

The genus *Odo* KEYSERLING, 1887 (Araneae: Zoridae) of the Galápagos islands (Ecuador)

By Léon BAERT

Abstract

Re-descriptions are given of *Odo insularis* BANKS, 1902 and *Odo galapagoensis* BANKS, 1902. Designation of ♂ Neotypes for both species. Two new species, *Odo maelfaiti* sp.n. and *Odo desenderi* sp.n., are described.

Key words: Galápagos islands, Araneae, Zoridae, *Odo*.

Introduction

Sampling campaigns for Galápagos arthropods have been regularly undertaken since 1982. An overview of these campaigns is given in BAERT *et al.* (2008).

The taxonomic position of the described species in the genus *Odo* KEYSERLING, 1887 is very uncertain. This is corroborated by ALAYÓN GARCIA (1995, 2002, 2003). Many species described by MELLO-LAITAO were assigned to different new genera, and the descriptions made were often based on juvenile material. LEHTINEN (1967) synonymised a few genera with *Odo*. This paper does not intend to make a revision of the genus but only to give an overview of the species encountered on the Galápagos islands.

Two species of *Odo* were known from the islands: *Odo galapagoensis* BANKS, 1902 and *Odo insularis* BANKS, 1902. The original type material of these species could not be located and could therefore not be examined. Being probably lost, a Neotype was designated for each species. Two new species are added.

Material and methods

The origin of the material examined comes from various sampling campaigns effectuated by myself together with J.-P. Maelfait, K. Desender and F. Hendrickx

(1982, 1986, 1988, 1991, 1996, 2000 and 2009), by S. Peck and his team (1985, 1991 and 1992), by H. Franz (1975), by D. Cavagnero, R. Schuster and M. Castro (1964), by members of the Charles Darwin Research Station (J. Lubin, S. Abedrabbo, L. Roque and H. Herrera) (Table 1).

A Wild M8 binocular was used for the examination and measurements. The epigynes were cleared with a methylsalicylat solution.

Abbreviations used in the descriptions for morphological characters

AL: Anterior lateral eyes; AM: Anterior median eyes; PL: Posterior lateral eyes; PM: Posterior median eyes; Ti: Tibia.

Abbreviations used for the names of the islands

BAL : Baltra; EDE: Eden; ESP: Española; FER: Fernandina; GAE: Gardner island near Española; IBC: Isabela, Beagle Crater; ICA: Isabela, Volcán Cerro Azul; IVA: Isabela, Volcán Alcedo; IVD: Isabela, Volcán Darwin; IVW: Isabela, Volcán Wolf; PIZ: Pinzon; RAB: Rabida; SAN: Santiago; SCB: San Cristóbal; SCZ: Santa Cruz; SEY: Seymour Norte; SFE: Santa Fé.

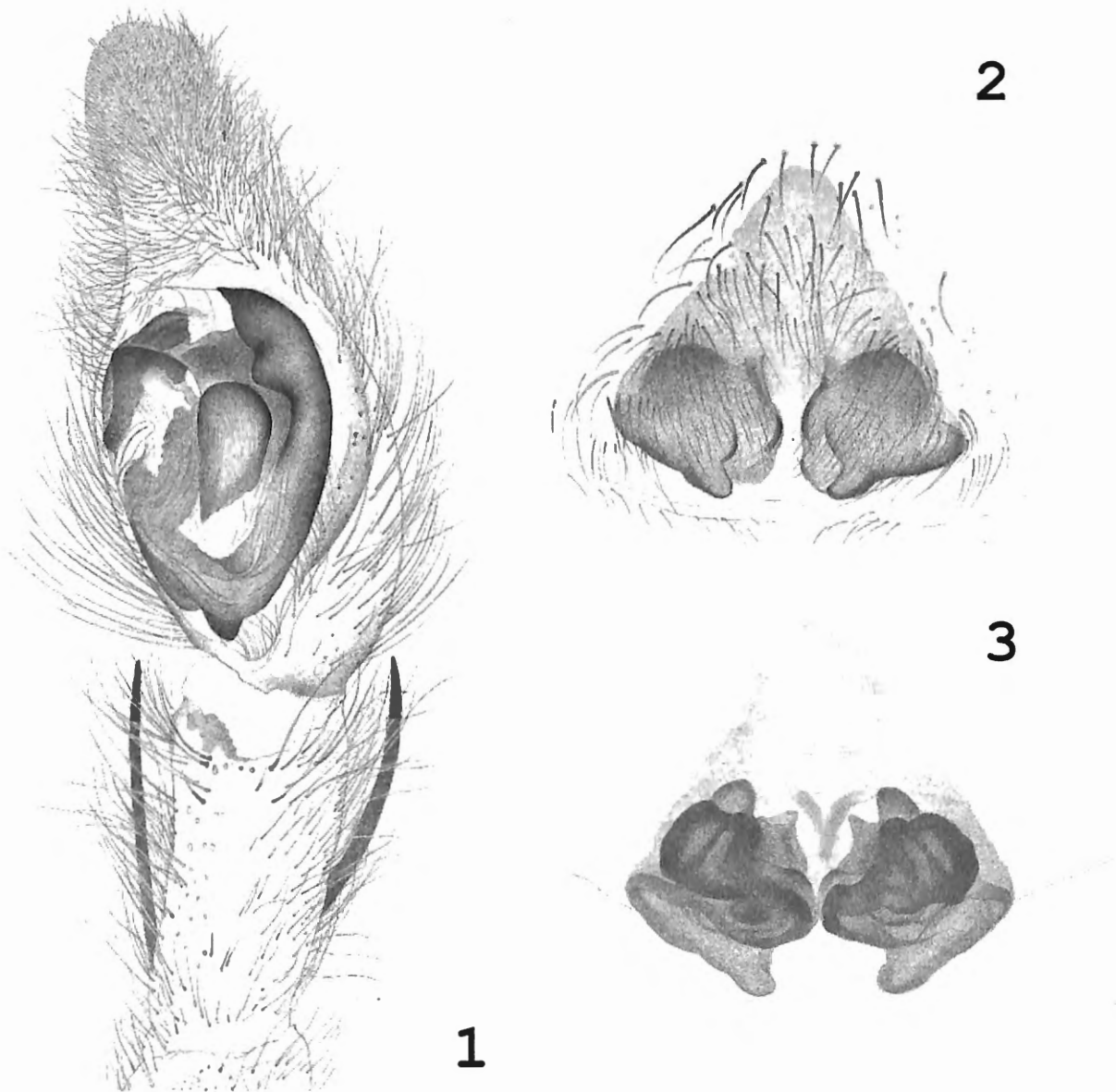
Taxonomic part

Odo insularis BANKS, 1902 (Figs 1-3)

Odo insularis BANKS, 1902: 64; Pl. 1, fig. 14; Pl. 2, fig. 12.

Odo insularis, SNODGRASS, 1902: 79.

Odo insularis, BANKS, 1924: 98.



Figs 1-3. – *Odo insularis* BANKS, 1902. 1. Male palp, ventral view. 2. Epigyne, ventral view. 3. Epigyne, dorsal view (Cymbium length: 3.37 mm).

Odo insularis, ROTH & CRAIG, 1970: 116.

Odo insularis, BAERT, 1987: 154, fig.33, 36.

TYPE MATERIAL: The original type material could not be located and could therefore not be examined (probably lost). Designation of ♂ Neotype: Isla Santa Cruz, 13 km North of Santa Rosa, alt. of 300m, *Bursera* forest, 1-30/5/1992, leg. S. Peck (P.92/0218). Deposited at the Royal Belgian Institute of Natural Sciences.

OTHER MATERIAL EXAMINED: See table 1.

DIAGNOSIS: Male pedipalp: cymbium without spines; median apophysis spoon-like; conductor membranous.

Epigynum with broad septum between lateral lobes; lateral lobes with mesially directed distal extension.

RE-DESCRIPTION (Based on ♂ Neotype and ♀ specimen from the population B.91/0664: Santa Cruz, Barranco near Charles Darwin research Station, alt. 20m, 5-13/4/1991, leg. Baert, Maelfait & Desender):

Male: Total length: 13.2 mm; Carapace: 6.8 mm long, 5.8 mm wide;

Colour: Carapace with a broad median yellow band as broad as distance between posterior median eyes (slightly broader just behind PM), covered with white hairs and with a median broken line of black hairs;

median band flanked at each side by a broad brownish band widening in the middle and narrowing backwards, blackly striated and covered with black hairs; broad marginal yellow bands; broken black margin; head region brownish covered with black hairs; clypeus flanked by a stain of white hairs. Chelicerae brown with longitudinal black stripes covered with whitish hairs. Legs yellow brown, Fe with dorsal black bands. Pedipalps yellow brown with grey cymbium. Sternum brownish yellow.

Dorsum of abdomen grey, mottled with pale spots, with faint pale central lanceolate mark; venter greyish.

Eyes: Distance between outer eye-margins: AM: 0.72 mm; AL: 1.34 mm; PM: 1.03 mm; PL: 1.79 mm; AM-PL: 1.36 mm; AM/AM-PL: 0.53; PL/AM-PL: 1.31.

Legs: Measurements: Leg I: 34.8 mm, Ti I: 7.5 mm; Leg II: 30.2 mm, Ti II: 7.8 mm; Leg III: 28.4 mm, Ti III: 6.9 mm; Leg IV: 37.03 mm, Ti IV: 8.3 mm; Pedipalp: 9.38 mm.

Pedipalp: Fe with 4 normal spines: d2p1r1. Cymbium without spines (length: 3.37 mm). Median apophysis broad, spoon-like, with a median position in the centre of the bulbus. Tegulum oblong, situated along prolateral side of bulbus and hiding broad apical embolus. Embolus directed mesally. Tegular apophysis arising at distal end of tegulum running from back to front along whole retro-lateral rim of bulbus, ending in mesally orientated membranous conductor. Conductor covering tip of embolus.

Female: Total length: 15.2 mm; Carapace: 6.4 mm long, 5.4 wide.

Colour: As male but slightly darker. Chelicerae chestnut brown with lighter tips. Legs darker brown, Fe and Ti with black bands. Sternum orange. Venter of abdomen creamy, mottled with grey spots.

Eyes: Distance between outer eye-margins: AM: 0.76 mm; AL: 1.46 mm; PM: 1.13 mm; PL: 2.0 mm; AM-PL: 1.28 mm; AM/AM-PL: 0.59; PL/AM-PL: 1.56.

Legs: Measurements: Leg I: 23.7 mm, Ti I: 5.9 mm; Leg II: 22.7 mm, Ti II: 5.6 mm; Leg III: 22.7 mm, Ti III: 5.4 mm; Leg IV: 28.9 mm, Ti IV: 6.8 mm.

Epigynum: Width: 1.24 mm. Septum between lateral lobes broad, their edges converging near posterior margin. Lateral lobes with distal obtuse extensions directed mesially.

DISTRIBUTION: BAL, EDE, FER, IBC, ICA, IVA, IVD, IVW, PIZ, RAB, SAN, SCB, SCZ, SEY, SFE.

ALTITUDINAL RANGE: BAL (2 m), FER (170-430 m), IBC (5-50 m), ICA (1200-1530 m), IVA (25; 800-1060 m), IVD (100 m), IVW (5; 1200-1425 m), PIZ (10-460 m), RAB (2-250 m), SAN (2-100; 580 m), SCB (coast), SCZ (S: 5-70 m; N: 150-300 m), SEY (10 m), SFE (2-5 m).

ECOLOGICAL RANGE: Littoral zone, lower Arid zone, *Bursera* forest; summit Arid zones of Fernandina, Cerro Azul, Volcán Alcedo and Volcán Wolf.

Odo galapagoensis BANKS, 1902
(Figs 4-6)

Odo galapagoensis BANKS, 1902: 64; Pl. 2, fig. 2.

Odo galapagoensis, BANKS, 1930: 276; Pl. 1, fig. 5.

Odo galapagoensis, ROTH & CRAIG, 1970: 116.

Odo galapagoensis, LUBIN, 1985: 492.

Odo galapagoensis, BAERT, 1987: 153, fig.37, 38.

TYPE MATERIAL: The original type material could not be located and could therefore not be examined (probably lost). Designation of ♂ Neotype: Isla Santa Cruz, Academy bay, Charles Darwin Research Station, 25/1/1964, leg. D.Q. Cavagnero & R.O. Schuster (Californian Academy of Sciences collection: CASENT 9033072).

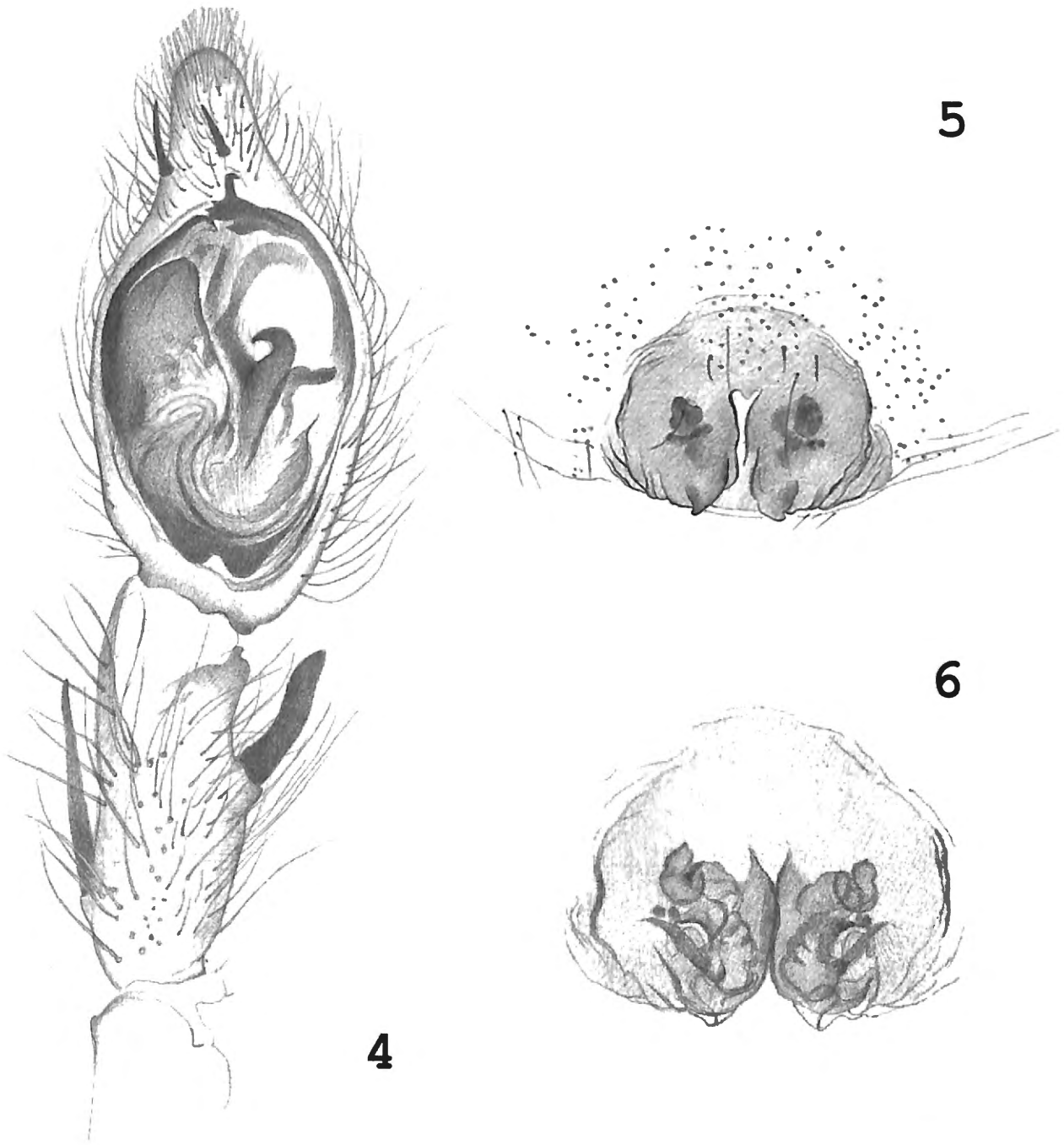
OTHER MATERIAL EXAMINED: Isla Pinzon (Duncan), 3/8/1964, leg. M. Castro (Californian Academy of Sciences collection: CASENT 9033075); 2♀♀, 4 immature.

DIAGNOSIS: Male pedipalp: Fe with 3 normal spines and a retro-lateral hooked spur preceded by a small blunt marginal extension; cymbium without ventral spines; median apophysis long and slender with hooked tip and narrowly flattened; tip of tegular apophysis grooved. Epigynum: narrow septum between lateral lobes; distal extensions with pointed tips directed outwards.

RE-DESCRIPTION (Based on ♂ Neotype and ♀ specimen from Isla Pinzon (Duncan), 3/8/1964, leg. M. Castro (Californian Academy of Sciences collection: CASENT 9033075):

Male: Total length: 7.8 mm; Carapace: 3.8 mm long, 2.8 mm wide;

Colour: Same colour pattern as in *Odo insularis*, but much clearer and with very sparse hair cover; chelicerae yellow brown; legs yellow, Fe with faint black dorsal bands; pedipalp yellow with yellow brown cymbium;



Figs 4-6. – *Odo galapagoensis* BANKS, 1902. 4. Male palp, ventral view. 5. Epigyne, ventral view. 6. Epigyne, dorsal view (Cymbium length: 1.75 mm).

sternum yellow with orange tinge along margins; abdomen grey with whitish venter.

Eyes: Distance between outer eye-margins: AM: 0.43 mm; AL: 0.85 mm; PM: 0.58 mm; PL: 1.02 mm; AM-PL: 0.68 mm; AM/AM-PL: 0.62; PL/AM-PL: 1.51.

Legs: Measurements: Leg I: 18.2 mm, Ti I: 4.9 mm; Leg II: 16.5 mm, Ti II: 4.1 mm; Leg III: 14.8 mm, Ti III: 3.4 mm; Leg IV: 18.7 mm, Ti IV: 4.4 mm; Pedipalp:

5.40 mm.

Pedipalp: Fe with 3 normal spines: d2p1 and retro-lateral hooked spur preceded by a small blunt marginal extension. Cymbium without ventral short spines (length: 1.75 mm). Median apophysis, tegulum, tegular apophysis and embolus have the same position as in former species. Median apophysis long and slender with hooked tip and narrowly flattened flanks (eagle like silhouette). Embolus with very broad base, tapered

into short broad curved tip. Tip of tegular apophysis grooved (3 teeth-like grooves at tip and 1 truncated horn-like apical extension).

Female: Total length: 11.8 mm; Carapace: 4.5 mm long, 4.1 wide.

Colour: As male but slightly darker; sternum more orange tinted; dorsum of abdomen creamy, mottled with a few grey spots, venter creamy.

Eyes: Distance between outer eye-margins: AM: 0.58 mm; AL: 0.85 mm; PM: 0.82 mm; PL: 1.43 mm; AM-PL: 0.93 mm; AM/AM-PL: 0.63; PL/AM-PL: 1.54.

Legs: Measurements: Leg I: 16.5 mm, Ti I: 4.3 mm; Leg II: 16.2 mm, Ti II: 4.1 mm; Leg III: 16.1 mm, Ti III: 3.9 mm; Leg IV: 20.0 mm, Ti IV: 4.7 mm.

Epigynum: Width: 0.97 mm. Septum between lateral lobes narrow with their edges running parallel. Distal extensions with pointed tips directed outwards.

DISTRIBUTION IN THE ARCHIPELAGO: ESP (?), FLO, GEN, PIZ, SAN (?), SCB, SCZ.

ECOLOGICAL RANGE: Lower Arid zone.

DISCUSSION: The only available data (see Table 1) for this species comes from the literature (BANKS, 1902, 1930; ROTH & CRAIG, 1970) and from the few specimens (2 males and 1 female) deposited in the collections of the Californian Academy of Sciences (CAS). These were caught in 1964 on Isla Santa Cruz by D. Cavagnero & R. Schuster and on Pinzon by M. Castro. Lubin (1985) reports in her study on the impact of the 1982-83 El Niño event upon the little fire ant *Wasmannia auropunctata*, that *O. galapagoensis* was abundant at "Los Guyabillos" (Isla Santiago, 300m of altitude) in 1982 but rare in 1983 (before and after the 1982-1983 El Niño event). This material could not be found. After that date and despite important sampling efforts, the species was not collected again. The specimens caught on Española belong without doubt to *Odo maelfaiti* sp. n.

Odo maelfaiti sp.n.

(Figs 7-9, 13)

TYPE MATERIAL: Holotype ♂: Isla Española, transect to top of island at an altitude of 100m (B.91/0732), 17-27/4/1991, pitfall, leg. Baert, Maelfait & Desender. Allotype ♀: Isla Española, second western Bahía before Bahía Gardner, at an altitude of 15 m (B.91/0736), 16-27/4/1991, pitfall, pitfall, leg. Baert, Maelfait &

Desender. Deposited at the Royal Belgian Institute of Natural Sciences.

OTHER MATERIAL EXAMINED: See Table 1.

DIAGNOSIS: Male pedipalp: Fe with 3 normal spines and a retro-lateral hooked spur; cymbium with 2 ventral spines; median apophysis long and slender with hooked tip with at base wing like extension; tip of tegular apophysis harpoon shaped with large flat apical horn-like extension. Epigynum: septum between lateral lobes twice as long as broad; lateral lobes without distal extension.

DESCRIPTION:

Male Holotype: Total length: 7.94 mm; Carapace: 4.13 mm long, 3.57 mm wide;

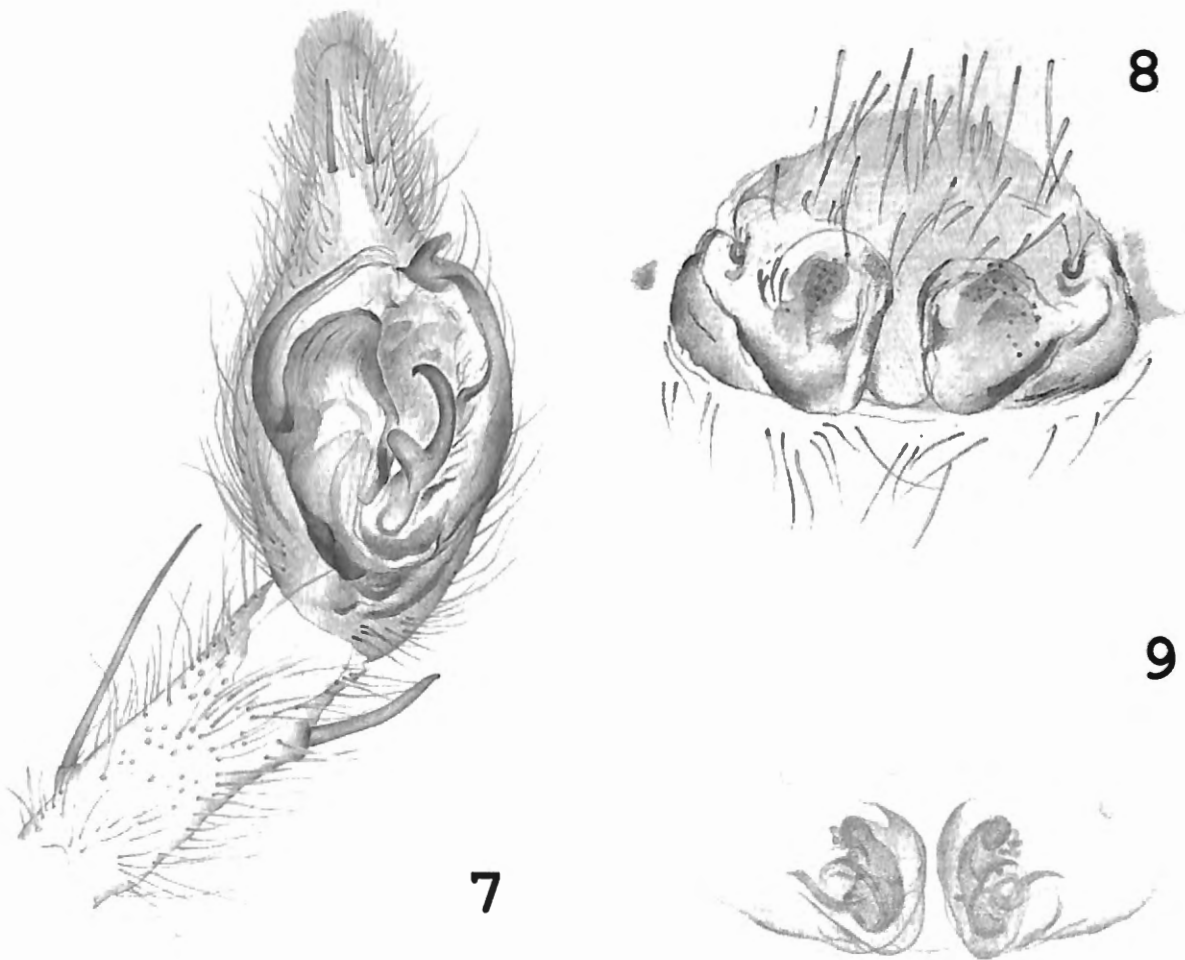
Colour: Carapace with same alternating pattern of yellow and black bands as in *O. galapagoensis* and *insularis*, but area around fovea strongly enlarged. Carapace with a broad median yellow band as broad as distance between posterior median eyes, strongly broadening around black suffused fovea (star shaped with blunt tips), and sparsely covered with short black hairs; this median band, flanked at each side by broad blackish striated band covered with black hairs; broad yellow marginal bands; continuously sinuous black margin; clypeus suffused with black; region between carapace rim and AME yellow. Chelicerae yellow, longitudinal stripes suffused with black. Legs yellow; Fe and Ti with two dorsal black bands; distal part of Pa yellow, proximal part black. Pedipalps yellow. Sternum and coxae yellowish orange.

Dorsum of abdomen black-grey, irregularly mottled with longitudinal pale spots; venter creamy. Spinnerets yellow slightly tinted orange.

Eyes: Distance between outer eye-margins: AM: 0.41 mm; AL: 0.78 mm; PM: 0.56 mm; PL: 0.93 mm; AM-PL: 0.64 mm; AM/AM-PL: 0.64; PL/AM-PL: 1.45.

Legs: Measurements: Leg I: 20.4 mm, Ti I: 5 mm; Leg II: 19.7 mm, Ti II: 4.8 mm; Leg III: 18.5 mm, Ti III: 4.3 mm; Leg IV: 21.4 mm, Ti IV: 5.2 mm; Pedipalp: 6.59 mm.

Pedipalp: Fe with 3 normal spines: d2p1 and a retro-lateral hooked spur. Cymbium with 2 ventral spines (length: 2.21 mm). Median apophysis, tegulum, tegular apophysis and embolus at same position as in former species. Median apophysis long and slender with hooked tip, at base with wing like extensions (flamingo like silhouette with open wings). Embolus with very broad base, tapered into slender curved tip. Tip of



Figs 7-9. – *Odo maelfaiti* n.sp. 7. Male palp, ventral view. 8. Epigyne, ventral view. 9. Epigyne, dorsal view (Cymbium length: 2.21 mm).

tegular apophysis triangular, harpoon shaped with large flat horn-like apical extension. Inner edge of tegular apophysis smooth.

Female Allotype: Total length: 15.03 mm; Carapace: 4.37 mm long, 3.65 wide.

Colour: As in male but more orange tinted; star-shaped yellow area around fovea with sharp tips. Chelicerae light brown with longitudinal striae suffused with black. Legs as in male, Mt and Ta light brown.

Pedipalps yellow with black stains. Sternum as in male but more orange tinted. Abdomen as in male.

Eyes: Distance between outer eye-margins: AM: 0.58 mm; AL: 1.11 mm; PM: 0.80 mm; PL: 1.46 mm; AM-PL: 0.89 mm; AM/AM-PL: 0.65; PL/AM-PL: 1.64.

Legs: Measurements: Leg I: 16 mm, Ti I: 4.1 mm; Leg II: 16 mm, Ti II: 4.1 mm; Leg III: 15.5 mm, Ti III:

3.8 mm; Leg IV: 19.3 mm, Ti IV: 4.1 mm.

Epigynum: Width: 1.20 mm. Septum between lateral lobes twice as long as broad. Lateral lobes oval-shaped without distal extension.

DISTRIBUTION IN THE ARCHIPELAGO: ESP, GAE.

ALTITUDINAL RANGE: From coast to summit of island (130 m).

ECOLOGICAL RANGE: Low Arid zone.

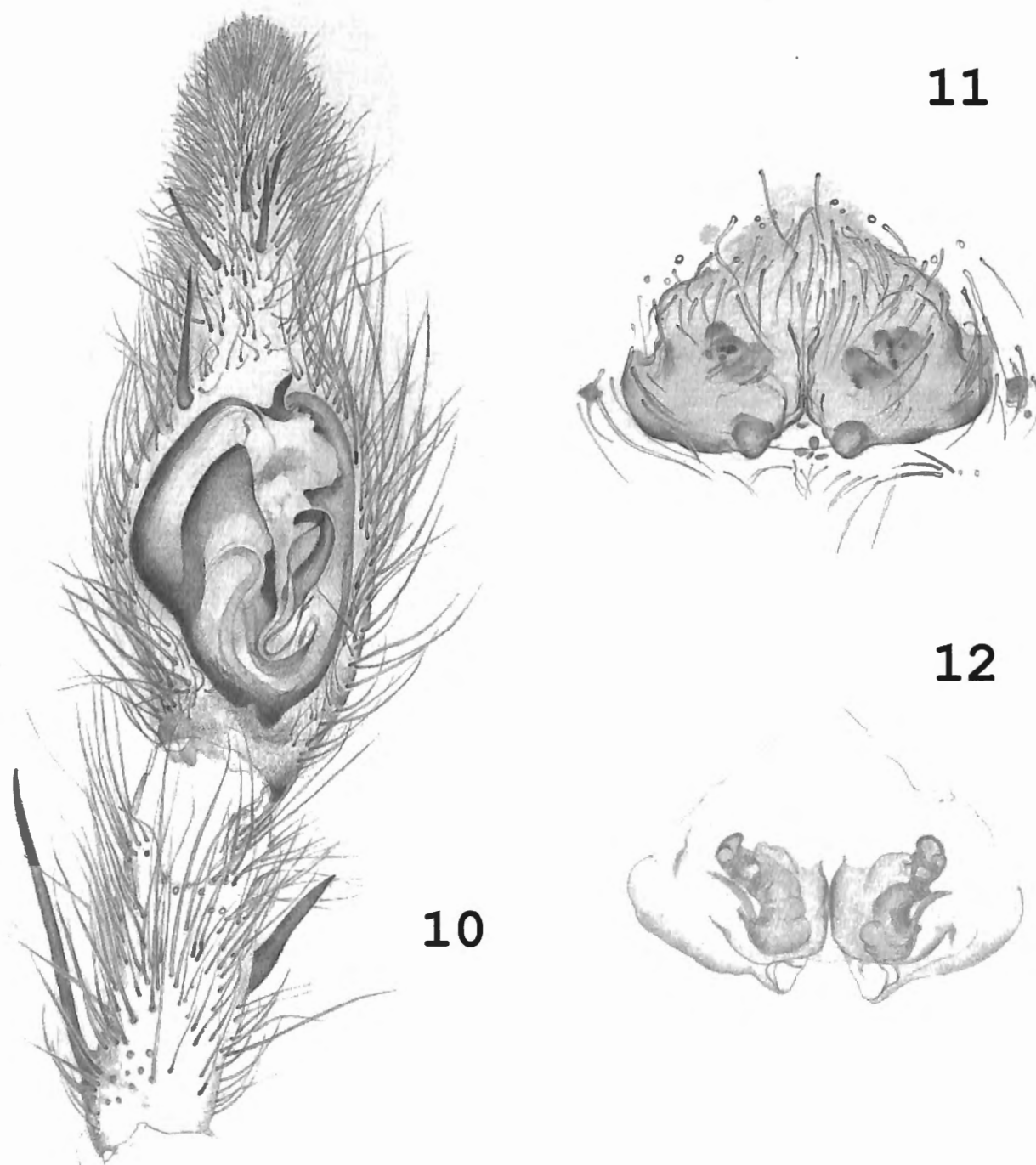
ETYMOLOGY: This species is named in honor of Jean-Pierre Maelfait, who started together with the author the study of the spiders of Galápagos in 1982 and who participated since at each sampling campaign of the Belgian team. He died unexpectedly on February 6th, 2009.

Odo desenderi sp.n.
(Figs 10-12)

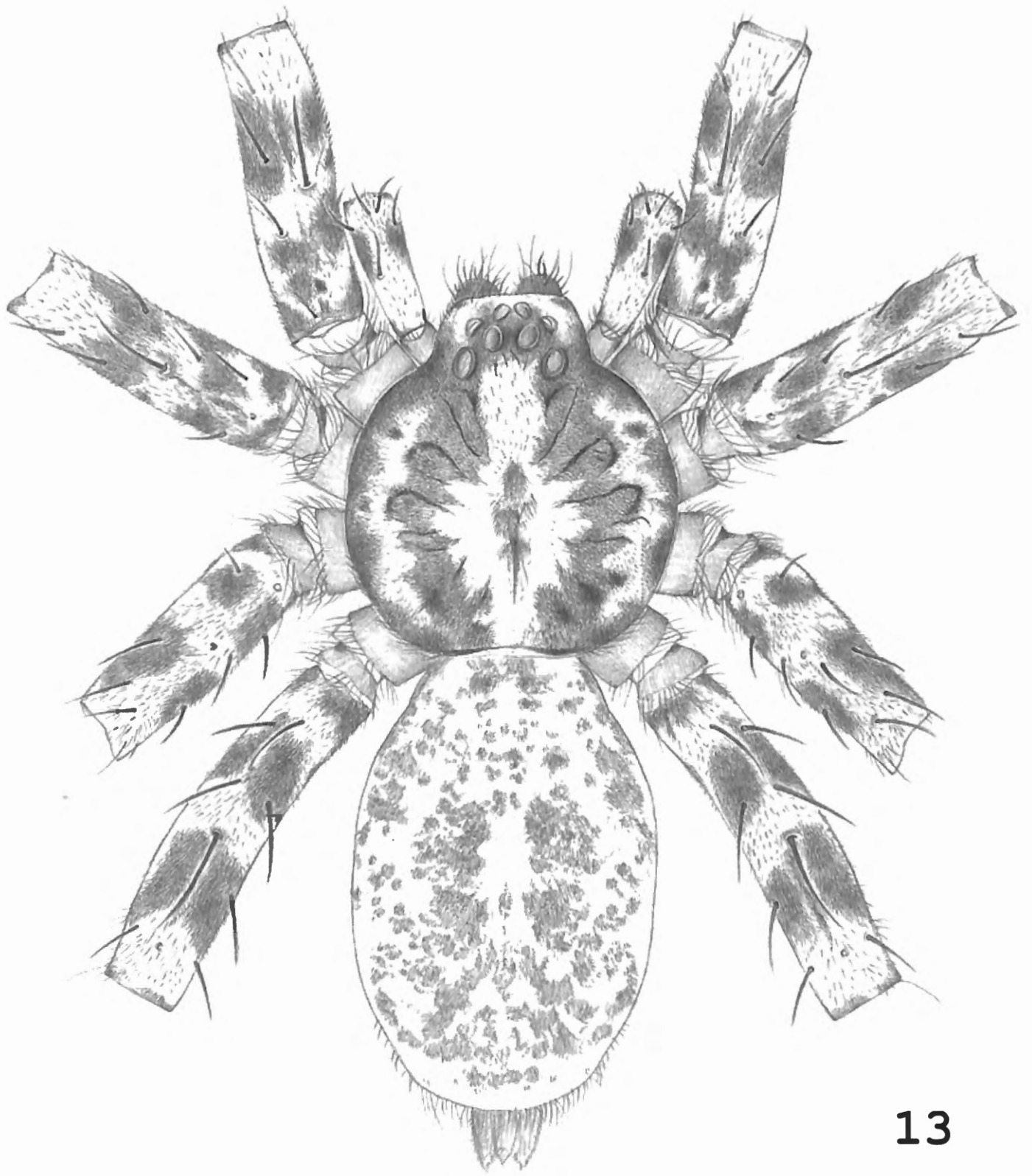
TYPE MATERIAL: Holotype ♂: Isla Santa Fé, Dry arid zone at an altitude of 100 m (P.96/0005), 11-24/3/1996, leg. S. Peck. Allotype ♀: Isla Santa Fé, Lagoon (B.02/0019), 6/12/2002, leg. Baert, Maelfait & Hendrickx. Deposited at the Royal Belgian Institute of Natural Sciences.

OTHER MATERIAL EXAMINED: Paratypes: 1 ♀: Isla Santa Fé, Dry arid zone at an altitude of 100 m (P.96/0005), 11-24/3/1996, leg. S. Peck. 1 ♂: Isla Santa Fé, March 1986, leg. Baert, Maelfait & Desender.

DIAGNOSIS: Male pedipalp: Fe with 3 normal pro-lateral spines and 1 short retro-lateral spur; cymbium with 5 ventral spines; median apophysis long and slender



Figs 10-12. – *Odo desenderi* n.sp. 10. Male palp, ventral view. 11. Epigyne, ventral view. 12. Epigyne, dorsal view (Cymbium length: 2.75 mm).



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Fig. 13. – *Odo malfaiti* n.sp., habitus.

with hooked tip and broadly winged extensions; tip of tegular apophysis with large flat horn-like apical extension. Epigynum: no septum between lateral lobes; lateral lobes with small, slightly swollen, rounded distal extension.

DESCRIPTION:

Male Holotype: Total length: 10.63 mm; Carapace: 5.48 mm long, 4.60 mm wide;

Colour: Carapace with same alternating pattern of yellow and dark bands as in former species, but area around fovea oval-shaped. Carapace covered with very short hairs. Chelicerae brown, somewhat suffused with black. Legs yellow brown; Fe with very faint black bands. Pedipalps yellow brown with brown cymbium. Sternum and coxae yellow brown.

Dorsum of abdomen pale mottled with few grey spots; sides more densely mottled with grey spots; venter pale.

Eyes: Distance between outer eye-margins: AM: 0.62 mm; AL: 1.18 mm; PM: 0.82 mm; PL: 1.50 mm; AM-PL: 0.99 mm; AM/AM-PL: 0.62; PL/AM-PL: 1.52.

Legs: Measurements: Leg I: 30.9 mm, Ti I: 8.3 mm; Leg II: 30.1 mm, Ti II: 7.6 mm; Leg III: 28.2 mm, Ti III: 7.1 mm; Leg IV: 32.4 mm, Ti IV: 7.9 mm; Pedipalp: 7.94 mm.

Pedipalp: Fe with 3 normal pro-lateral spines and 1 short retro-lateral spur. Cymbium with 5 ventral spines (length: 2.75 mm). Median apophysis, tegulum, tegular apophysis and embolus have the same position as in former species. Median apophysis long, slender, with hooked tip, broadly winged (eagle like silhouette with half open wings). Embolus with very broad base, tapered into broad curved tip. Tip of tegular apophysis with large flat apical horn-like extension. Inner edge of tegular apophysis irregularly notched.

Female Allotype: Total length: 13.25 mm; Carapace: 5.87 mm long, 4.76 wide.

Colour: As in male but much darker; fovea surrounded with black. Chelicerae chestnut brown. Legs: Fe and Ti yellow with well marked black spots; distal part of Pa yellow, proximal part black. Pedipalps yellow brown, Fe suffused with black. Sternum and coxae yellow brown. Dorsum of abdomen creamy with grey pattern; venter creamy mottled with few small grey spots.

Eyes: Distance between outer eye-margins: AM: 0.66 mm; AL: 1.32 mm; PM: 0.97 mm; PL: 1.71 mm; AM-PL: 1.11 mm; AM/AM-PL: 0.59; PL/AM-PL: 1.54.

Legs: Measurements: Leg I: 20.7 mm, Ti I: 5.3 mm; Leg II: 20.2 mm, Ti II: 5.1 mm; Leg III: 20.2 mm, Ti III: 4.9 mm; Leg IV: 25 mm, Ti IV: 5.8 mm.

Epigynum: Width: 1.17 mm. No septum between lateral lobes, their edges touching each other. Lateral lobes with small, slightly swollen, rounded distal extension.

DISTRIBUTION IN THE ARCHIPELAGO: SFE.

ALTITUDINAL RANGE: At 100 m.

ECOLOGICAL RANGE: Lower Arid zone.

ETYMOLOGY: This species is named in honor of Konjev Desender, renamed carabidologist, who participated since 1986 at each sampling campaign of the Belgian team. He died after a long period of illness on September 9th, 2008.

Discussion

According to the male palp (the shape of the median apophysis, the shape of the retrolateral tegular apophysis and the presence of ventral cymbial spines) *O. galapagoensis*, *O. maelfaiti* sp.n. and *O. desenderi* sp.n. belong to the same monophyletic group. On the contrary, *O. insularis* with its spoonlike shape of the median apophysis, the blunt retro-lateral tegular apophysis and the complete absence of ventral cymbial spines, certainly belongs to another group. Moreover, *O. insularis* is the most common species, widespread over most islands of the archipelago and with a broad ecological range within the lower arid zone from the littoral zone up to the higher *Bursera* forest (max. altitude 400 m) and in the higher summit arid zone between 800 and 1530 m of altitude, whilst *O. galapagoensis*, *O. maelfaiti* sp.n. and *O. desenderi* sp.n. have a very restricted occurrence.

According to the male palpal structures, we can state that the *galapagoensis* group [ALAYÓN GARCIA (1995, 2002, 2003) erroneously cited *insularis*] seems to be very close to the Caribbean Insular species *O. abudi* ALAYÓN, 2002 from Dominican Republic, *O. ariguanobo* ALAYÓN, 1995 from Cuba and *O. agilis* SIMON, 1897 from Santo Thomas, corroborate the Caribbean-Antillean origin. The fact that there was a broad connection between the Caribbean region and the eastern Pacific area from 48 my until 3 my ago (WOODRING, 1959; JONES & HASSON, 1965, BAERT & JOCQUÉ, 1993) makes this scenario acceptable.

Acknowledgements

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Table 1 – Material examined.

Species	Isl.	Toponym	Alt. (m)	Sample / Lit.	Date	MM	FF	JUV
<i>Odo maelfaiti</i>	ESP	Caleta W of Bahía Gardner	5	B.91/0739	16-27/4/1991	-	-	2
<i>Odo maelfaiti</i>	ESP	Caleta W of Bahía Gardner	5	B.91/0740	16-27/4/1991	1	1	1
<i>Odo maelfaiti</i>	ESP	Caleta W of Bahía Gardner	5	B.91/0741	16-27/4/1991	1	-	1
<i>Odo maelfaiti</i>	ESP	Bahía Gardner, Playa Blanca	5	B.91/0742	27/4/1991	-	-	1
<i>Odo maelfaiti</i>	ESP	Bahía Manzanilla	5	P.85/0182	5-10/6/1985	3	-	1
<i>Odo maelfaiti</i>	ESP	Bahía Manzanilla	5	P.92/0145	25/4-2/5/1992	1	2	1
<i>Odo maelfaiti</i>	ESP	Bahía Manzanilla	5	P.92/0146	23/4-2/5/1992	1	2	-
<i>Odo maelfaiti</i>	ESP	Bahía Manzanilla	10	P.85/0184	6-10/6/1985	1	1	1
<i>Odo maelfaiti</i>	ESP	Caleta W of Bahía Gardner	15	B.91/0671	16/4/1991	1	1	1
<i>Odo maelfaiti</i>	ESP	Caleta W of Bahía Gardner	15	B.91/0676b	17/4/1991	-	1	2
<i>Odo maelfaiti</i>	ESP	Caleta W of Bahía Gardner	15	B.91/0677	16-18/4/1991	3	-	-
<i>Odo maelfaiti</i>	ESP	Caleta W of Bahía Gardner	15	B.91/0680	18/4/1991	-	-	1
<i>Odo maelfaiti</i>	ESP	Caleta W of Bahía Gardner	15	B.91/0736	16-27/4/1991	-	1	-
<i>Odo maelfaiti</i>	ESP	Transect to Top	50	B.91/0674	17/4/1991	-	-	1
<i>Odo maelfaiti</i>	ESP	Transect to Top	50	B.91/0731	17-27/4/1991	1	1	-
<i>Odo maelfaiti</i>	ESP	Transect to Top	100	B.91/0732	17-27/4/1991	3	1	1
<i>Odo maelfaiti</i>	ESP	Top of Island	130	B.91/0733	17-27/4/1991	-	1	1
<i>Odo maelfaiti</i>	ESP	Playa Manzanilla	10	B.09/0015	21/3/2009	-	-	5
<i>Odo maelfaiti</i>	ESP	Playa Manzanilla	10	B.09/0016	21-22/3/2009	-	-	1
<i>Odo maelfaiti</i>	ESP	Bahía Gardner	2	B.09/0022	22/3/2009	-	-	1
<i>Odo maelfaiti</i>	GAE	Gardner Island near Española		CAS	Nov 1905	-	2	-
<i>Odo galapagoensis</i>	ESP			Banks (1902)	May	-	-	-
<i>Odo galapagoensis</i>	FLO			Banks (1930)	September	-	-	-
<i>Odo galapagoensis</i>	FLO			Banks (1930)	November	-	-	-
<i>Odo galapagoensis</i>	GEN			Banks (1902)	June	-	-	-
<i>Odo galapagoensis</i>	PIZ			CAS	3/8/1964	-	2	4
<i>Odo galapagoensis</i>	SCB			Banks (1902)	May	-	-	-
<i>Odo galapagoensis</i>	SCZ	Academy Bay		CAS	25/1/1964	1	-	-
<i>Odo galapagoensis</i> (?)	SAN	Los Guyabilos	300	Lubin (1985)		-	-	-
<i>Odo insularis</i>	BAL	Littoral Zone	2	A.92/0039	1-14/7/1992	1	2	5
<i>Odo insularis</i>	EDE			Banks (1924)	April	-	-	-
<i>Odo insularis</i>	FER	Cerro Verde	170	B.91/0781	9/5/1991	-	-	1
<i>Odo insularis</i>	FER	Cerro Verde	170	B.91/0795	4-10/5/1991	-	-	1
<i>Odo insularis</i>	FER	Encañada towards Top	400	B.91/0769	6/5/1991	1	-	-
<i>Odo insularis</i>	FER	Encañada towards Top	400	B.91/0793	4-9/5/1991	1	-	-
<i>Odo insularis</i>	FER	Encañada towards Top	430	B.91/0791	4-9/5/1991	2	-	2
<i>Odo insularis</i>	FER		1000	B.91/0772	7/5/1991	-	-	5
<i>Odo insularis</i>	FER		1000	B.91/0788	5-9/5/1991	1	-	-
<i>Odo insularis</i>	FER		1200	B.91/0774	8/5/1991	-	1	5
<i>Odo insularis</i>	FER		1200	B.91/0787	5-9/5/1991	3	-	-
<i>Odo insularis</i>	FER	Near crater rim	1300	B.91/0779	8/5/1991	-	1	2
<i>Odo insularis</i>	FER	NE of fumarole	1320	B.91/0778	8/5/1991	-	-	1
<i>Odo insularis</i>	FER	Near fumarole at crater rim	1360	B.91/0777	8/5/1991	-	-	2
<i>Odo insularis</i>	IBC	E border of Beagle crater	8	B.88/0477	25/3/1988	-	1	1
<i>Odo insularis</i>	IBC	W border of Beagle crater	50	B.82/0029	22-25/2/1982	-	2	2
<i>Odo insularis</i>	ICA	Fern-sedge	1200	B.91/0865	21-25/5/1991	-	-	2
<i>Odo insularis</i>	ICA	Xerophytic vegetation	1300	B.91/0849	24/5/1991	-	-	2
<i>Odo insularis</i>	ICA	Xerophytic grassy vegetation	1400	B.91/0832	21/5/1991	-	-	3
<i>Odo insularis</i>	ICA	Xerophytic grassy vegetation	1400	B.91/0855	21-24/5/1991	1	-	3
<i>Odo insularis</i>	ICA	Xerophytic grassy vegetation	1480	B.91/0852	24/5/1991	-	-	10
<i>Odo insularis</i>	ICA	Inner crater	1510	B.91/0830	21/5/1991	-	-	2
<i>Odo insularis</i>	ICA	Xerophytic steppe scrub	1530	B.91/0854	21-24/5/1991	-	-	1
<i>Odo insularis</i>	ICA	Xerophytic steppe scrub	1600	B.09/0061	7/4/2009	-	-	1
<i>Odo insularis</i>	ICA	Xerophytic steppe scrub	1470	B.09/0062	7/4/2009	-	-	1

Species	Isl.	Toponym	Alt. (m)	Sample / Lit.	Date	MM	FF	JUV
<i>Odo insularis</i>	IVA	NE slope, Dry arid zone	2	B.91/0898	20-26/6/1991	-	-	2
<i>Odo insularis</i>	IVA	NE slope, Dry arid zone	25	B.91/0899	20-26/6/1991	-	1	1
<i>Odo insularis</i>	IVA	NE slope, Dry arid zone	25	B.96/0104	2-4/4/1996	1	1	2
<i>Odo insularis</i>	IVA	NE slope, Dry arid zone	25	P.91/0241	20-26/6/1991	-	1	1
<i>Odo insularis</i>	IVA	<i>Pisonia</i> forest	800	B.82/0110	21/4/1982	-	3	3
<i>Odo insularis</i>	IVA		900	B.96/0091	2-4/4/1996	1	-	-
<i>Odo insularis</i>	IVA	NE crater rim	1000	P.91/0245	21-25/6/1991	4	-	-
<i>Odo insularis</i>	IVA		1000	R.97/0001	Feb 1997	-	2	-
<i>Odo insularis</i>	IVA	SE crater rim	1025	A.91/0009	2/8-2/9/1991	5	1	1
<i>Odo insularis</i>	IVA	SE crater rim	1060	B.91/0900	24/6/1991	-	-	1
<i>Odo insularis</i>	IVA	SE crater rim	1060	B.91/0905	25/6/1991	-	1	-
<i>Odo insularis</i>	IVA	Playa (new trail)	10	HH.09/01	8-9/3/2009	-	-	1
<i>Odo insularis</i>	IVD	Tagus cove	100	P.92/0182	14-22/5/1992	1	-	1
<i>Odo insularis</i>	IVD	Tagus cove	100	P.92/0185	14-22/5/1992	-	3	-
<i>Odo insularis</i>	IVD	Tagus cove	100	Banks (1902)	February	-	-	-
<i>Odo insularis</i>	IVD	Tagus cove	100	Banks (1902)	March	-	-	-
<i>Odo insularis</i>	IVW	Sandy beach W of island	4	B.88/0470	22/3/1988	-	1	-
<i>Odo insularis</i>	IVW	Upper Dry arid zone	1200	P.96/0195	18-22/5/1996	-	1	-
<i>Odo insularis</i>	IVW	Upper Dry arid zone	1425	B.88/0461	22/3/1988	-	1	1
<i>Odo insularis</i>	PIZ	Playa Escondida	5	B.00/0118	1/4/2000	-	3	6
<i>Odo insularis</i>	PIZ	East of main crater	250	P.92/0239	19-27/6/1992	-	1	-
<i>Odo insularis</i>	PIZ	Upper caldera		CAS	Feb 1964	-	1	-
<i>Odo insularis</i>	RAB	Lagoon	2	B.86/0078	9/3/1986	-	2	9
<i>Odo insularis</i>	RAB	NW coast	40	P.91/0179	2-11/6/1991	1	1	-
<i>Odo insularis</i>	RAB	NW coast, Palo Santo forest	250	P.91/0184	2-11/6/1991	-	1	-
<i>Odo insularis</i>	SAN	Playa Espumila	2	B.88/0445	19/3/1988	-	2	1
<i>Odo insularis</i>	SAN	Puerto Egas	10	B.82/0030	26/2/1982	-	1	2
<i>Odo insularis</i>	SAN	Puerto Egas	10	B.82/0109	20/4/1982	-	1	3
<i>Odo insularis</i>	SAN	Mina de Sal, crater floor	10	B.86/0076	8/3/1986	-	1	-
<i>Odo insularis</i>	SAN	Puerto Egas	10	F.75/SA313	11/6/1975	-	1	-
<i>Odo insularis</i>	SAN	Playa Espumila	10	P.91/0186	3-9/6/1991	-	2	-
<i>Odo insularis</i>	SAN	Playa Espumila	10	P.92/0101	4-13/4/1992	3	-	-
<i>Odo insularis</i>	SAN	NW slope at Bucanero Cove	30	B.82/0089	6/4/1982	-	2	10
<i>Odo insularis</i>	SAN	NE slope, Palo Santo forest	100	B.86/0049	4/3/1986	-	2	5
<i>Odo insularis</i>	SAN	NW slope	600	CAS	May 1964	-	2	-
<i>Odo insularis</i>	SAN	Bucanero cove	30	B.09/0037	28/3/2009	-	2	4
<i>Odo insularis</i>	SAN	Palo Santo forest	170	B.09/0038	29/3/2009	-	-	1
<i>Odo insularis</i>	SAN	Palo Santo forest	240	B.09/0039	29/3/2009	1	-	-
<i>Odo insularis</i>	SAN	Palo Santo forest	300	B.09/0040	29/3/2009	-	-	6
<i>Odo insularis</i>	SAN	Scalesia quadrat	560	B.09/0042	29/3/2009	-	-	2
<i>Odo insularis</i>	SAN	Scalesia quadrat	560	B.09/0043	29/3/2009	-	-	1
<i>Odo insularis</i>	SAN	Palo Santo forest	300	B.09/0052	29/3-1/4/2009	1	-	-
<i>Odo insularis</i>	SCB	Punta Bassa	5	B.09/0027	23-24/3/2009	-	1	-
<i>Odo insularis</i>	SCZ	Bahía Tortuga	2	A.91/D08	7/9-13/10/1991	-	1	-
<i>Odo insularis</i>	SCZ	Bahía Tortuga	2	A.91/D16	7/9-7/10/1992	-	-	1
<i>Odo insularis</i>	SCZ	Bahía Tortuga	2	A.91/D21	7/2-7/3/1993	-	-	1
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	A.91/C23	10/1-10/2/1993	-	-	1
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	A.91/C24	10/2-10/3/1993	-	-	1
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	A.91/C25	10/3-10/4/1993	-	1	-
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	A.91/C26	10/4-10/5/1993	-	1	2
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	A.91/C27	10/5-10/6/1993	-	-	3
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	A.91/C28	10/6-10/7/1993	-	-	2
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	A.91/C29	10/7-10/8/1993	-	-	1
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	B.91/0664	5-13/4/1991	-	1	-
<i>Odo insularis</i>	SCZ	Seismological Station CDRS	20	B.91/0750	13-28/4/1991	1	2	3

Species	Isl.	Toponym	Alt. (m)	Sample / Lit.	Date	MM	FF	JUV
<i>Odo insularis</i>	SCZ	Carretera por El Garapatero	70	CDRS.01/010	20/12/2000	-	1	-
<i>Odo insularis</i>	SCZ	N side of island along road	150	P.92/0079	1-30/4/1992	2	1	-
<i>Odo insularis</i>	SCZ	N side of island along road	300	P.92/0081	1-30/4/1992	3	2	7
<i>Odo insularis</i>	SCZ	N side of island along road	300	P.92/0218	1-30/5/1992	4	-	2
<i>Odo insularis</i>	SCZ	Academy Bay		CAS	Jan 1964	2	2	-
<i>Odo insularis</i>	SCZ	Academy Bay		CAS	Feb 1964	2	-	-
<i>Odo insularis</i>	SCZ	N side of island along road	30	B.09/0009	19/3/2009	-	3	9
<i>Odo insularis</i>	SCZ	Las Palmas	3	B.09/0030	26/3/2009	-	2	1
<i>Odo insularis</i>	SCZ	N side of island along road	30	B.09/0067	19/3-12/4/2009	-	-	1
<i>Odo insularis</i>	SEY	<i>Bursera</i> forest	10	P.89/0005	23/1/1989	1	-	-
<i>Odo insularis</i>	SFE	Lagoon along NW coast	5	R.98/0031	21/8/1998	1	-	-
<i>Odo insularis</i>	SCZ	Along coast	5	Leleup	Sep, Oct 1964	2	1	-
<i>Odo insularis</i>	SAN	Western coast		Jacquemart	March 1974	-	4	-