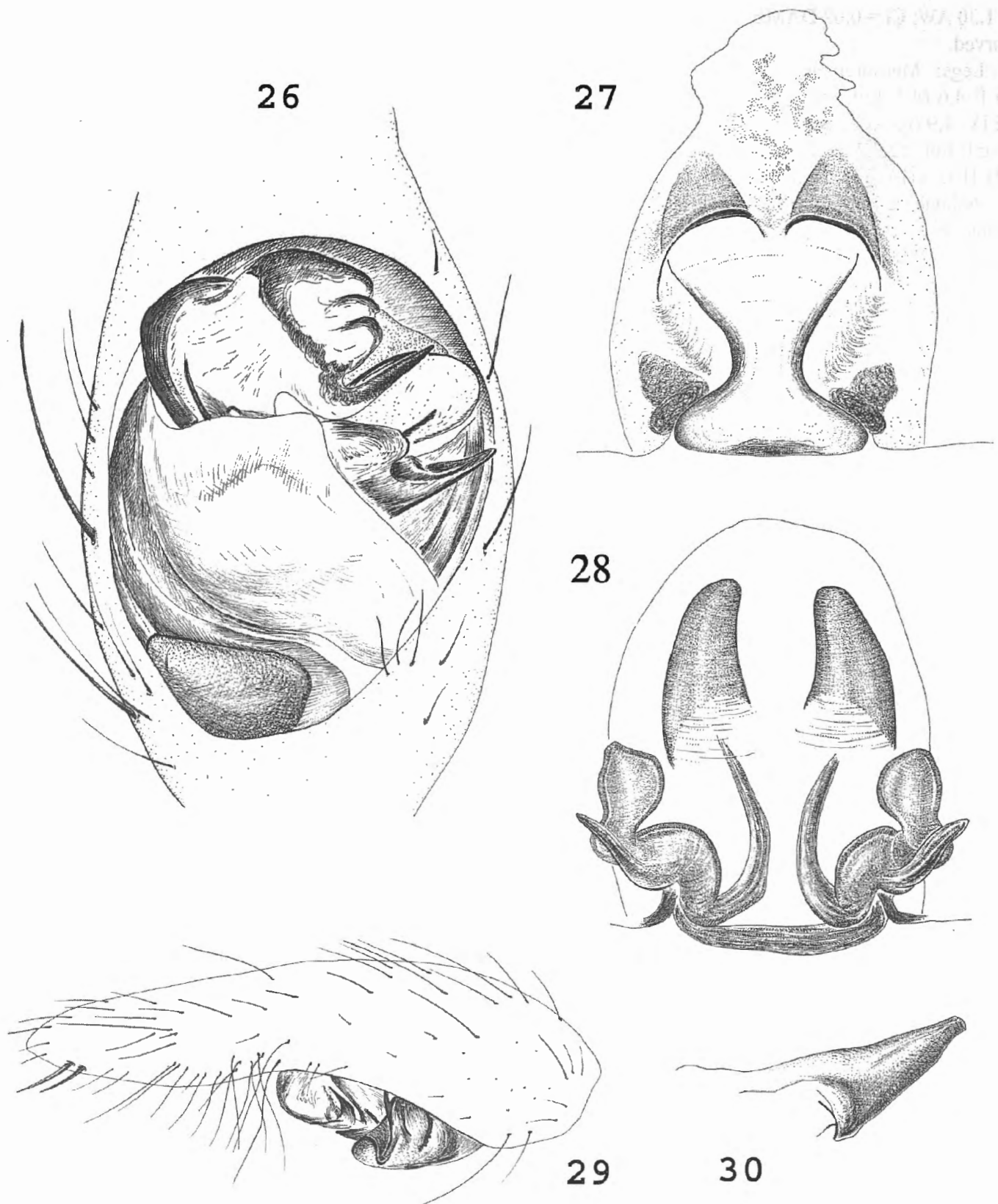
RE-DESCRIPTION: Based on NEOTYPE ♂ and ♀ specimen belonging to the population B.02/0010: Caleta Sapho, alt. 2 m, Supra-littoral zone with *Spirobolus*-vegetation; 2/12/2002 (Measurements between brackets are based on specimens from the San Cristóbal populations B.02/0010: 6♂♂ & 6♀♀).

Male: Total length: 10.8 (10.7-12.0) mm; Carapace: 6.2 (6.1-6.8) mm long, 4.6 (4.5-5.2) mm wide and 2.1 high.

Colour: Carapace yellow-brown, with broad yellow median band, a bit broader in first half behind posterior eyes; at each side a broad yellow sub-marginal band; brown parts densely covered with small black hairs, while yellow bands are covered with short white hairs (except broadest part of median band). Chelicerae dark brown. Sternum pale yellow. Gnathocoxae light brown. Labium brown; Legs yellow; TiI, Mti & II and TaI & II brown. Pedipalps pale yellow.

Abdomen black with very broad median whitish yellow band running over whole abdomen length till pale yellow spinnerets, with central faint greyish spear-like spot; Venter pale yellow.

Eyes: MOQ: MW = 0.85 PW, MW = 1.04 LMP, MW



Figs 26-30 – *Hogna snodgrassi* (BANKS, 1902). 26. Male palp, ventral view. 27. Epigyne, ventral view. 28. Epigyne, dorsal view. 29. Male palp, retrolateral view. 30. Male palp, Median apophysis. (Cymbium length: 1.81 mm; length of epigynum Median septum: 0.56 mm).

= 1.30 AW; CI = 0.62 DAME. Anterior eye row pro-curved.

Legs: Measurements: Leg I: 19.4 (18.3-21.3) mm, Ti I: 4.6 (4.1-4.9) mm; Leg IV: 23.2 (21.4-24.4) mm, Ti IV: 4.9 (4.4-5.2) mm; TiI L/D: ca. 5.7. Spination of Leg I: FeI: d2,2,2 p2(d); TiI: d1 p2 r2 v 2l, 2l, 2s; MtI: p11,11,1s r11,11,1s v 2l,2l,1s. MtI with dense scopulae.

Pedipalp: Cymbium with 2 dorsal spines and 2 spines along prolateral rim, 6 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 nearly blade-shaped; embolus long and strong, normally curved; median apophysis with truncated tip, basic spur slightly convex and sharp; palea small.

Female: Total length: 13.1 (-15.9) mm; Carapace: 6.4 (-8.1) mm long, 4.8 (-6.2) wide and 1.9 high.

Colour: As in male, but all legs yellow.

Eyes: MOQ: MW = 0.83 PW, MW = 1.05 LMP, MW = 1.26 AW; CI = 0.69 DAME. Anterior eye row pro-curved.

Legs: Measurements: Leg I: 17.4 (16.6- 20.4) mm, Ti I: 3.6 (-4.8) mm; Leg IV: 20.6 (-25.5) mm, Ti IV: 4.3 (-5.8) mm; Ti I L/D: ca. 3.75. Spination of Leg I:

FeI: d2,2,2 p2(d); TiI: p2s v2f2f2(short & thick); MtI: v 2,2,1 (basal short, median medially short and proximal extremely short, all spines hardly visible through dense scopulae). MtI with very dense scopulae.

Epigynum: Hooded, long hoods slightly converging at tips, hood cavities deep; median septum with very broad base, T-shape less pronounced than in other species; spermathecae slightly swollen; copulatory tube with no supplementary bulbous at base; fertilisation duct short, emerging in the middle of the copulatory tube.

HABITAT: Lives in the dryer supra-littoral zone with *Sesuvium*- or *Spiroboles*-vegetation and in dune-vegetation of the arid zone.

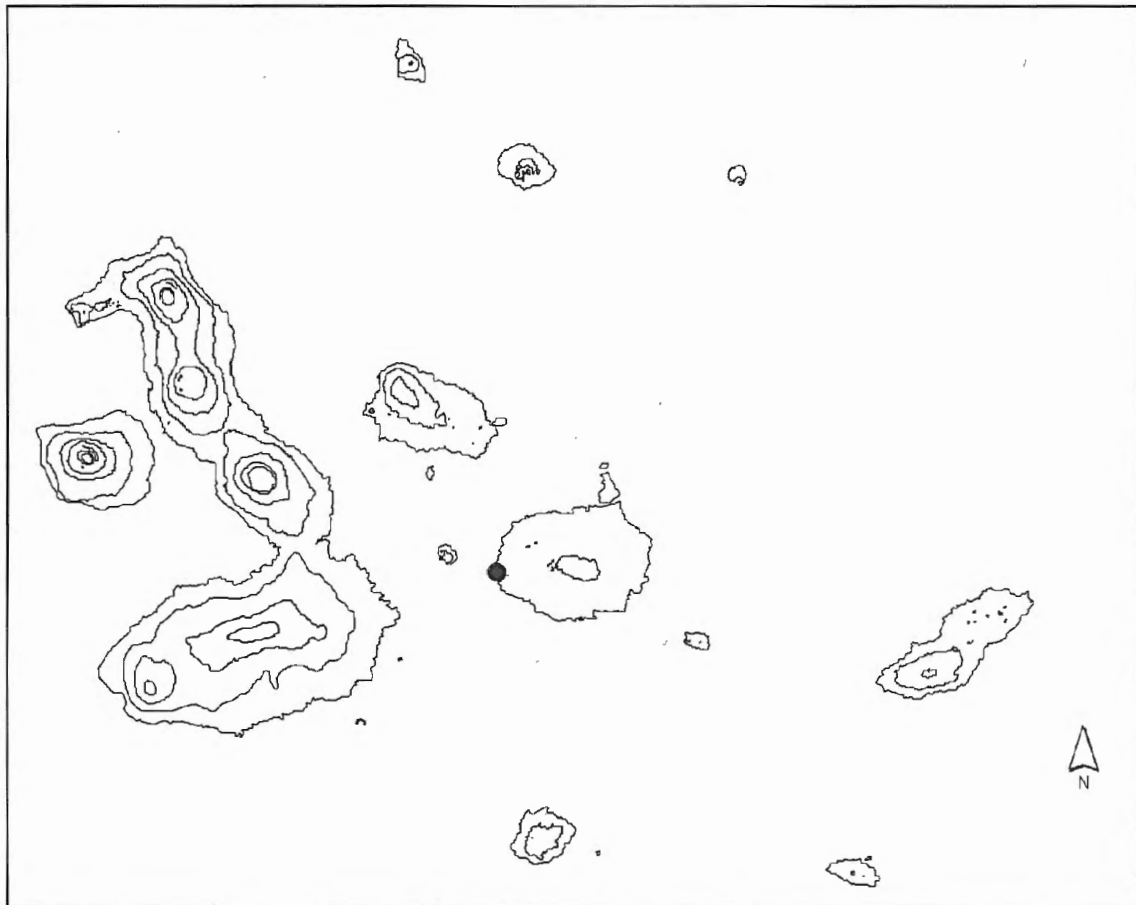
DISTRIBUTION: See Map 7.

Hogna hendrickxi BAERT & MAELFAIT
new species

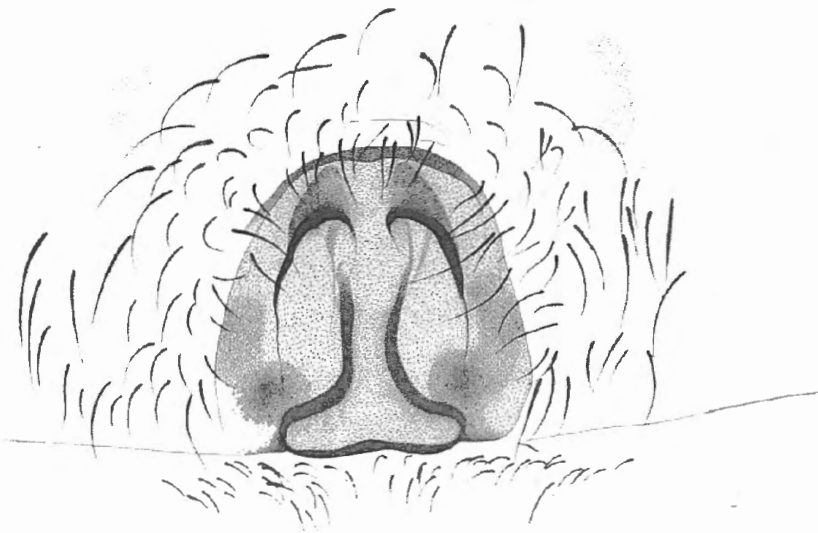
(Figs 31-32, 47; Map 8)

Hogna species 6 (H6), BAERT, HENDRICKX & MAELFAIT, 2008.

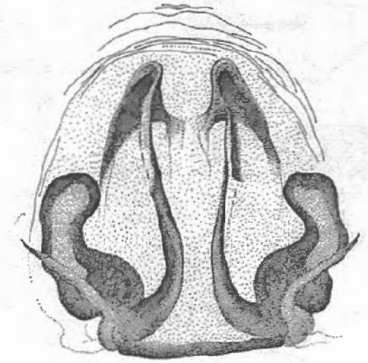
TYPE MATERIAL: Holotype ♀, Paratype ♀ together with



Map 8 – Distribution of *Hogna hendrickxi* n.sp.

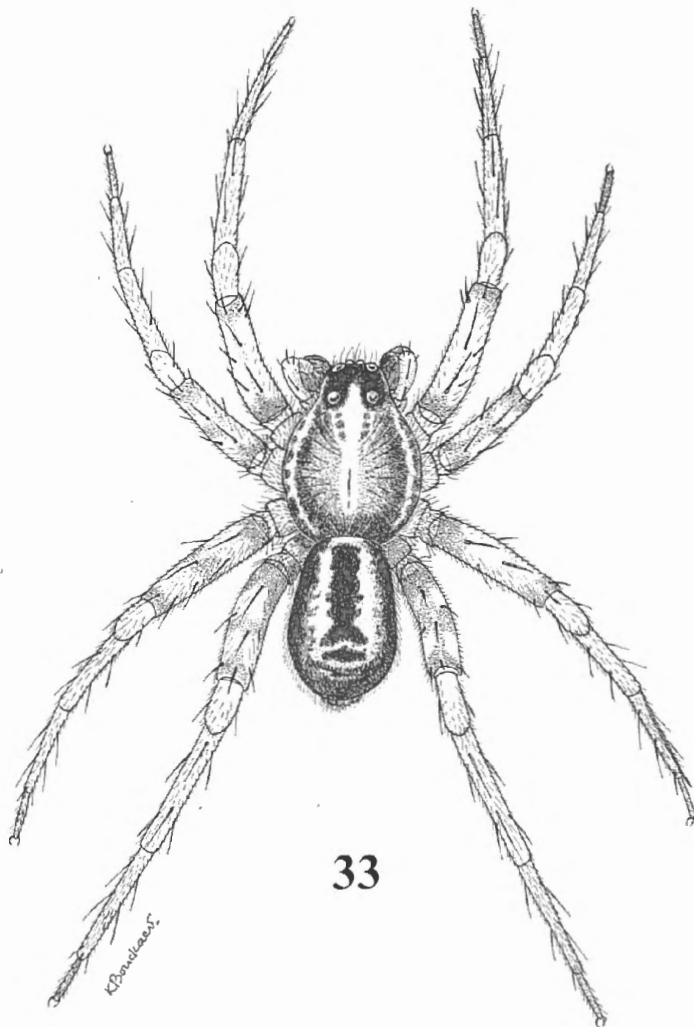


31

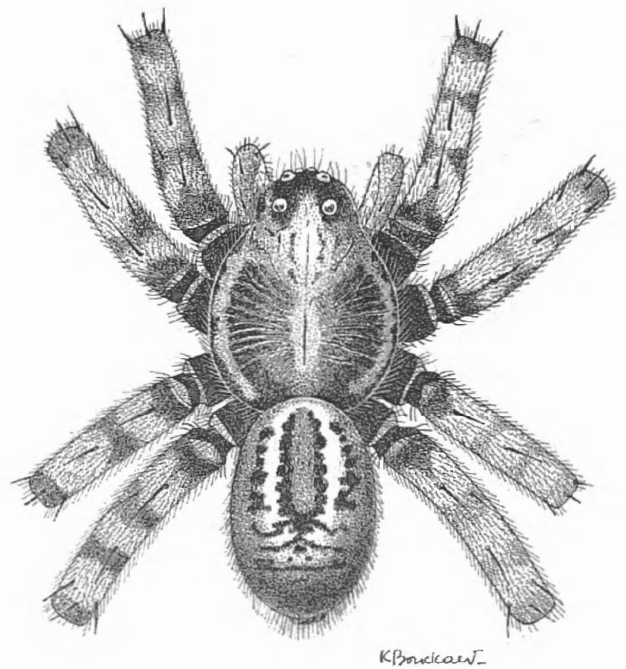


32

Figs 31-32 – *Hogna hendrickxii* n.sp. 31. Epigyne, ventral view. 32. Epigyne, dorsal view. (Length of epigynum Median septum: 0.58 mm).

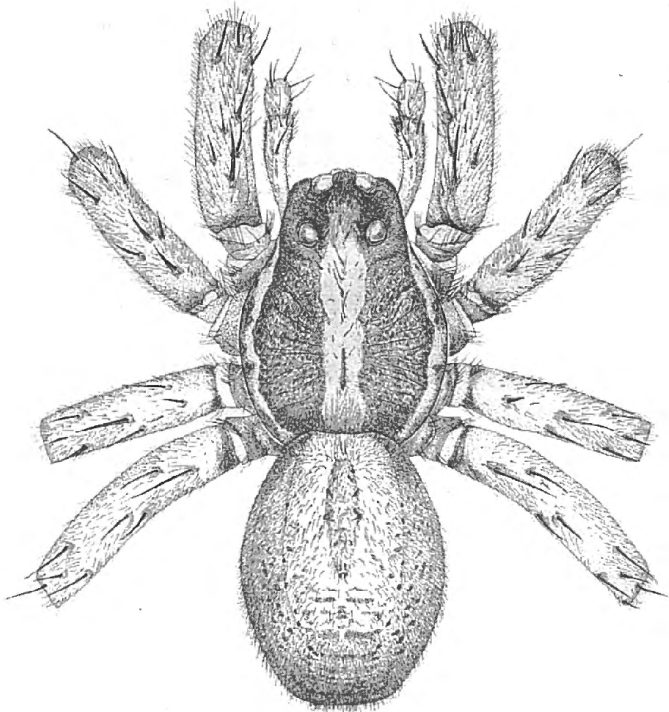


33

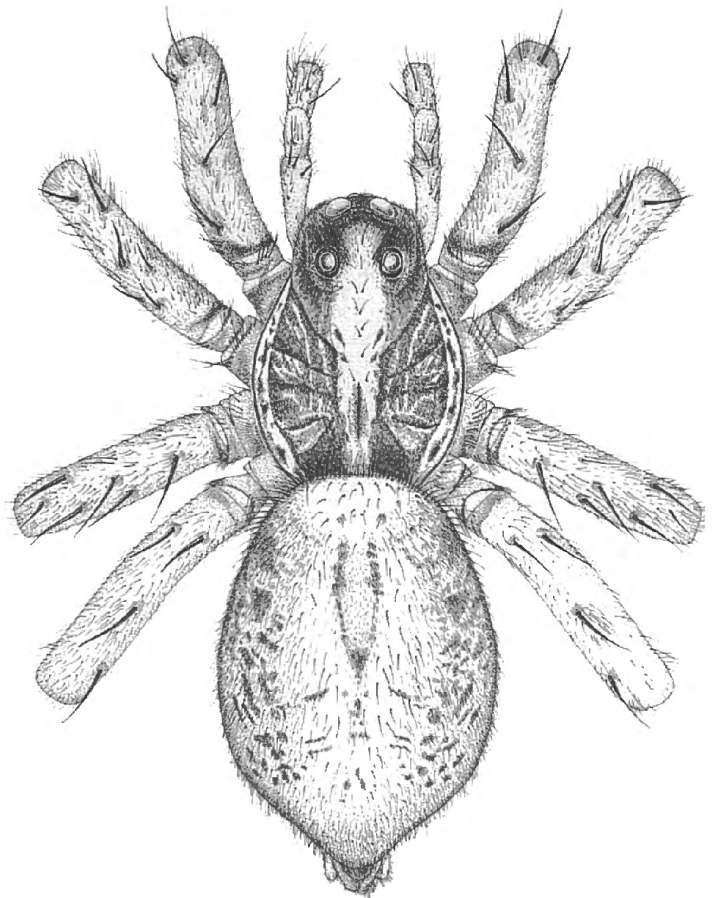


34

Figs 33-34 – Habitus. 33. *Hogna albemarlensis* (BANKS, 1902), male (length = 8.5 mm). 34. *Hogna galapagoensis* (BANKS, 1902), female (length = 13.8 mm).



35



36

Figs 35-36 – Habitus. 35. *Hogna española* n.sp., female (length = 16.2 mm). 36. *Hogna snodgrassi* (BANKS, 1902), female (length = 13.1 mm).

1 SA♂, 4 SA♀♀ and 20 juv. (Population B.02/0058): ISLA SANTA CRUZ, Playa Las Palmas, 18/12/2002 (Leg. F. Hendrickx)

DIAGNOSIS: Females by having parallel short hoods, long fertilisation ducts and a very small median septum base.

DESCRIPTION:

Female: Total length: 14.9 mm; Carapace: 7.4 mm long, 5.4 mm wide and 2.4 high.

Colour: Carapace chestnut brown with broad yellow-orange median band, broadest in first half behind posterior eyes, densely covered with short black hairs. At each side a faint yellow-orange sub-marginal band covered with short white hairs. Chelicerae chestnut brown to black. Labium and Gnathocoxae dark brown. Sternum light brown. Legs yellow brown with irregular black suffused stains giving a tigered appearance; Ti, Mt and Ta of legs I and II brown.

Abdomen greyish with faint black patches; dorsum with median light patch with in its middle two short parallel lines of black patches; Venter pale.

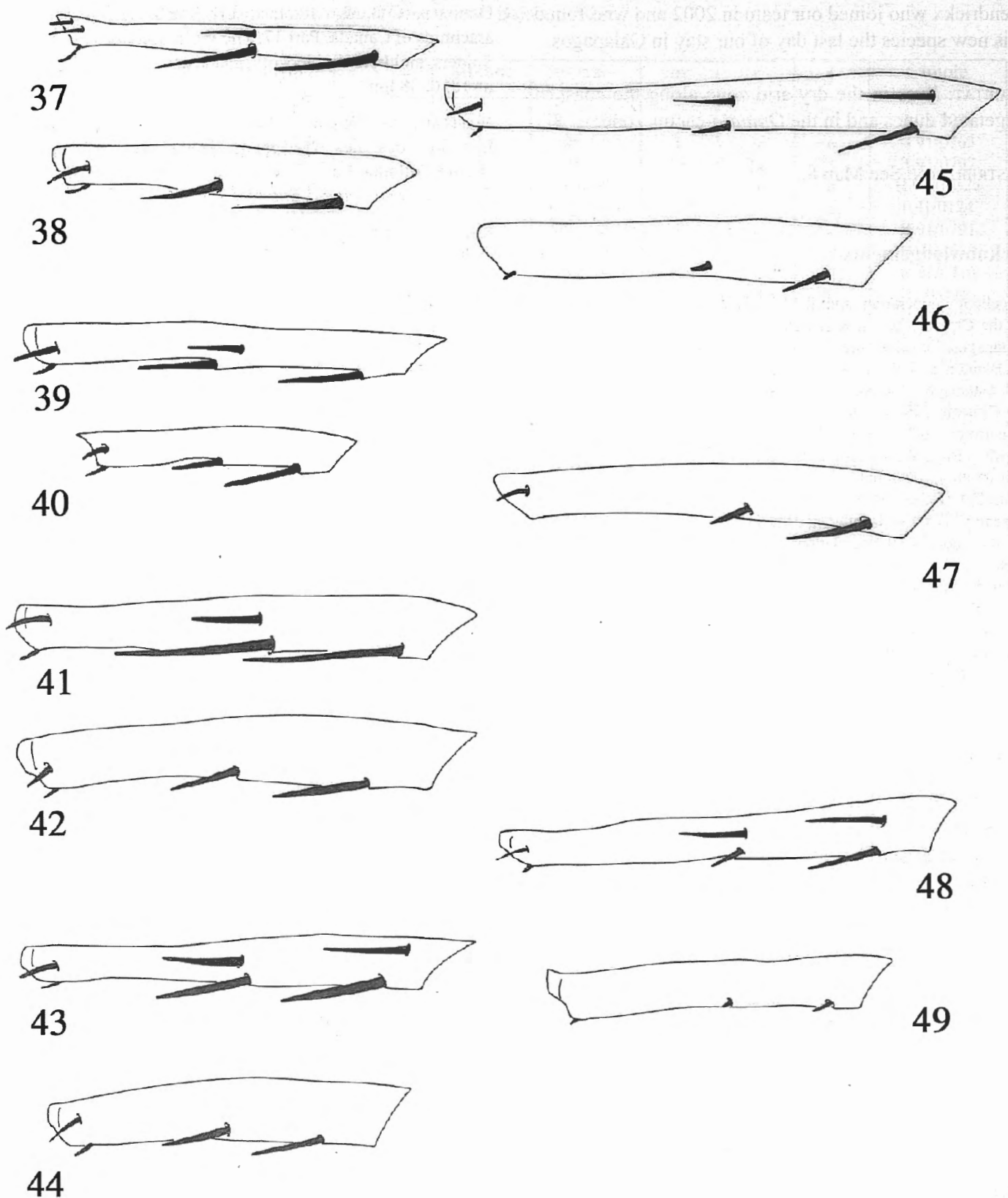
Eyes: MOQ: MW = 0.82 PW, MW = 1.11 LMP, MW = 1.25 AW; CI = 0.75 DAME. Anterior eye row almost straight.

Legs: Measurements: Leg I: 19.7 mm, Ti I: 4.3 mm; Leg IV: 24 mm, Ti IV: 5 mm; TiI L/D: ca. 4.5. Spination of Leg I: FeI: d2,1,2 p2(d); TiI: p1s v 2l,2l,2s; MtI: p1s(d) r1s(d) v 2l,2s,0. MtI with dense scopulae.

Epigynum: Hooded, short and small hoods oval shaped slightly bending to each other, hood cavities small; median septum with narrow base; spermathecae slender; copulatory tube with no supplementary bulbus at base; fertilisation duct long, emerging at base of spermatheca.

Male: unknown as adult.

ETYMOLOGY: This species is named after Frederick



Figs 37-49 – Metatarsus I, spination. 37. *Hogna albemarlensis*, male. 38. *Hogna albemarlensis*, female. 39. *Hogna galapagoensis*, male. 40. *Hogna galapagoensis*, female. 41. *Hogna jacquesbreli* n.sp., male. 42. *Hogna jacquesbreli* n.sp., female. 43. *Hogna junco* n.sp., male. 44. *Hogna junco* n.sp., female. 45. *Hogna española* n.sp., male. 46. *Hogna española* n.sp., female. 47. *Hogna hendrickxi* n.sp., female. 48. *Hogna snodgrassi*, male. 49. *Hogna snodgrassi*, female.

Hendrickx who joined our team in 2002 and who found this new species the last day of our stay in Galápagos.

HABITAT: lives in the dry arid zone along the coast in vegetated dunes and in the *Opuntia*-cactus zone.

DISTRIBUTION: See Map 8.

Acknowledgements

Excellent cooperation and field logistic support were provided by the Charles Darwin Research Station (CDRS, Isla Santa Cruz, Galápagos, Ecuador), the directors F. Koestner, G. Reck, D. Evans, C. Blanton and R. Bensted-Smith, M. Cifuentes and their staff; the Galápagos National Park Service (SPNG Superintendents M. Cifuentes, IR. H. Ochoa, F. Cepeda, A. Izurieta and E. Cruz), Department of Forestry, Ministry of Agriculture of Ecuador; TAME airline kindly issued reduced price for travel tickets. Our investigations and field work were financially supported by (1) BELSPO (former Belgian DWTC), (2) the Fund for Scientific Research (FWO-Vlaanderen; research project G.0202.06) and (3) the Léopold III Foundation. Help in field was provided by K. Desender, L. Roque and P. Verdyck. The drawings were made by Katia de Pierpont, Marylise Leclercq and Eliane De Block. The type material of *Lycosa albemarlensis* (BANKS, 1902) was made available to us by L. Leibensperger of the Museum of Comparative Zoology, Harvard University, Massachusetts, USA. Constructive comments were given by Rudy Jocqué (MRAC) and Mark Alderweireldt.

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Table 1 – Other material examined of *Hogna albemarlensis* (BANKS, 1902).

Isla	Toponym	Altitude	Date	m	f	j	Sample
BAR	Near Pinnacle Rock	0	18/03/1998	2	59	3	B.98/0034
FER	Cabo Hammond	5	3/05/1991	1	6	6	B.91/0763
FER	Cabo Hammond	5	3/05/1991	18	14	1	B.91/0797
FER	Cabo Hammond	5	4/05/1991	3	5	8	H.91/0032a
FER	Small cerro left of encañada	400	6/05/1991	1	1	5	P.91/0124
FER	Small woodland left of encañada	430	4/05/1991	1	-	-	B.91/0791
FLO	Punta Cormoran	2	11/04/1991	-	-	8	B.91/0650
FLO	Punta Cormoran	2	11/04/1991	-	-	7	B.91/0710
FLO	Punta Cormoran (lagoon)	2	21/03/2000	5	13	21	B.00/0040
FLO	Black Beach	10	8/04/1991	-	-	1	B.91/0705
FLO	Black Beach	10	11/04/1991	-	-	2	B.91/0704
FLO	Finca Padre Cruz	150	20/03/2000	-	5	-	B.00/0025
FLO	Along Road	300	16/04/1996	1	-	-	P.96/0120
FLO	E of Cerro Pajas	350	27/03/1996	-	-	1	P.96/0055
FLO	Finca Claudio Cruz	350	21/02/1998	1	5	1	B.88/0325
FLO	Finca Claudio Cruz	350	9/04/1991	-	-	1	B.91/0628
FLO	Finca Claudio Cruz	350	9/04/1991	-	-	1	B.91/0629
FLO	Finca Claudio Cruz	350	9/04/1991	2	8	4	B.91/0700
FLO	Finca Claudio Cruz	350	20/03/2000	1	7	47	B.00/0023
FLO	Finca Platanera	350	2/05/1992	3	4	5	A.92/0049
FLO	Finca Platanera	350	4/05/1992	1	2	4	A.92/0048
FLO	Highland	360	21/02/1988	4	3	6	B.88/0440
FLO	Highland	360	28/02/1988	-	5	-	B.88/0441
FLO	Highland	360	9/04/1991	1	1	-	B.91/0701
GEN	Lago Arcturus (bottom of crater, N border)	5	13/03/1988	-	-	1	B.88/0422
GEN	Lago Arcturus (bottom of crater, N border)	5	13/03/1988	2	1	-	B.88/0428
GEN	Lago Arcturus (bottom of crater, N border)	5	14/03/1988	1	-	-	B.88/0430
GEN	Lago Arcturus (bottom of crater, N border)	5	28/03/2000	-	2	10	B.00/0085
IBC	E border of lake	8	25/03/1988	2	8	21	B.88/0477
ICA	Caleta Iguana	5	28/03/1988	-	-	1	B.98/0090
ICA	Caleta Iguana	5	19/05/1991	1	1	-	B.91/0823
ICA	Caleta Iguana	5	19/05/1991	1	1	-	B.91/0826
ICA	Caleta Iguana	5	19/05/1991	-	4	-	B.91/0861
ICA	Caleta Iguana	5	19/05/1991	-	1	2	B.91/0879
ICA	Caleta Iguana	5	19/05/1991	-	1	2	B.91/0880
ICA	Caleta Iguana	5	19/05/1991	2	4	-	H.91/0058
ICA	Caleta Iguana	5	19/05/1991	-	1	-	P.91/0146
ICA	Caleta Iguana	5	22/05/1991	1	1	-	B.91/0862
ICA	Caleta Iguana	5	28/03/1998	3	1	19	B.98/0086
ICA	Transect to top along Southwestern slope	80	19/05/1991	-	2	2	B.91/0878
ICA	Transect to top along Southwestern slope	150	19/05/1991	8	13	-	B.91/0877
ICA	Transect to top along Southwestern slope	150	19/05/1991	-	-	1	P.91/0147
ICA	Transect to top along Southwestern slope	200	19/05/1991	7	13	-	B.91/0876
ICA	Transect to top along Southwestern slope	200	19/05/1991	2	3	36	H.91/0056
ICA	Transect to top along Southwestern slope	200	20/05/1991	2	13	2	B.91/0827
ICA	Transect to top along Southwestern slope	300	20/05/1991	1	5	2	B.91/0828
ICA	Transect to top along Southwestern slope	300	20/05/1991	7	4	8	B.91/0875
ICA	Transect to top along Southwestern slope	400	20/05/1991	3	-	-	B.91/0874
ICA	Transect to top along Southwestern slope	400	20/05/1991	-	1	-	P.91/0153
ICA	Transect to top along Southwestern slope	400	25/05/1991	-	5	17	B.91/0857
ICA	Transect to top along Southwestern slope	450	24/02/1986	5	33	9	B.86/0037
ICA	Transect to top along Southwestern slope	500	27/03/1998	-	4	-	B.98/0089
ICA	Transect to top along Southwestern slope	620	20/05/1991	-	-	3	B.91/0829
ICA	Transect to top along Southwestern slope	680	20/05/1991	-	-	1	B.91/0837
ICA	Transect to top along Southwestern slope	680	22/05/1991	-	2	1	B.91/0845
ICA	Cerro Gavillan	700	22/02/1986	5	1	8	B.86/0028
ICA	Cerro Gavillan	700	25/03/1998	2	3	5	B.98/0083
ICA	Transect to top along Southwestern slope	760	21/05/1991	1	-	4	B.91/0869

Isla	Toponym	Altitude	Date	m	f	j	Sample
ICA	Inside crater Cerro Gavillan	850	22/05/1998	-	1	1	B.91/0844
ICA	Transect to top along Southwestern slope	1000	21/05/1991	-	1	3	B.91/0833
ICA	Transect to top along Southwestern slope	1100	23/02/1986	1	1	-	B.86/0029
ICA	Transect to top along Southwestern slope	1100	26/03/1998	-	13	1	B.98/0084
ICA	Transect to top along Southwestern slope	1530	26/03/1998	16	23	5	B.98/0085
ISN	Lagunas de Villamil	2	20/02/1986	-	2	7	B.86/0024
ISN	Lagunas de Villamil	2	21/02/1986	-	2	3	B.86/0025
ISN	Lagunas de Villamil	2	29/03/1988	-	1	-	B.88/0501
ISN	Lagunas de Villamil	2	2/03/1989	1	-	-	P.89/0086
ISN	Lagunas de Villamil	2	26/05/1991	3	6	24	B.91/0883
ISN	Lagunas de Villamil	2	26/05/1991	5	8	5	B.91/0884
ISN	Lagunas de Villamil	2	7/04/1996	8	26	14	B.96/0124
ISN	Marshy area 4 km of Villamil (along road)	5	25/03/1982	-	16	-	B.82/0080
ISN	Marshy area 4 km of Villamil (along road)	5	21/02/1986	1	-	-	B.86/0026
ISN	Marshy area 4 km of Villamil (along road)	5	6/04/1996	8	4	3	P.96/0089
ISN	Marshy area 5 km of Villamil (along road)	5	18/02/1986	4	9	17	B.86/0015
ISN	Marshy area 5 km of Villamil (along road)	5	21/02/1986	-	5	5	B.86/0027
ISN	12 km NW of Villamil	150	22/04/1996	1	-	-	P.96/0128
ISN	Culture zone near Santo Tomás	400	20/02/1986	-	1	5	B.86/0023
ISN	Santo Tomás, Corazon Verde	450	18/02/1986	-	-	1	B.86/0016
ISN	Culture zone near Santo Tomás	475	20/02/1986	1	16	31	B.86/0022
ISN	5 km NW of Santo Tomás	600	3/03/1989	1	-	-	P.89/0097
ISN	-	700	3/03/1989	11	1	-	P.89/0123
ISN	-	750	3/03/1989	-	1	-	P.89/0098
ISN	(X) SE slope	780	6/12/1982	1	-	-	A.86/0044
ISN	(VII) SE slope	800	23/09/1986	1	1	-	A.86/0031
ISN	(VII) SE slope	800	6/12/1986	-	2	-	A.86/0041
ISN	(VII) SE slope	800	6/02/1987	1	1	-	A.87/0007
ISN	(VII) SE slope	800	8/09/1988	-	1	-	A.88/0007
ISN	(VIII) SE slope	800	23/09/1986	-	1	-	A.86/0032
ISN	(VIII) SE slope	800	6/12/1986	2	2	-	A.86/0042
ISN	(VIII) SE slope	800	23/09/1987	1	-	-	A.87/0028
ISN	(V) Cerro Chanchos	870	13/06/1987	2	-	-	A.87/0015
ISN	(VI) Cerro Chanchos	870	10/02/1986	1	1	-	A.86/0003
ISN	(VI) Cerro Chanchos	870	13/06/1987	1	1	-	A.87/0016
ISN	(VI) Cerro Chanchos	870	23/09/1987	1	-	-	A.87/0026
ISN	(III) Crater Pulpito	930	10/02/1986	1	-	1	A.86/0001
ISN	(I) Cerro Bocanilla	1000	6/02/1987	-	2	-	A.87/0001
ISN	(I) Cerro Bocanilla	1000	13/06/1987	1	-	-	A.87/0011
ISN	(I) Cerro Bocanilla	1000	23/09/1987	1	1	-	A.87/0021
ISN	(II) Cerro Bocanilla	1000	6/12/1986	1	1	-	A.86/0045
ISN	(II) Cerro Bocanilla	1000	13/06/1987	1	-	-	A.87/0012
ISN	Rim between C. Chanchos and C. La Torre	1000	9/03/1989	1	-	-	P.89/0121
ISN	W rim	1150	19/02/1986	4	8	-	B.86/0020
IVA	Nidification area of giant turtoises	760	1/04/1986	-	5	4	B.86/0186
IVA	<i>Psidium</i> forest along new trail	850	6/04/1999	-	-	1	R.99/0003
IVA	Geyser pools	900	26/06/1991	-	1	-	B.91/0906
IVA	SE crater rim	1100	7/04/1999	-	1	-	R.99/0013
IVA	Top near new Caseta	1100	16/10/1999	1	-	-	R.99/0010
IVD	Playa Tortuga Negra	2	6/02/1997	-	2	-	R.97/0002
IVW	Behind Mangrove girdle	2	24/03/1988	1	6	46	B.88/0472
MAR	Playa Negra	2	26/02/2001	1	-	-	R.01/0001
MAR	Playa Negra	5	29/03/2000	-	1	-	B.00/0093
RAB	Laguna beach	2	13/03/1998	7	2	28	B.98/0022
SAN	Playa Espumila	2	17/03/1998	7	21	22	B.98/0031
SAN	Playa Espumila	2	14/12/2002	-	2	38	B.02/0049
SAN	Transect back to Puerto Egas	300	3/06/1991	-	-	2	P.91/0191
SAN	Transect back to Puerto Egas	300	3/06/1991	-	-	3	P.91/0192
SAN	Aguacate	550	4/06/1991	6	17	4	P.91/0195
SAN	Aguacate	550	4/06/1991	-	1	1	P.91/0199
SAN	Aguacate	550	7/04/1992	42	61	2	P.92/0108

Isla	Toponym	Altitude	Date	m	f	j	Sample
SAN	Aguacate	550	7/04/1992	31	29	4	P.92/0112
SAN	Aguacate	550	7/04/1992	-	-	1	P.92/0113
SAN	Aguacate	550	16/03/1998	3	62	8	B.98/0029
SAN	Aguacate	550	12/12/2002	-	41	-	B.02/0046
SAN	Transect back to Puerto Egas	600	4/06/1991	9	42	10	P.91/0197
SAN	La Central	700	5/03/1986	9	26	-	B.86/0058
SAN	La Central	700	5/03/1986	1	-	-	B.86/0061
SAN	La Central	700	16/03/1998	11	59	8	B.98/0027
SAN	La Central	700	13/12/2002	10	18	10	B.02/0048
SAN	3 km E of Aguacate	740	5/06/1991	-	-	6	H.91/0078
SAN	4 km E of Aguacate	740	4/06/1991	-	11	4	P.91/0198
SAN	6 km E of Aguacate	740	5/06/1991	8	45	42	P.91/0201
SAN	Los Jaboncillos	820	15/03/1998	8	66	3	B.98/0025
SAN	Los Jaboncillos	820	13/12/2002	1	39	2	B.02/0047
SAN	Top of Island	900	6/03/1986	1	2	-	B.86/0064
SAN	Top of Island	900	6/06/1991	9	14	11	P.91/0206
SCB	Caleta Sapho	2	28/03/1996	-	-	1	B.96/0033
SCB	Caleta Sapho	2	2/12/2002	-	1	-	B.02/0010
SCB	Puerto Baquerizo Moreno	2	5/12/2002	-	-	42	B.02/0018
SCB	Caleta de la Tortuga	5	3/12/2002	-	1	9	B.02/0011
SCB	Farm along road E of El Junco	500	1/11/1997	-	-	1	B.97/0001
SCB	El Junco	625	25/03/1996	1	8	-	B.96/0013
SCB	El Junco	625	27/03/1996	1	-	-	B.96/0025
SCB	El Junco	625	5/12/2002	3	16	17	B.02/0016
SCZ	Bahía Tiburón	2	18/04/1982	1	6	-	B.82/0104
SCZ	Bahía Tortuga	2	20/03/1998	13	90	19	B.98/0041
SCZ	Bahía Tortuga	2	4/04/2000	8	9	11	B.00/0151
SCZ	Bahía Tortuga	2	30/11/2002	3	16	21	B.02/0009
SCZ	Bahía Tortuga	2	14/03/1986	1	1	-	B.86/0112
SCZ	Bahía Tortuga	2	14/03/1986	-	1	-	B.86/0115
SCZ	Bahía Tortuga	2	14/03/1986	1	3	-	B.86/0116
SCZ	Bahía Tortuga	2	14/03/1986	1	1	1	B.86/0118
SCZ	Bahía Tortuga	2	24/03/1991	2	-	-	B.91/0611
SCZ	Bahía Tortuga	2	6/04/1991	-	-	19	B.91/0612
SCZ	Bahía Tortuga	2	6/04/1991	1	-	-	B.91/0669
SCZ	Bahía Tortuga	2	6/04/1991	1	-	3	B.91/0670
SCZ	Bahía Tortuga	2	15/04/1991	-	-	5	B.91/0666
SCZ	Bahía Tortuga	2	15/04/1991	1	1	-	B.91/0746
SCZ	Bahía Tortuga	2	15/04/1991	-	-	13	B.91/0747
SCZ	Bahía Tortuga	2	28/04/1992	1	-	1	A.91/D12
SCZ	Bahía Tortuga	2	9/04/1996	1	4	1	B.96/0134
SCZ	Bahía Tortuga	2	12/06/2000	4	20	23	B.00/0173
SCZ	Bahía Tortuga Negra	2	20/04/1982	-	1	-	B.82/0127
SCZ	Beach at Director's House	2	26/03/2000	1	1	4	B.00/0080
SCZ	Beach at Director's House	2	30/03/1998	2	52	2	B.98/0095
SCZ	El Garapatero lagoon (Puerto Nuñez)	2	12/02/2000	1	7	23	B.00/0162
SCZ	El Garapatero lagoon (Puerto Nuñez)	2	10/12/2002	1	9	11	B.02/0036
SCZ	El Garapatero lagoon (Puerto Nuñez)	2	10/01/2001	8	3	10	CDRS.01/003
SCZ	Isla Venecia	2	18/04/1982	1	2	-	B.82/0103
SCZ	Laguna Andreas	2	14/04/1991	-	-	2	B.91/0665
SCZ	Laguna Andreas	2	28/04/1991	122	35	26	B.91/0817
SCZ	Laguna Andreas	2	17/05/1991	-	7	1	B.91/0821
SCZ	Laguna Andreas	2	17/05/1991	5	1	5	B.91/0888
SCZ	Laguna Andreas	2	22/03/1996	2	2	9	B.96/0041
SCZ	Laguna Andreas	2	30/03/1996	-	6	4	B.96/0061
SCZ	Laguna Andreas	2	30/03/1996	2	1	4	B.96/0130
SCZ	Laguna Andreas	2	10/04/1996	-	5	6	P.96/0157
SCZ	Laguna Andreas	2	26/11/2000	7	14	21	B.00/0160
SCZ	Laguna Andreas	2	30/11/2002	7	21	12	B.02/0008
SCZ	Meteorological Station of CDRS	2	5/04/1991	-	-	1	B.91/0662
SCZ	Meteorological Station of CDRS	2	13/04/1991	-	-	2	B.91/0748

Isla	Toponym	Altitude	Date	m	f	j	Sample
SCZ	Meteorological Station of CDRS	2	28/04/1991	-	1	-	B.91/0805
SCZ	Meteorological Station of CDRS	2	9/03/1998	-	1	1	B.98/0060
SCZ	Meteorological Station of CDRS	2	11/03/1998	5	23	9	B.98/0014
SCZ	Meteorological Station of CDRS	2	21/03/1998	1	1	8	B.98/0110
SCZ	Meteorological Station of CDRS	2	18/03/2000	1	-	8	B.00/0121
SCZ	Playa Bachas	2	12/04/2000	1	6	33	B.00/0166
SCZ	Playa Las Palmas	2	18/12/2002	-	3	25	B.02/0058
SCZ	Punta Bowdich	2	9/12/2002	3	2	26	B.02/0033
SCZ	Bahía Tortuga Trail	5	16/03/1982	5	1	-	B.82/0064
SCZ	Barranco (seismological station)	20	19/02/1982	-	3	-	B.82/0020
SCZ	Barranco (seismological station)	20	15/03/1982	1	1	-	B.82/0063
SCZ	Barranco (seismological station)	20	29/03/1982	1	-	-	B.82/0082
SCZ	El Chato	190	30/03/1982	1	2	-	B.82/0083
SCZ	El Chato	190	12/02/2000	2	24	14	B.00/0161
SCZ	El Chato	190	27/03/2000	-	2	-	B.00/0082
SCZ	El Chato	190	28/11/2002	5	18	17	B.02/0006
SCZ	El Chato	190	8/12/2002	5	19	16	B.02/0031
SCZ	Playa Bachas	2	1/04/1998	1	3	17	B.98/0117
SCZ	Playa Bachas	2	7/12/2002	14	10	20	B.02/0029
SCZ	Southern Transect	230	10/03/1982	-	1	-	B.82/0056
SCZ	Southern Transect	230	15/02/1986	-	1	-	B.86/0101
SCZ	Southern Transect	230	1/03/1986	-	1	-	B.86/0088
SCZ	El Chato	250	28/11/2002	-	1	-	B.02/0027
SCZ	Northern Transect	300	10/03/1998	-	-	1	B.98/0054
SCZ	Southern Transect, E of Santa Rosa	350	15/02/1986	-	3	6	B.86/0004
SCZ	Southern Transect, E of Santa Rosa	350	15/02/1986	1	-	-	B.86/0102
SCZ	Southern Transect, E of Santa Rosa	350	1/03/1986	5	1	6	B.86/0087
SCZ	Southern Transect, E of Santa Rosa	350	23/03/1996	-	1	-	B.96/0052
SCZ	Southern Transect, E of Santa Rosa	350	30/03/1996	-	3	-	B.96/0143
SCZ	Southern Transect, E of Santa Rosa	350	10/04/1996	3	1	-	B.96/0165
SCZ	El Carmen farm	350	10/03/1998	-	1	3	B.98/0011
SCZ	El Carmen farm	350	10/03/1998	-	-	3	B.98/0057
SCZ	El Carmen farm	350	21/03/1998	1	-	1	B.98/0107
SCZ	El Carmen farm	350	31/03/1998	11	37	18	B.98/0100
SCZ	El Carmen farm	350	18/03/2000	1	-	-	B.00/0130
SCZ	Southern Transect, Finca Cirilo	400	15/02/1986	-	3	-	B.86/0009
SCZ	Northern Transect, Granillo rojo	500	12/02/1988	-	-	1	B.88/0380
SCZ	Northern Transect, Granillo rojo	500	7/03/1992	1	-	-	P.92/0005
SCZ	Northern Transect, Granillo rojo	500	1/04/1992	1	-	-	P.92/0083
SCZ	Southern Transect, N of Santa Rosa	500	15/02/1986	-	19	-	B.86/0005
SCZ	Southern Transect, N of Santa Rosa	500	15/02/1986	3	6	1	B.86/0103
SCZ	Southern Transect, N of Santa Rosa	500	30/03/1996	1	-	1	B.96/0142
SCZ	Southern Transect, N of Santa Rosa	500	10/04/1996	1	1	2	P.96/0164
SCZ	Southern Transect, N of Santa Rosa	500	18/03/2000	-	1	9	B.00/0129
SCZ	Media Luna trail	500	15/02/1988	-	1	1	B.88/0390
SCZ	Media Luna trail	500	8/03/1988	1	1	-	B.88/0517
SCZ	Media Luna trail	500	1/02/1989	1	-	-	P.89/0040
SCZ	Media Luna trail	500	9/03/1998	-	-	1	B.98/0062
SCZ	Media Luna trail	500	18/03/2000	1	-	2	B.00/0133
SCZ	Northern Transect	560	1/05/1991	-	2	-	P.91/0112
SCZ	Los Gemelos (E. of sink hole)	570	12/02/1988	2	4	-	B.88/0382
SCZ	Los Gemelos (E. of sink hole)	570	7/03/1988	1	4	-	B.88/0509
SCZ	Los Gemelos (E. of sink hole)	570	23/03/1996	1	1	4	B.96/0048
SCZ	Los Gemelos (E. of sink hole)	570	23/03/1996	3	3	9	B.96/0049
SCZ	Los Gemelos (E. of sink hole)	570	30/03/1996	-	5	-	B.96/0060
SCZ	Los Gemelos (E. of sink hole)	570	30/03/1996	-	2	-	B.96/0139
SCZ	Los Gemelos (E. of sink hole)	570	30/03/1996	-	1	5	B.96/0140
SCZ	Los Gemelos (E. of sink hole)	570	10/04/1996	-	3	-	B.96/0153
SCZ	Los Gemelos (E. of sink hole)	570	10/04/1996	2	18	-	P.96/0162
SCZ	Los Gemelos (E. of sink hole)	570	10/04/1996	18	15	22	P.96/0166
SCZ	Los Gemelos (E. of sink hole)	570	30/03/1998	-	1	-	B.98/0093

Isla	Toponym	Altitude	Date	m	f	j	Sample
SCZ	Los Gemelos (E. of sink hole)	570	31/03/1998	-	25	-	B.98/0119
SCZ	Los Gemelos (E. of sink hole)	570	28/11/2002	-	3	9	B.02/0004
SCZ	Los Gemelos (E. of sink hole)	570	28/11/2002	1	1	-	B.02/0023
SCZ	Los Gemelos (E. of sink hole)	570	12/02/1988	-	-	1	B.88/0308
SCZ	Los Gemelos (E. of sink hole)	570	12/02/1988	-	1	-	B.88/0384
SCZ	Los Gemelos (E. of sink hole)	570	7/03/1988	-	2	-	B.88/0511
SCZ	Los Gemelos (E. of sink hole)	570	18/03/2000	6	8	21	B.00/0137
SCZ	Los Gemelos (E. of sink hole)	570	12/04/2000	4	34	9	B.00/0164
SCZ	Los Gemelos (W. of sink hole)	570	15/02/1986	-	2	-	B.86/0006
SCZ	Los Gemelos (W. of sink hole)	570	23/03/1996	4	-	1	B.96/0050
SCZ	Los Gemelos (W. of sink hole)	570	18/03/2000	3	12	1	B.00/0138
SCZ	Los Gemelos (W. of sink hole)	570	28/11/2002	-	-	3	B.02/0024
SCZ	Los Gemelos (W. of sink hole)	570	8/12/2002	-	9	33	B.02/0030
SCZ	Media Luna	600	10/04/1996	2	-	-	P.96/0147
SCZ	Media Luna	600	11/03/1998	2	36	15	B.98/0015
SCZ	Media Luna	600	18/03/2000	-	1	-	B.00/0134
SCZ	Media Luna	600	12/05/2000	4	27	5	B.00/0170
SCZ	Media Luna	600	10/12/2002	1	6	20	B.02/0037
SCZ	Media Luna	620	17/05/1985	1	-	-	P.85/0164
SCZ	1 km N of C. Puntudo	650	1/03/1989	1	-	-	P.89/0171
SCZ	Southeast of Cerro Crocker	650	15/02/1986	-	1	-	B.86/0106
SCZ	Table Mtn.	440	16/04/1964	1	1	-	CAS/64-coll.

Table 2 – Other material examined of *Hogna galapagoensis* (BANKS, 1902).

Isla	Toponym	Altitude	Date	m	f	j	Sample
ICA	Transect to top along Southwestern slope	1000	21/05/1991	1	-	-	B.91/0867
ICA	Transect to top along Southwestern slope	1100	23/02/1986	-	3	-	B.86/0034
ICA	Transect to top along Southwestern slope	1100	23/05/1991	2	-	-	B.91/0848
ICA	Transect to top along Southwestern slope	1200	23/02/1986	-	1	-	B.86/0033
ICA	Transect to top along Southwestern slope	1300	23/02/1986	-	3	-	B.86/0030
IVA	Nidification area of giant turtoises	760	1/04/1986	5	-	-	B.86/0186
IVA	<i>Psidium</i> forest along new trail	850	21/04/1998	-	1	-	R.98/0030
IVA	SE crater rim	1060	2/08/1991	3	-	-	A.91/0009
IVA	SE crater rim	1060	2/04/1996	1	-	-	B.96/0070
IVA	SE crater rim	1060	3/04/1996	4	-	-	B.96/0085
IVA	SE crater rim	1100	7/04/1999	1	-	-	R.99/0013
IVA	Top near new Caseta	1100	1/11/1998	47	11	-	R.98/0053
PIZ	upper caldera, valley zone	460	7/02/1964	1	-	-	CAS/64-coll.
SAN	NW-slope	400	13/05/1964	-	1	-	CAS/64-coll.
SAN	Top of island	900	6/03/1986	1	15	-	B.86/0064
SCZ	Academy Bay (CDRS) (?)	2	20/02/1964	-	1	-	CAS/64-coll.
SCZ	Bahía Tortuga	2	15/04/1991	2	-	-	B.91/0745
SCZ	Bahía Tortuga	2	28/04/1991	1	-	6	B.91/0819
SCZ	Barranco (seismological station)	20	19/02/1982	-	1	-	B.82/0020
SCZ	E-slope	160	16/04/1964	-	1	-	CAS/64-coll.
SCZ	Horneman farm	220	16/02/1964	-	1	-	CAS/64-coll.
SCZ	Northern transect	300	7/03/1992	1	-	-	P.92/0003
SCZ	Media Luna trail	500	24/03/1996	1	-	-	B.96/0064
SCZ	Media Luna trail	500	10/04/1996	1	-	-	P.96/0146
SCZ	5 km N of Santa Rosa	550	1/05/1991	-	5	-	P.91/0113
SCZ	6 km N of Santa Rosa	550	1/06/1991	-	-	3	P.91/0233
SCZ	7 km N of Santa Rosa	550	1/06/1991	-	1	-	P.91/0234
SCZ	Media Luna trail	550	8/03/1988	1	-	-	B.88/0516
SCZ	Media Luna trail	550	1/03/1989	2	-	-	P.89/0172
SCZ	Los Gemelos (E. of sink hole)	570	3/11/1997	84	13	4	R.97/0004
SCZ	Los Gemelos (E. of sink hole)	570	15/11/1997	13	3	1	R.97/0005

Isla	Toponym	Altitude	Date	m	f	j	Sample
SCZ	Los Gemelos (E. of sink hole)	570	4/12/1997	11	1	4	R.97/0006
SCZ	Los Gemelos (E. of sink hole)	570	17/12/1997	44	8	3	R.97/0021
SCZ	Los Gemelos (E. of sink hole)	570	1/01/1998	44	5	1	R.98/0020
SCZ	Los Gemelos (E. of sink hole)	570	13/03/1982	2	12	-	B.82/0060
SCZ	Los Gemelos (E. of sink hole)	570	15/02/1986	-	1	-	B.86/0007
SCZ	Los Gemelos (E. of sink hole)	570	12/02/1988	14	4	-	B.88/0382
SCZ	Los Gemelos (E. of sink hole)	570	7/03/1988	4	11	-	B.88/0509
SCZ	Los Gemelos (E. of sink hole)	570	30/03/1996	-	4	1	B.96/0060
SCZ	Los Gemelos (E. of sink hole)	570	10/04/1996	-	1	-	B.96/0153
SCZ	Los Gemelos (E. of sink hole)	570	10/04/1996	6	4	-	P.96/0162
SCZ	Los Gemelos (E. of sink hole)	570	10/04/1996	4	-	-	P.96/0166
SCZ	Los Gemelos (E. of sink hole)	570	30/03/1998	1	-	-	B.98/0093
SCZ	Los Gemelos (E. of sink hole)	570	31/03/1998	-	1	-	B.98/0119
SCZ	Los Gemelos (W. of sink hole)	570	13/03/1982	-	1	-	B.82/0061
SCZ	Los Gemelos (W. of sink hole)	570	13/06/1985	36	26	-	P.85/0188b
SCZ	Los Gemelos (W. of sink hole)	570	15/02/1986	5	3	21	B.86/0006
SCZ	Los Gemelos (W. of sink hole)	570	15/02/1986	22	2	3	B.86/0104
SCZ	Los Gemelos (W. of sink hole)	570	1/03/1986	6	1	1	B.86/0085
SCZ	Los Gemelos (W. of sink hole)	570	12/03/1986	1	2	5	B.86/0155
SCZ	Los Gemelos (W. of sink hole)	570	12/02/1988	24	2	-	B.88/0383
SCZ	Los Gemelos (W. of sink hole)	570	7/03/1988	113	22	-	B.88/0510
SCZ	Los Gemelos (W. of sink hole)	570	1/02/1989	1	-	-	P.89/0045
SCZ	Los Gemelos (W. of sink hole)	570	1/02/1989	33	6	-	P.89/0082
SCZ	Los Gemelos (W. of sink hole)	570	1/03/1989	77	-	2	P.89/0175
SCZ	Los Gemelos (W. of sink hole)	570	1/04/1989	56	2	-	P.89/0207
SCZ	Los Gemelos (W. of sink hole)	570	30/03/1996	15	1	-	B.96/0141
SCZ	Los Gemelos (W. of sink hole)	570	10/04/1996	69	10	14	P.96/0163
SCZ	Los Gemelos (W. of sink hole)	570	17/01/2001	26	-	-	CDRS.01/009
SCZ	Northeast of C. Crocker	570	9/03/1982	-	1	-	B.82/0050
SCZ	Northeast of C. Crocker	570	9/03/1982	-	1	-	B.82/0051
SCZ	Media Luna	600	8/03/1982	1	-	-	B.82/0059
SCZ	Media Luna	600	10/03/1982	15	11	-	B.82/0054
SCZ	Media Luna	600	15/02/1986	16	4	1	B.86/0107
SCZ	Media Luna	600	16/02/1986	12	9	5	B.86/0011
SCZ	Media Luna	600	1/03/1986	7	1	-	B.86/0094
SCZ	Media Luna	600	1/02/1989	1	-	-	P.89/0037
SCZ	Media Luna	600	1/12/1992	3	-	-	CDRS.92/003
SCZ	Media Luna	600	24/03/1996	6	-	-	B.96/0065
SCZ	Media Luna	600	30/03/1996	6	2	-	B.96/0147
SCZ	Media Luna	600	10/04/1996	3	6	-	P.96/0147
SCZ	Media Luna	600	18/03/2000	11	-	-	B.00/0134
SCZ	Media Luna	620	14/05/1985	2	11	6	P.85/0158
SCZ	Media Luna	620	17/05/1985	-	1	6	P.85/0164
SCZ	1 km N. of C Puntudo	650	1/02/1989	13	-	-	P.89/0041
SCZ	1 km N. of C Puntudo	650	1/03/1989	144	-	-	P.89/0171
SCZ	1 km N. of C Puntudo	650	1/04/1989	38	-	-	P.89/0199
SCZ	Cerro Crocker Trail	650	15/02/1988	29	3	-	B.88/0392
SCZ	Cerro Crocker Trail	650	8/03/1988	95	13	-	B.88/0515
SCZ	small pool along C. Crocker Trail	650	1/12/1992	36	1	1	CDRS.92/006
SCZ	small pool along C. Crocker Trail	650	10/12/2002	-	-	12	B.02/0034
SCZ	Southeast of Cerro Crocker	650	10/02/1982	2	1	-	B.82/0006
SCZ	Southeast of Cerro Crocker	650	8/03/1982	-	21	-	B.82/0046
SCZ	Southeast of Cerro Crocker	650	8/03/1982	-	3	-	B.82/0047
SCZ	Southeast of Cerro Crocker	650	9/03/1982	1	-	-	B.82/0053
SCZ	Southeast of Cerro Crocker	650	15/02/1986	2	5	-	B.86/0106
SCZ	Southeast of Cerro Crocker	650	16/02/1986	5	9	5	B.86/0010
SCZ	Southeast of Cerro Crocker	650	1/03/1986	6	5	-	B.86/0095
SCZ	Cerro Puntudo	700	2/02/1989	-	-	1	P.89/0029
SCZ	Cerro Puntudo	700	4/02/1992	1	1	-	A.92/0007
SCZ	Los Picachos east of C. Crocker	700	8/03/1982	1	-	-	B.82/0048
SCZ	Los Picachos east of C. Crocker	700	8/03/1982	2	-	-	B.82/0057

Isla	Toponym	Altitude	Date	m	f	j	Sample
SCZ	Los Picachos east of C. Crocker	700	13/03/1986	4	11	2	B.86/0093
SCZ	Los Picachos east of C. Crocker	700	1/12/1992	42	2	-	CDRS.92/007
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	15/02/1988	2	7	3	B.88/0312
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	15/02/1988	29	8	3	B.88/0393
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	8/03/1988	155	31	-	B.88/0514
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	14/06/1991	-	5	-	P.91/0228
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	25/06/1992	-	2	18	A.92/0023
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	24/03/1996	6	2	3	B.96/0066
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	30/03/1996	9	1	3	B.96/0148
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	10/04/1996	6	25	-	P.96/0148
SCZ	Cerro Crocker trail (base of Cerro Crocker)	750	18/03/2000	91	29	7	B.00/0135
SCZ	Pampa	750	10/04/1964	5	16	2	CAS/64-coll.
SCZ	Subtop of Cerro Crocker	790	24/03/1991	34	16	2	B.91/0613
SCZ	Subtop of Cerro Crocker	790	6/04/1991	-	24	3	B.91/0729
SCZ	Subtop of Cerro Crocker	790	26/04/1991	71	4	3	B.91/0813
SCZ	Subtop of Cerro Crocker	790	24/03/1996	22	5	6	B.96/0067
SCZ	Subtop of Cerro Crocker	790	30/03/1996	5	-	-	B.96/0149
SCZ	Subtop of Cerro Crocker	790	10/04/1996	47	46	7	P.96/0149
SCZ	Crater floor	800	8/03/1988	1	2	-	B.88/0398
SCZ	Crater floor	800	12/05/2000	-	-	23	B.00/0169
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	14/06/1991	-	2	11	A.91/B05
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	10/07/1991	-	-	4	A.91/B06
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	12/08/1991	-	-	1	A.91/B07
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	11/09/1991	-	-	1	A.91/B08
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	11/10/1991	-	-	3	A.91/B09
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	20/11/1991	2	-	-	A.91/B10
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	14/01/1992	48	7	7	A.91/B11
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	14/02/1992	96	18	1	A.91/B12
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	14/04/1992	17	11	-	A.91/B14
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	20/05/1992	1	16	3	A.91/B15
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	14/06/1992	-	14	33	A.91/B16
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	16/07/1992	-	-	11	A.91/B17
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	14/08/1992	1	-	10	A.91/B18
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/09/1992	-	-	3	A.91/B19
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	16/10/1992	-	-	10	A.91/B20
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/11/1992	15	3	14	A.91/B21
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/12/1992	3	-	2	A.91/B22
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/01/1993	23	3	-	A.91/B23
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	17/02/1993	11	5	3	A.91/B24
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/08/1993	-	1	16	A.91/B30
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/09/1993	-	-	14	A.91/B31
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/10/1993	-	-	1	A.91/B32
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/11/1993	-	2	1	A.91/B33
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/12/1993	1	2	3	A.91/B34
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/02/1994	5	-	-	A.91/B36
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/02/1988	3	-	-	B.88/0311
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/02/1988	17	2	1	B.88/0394
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	8/03/1988	6	6	-	B.88/0397
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	8/03/1988	-	3	-	B.88/0403
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	8/03/1988	97	-	-	B.88/0513
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/04/1994	67	11	-	A.91/B38
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/05/1994	6	3	-	A.91/B39
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/06/1994	-	1	-	A.91/B40
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/07/1994	-	5	4	A.91/B41
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/08/1994	-	-	1	A.91/B42
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/09/1994	-	1	6	A.91/B43
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/10/1994	-	-	7	A.91/B44
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/11/1994	2	-	5	A.91/B45
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/01/1995	1	-	-	A.91/B47
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/02/1995	7	1	-	A.91/B48
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/03/1995	-	1	-	A.91/B49

Isla	Toponym	Altitude	Date	m	f	j	Sample
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/04/1995	1	1	-	A.91/B50
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/05/1995	-	2	1	A.91/B51
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/06/1995	-	8	1	A.91/B52
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	15/07/1995	-	1	-	A.91/B53
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	24/03/1996	29	6	-	B.96/0068
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	30/03/1996	6	6	-	B.96/0150
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	825	10/04/1996	57	89	16	P.96/0150
SCZ	<i>Sphagnum</i> bog, NE edge of Cerro Crocker	850	21/03/1998	15	8	-	B.98/0051
SCZ	Top of Cerro Crocker	875	15/02/1988	3	-	-	B.88/0310
SCZ	Top of Cerro Crocker	875	15/02/1988	66	-	-	B.88/0395
SCZ	Top of Cerro Crocker	875	8/03/1988	1	-	5	B.88/0396
SCZ	Top of Cerro Crocker	875	8/03/1988	-	1	-	B.88/0399
SCZ	Top of Cerro Crocker	875	8/03/1988	221	1	-	B.88/0512
SCZ	Top of Cerro Crocker	875	6/04/1991	44	24	7	B.91/0727
SCZ	Top of Cerro Crocker	875	6/04/1991	13	12	-	B.91/0730
SCZ	Top of Cerro Crocker	875	26/04/1991	7	2	1	B.91/0810
SCZ	Top of Cerro Crocker	875	16/05/1991	-	1	2	B.91/0892
SCZ	Top of Cerro Crocker	875	14/06/1991	-	1	8	A.91/A05
SCZ	Top of Cerro Crocker	875	10/07/1991	-	1	13	A.91/A06
SCZ	Top of Cerro Crocker	875	12/08/1991	1	2	4	A.91/A07
SCZ	Top of Cerro Crocker	875	11/09/1991	-	-	3	A.91/A08
SCZ	Top of Cerro Crocker	875	11/10/1991	-	-	9	A.91/A09
SCZ	Top of Cerro Crocker	875	20/11/1991	2	-	2	A.91/A10
SCZ	Top of Cerro Crocker	875	14/01/1992	56	9	2	A.91/A11
SCZ	Top of Cerro Crocker	875	14/02/1992	139	9	-	A.91/A12
SCZ	Top of Cerro Crocker	875	20/03/1992	271	26	-	A.91/A13
SCZ	Top of Cerro Crocker	875	14/04/1992	85	29	-	A.91/A14
SCZ	Top of Cerro Crocker	875	20/05/1992	18	67	-	A.91/A15
SCZ	Top of Cerro Crocker	875	14/06/1992	2	86	30	A.91/A16
SCZ	Top of Cerro Crocker	875	16/07/1992	-	1	19	A.91/A17
SCZ	Top of Cerro Crocker	875	14/08/1992	-	3	42	A.91/A18
SCZ	Top of Cerro Crocker	875	15/09/1992	-	-	25	A.91/A19
SCZ	Top of Cerro Crocker	875	16/10/1992	-	-	11	A.91/A20
SCZ	Top of Cerro Crocker	875	15/11/1992	-	1	9	A.91/A21
SCZ	Top of Cerro Crocker	875	15/12/1992	47	7	4	A.91/A22
SCZ	Top of Cerro Crocker	875	15/01/1993	59	4	1	A.91/A23
SCZ	Top of Cerro Crocker	875	17/02/1993	19	4	20	A.91/A24
SCZ	Top of Cerro Crocker	875	15/03/1993	4	9	-	A.91/A25
SCZ	Top of Cerro Crocker	875	15/04/1993	16	3	3	A.91/A26
SCZ	Top of Cerro Crocker	875	16/05/1993	-	2	1	A.91/A27
SCZ	Top of Cerro Crocker	875	16/06/1993	-	-	5	A.91/A28
SCZ	Top of Cerro Crocker	875	16/07/1993	-	-	4	A.91/A29
SCZ	Top of Cerro Crocker	875	15/08/1993	-	-	5	A.91/A30
SCZ	Top of Cerro Crocker	875	15/09/1993	-	-	5	A.91/A31
SCZ	Top of Cerro Crocker	875	15/11/1993	-	-	1	A.91/A33
SCZ	Top of Cerro Crocker	875	15/12/1993	16	4	-	A.91/A34
SCZ	Top of Cerro Crocker	875	15/01/1994	3	2	1	A.91/A35
SCZ	Top of Cerro Crocker	875	15/02/1994	137	8	-	A.91/A36
SCZ	Top of Cerro Crocker	875	15/03/1994	113	1	-	A.91/A37
SCZ	Top of Cerro Crocker	875	15/04/1994	198	15	-	A.91/A38
SCZ	Top of Cerro Crocker	875	15/05/1994	18	37	-	A.91/A39
SCZ	Top of Cerro Crocker	875	15/06/1994	-	2	-	A.91/A40
SCZ	Top of Cerro Crocker	875	15/07/1994	-	1	-	A.91/A41
SCZ	Top of Cerro Crocker	875	15/08/1994	-	2	12	A.91/A42
SCZ	Top of Cerro Crocker	875	15/09/1994	-	1	15	A.91/A43
SCZ	Top of Cerro Crocker	875	16/10/1994	2	-	5	A.91/A44
SCZ	Top of Cerro Crocker	875	15/11/1994	5	1	10	A.91/A45
SCZ	Top of Cerro Crocker	875	15/12/1994	2	-	2	A.91/A46
SCZ	Top of Cerro Crocker	875	15/02/1995	3	-	4	A.91/A48
SCZ	Top of Cerro Crocker	875	16/03/1995	-	2	-	A.91/A49
SCZ	Top of Cerro Crocker	875	15/04/1995	-	3	-	A.91/A50

Isla	Toponym	Altitude	Date	m	f	j	Sample
SCZ	Top of Cerro Crocker	875	15/05/1995	-	6	-	A.91/A51
SCZ	Top of Cerro Crocker	875	15/06/1995	-	7	8	A.91/A52
SCZ	Top of Cerro Crocker	875	15/07/1995	-	3	5	A.91/A53
SCZ	Top of Cerro Crocker	875	24/03/1996	12	24	4	B.96/0010
SCZ	Top of Cerro Crocker	875	24/03/1996	21	3	7	B.96/0068b
SCZ	Top of Cerro Crocker	875	30/03/1996	39	12	-	B.96/0151
SCZ	Top of Cerro Crocker	875	31/03/1996	7	1	3	B.96/0069
SCZ	Top of Cerro Crocker	875	10/04/1996	6	3	1	B.96/0152
SCZ	Top of Cerro Crocker	875	10/04/1996	56	58	5	P.96/0151
SCZ	Top of Cerro Crocker	875	18/03/2000	21	7	2	B.00/0012
SCZ	Top of Cerro Crocker	875	18/03/2000	2	19	2	B.00/0017
SCZ	Top of Cerro Crocker	875	18/03/2000	91	29	12	B.00/0136
SCZ	Top of Cerro Crocker	875	9/01/2001	5	2	4	CDRS.01/008
SCZ	Top of Cerro Crocker	875	10/12/2002	5	3	39	B.02/0035
SCZ	Top of Cerro Crocker	875	16/05/1991	-	9	3	B.91/0811

Table 3 – Other material examined of *Hogna española* n.sp.

Isla	Toponym	Altitude	Date	m	f	j	Sample
ESP	First beach W of Caleta (N of island)	2	18/04/1991	-	-	1	B.91/0678
ESP	First beach W of Caleta (N of island)	2	16/04/1991	-	-	1	B.91/0672
ESP	First beach W of Caleta (N of island)	2	16/04/1991	-	1	-	B.91/0740
ESP	Punto Cevallos	5	3/03/1988	-	-	1	B.88/0356
ESP	Punto Cevallos	5	3/03/1988	-	-	1	B.88/0359
ESP	Punto Cevallos	5	4/03/1988	1	-	1	B.88/0369
ESP	Punto Cevallos	5	5/03/1988	-	-	1	B.88/0371
ESP	Punto Cevallos	5	5/03/1988	2	4	2	B.88/0373
ESP	Punto Cevallos	5	5/03/1988	-	-	2	B.88/0374
ESP	Punto Cevallos	5	3/03/1988	1	1	-	R.98/0035
ESP	Punto Cevallos	5	1/10/1998	1	-	-	R.98/0037
ESP	Punto Cevallos	5	22/03/2000	8	15	16	B.00/0046
ESP	Old army road	10	4/03/1988	-	-	1	B.88/0364
ESP	Punta Suarez	10	4/06/1998	-	1	-	R.98/0036
ESP	Second caleta west of Bahía Gardner	15	16/04/1991	-	2	1	B.91/0671
ESP	Second caleta west of Bahía Gardner	15	16/04/1991	-	-	2	B.91/0676b
ESP	Second caleta west of Bahía Gardner	15	17/04/1991	2	1	1	B.91/0674b
ESP	Second caleta west of Bahía Gardner	15	18/04/1991	4	3	-	B.91/0681
ESP	Transect to top	50	3/03/1998	-	1	-	R.98/0033
ESP	Top of island	130	17/04/1991	-	-	1	B.91/0676
ESP	Bahía Manzanilla	5	23/04/1992	3	1	-	P.92/0146
ESP	Bahía Manzanilla	5	25/04/1992	-	-	1	P.92/0145
GAE	Isla Gardner near Española	2	24/03/2000	1	2	1	B.00/0059
GAE	Isla Gardner near Española	2	24/03/2000	7	24	10	B.00/0064
GAE	Isla Gardner near Española	5	23/03/2000	-	1	1	B.00/0053
GAE	Isla Gardner near Española	5	23/03/2000	9	8	14	B.00/0054
GAE	Isla Gardner near Española	5	24/09/2005	-	1	-	CAS/05-coll.
GAE	Isla Gardner near Española	5	3/10/2005	-	1	1	CAS/05-coll.

Table 4 – Other material examined of *Hogna jacquesbrel* n.sp.

Isla	Toponym	Altitude	Date	m	f	j	Sample
ICA	Transect to top along Southwestern slope	680	20/05/1991	-	1	1	B.91/0871
ICA	Transect to top along Southwestern slope	680	21/05/1991	-	6	1	B.91/0839
ICA	Transect to top along Southwestern slope	680	22/05/1991	-	9	-	B.91/0845
ICA	Transect to top along Southwestern slope	700	25/03/1998	5	23	10	B.98/0083
ICA	Transect to top along Southwestern slope	760	22/05/1991	-	2	6	B.91/0843
ICA	Inside crater Cerro Gavillan	850	22/05/1991	-	4	-	B.91/0844
ICA	Inside crater Cerro Gavillan	850	25/05/1991	1	4	-	B.91/0856
ICA	Transect to top along Southwestern slope	1000	21/05/1991	1	1	-	B.91/0867
ICA	Transect to top along Southwestern slope	1100	23/02/1986	-	1	-	B.86/0029
ICA	Transect to top along Southwestern slope	1100	23/05/1991	1	-	-	B.91/0848
ISN	12 km NW of Villamil	150	22/04/1996	1	-	-	P.96/0128
ISN	Pampa zone	700	3/03/1989	8	-	-	P.89/0123
ISN	(IX) SE slope	780	13/06/1987	-	-	2	A.87/0019
ISN	(X) SE slope	780	6/12/1986	1	-	-	A.86/0044
ISN	(X) SE slope	780	13/06/1987	-	-	1	A.87/0020
ISN	(X) SE slope	780	8/09/1988	1	-	1	A.88/0010
ISN	(X) SE slope	780	16/09/1990	-	-	1	A.90/0010
ISN	(VII) SE slope	800	23/09/1986	-	1	-	A.86/0031
ISN	(VII) SE slope	800	6/12/1986	1	1	-	A.86/0041
ISN	(VII) SE slope	800	6/02/1987	2	-	-	A.87/0007
ISN	(VII) SE slope	800	8/09/1988	1	-	-	A.88/0007
ISN	(VII) SE slope	800	16/09/1990	1	-	-	A.90/0007
ISN	(VIII) SE slope	800	23/09/1986	-	1	-	A.86/0032
ISN	(VIII) SE slope	800	6/12/1986	3	2	-	A.86/0042
ISN	(VIII) SE slope	800	6/02/1987	-	1	-	A.87/0008
ISN	(VIII) SE slope	800	23/09/1987	-	-	1	A.87/0028
ISN	(V) Cerro Chanchos	870	13/06/1987	2	-	-	A.87/0015
ISN	(VI) Cerro Chanchos	870	10/02/1986	1	1	-	A.86/0003
ISN	(VI) Cerro Chanchos	870	13/06/1987	-	1	-	A.87/0016
ISN	(VI) Cerro Chanchos	870	8/09/1988	-	-	1	A.88/0006
ISN	Volcán Chico trail	900	5/04/1996	-	3	1	P.96/0087
ISN	E crater floor	925	19/02/1986	-	1	2	B.86/0017
ISN	E crater floor	925	19/02/1986	-	2	3	B.86/0018
ISN	(III) Crater Pulpito	930	23/09/1986	1	-	-	A.86/0027
ISN	(III) Crater Pulpito	930	6/12/1986	-	-	1	A.86/0037
ISN	(III) Crater Pulpito	930	13/06/1987	1	-	-	A.87/0013
ISN	(III) Crater Pulpito	930	23/09/1987	-	1	-	A.87/0023
ISN	(IV) Crater Pulpito	930	8/09/1988	-	-	1	A.88/0004
ISN	(I) Cerro Bocanilla	1000	6/02/1987	-	4	-	A.87/0001
ISN	(I) Cerro Bocanilla	1000	13/06/1987	1	-	-	A.87/0011
ISN	(I) Cerro Bocanilla	1000	23/09/1987	1	-	-	A.87/0021
ISN	(I) Cerro Bocanilla	1000	16/09/1990	-	-	2	A.90/0001
ISN	(II) Cerro Bocanilla	1000	10/02/1986	1	1	-	A.86/0002
ISN	(II) Cerro Bocanilla	1000	6/12/1986	-	1	-	A.86/0045
ISN	(II) Cerro Bocanilla	1000	8/09/1988	-	1	-	A.88/0002
ISN	Rim between C. Chanchos and C. La Bocanilla	1000	10/02/1987	-	1	-	B.82/0138
ISN	Rim between C. Chanchos and C. La Bocanilla	1000	9/03/1989	4	-	-	P.89/0122
ISN	Rim between C. Chanchos and C. La Bocanilla	1000	6/04/1996	-	3	2	B.96/0118
ISN	Rim between C. Chanchos and C. La Bocanilla	1000	6/04/1996	4	29	8	B.96/0121
ISN	Rim between C. Chanchos and C. La Bocanilla	1000	6/04/1996	1	1	-	P.96/0088
ISN	W rim	1150	19/02/1986	1	16	-	B.86/0020

Table 5 – Other material examined of *Hogna junco* n.sp.

Isla	Toponym	Altitude	Date	m	f	j	Sample
SCB	La Toma	530	20/02/1992	-	1	1	A.92/0030
SCB	1 km W of El Junco	540	17/03/1996	-	-	3	P.96/0032
SCB	Along road to El Junco	540	2/03/1988	25	7	-	B.88/0436
SCB	Along road to El Junco	540	3/03/1988	29	5	-	B.88/0437
SCB	1 km E of El Junco	550	13/02/1989	19	-	-	P.89/0055
SCB	1 km E of El Junco	550	20/02/1989	9	-	-	P.89/0078
SCB	El Junco	570	27/03/1986	-	1	-	B.86/0164
SCB	El Junco	570	27/03/1986	5	1	-	B.86/0174
SCB	Along road to El Junco	600	3/03/1982	7	10	-	B.82/0036
SCB	Along road to El Junco	600	15/02/1989	3	-	-	P.89/0079
SCB	2 km NW of El Junco	620	21/02/1989	-	-	1	P.89/0075
SCB	El Junco	625	27/03/1986	2	10	26	B.86/0162
SCB	El Junco	625	27/03/1986	-	-	4	B.86/0171
SCB	El Junco	625	27/03/1986	1	-	-	B.86/0172
SCB	El Junco	625	6/03/1988	10	1	-	B.88/0438
SCB	El Junco	625	25/03/1996	19	15	5	B.96/0013
SCB	El Junco	625	26/03/1996	1	1	1	B.96/0019A
SCB	El Junco	625	27/03/1996	3	1	3	B.96/0025
SCB	El Junco	625	5/12/2002	9	11	29	B.02/0016
SCB	El Junco	675	27/03/1986	-	-	5	B.86/0163
SCB	El Junco	675	27/03/1986	-	1	1	B.86/0173
SCB	El Junco	675	21/02/1992	3	-	-	A.92/0033
SCB	El Junco	675	21/02/1992	1	1	-	A.92/0034
SCB	El Junco	675	21/02/1992	4	1	8	A.92/0035
SCB	El Junco	675	21/03/1992	12	-	-	A.92/0036
SCB	El Junco	675	14/03/1996	-	-	5	P.96/0016
SCB	El Junco	678	21/02/1992	-	3	-	CDRS.92/001
SCB	Cerro San Joaquin	700	20/02/1992	5	-	-	A.92/0038
SCB	Summit of Cerro San Joaquin	740	27/03/1996	5	9	5	B.96/0031

The World of Mathematics (continued) from the last page

For the purpose of this assignment, you will be using the following information:

Year	Population (in millions)	Area (in square miles)
1950	2500	57,000,000
1960	3000	57,000,000
1970	3700	57,000,000
1980	4500	57,000,000
1990	5300	57,000,000
2000	6100	57,000,000

Using the information above, answer the following questions:

1. How much did the population increase from 1950 to 2000?
2. How much did the area increase from 1950 to 2000?
3. How much did the population increase from 1960 to 2000?
4. How much did the area increase from 1960 to 2000?
5. How much did the population increase from 1970 to 2000?
6. How much did the area increase from 1970 to 2000?
7. How much did the population increase from 1980 to 2000?
8. How much did the area increase from 1980 to 2000?
9. How much did the population increase from 1990 to 2000?
10. How much did the area increase from 1990 to 2000?

Now, use the information above to answer the following questions:

11. How much did the population increase from 1950 to 1960?
12. How much did the area increase from 1950 to 1960?
13. How much did the population increase from 1960 to 1970?
14. How much did the area increase from 1960 to 1970?
15. How much did the population increase from 1970 to 1980?
16. How much did the area increase from 1970 to 1980?
17. How much did the population increase from 1980 to 1990?
18. How much did the area increase from 1980 to 1990?
19. How much did the population increase from 1990 to 2000?
20. How much did the area increase from 1990 to 2000?

Now, use the information above to answer the following questions:

21. How much did the population increase from 1950 to 1970?
22. How much did the area increase from 1950 to 1970?
23. How much did the population increase from 1960 to 1980?
24. How much did the area increase from 1960 to 1980?
25. How much did the population increase from 1970 to 1990?
26. How much did the area increase from 1970 to 1990?
27. How much did the population increase from 1980 to 2000?
28. How much did the area increase from 1980 to 2000?
29. How much did the population increase from 1990 to 2000?
30. How much did the area increase from 1990 to 2000?

Now, use the information above to answer the following questions:

31. How much did the population increase from 1950 to 1980?
32. How much did the area increase from 1950 to 1980?
33. How much did the population increase from 1960 to 1990?
34. How much did the area increase from 1960 to 1990?
35. How much did the population increase from 1970 to 2000?
36. How much did the area increase from 1970 to 2000?
37. How much did the population increase from 1980 to 2000?
38. How much did the area increase from 1980 to 2000?
39. How much did the population increase from 1990 to 2000?
40. How much did the area increase from 1990 to 2000?

Now, use the information above to answer the following questions:

41. How much did the population increase from 1950 to 1990?
42. How much did the area increase from 1950 to 1990?
43. How much did the population increase from 1960 to 2000?
44. How much did the area increase from 1960 to 2000?
45. How much did the population increase from 1970 to 2000?
46. How much did the area increase from 1970 to 2000?
47. How much did the population increase from 1980 to 2000?
48. How much did the area increase from 1980 to 2000?
49. How much did the population increase from 1990 to 2000?
50. How much did the area increase from 1990 to 2000?

Now, use the information above to answer the following questions:

51. How much did the population increase from 1950 to 2000?
52. How much did the area increase from 1950 to 2000?
53. How much did the population increase from 1960 to 2000?
54. How much did the area increase from 1960 to 2000?
55. How much did the population increase from 1970 to 2000?
56. How much did the area increase from 1970 to 2000?
57. How much did the population increase from 1980 to 2000?
58. How much did the area increase from 1980 to 2000?
59. How much did the population increase from 1990 to 2000?
60. How much did the area increase from 1990 to 2000?

Now, use the information above to answer the following questions:

61. How much did the population increase from 1950 to 2000?
62. How much did the area increase from 1950 to 2000?
63. How much did the population increase from 1960 to 2000?
64. How much did the area increase from 1960 to 2000?
65. How much did the population increase from 1970 to 2000?
66. How much did the area increase from 1970 to 2000?
67. How much did the population increase from 1980 to 2000?
68. How much did the area increase from 1980 to 2000?
69. How much did the population increase from 1990 to 2000?
70. How much did the area increase from 1990 to 2000?

Now, use the information above to answer the following questions:

71. How much did the population increase from 1950 to 2000?
72. How much did the area increase from 1950 to 2000?
73. How much did the population increase from 1960 to 2000?
74. How much did the area increase from 1960 to 2000?
75. How much did the population increase from 1970 to 2000?
76. How much did the area increase from 1970 to 2000?
77. How much did the population increase from 1980 to 2000?
78. How much did the area increase from 1980 to 2000?
79. How much did the population increase from 1990 to 2000?
80. How much did the area increase from 1990 to 2000?