

## The genera *Agroeca*, *Agraeцина*, *Apostenus* and *Scotina* in the Maghreb countries (Araneae: Liocranidae)

by Robert BOSMANS

### Summary

The genera *Agroeca*, *Agraeцина*, *Apostenus* and *Scotina* occurring in the Maghreb countries are revised. Eight species are recorded, four of which are new, the other four are re-described: *Agroeca annulipes* SIMON, *Agroeca inopina* O.P.-Cambridge, *Agroeca maghrebensis* n. sp., *Agraeцина lineata* (SIMON), *Agraeцина hodna* n. sp., *Scotina celans* (BLACKWALL), *Apostenus maroccanus* n. sp. and *Apostenus algericus* n. sp. *Agroeca liocranoides* DENIS, 1956 is a junior synonym of *A. annulipes* SIMON, 1878. Distribution data of all species, in the Maghreb but also in Europe are given.

**Key words:** Liocranidae; taxonomy; distribution; Maghreb.

### introduction

During two collecting trips to Morocco-Algeria in 1982 and 1984, and during a permanent stay at the Houari Boumédiène University in Algiers, Algeria from 1987 to 1991, a large collection of Araneae was obtained. Several results on the arachnofauna of Linyphiidae and Dysderidae have been published, the most recent ones being BOSMANS (1996) and BELADJAL & BOSMANS (1997). In these papers, it was the purpose to describe or re-describe all species occurring in the Maghreb countries (Morocco, Algeria, Tunisia, Libya and Mauritania), even the common European species. In Algerian universities, and probably in universities of the other Maghreb countries as well, there is a permanent absence of identification books, and it is increasingly difficult to gather the scattered literature concerning the arachnofauna of these countries. Descriptions of all occurring species are therefore highly appreciated.

The present paper is a first contribution to the systematics of the spider family Liocranidae. The nomenclatural stability of this family is still in discussion. Following the most recent classifications of PLATNICK (1997) and DIPENAAR & JOCQUÉ (1997), the following liocranid genera occur in the Maghreb: *Agroeca* WESTRING 1862, *Agraeцина* SIMON 1932, *Apostenus* WESTRING 1851, *Brachyanillus* SIMON 1913, *Mesiotelus* SIMON 1897, *Phrurolinillus* WUNDERLICH 1995, *Phrurolithus* C.L. KOCH 1839, and *Scotina* MENGE 1873. In this paper, the genera *Agroeca*, *Agraeцина* and *Apostenus* and *Scotina* will be treated.

The four genera have been rarely cited in the Maghreb. Not one species was mentioned in LUCAS's (1846) standard work on the fauna of Algeria. Only in 1932, SIMON mentioned the presence of *Agroeca annulipes* SIMON, *Agraeцина lineata* (SIMON) and *Scotina celans* (BLACKWALL) in Algeria or Morocco. Twenty five years later, DENIS (1956) described the species *Agroeca liocranoides* from Morocco. To my knowledge, these are the only records concerning the four genera in the Maghreb.

Abbreviations:

CJvK: Collection Johan VAN KEER;

CPP: Collection Piet POOT;

CRB: collection Robert BOSMANS;

IRSNB: Institut royal des Sciences naturelles de Belgique;

MNHNP: Muséum d'Histoire naturelle de Paris.

Measurements are in mm.

### Description of species

#### *Agroeca* WESTRING, 1862

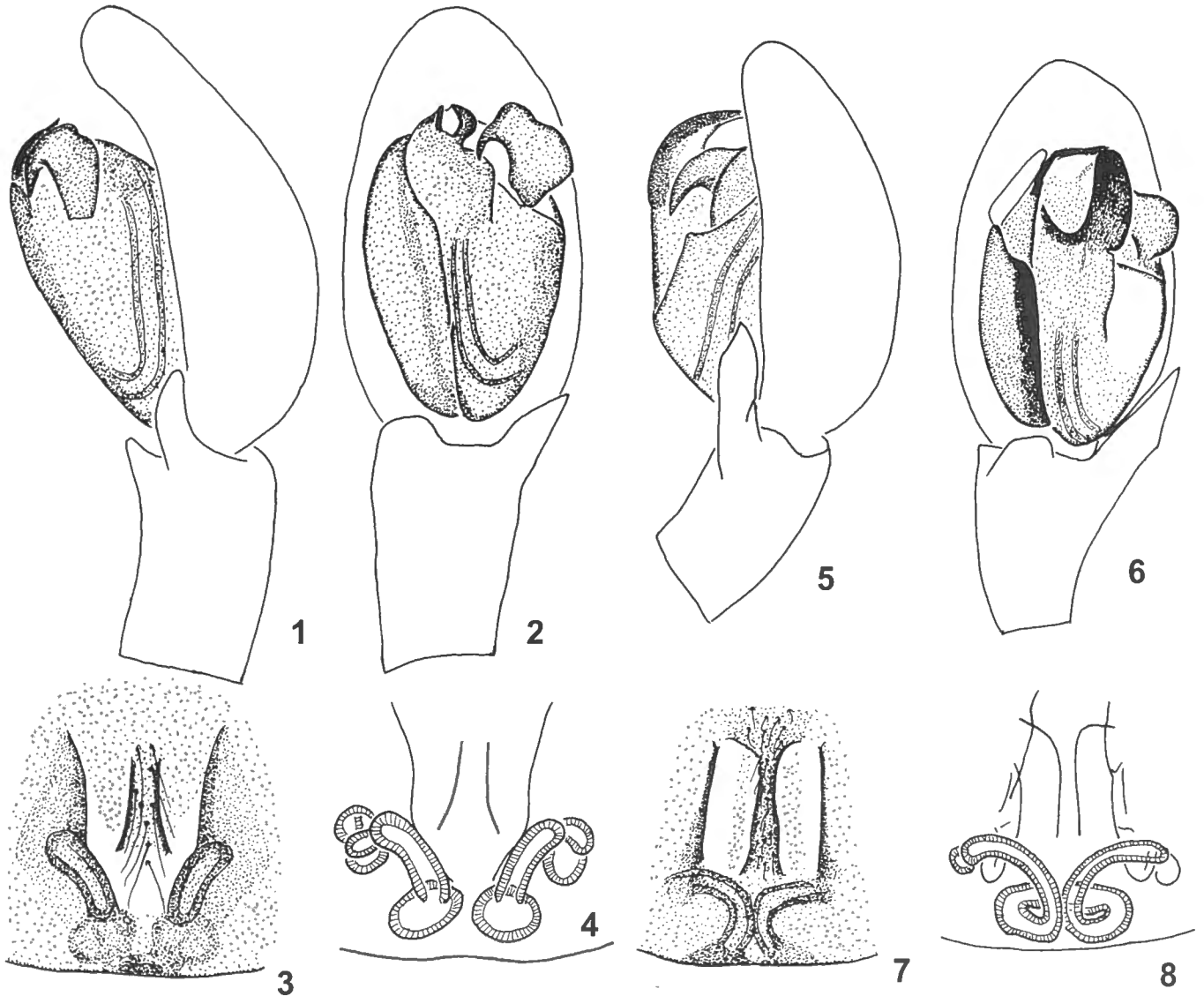
*Agroeca* species are relatively large Liocranids which can be distinguished by the presence of three pairs of ventral spines on metatarsus I. Twenty four palaeartic and nearctic species have been described, of which some are insufficiently known; a few neotropical and oriental species are probably misplaced in the genus.

Two species have been mentioned from the Maghreb. In 1932, SIMON mentioned the presence in Algeria of *Agroeca annulipes* SIMON, a species formerly known only from Corsica. In 1956, DENIS described *Agroeca liocranoides*, a new species from Morocco.

#### *Agroeca annulipes* SIMON, 1878

(Figs 1-4)

*Agroeca annulipes* SIMON 1878: 304 (descr. female); SIMON 1932: 972 (descr. female, non male); CANARD 1989: 28.



Figs. 1-4 — *Agroeca annulipes* SIMON. - 1. Male palp, lateral view; - 2. Idem, ventral view; - 3. Epigyne, ventral view; - 4. Vulva, ventral view.  
 Figs. 5-8 — *Agroeca maghrebensis* n. sp. - 5. Male palp, lateral view; - 6. Idem, ventral view; - 7. Epigyne, ventral view; - 8. Vulva, ventral view.

*Agroeca liocranoides* DENIS 1956: 198 (descr. female) (N. Syn.).

*Type material*: Holotype female of *A. annulipes* from France, Corsica, without further locality (MNHNP 26419); examined.

*Diagnosis*: Closely related to *A. maghrebensis* n. sp. in colour and spination, but easily distinguished in the male by the gently curved apophysis on the palpal tibia, in the female by the epigyne with the median depression being much wider anteriorly than posteriorly and by the oblique copulation ducts.

*Remarks*: SIMON (1878) described the species for a female from Corsica. I consider the only female from

that locality present in the MNHNP as the holotype. In my material from the Maghreb, conspecific females were rather frequently collected, often together with males, and I am definitely sure they match. I redescribe here the female, and describe the male for the first time. In 1932, SIMON described what he thought to be the male of *A. annulipes*, but this is in fact a new species, also present in our collection. SIMON's specimen is not available (absent in the MNHNP), but his Figure of the male palp with dorsal denticle on the tibia allows clear identification. It is described below as a new species, closely related to *A. annulipes* but easily distinguished by palps and epigyne.

In 1956, DENIS described a female from Morocco as *Agroeca liocranoides*. I could not trace the type material. His Figure of the epigyne shows the same oblique, clear-

ly separated copulation ducts as in *A. annulipes*, considered here as an important diagnostic character to separate it from related species. I therefore consider *A. liocranoides* DENIS, 1956 a junior synonym of *A. annulipes* SIMON, 1878.

#### Description:

Measurements: Male: Total length 3.8-5.1; carapace 2.02-2.44 long, 1.44-1.96 wide. Female: Total length 5.4-6.4; carapace 2.44-2.72 long, 1.84-2.26 wide.

Colour: Carapace with median yellowish brown, longitudinal stripe, laterally mottled dark brown, pale specimens with submarginal yellowish brown stripe; legs: Fe dark olive brown, with narrow, discontinuous yellowish brown stripes, Pa and Ti olive brown, Mt and Ta yellowish brown, in Mt I-II suffused with olive brown; abdomen dorsally with olive grey stripe with postero-median dark grey chevrons. Female: carapace as in male; legs yellowish brown, Fe distinctly annulated with dark olive brown; abdomen dorsally dark brown, laterally mottled with dark grey; venter pale yellowish brown.

Legs: Ti I-II with two pair of ventral spines, Mt I-II with three pair of ventral spines.

Palp (Figs. 1-2): Tibia with bluntly pointed apophysis, slightly curved upwards; median apophysis with broad base, distally with small pointed tooth; embolic part with small distal indentation.

Epigyne (Fig. 3): Relatively small compared to other *Agroeca* species; much longer than wide, with elongate, posteriorly rounded median depression, nearly touching epigastric furrow, depression in anterior half with narrow median septum; depression often filled with secretions ("copulation marks").

Vulva (Fig. 4): Copulation ducts oblique, not touching in middle; spermathecae rounded, wider than ducts.

#### Material examined and citations:

##### FRANCE

– Corsica: La Porta, Muro, Vizzavona, Bastelica (SIMON 1878, 1932).

##### SPAIN

– Cadiz: Tarifa, 1 female, III.1991, P. POOT leg. (CPP).

– Malaga: Alozaina N., 200m, 1 male in litter in small *Quercus suber* forest, 9.IV.1999, R. BOSMANS leg. (CRB).

##### ITALY

– Sardinia: Sassari (SIMON 1932).

##### ALGERIA

– Alger: without further locality (SIMON 1932); El Har-rach, 25m, 1 female in garden, 30.I.1985, and 2 males, 31.X.1985, R. BOSMANS leg. (CRB).

– Bouira: E. Bechloul, Oued Zaiana, 400m, 1 female in tamarisk litter, 28.IV.1988, R. BOSMANS leg. (CRB).

– Boumerdes: Rhegaia, 1 male in pitfalls in coastal marsh, 7.XI.1987, R. BOSMANS leg. (CRB).

– Chleff: Damous, 5m, 1 female in *Pistacia lentisica* maquis, 17.IV.1987, R. BOSMANS leg. (CRB); S. Tenes, gorges de l'Oued Allala, 1 female, stones, 6.V.1989, R. BOSMANS leg. (CRB).

– Saida: without further locality (SIMON 1932).

– Tipasa: Bou Haroun, 30m, 1 female, stones in grassland, 21.I.1987, R. BOSMANS leg. (CRB); Douaouda, Oued Mazafran, 50m, 24 males 10 females, pitfalls in *Populus alba* forest, 16.XII.86-26.II.1988, and 4 males 1 female in pitfalls in *Olea maquis*, 30.X.1988, R. BOSMANS leg. (1 male 1 female in MNHNP, 1 male 1 female in IRSNB, rest in CRB); between Staoueli and Bouchaoui, 70m, 1 female, stones in rough grassland, 3.I.1987, R. BOSMANS leg. (CRB).

– Tissemsilt: Djebel Ouarsenis (SIMON 1932).

– Tlemcen: Nemours (SIMON 1932).

##### MOROCCO

– Aïn Sebaa (DENIS 1956).

*Distribution:* Corsica (SIMON, 1878, 1932; CANARD, 1989), Sardinia (SIMON 1932), Morocco (DENIS 1956) and Algeria (SIMON 1932); cited here also for the first time from Spain.

*Ecology:* Exclusively occurring at low altitudes near the coast. Adult mainly in winter. Males were only collected in November, females from November to May.

#### *Agroeca maghrebensis* n. sp. (Figs 5-8)

*Agroeca annulipes*; SIMON 1932: 972 (descr. male, non female).

*Type material:* Holotype male from Algeria, Wilaya of Bouira, Ighrem, 490m in pitfalls among Tamarisk along Oued Sahel, 17.XI.1986, R. BOSMANS leg.; deposited in IRSNB.

*Diagnosis:* Males of this species are easily distinguished by the dorsal angularity on the male palpal tibia, females by the epigyne with median depression with parallel margins and x-shaped pattern of copulation ducts.

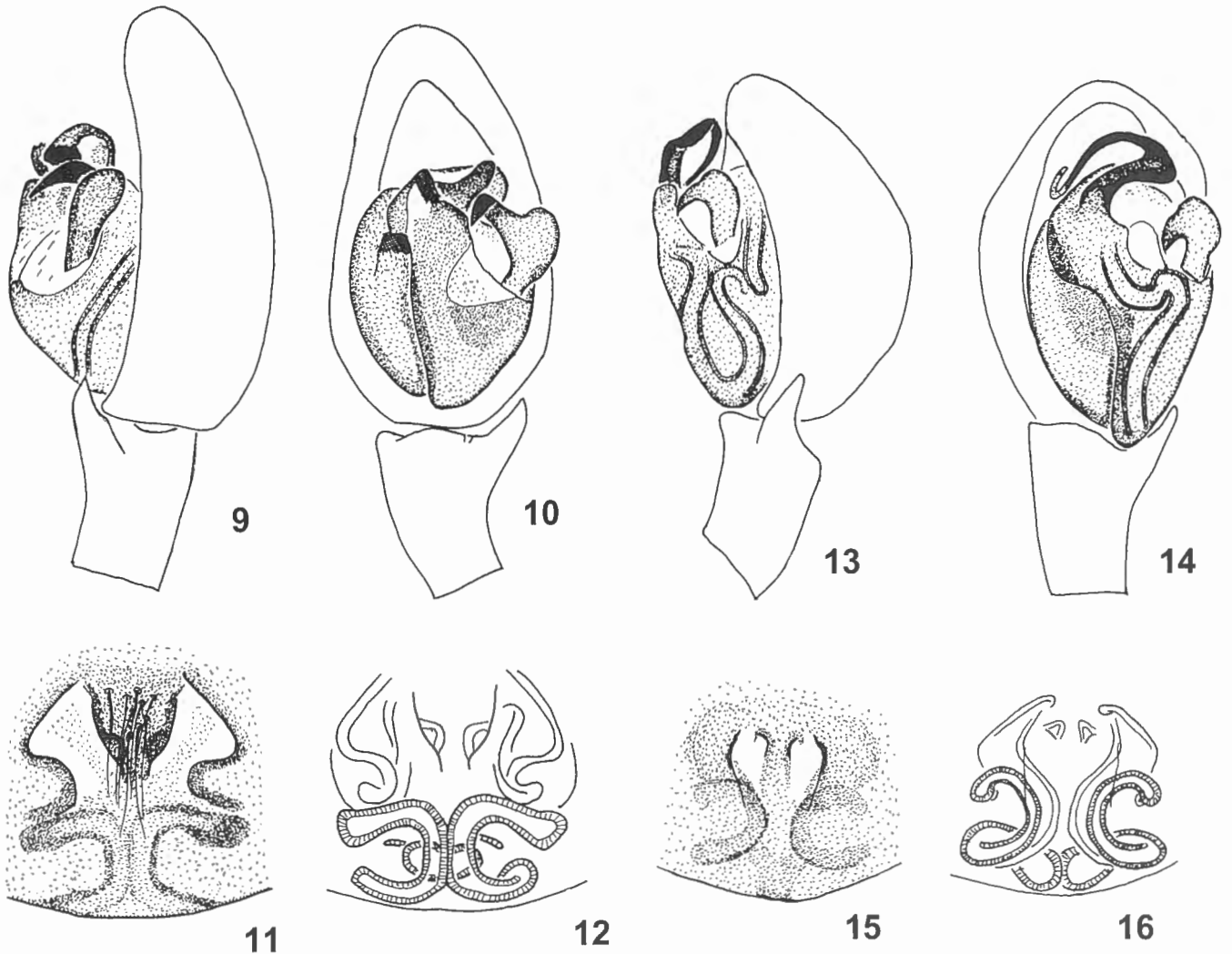
*Remarks:* The male figured by SIMON (1932) as the male of *Agroeca annulipes*, SIMON 1878 apparently belongs to the species described here.

#### Description:

Measurements: Male: Total length 4.0; carapace 2.06 long, 1.68 wide. Female: Total length 4.6-6.4; carapace 2.32-2.84 long, 1.72-2.40 wide.

Colour and spination as in *Agroeca annulipes*. (Figs. 5-6): Tibial apophysis straight, with distinct dorsal angularity; median apophysis hooked, distal part strongly pointed; wide basal part of embolus visible in antero-median part of bulb, gradually narrowing, curved in antero-dorsal direction.

Epigyne (Fig. 7): Longer than wide; with large median depression, posteriorly truncate, anterior half with narrow



Figs. 9-12 — *Agroeca inopina* O.P. Cambridge. - 9. Male palp, lateral view; - 10. Idem, ventral view; - 11. Epigyne, ventral view; - 12. Vulva, ventral view.  
 Figs. 13-16 — *Scotina celans* (Blackwall). - 13. Male palp, lateral view; - 14. Idem, ventral view; - 15. Epigyne, ventral view; - 16. Vulva, ventral view.

median septum; depression often filled with concretions ("copulation plugs"); x-shaped pattern of touching copulation ducts visible in transparency.

Vulva (Fig. 8): Copulation ducts semi-circular, touching in middle; spermathecae not wider than copulation ducts.

*Material examined and citations:*

ALGERIA

- Aïn Temouchent: between El Malah and El Ghella, along Rio Salado, 80m, 1 female in *Atriplex* litter, 24.IV.1984, R. Bosmans leg. (CRB).
- Batna: Massif de l'Aures, Monts de Belezma, Col Telmet, 1820m, 2 males in pitfalls in *Cedrus* forest, 26.II.1988, R. BOSMANS leg. (CRB).
- Blida: Atlas Blidéen, Meftah, 480m, 4 females in pitfalls in *Quercus suber* forest, 11.XII.1986, R. BOSMANS leg. (CRB).

- Bordj Bou Arreridj: Sidi Embarek, 900m, 1 female, stones in cultivated land, 27.II.1990, R. BOSMANS leg. (CRB).

- Bouira: E. Bechloul, Oued Zaiane, 400m, 1 female in tamarisk litter, 28.IV.1988, R. BOSMANS leg. (CRB); Col de Dirah, 900m, 2 females, pitfalls in rough grassland along Oued Djenane, 1.V.1988, R. BOSMANS leg. (CRB).

- Jijel: Ziama Mansouria, 15m, 7 females in flooded orchard, 24.XI.1989, R. BOSMANS leg. (2 females in MNHNP, 2 females in IRSNB, 3 females in CRB).

- Laghouat: Laghouat, Oud M'zi, 750m, 1 female in *Phragmites* litter, 21.V.1990, R. BOSMANS leg. (CRB).

- M.3'sila: 5 km E. Mansourah, 800m, 1 female, stones in dry *Pinus halepensis* forest, 16.X.1987, R. BOSMANS leg. (CRB).

- Oran: N. Misserghin, 200m, 1 female in flooded orchard, 25.IV.1984, R. BOSMANS leg. (CRB).

- Setif: Djebel Babor, 1850m, 1 female in mixed forest, 20.VI.1986; N. Magra, Rasfa, 1 female in herbs along an oued, 15.IV.1990, R. BOSMANS leg. (CRB).
- Skikda: Bouchata, 400m, 1 female, stones in grassland, 12.III.1990, R. BOSMANS leg. (CRB).
- Souk Ahras: 2 km S. Souk Ahras, 660m, 1 female, stones in *P. halepensis* forest, 10.II.1988, R. BOSMANS leg. (CRB).
- Tlemcen: S. Tlemcen, forêt de Tal Terny, 1300m, 1 female, pitfalls in *Quercus ilex* forest, 24.V.1990, R. BOSMANS leg. (CRB).

## MOROCCO

- Messia-Melilla, 1 female, sub *Mesiotelus* sp. (MNHNP 19.700).

## TUNISIA

- Nabeul: Djebel El Haouaria, 1 female in maquis, 13.IV.1993, K. DE SMET leg. (CRB).

*Distribution:* Algeria, Morocco, Tunisia. Not as coastal as *A. annulipes*.

*Ecology:* Adult in winter. Males were collected from November to February, females from November to May.

***Agroeca inopina* O.P.-CAMBRIDGE, 1886**

(Figs 9-12)

*Agroeca inopina* O.P.-CAMBRIDGE 1886: 71 (descr. male, female); SIMON 1932: 972; GRIMM 1986: 29.

*Diagnosis:* Besides the copulatory organs, this species is easily distinguished from both other *Agroeca* species occurring in the Maghreb by its yellowish brown cephalothorax and the uniform legs with no annulations.

*Description:*

Measurements: Male: Total length 5.0-5.4; carapace 2.34-2.44 long, 1.82-1.92 wide. Female: Total length 5.3-7.6; carapace 2.56-2.64 long, 2.02-2.16 wide.

Colour: Carapace yellowish brown with narrow black margin and anastomosing, radiating dark brown striae; legs yellowish brown, not annulated; abdomen with central reddish brown band, laterally darker.

Palp (Figs. 9-10): Tibial apophysis relatively short; median apophysis large, terminally with elongated hook.

Epigyne (Fig. 11): As long as wide, with large antero-medial depression with triangular antero-medial septum; depression often filled with secretions ("copulation plugs").

Vulva (Fig. 12): Copulation ducts c-shaped, widely touching in middle; spermathecae not wider than copulation ducts.

*Material examined:*

## ALGERIA

- Blida: Djebel Mouzaia, 1200m, 1 male 1 female, stones in grassland around lake, 27.I.1990, R. BOSMANS

leg. (CRB); idem, 1250m, 1 male in pitfalls in *Quercus suber* forest, 27.I.1990, R. BOSMANS leg. (CRB).

- Tizi Ouzou: Aït Ouabane, 1850m, 2 males, stones in montane grassland, 15.XI.1985, R. BOSMANS leg. (CRB); forêt d'Akfadou, 1200m, 1 female in *Quercus faginea* litter, 18.V.1988 and 910m, 1 female in *Quercus faginea* litter, 24.III.1988, R. BOSMANS leg. (CRB); Tala Guilef, 1600m, 1 male in pitfalls in dense *Cedrus* forest, 16.III.1990, R. BOSMANS leg. (CRB); Yakouren, 800m, 1 female in pitfalls in *Quercus faginea* forest, 22.IV.1982, 1 female, 4.XII.1986 and 1 female, 25.I.1990, R. BOSMANS leg. (CRB).

- Tlemcen: S.E. Tlemcen, forêt d'Hafir, 1350m, 1 female in *Quercus ilex* litter, 23.V.1990, R. BOSMANS leg. (CRB).

*Distribution:* Portugal, Spain, France, S. England, Austria, S.W. Finland, and cited here for the first time from Africa from Algeria, where it appears to be a species of higher altitudes.

***Agraecina* SIMON, 1932**

*Agraecina* species are closely related to *Agroeca* and differ by the presence of only two pair of ventral spines on metatarsus I and II, and the simpler genital organs. Four species are actually known: *Agraecina striata* Kulczynski from Europe, *A. lineata* (SIMON) from the western Mediterranean region, *A. canariensis* WUNDERLICH from the Canary Islands and the remarkable blind *A. christiani* (GEORGESCU) species recently described from a cave in Romania.

***Agraecina lineata* (SIMON)**

(Figs 17-20)

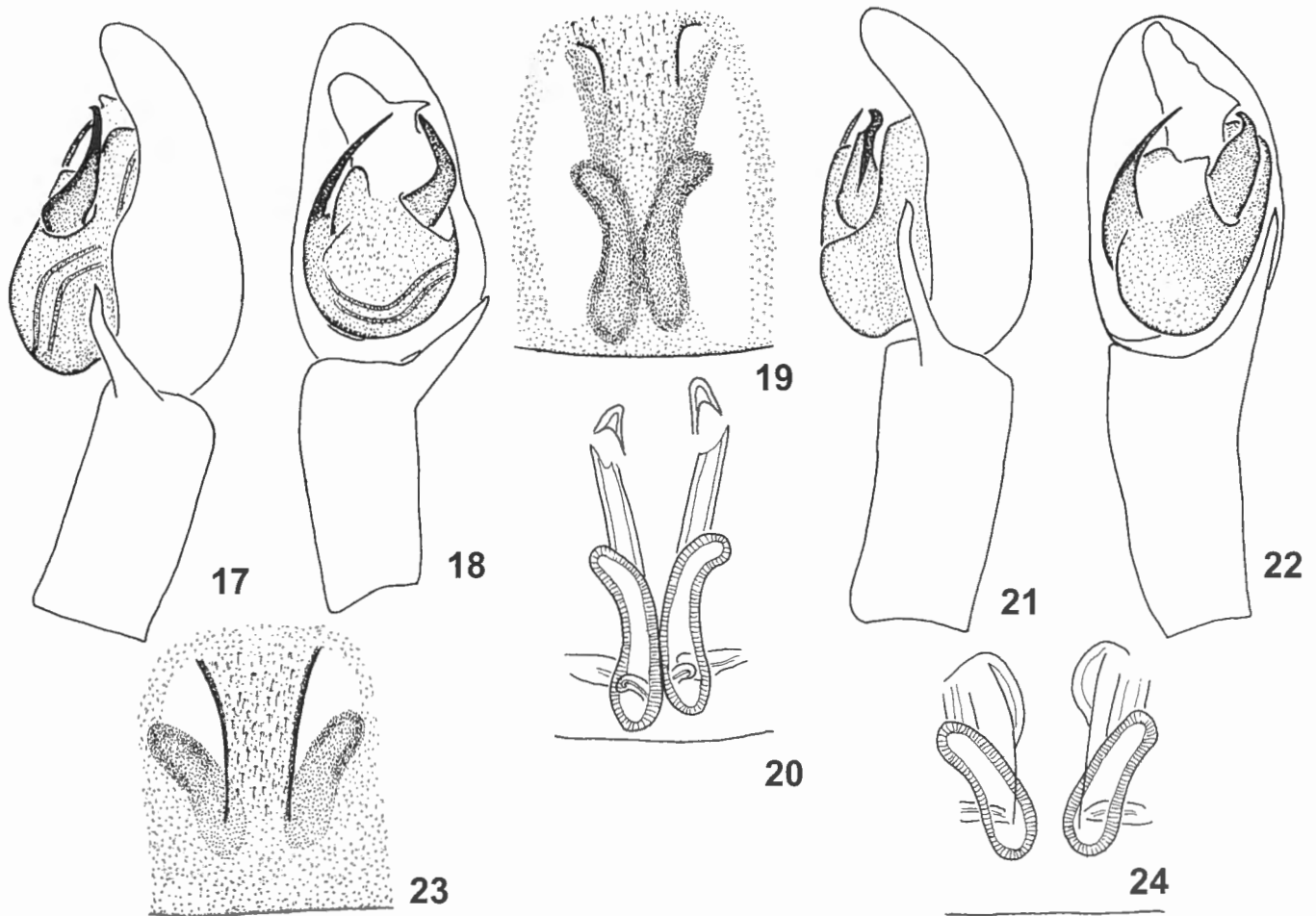
*Agroeca lineata* SIMON 1878: 308 (descr. female).  
*Agraecina lineata*; SIMON 1932: 939, 970 (descr. male, non female); GRIMM 1986: 14.

*Diagnosis:* Males are easily distinguished from other liocranids from the Maghreb by the strongly pointed tibial apophysis and median apophysis of the bulb; females have an epigyne with elongate median septum, without other chitinisations.

*Remarks:* SIMON (1878) described *Agraecina lineata* from a juvenile or subadult female from Corsica. He described the male and female in 1932, and the species was said to occur in continental France, Corsica, Algeria and Morocco. SIMON's Figure of the female epigyne is incorrect, as also indicated by GRIMM (1986). The same author presented recent Figures of the male palp, epigyne and vulva have never been illustrated.

*Description:*

Measurements: Male: Total length 4.4-6.0; carapace



Figs. 17-20 — *Agraecina lineata* (Simon). - 17. Male palp, lateral view; - 18. Idem, ventral view; - 19. Epigyne, ventral view; - 20. Vulva, ventral view.

Figs. 21-24 — *Agraecina hodna* n. sp. - 21. Male palp, lateral view; - 22. Idem, ventral view; - 23. Epigyne, ventral view; - 24. Vulva, ventral view.

1.97-2.82 long, 1.64-2.21 wide. Female: Total length 8,0; carapace 2.72 long, 2.21 wide.

Colour: Carapace yellowish brown with grey margin and anastomosing, radiating stripes; legs yellowish brown, not annulated; abdomen pale grey with wide median and narrower lateral longitudinal grey stripes, converging to the back.

Palp (Figs. 17-18): Tibial apophysis strongly pointed, gradually narrowing, oblique to the axe of the segment: median apophysis gently curved, distal 2/3 linear and pointed; embolus straight, needle-like.

Epigyne (Fig. 19): With hardly defined, short median septum in the anterior half, in the postero-median half with gently curved spermathecae visible in transparency.

Vulva (Fig. 20): Anterior to the septum with two pouches, preceding long and straight copulation ducts

*Material examined:*

ALGERIA

– Boumerdes: Reghaia, 5m, 2 males in pitfalls in marsh with tamarisk, 13.VI.1988, and 1 male 1 female, 30.IX.1988, R. BOSMANS leg. (CRB).

– Tizi Ouzou: forêt de Mizrana, 300m, 1 female, stones in grassland, 26.I.1990, R. BOSMANS leg. (CRB).

SPAIN

– Malaga: Benyanina N., 1 male in pitfalls in coastal dunes, 1.-IV.1999, R. BOSMANS leg. (CRB).

*Distribution:* Algeria, Morocco, France (Alpes maritimes, Bouches du Rhone, Bretagne, Corse, Loire atlantique, Loire inférieure, Morbihan), Italy (Umbria), Spain (new record). In Algeria we collected the species mainly in salt marshes, once more to the interior in grassland.

*Agraecina hodna* n. sp.

(Figs 21-24)

*Type material:* Holotype male, 4 male 1 female paratypes and from Algeria, M'sila, Chott el Hodna, S. Baniou in pitfalls in salt land with *Limonium*, 30.VII.1988, R. BOSMANS leg. (deposited in IRSNB, except for 2 male paratypes in CRB).

**Diagnosis:** Closely related to *Agraecina cristiani* GEORGESCU and *A. canariensis* WUNDERLICH, but males clearly differing by the broad base of the median apophysis, females by the well-defined median septum and the oblique spermathecae not touching in the middle.

**Description:**

Measurements: Male: Total length 3.1-4.6; carapace 1.44-2.04 long 0.98-1.64 wide. Female: Total length 6.2; carapace 2.78 long, 2.19 wide.

Colour: As in the preceding species.

Palp (Figs. 21-22): Tibial apophysis strongly pointed in the axe of the segment, long and narrow, terminally curved upwards; median apophysis with broad base, towards the tip suddenly narrowing into a distinct hook; embolus distinctly pointed, tip surrounded by a large membrane.

Epigyne (Fig. 23): With well-defined, median septum, narrowing posteriorly, laterally accompanied by the spermathecae visible in transparency.

Vulva (Fig. 24): With pockets situated at antero-medial side of septum; copulation wide and straight; spermathecae relatively wide, not touching in the middle.

**Material examined:**

ALGERIA

– M'sila: Aïn-el-Hadjel, réserve de Mergueb, 1 male in pitfalls in dense grassland, 22.VI.1990, R. BOSMANS leg. (CRB).

**Distribution:** Only known from the region of the steppe region in Algeria.

***Scotina* MENGE, 1873**

*Scotina* are medium-sized liocranids, differing from other Maghrebian genera by the presence of 7-10 pairs of ventral spines on metatarsus I. The genus includes three palaearctic species of which one occurs in the Maghreb.

***Scotina celans* (BLACKWALL, 1841)**  
(Figs 13-16)

*Agroeca celans* BLACKWALL 1841: 624 (descr. male, female); SIMON 1878: 308.

*Scotina celans*; SIMON 1932: 945, 972.

**Description:**

Measurements: Male: Total length 2.8-3.3; carapace 1.32 long, 1.60 wide. Female: Total length 3.0-4.8; carapace 1.44-1.92 long, 1.12-1.52 wide.

Colour: Carapace yellowish brown, with two dark para-median brown to black stripes; legs yellowish brown, tibiae and tarsi in males often darkened; abdomen dorsally dark olive brown to black, with indistinct reddish brown spots.

Palp (Figs. 13-14): Tibia with triangular apophysis;

median apophysis hooked; embolus S-shaped, basal part relatively wide, terminal part linear.

Epigyne (Fig. 15): Poorly chitinised, with two parallel sutures, between them two anchoring holes.

Vulva (Fig. 16): Copulation ducts wide, U-shaped; spermathecae oval, wider than the ducts.

**Material examined:**

ALGERIA

– Aïn Defla: Djebel Zaccar, Aïn n'Sour, 900m, 1 female in *Quercus ilex* litter, 18.V.1988, R. BOSMANS leg. (CRB).

– Annaba: Djebel Edough, Seraidi, 810m, 1 male in litter in *Quercus faginea* forest, 24.XI.1989, and 1 female in pitfalls, 2.III.1990, R. BOSMANS leg. (CRB).

– Batna: Massif de l'Aures: monts de Belezma, Col Telmet, 1820m, 6 males in pitfalls in *Cedrus* forest, 26.II.1988, R. BOSMANS leg. (CRB); forêt de S'gag, 1650m, 10 males 2 females in pitfalls in *Cedrus* forest, 5.XI.87-9.IV.1988, R. BOSMANS leg. (CRB).

– Blida: Chrea, 850m, 2 females in pitfalls in *Quercus suber* forest, 27.III.1985, R. BOSMANS leg. (CRB); Chrea, 1000m, 1 female, pitfalls in *Quercus faginea* forest, 20.V.1985, R. BOSMANS leg. (CRB); Chrea, Pic Abdelakder, 1520m, 1 female in pitfall in *Cedrus* forest, 20.V.1987, R. BOSMANS leg. (CRB); Meftah, Djebel Zerouela, 480m, 16 males in pitfalls in *Quercus suber* forest, 11.XII.1986-23.VI.1987, R. BOSMANS leg. (CRB); Meurdja, 950m, pitfalls in planted *Cedrus* forest, 4 males 7 females, 2.V-15.VI.1982, and 24 males 8 females, 15.VI.1987-22.XII.1988, R. BOSMANS leg. (CRB); Debel Mouzaia, 1200m, 1 male 1 female, stones in grassland, 27.I.1990, and 1300m, 8 males 1 female, pitfalls in *Acer* forest, 6.X-4.XI.1985, R. BOSMANS leg. (CRB).

– Bouira: Massif du Djurdjura: Tala Rana, 1310m, 5 males in pitfalls in *Cedrus* forest, 6.X.1987-VI.1988. Tikjda, 1475m, 2 males, pitfalls in *Cedrus* forest, 2-24.IV.1982, R. BOSMANS leg. (CRB).

– Boumerdes: Rhegaia, 15m, 3 males 1 female in pitfalls in *Populus alba* forest, 13.VI.1988. Zemmouri, 10m, 4 males 1 female, pitfalls in *Pinus halepensis* forest, 7.I.1989, R. BOSMANS leg. (CRB).

– Chleff: Bai des Souhalia, 10m, 1 female, stones in *Pinus halepensis* forest, 7.V.1989, R. BOSMANS leg. (CRB). Damous, 50m, 1 male, pitfalls in *Pinus halepensis* forest, 20.I.1990, R. BOSMANS leg. (CRB); forêt de Tacheta, 850m, 6 males 1 female in pitfalls in *Quercus faginea* forest, 12.IV.1989, R. BOSMANS leg. (CRB).

– El Tarf: El Kala, Lac Melah, 4m, 1 female in pitfall in *Quercus suber* forest, 7.IV.1982, R. BOSMANS leg. (CRB).

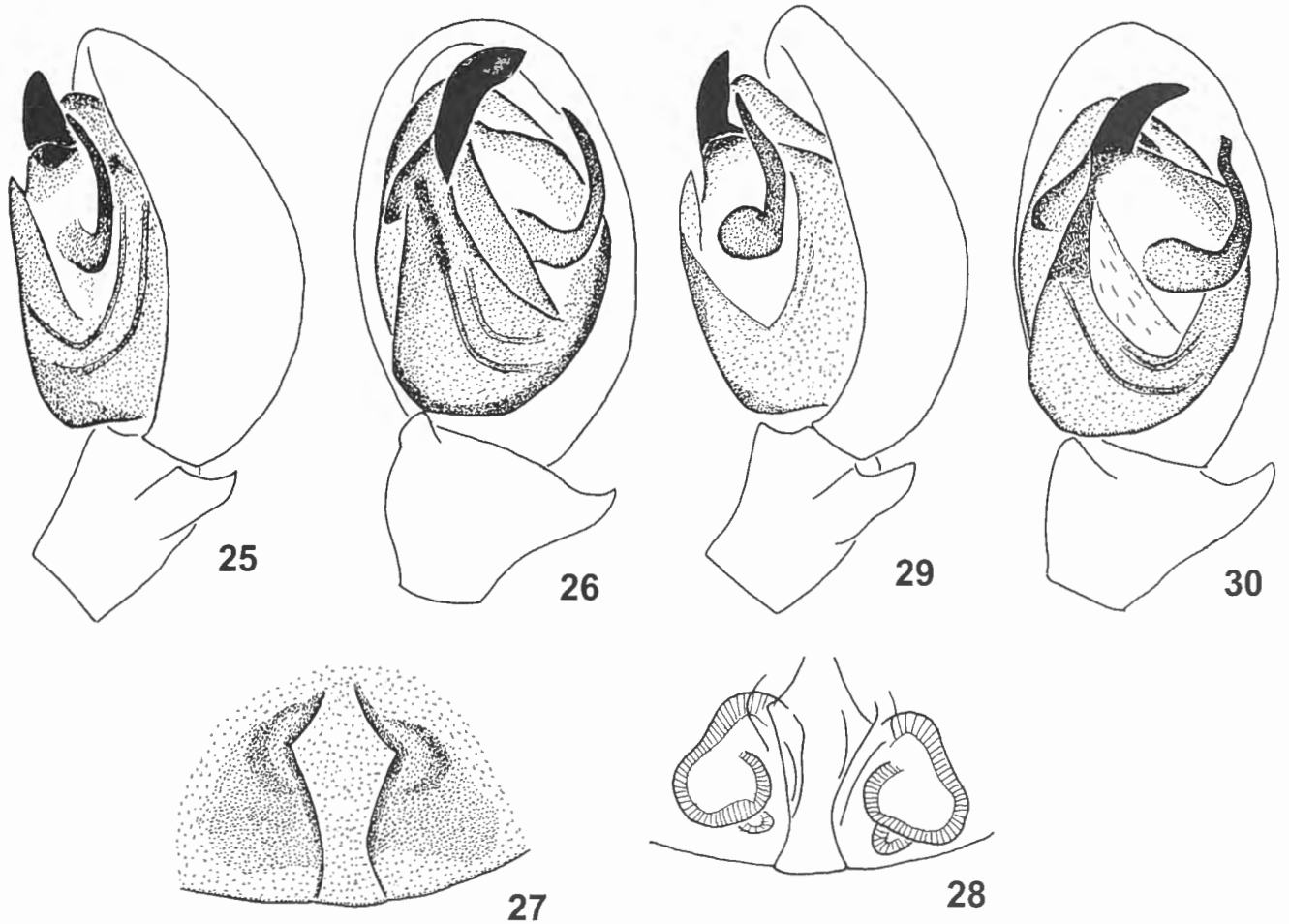
– Medea: Col de Beni Chicao, 1230m, 1 male, pitfalls in *Quercus ilex* forest, 13.I-20.V.1990, R. BOSMANS leg. (CRB).

– Oran: Forêt de M'sila, 400m, 1 female in *Quercus ilex* litter, 25.IV.1984, R. BOSMANS leg. (CRB).

– Setif: Djebel Babor, 1600m, 1 female in pitfall in *Cedrus* forest, 20.V.1982, R. BOSMANS leg. (CRB).

– Skikda: road Djendel-Larbi ben Mhid, 200m, 2 males 2 females in *Quercus ilex* litter, 2.III.1990, R. BOSMANS leg. (CRB).





Figs. 25-28 — *Apostenus maroccanus* n. sp. - 25. Male palp, lateral view; - 26 Idem, ventral view; - 27. Epigyne, ventral view; - 28. Vulva, ventral view.

Figs. 29-30 — *Apostenus algericus* n. sp. - 29. Male palp, lateral view; - 30. Idem, ventral view.

– Tipasa: Bouchaoui, 95m, 3 males 1 female in pitfalls in *Ulmus* forest, 27.I.1996, R. BOSMANS leg. (CRB); Douaouda, Oued Mazafran, 50m, 2 males in pitfalls in *Olea maquis*, 12.I.1988, R. BOSMANS leg. (CRB); Sidi Fredj, 25m, 8 males 2 females in pitfalls in *Pinus halepensis* forest, 18.XII.1986, R. BOSMANS leg. (CRB).

– Tissemsilt: Theniet el Had, Djebel Ouarsenis, 1400-1600m, 24 males 5 females in pitfalls in *Cedrus atlanticus* forest, 23.X.1987-15.V.1988, R. BOSMANS leg. (CRB).

– Tizi Ouzou: Massif du Djurdjura: Aït Ouabane, 1500m, 1 female, stones in *Quercus faginea* forest, 20.X.1986, R. BOSMANS leg. (CRB); Col de Tizi 'n Kouillal, 1500m, 2 males 2 females in pitfalls in montane grassland, I-XII.1992, R. BOSMANS leg. (CRB); Tala Guiléf, 1420m, 6 males in pitfalls in *Cedrus atlanticus* forest, 6.X.1989-1.VI.1990, R. BOSMANS leg. (CRB); Yakouren, 820m, 2 males 1 female in pitfalls in *Quercus faginea* forest, 4.XII.1986, R. BOSMANS leg. (CRB).

– Tlemcen: Col de Zarifète, 1150m, 2 females in pitfalls in *Quercus ilex* forest, 6.V.1984, R. BOSMANS leg. (CRB); Col de Tal Tery, 1300m, 2 males 8 females

in pitfalls in *Quercus ilex* forest, 6.V.1984, R. BOSMANS leg. (CRB); Forêt d'Hafir, 1350m, 5 males 1 female in pitfalls in *Quercus suber* forest, 23.V.1990, R. BOSMANS leg. (CRB); Monts de Traras, El Arabienne, 580m, 2 males in pitfalls in *Olea maquis*, 24.V.1990, R. BOSMANS leg. (CRB); Tal Tery, 1300m, 1 male in pitfalls in *Quercus ilex* forest, 24.V.1990, R. BOSMANS leg. (CRB).

*Distribution:* Western and Central Europe, Maghreb.

*Ecology:* A very common species in all kinds of forests and maquis, in the south only at higher altitudes. Adult in winter and early spring: males were collected from November to April, females from December to May.

#### *Apostenus* WESTRING, 1851

*Apostenus* are small liocranids differing from other Maghrebian genera by the presence of five pairs of ven-



tral spines on Mt I. Eight palaeartic species are known: three from Western Europe, one from Greece and four from the Canary Islands, recently described by WUNDERLICH (1987,1992). One afrotropical species is probably misplaced.

*Apostenus maroccanus* n. sp.  
(Figs 25-28)

*Type material*: Holotype male from Morocco, Ifrane, S. Azrou, 1450m, in litter and under stones in *Quercus ilex* forest, 7.II.1996; deposited in IRSNB; 1 male 2 female paratypes, same data (1 male 1 female in CRB, 1 female in IRSNB).

*Diagnosis*: Distinguished from other *Apostenus* species by the uniform pale legs, and by the shape of the median apophysis and the embolus in the male palp.

*Description*:

Measurements: Male: Total length 2.2; carapace 1.04-1.08 long, 0.86-0.91 wide. Female: Total length 3.0-3.1; carapace 1.10-1.12 long, 0.92-0.94 wide.

Legs: Tibiae I-II with 5 pairs of strong ventral spines, Mt I-II with 3 pairs of ventral spines, legs III-IV with normal spination.

Colour: Carapace yellowish orange with narrow dark margin, area before fovea and striae tinged with grey, in some specimens barely visible; legs uniform yellowish orange; abdomen greyish brown, males with triangular antero-dorsal reddish brown spot and three pairs of small postero-dorsal spots of same colour.

Palp (Figs. 25-26): Tibia with oblique, pointed apophysis; median apophysis a gently curved hook; embolus very thick, widened in middle.

Epigyne (Fig. 27): With narrow median septum, angular in upper half.

Vulva (Fig. 28): Receptacula very large, circular; no distinct copulation ducts.

*Other material examined*: None.

*Distribution*: Morocco. Only known from the type locality.

*Apostenus algericus* n. sp.  
(Figs. 29-22)

*Type material*: Holotype male from Algeria, Wilaya of El Bayadh, N.E. Les Arbaouattes, 900m, in *Nerium oleander* litter, 20.I.1988, R. BOSMANS leg.; deposited in IRSNB.

*Diagnosis*: Closely related to *Apostenus maroccanus* n. sp., differing by the subterminally curved median apophysis and the gradually narrowing embolus.

*Description*:

Measurements: Male: Total length 2.3; carapace 1.14 long, 0.86 wide.

Colour: Carapace yellowish orange, before fovea, region of striae with some grey; legs uniformly yellowish orange; abdomen brown with some greyish markings. Spination as in preceding species.

Palp (Figs. 29-30): Tibia with oblique, pointed apophysis; median apophysis gently curved, subterminally curved in anterior direction; embolus thick, gradually narrowing.

*Other material examined*: None.

*Distribution*: Only known from the type locality in Algeria.

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Robert BOSMANS  
Laboratorium voor Ecologie,  
Zoögeografie en Natuurbehoud,  
Ledeganckstraat 35,  
B-9000 Gent,  
Belgium