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New records of the East Mediterranean *Lachesana* (Aranei: Zodariidae), with description of a new species

Новые нахожки восточносредиземноморских *Lachesana* (Aranei: Zodariidae), с описанием нового вида

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KEY WORDS: Araneae, Anatolia, Turkey, Cyprus, distribution, Lachesaninae, spider.
КЛЮЧЕВЫЕ СЛОВА: Araneae, Анатолия, Турция, Кипр, распространение, Lachesaninae, паук.

ABSTRACT. A new species *Lachesana bayramgocmeni* sp.n. is described based on both sexes from Cyprus. The new species is compared in detail with *L. blackwalli* (O. Pickard-Cambridge, 1872). New data on the distribution of *L. blackwalli* in Turkey and Cyprus are presented.

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РЕЗЮМЕ. Описан из Кипра новый вид пауков *Lachesana bayramgocmeni* sp.n. на основе обоих полов. Новый вид близок к *L. blackwalli* (O. Pickard-Cambridge, 1872), оба вида подробно сравниваются. Представлены новые данные о распространении *L. blackwalli* в Турции и на Кипре.

Introduction

The subfamily Lachesaninae Jocqué, 1991 currently includes three genera: *Antillorena* Jocqué, 1991; *Lachesana* Strand, 1932 and *Lutica* Marx, 1891 [Jocqué, 1991]. The subfamily is known in the Neotropics (*Antillorena*), Nearctic (*Lutica*) and West Palaearctic (*Lachesana*). The most characteristic feature of the subfamily is that the anterior spinnerets are long and retractable.

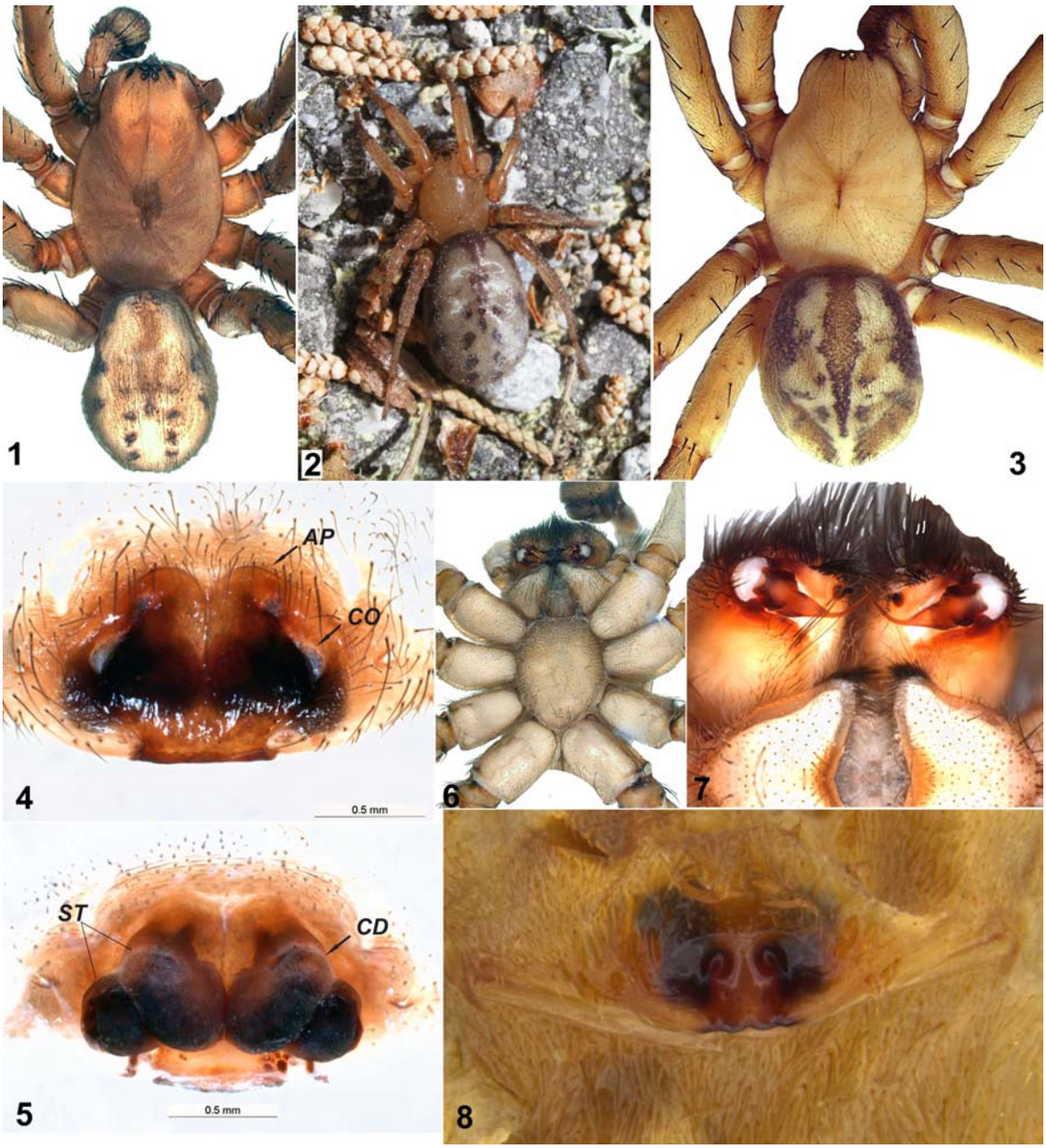
The present study has started from the examination of several *Lachesana* males, collected in the Beşparmak Mountains (Cyprus), in the course of regional spider fauna investigation. During the examination of these males, we noticed that they differ by the shape of the palp from *L. blackwalli* (O. Pickard-Cambridge, 1872), a species previosuly reported from the island. Our suspicions that this *Lachesana* from Cyprus could belong to a new species were confirmed, when we found a distinguishable conspecific female.

The aim of this study is to describe a new *Lachesana* species from Cyprus. The comparative illustrations showing the copulatory organs and the somatic structures of both the new species and the most closely related *L. blackwalli* are provided.

Material and Methods

The specimens were preserved in 70% ethanol. Digital images of the copulatory organs were obtained using the Leica DFC295 digital camera attached to a Leica S8AP0 stereomicroscope. From 5 to 15 photographs were taken in different focal planes and combined using "CombineZP" image stacking software.

All measurements are given in mm. Terminology for the body measurements, copulatory organ structures and spination are after Jocqué [1991]. The following abbreviations were used in the text: ALE — anterior lateral eyes; AME — anterior median eyes; PLE — posterior lateral eyes; PME — posterior median eyes; Ta — tarsus; Mt — metatarsus, T — tibia; P — patella; F — femur; d — dorsal; p — prolateral; r — retrolateral; v — ventral; CO — conductor; E — embolus, RTA — retrolateral tibial apophysis; CHNM — Cyprus Herbarium & Natural History Museum, Near East University, Nicosia, Cyprus; ETZM — Eskişehir Technical University Zoology Museum, Eskişehir, Turkey; ZMMU — Zoological Museum of the Moscow State University, Moscow, Russia.



Figs 1–8. *Lachesana bayramgocmeni* sp.n. (1–2, 4–7) and *L. blackwalli* (3, 8). 1, 3 — male habitus, dorsal; 2 — female habitus, dorsal; 4, 8 — epigyne, ventral; 5 — epigyne, dorsal; 6 — male prosoma, ventral; 7 — male chelicerae and gnathocoxae, ventral. Abbreviations: *AP* — apical pocket; *CD* — copulatory duct; *CO* — copulatory opening; *ST* — spermatheca.

Рис. 1–8. *Lachesana bayramgocmeni* sp.n. (1–2, 4–7) и *L. blackwalli* (3, 8). 1, 3 — самец, сверху; 2 — самка, сверху; 4, 8 — эпигина, снизу; 5 — эпигина, сверху; 6 — головогрудь самца, снизу; 7 — хелицеры и максиллы, снизу. Сокращения: *AP* — верхний карман; *CD* — копулятивный проток; *CO* — копулятивное отверстие; *ST* — сперматека.

Taxonomy

Family Zodariidae Thorell, 1881
Subfamily Lachesaninae Jocqué, 1991

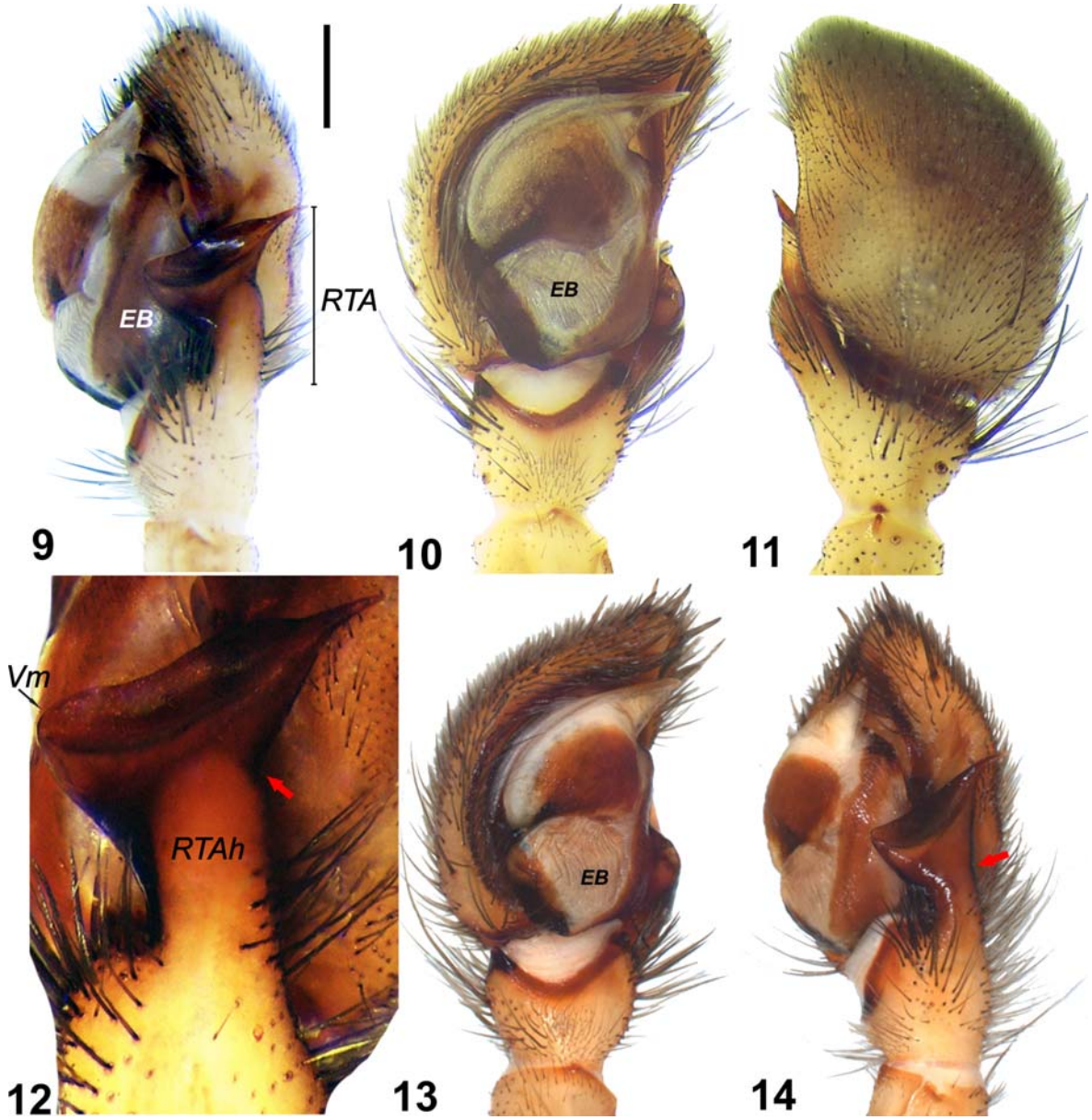
Genus *Lachesana* Strand, 1932

TYPE SPECIES: *Lachesis blackwalli* O. Pickard-Cambridge, 1872.

COMMENTS. *Lachesana* is the most species-rich genus of the subfamily, with seven named species distributed from Greece east to Kyrgyzstan and south to Egypt [Fomichev, Marusik, 2019; WSC, 2020].

***Lachesana bayramgocmeni* sp.n.**
Figs. 1–2, 4–7, 9–12, 15.

TYPES. Holotype ♂, CYPRUS, Lefkoşa Dist., Kalavaç Vill.,



Figs 9–14. Male palp *Lachesana bayramgocmeni* sp.n. (9–12) and *L. blackwalli* (13–14). 9, 12, 14 — retrolateral; 10, 13 — ventral; 11 — dorsal. Scale bar: 0.5 mm. Abbreviations: *EB* — base of embolus; *RTA* — retrolateral tibial apophysis; *RTAh* — handle of retrolateral tibial apophysis; *Vm* — ventral margin of deep concavity. Arrows indicate angular differences with *RTAh* and dorsal margin of *RTA*.

Рис. 9–14. Пальпа самца *Lachesana bayramgocmeni* sp.n. (9–12) и *L. blackwalli* (13–14). 9, 12, 14 — ретролатерально; 10, 13 — снизу; 11 — сверху. Масштаб: 0.5 mm. Сокращения: *EB* — основание эмболюса; *RTA* отросток голени; *RTAh* — ножка отростка голени; *Vm* — нижний край глубокой впадины. Стрелки показывают угловую разницу между *RTAh* и верхним краем *RTA*.

Alevkayası Area, 35°17′06″ N 33°31′41″ E, 630 m, 15.09.2017–13.01.2018, leg. K.B. Kunt & S. Gücel.

Paratypes: 1 ♀, Girne Dist., Lapta, Servili Tepe, 35°19′36.90″ N 33°08′55.40″ E, 753 m, 25.03.2018, leg. S. Gücel; 1 ♂, Beşparmak Mountains, 35°17′5.99″ N 33°29′10.65″ E, 558 m, 14 .01.2018–22.03.2018, leg. K.B. Kunt & S. Gücel. All types are deposited in CHNM.

ETYMOLOGY. The specific epithet is a patronym, honoring a colleague, a late Cypriot zoologist, Professor Dr. Bayram Göçmen (1965–2019).

DIAGNOSIS. Males of *Lachesana bayramgocmeni* sp.n. are similar to those of *L. blackwalli*. However, these two species differ mainly by the shape of tibial apophysis (cf. Figs 12 and 14). The tibial apophysis of the new species has a broader handle (0.25 times) and more rounded tip. The ventral margin of the deep concavity of the tibial apophysis is more rounded in *L. bayramgocmeni* sp.n. (Fig. 12). Females of *L. bayramgocmeni* sp.n. can be easily distinguished from those of *L. blackwalli* by the more widely spaced copulatory openings and by their shape as well as by double-lobed receptacles (*vs*. not doubled in *L. blackwalli*).

Measurements (holotype ♂/ paratype ♀): Carapace 5.70/6.00 long, 4.10/4.20 wide; abdomen: 5.00/5.25 long; ALE:

Table 1. Length of leg segments in *Lachesana bayramgocmeni* sp.n. (holotype ♂/ paratype ♀).
Таблица 1. Длина членикоа ног *Lachesana bayramgocmeni* sp.n. (голотип ♂/ паратип ♀).

Leg	F	P	T	Mt	Ta	Total
I	5.00/5.25	2.00/2.30	4.00/3.95	3.50/3.40	2.50/2.60	17.00/17.50
II	4.60/4.50	2.00/1.90	3.70/3.55	3.50/3.40	2.50/2.50	16.30/15.85
III	4.00/3.85	2.00/1.90	2.70/2.60	4.80/4.65	2.70/2.50	16.20/15.50
IV	5.20/5.10	2.00/1.90	3.40/3.30	6.50/5.80	3.40/2.70	20.50/18.80

Table 2. Leg spination in *Lachesana bayramgocmeni* sp.n. (holotype ♂).
Таблица 2. Вооружение ног *Lachesana bayramgocmeni* sp.n. (голотип ♂).

Leg	F	P	T	Mt	Ta	Total
I	d6 p5 r4	p1	p5 r1 v8	p2 r2	v18	52
II	d5 p5 r5	p1	p5 v10	p3 v10	v14	58
III	d5 p5 r5	d1 p1 r2	d2 p3 v6	d2 p3 r4 v8	v16	63
IV	d6 r10	d1 p1 r2	d2 p3 v6	d2 p3 r3 v10	v16	65

0.23/0.24; AME: 0.23/0.24; PLE: 0.18/0.20; PME: 0.14/0.15; AME-AME: 0.10/0.11; AME-PME: 0.08/1.00; PME-PME: 0.12/0.13.

DESCRIPTION. Carapace yellowish-brown (Figs 1–2). Eyes well developed, aligned in two rows. Both rows procurved. Sternum oval, surface covered with short black setae (Fig. 6). Gnathocoxae, labium, and sternum yellowish brown. Gnathocoxae 2 times longer than labium. Tips of gnathocoxae with black setae in form of tuft (Fig. 7). Male chelicerae with modified fangs: triangular at base, with tips recurved anteriorly and sharply tapering from their middle part to tip (Fig. 7).

Abdomen yellowish, dorsally with brownish lanceolate pattern in anterior half and 5 pairs of black spots spread more posteriorly, symmetrically and laterally of midline (Figs 1–2).

Legs yellowish brown. Anterior and posterior parts of coxae slightly darker than other segments. Leg covered with short black setae, denser on dorsal surfaces of patellae and tibiae. Legs with numerous spines. Number of spines and their arrangement vary between opposite legs of the same leg pair. Length of leg segments as in Table 1. Leg spination as in Table 2.

Male palp as in Figs. 9–12. Femur long, a little shorter than tibia+cymbium. Patella longer than tibia. Tibial apophysis with a distinct handle and a deep concavity. Dorsal part of tibial apophysis jagged and extends to half of the cymbium anteriodorsally. Cymbium nearly 1.7 times longer than wide, with 8–10 strong spines of different length. Base of embolus strongly chitinized prolaterally, other parts with longitudinal wrinkles. Filamentous embolus blackish, lying in the white triangular conductor.

Epigyne as in Figs. 4–5. Epigyne about 1.5 times wider than long, consists of two ear-shaped, chitinous plates, separated by a deep suture vertically continued to the middle of the epigyne. Sides of epigynal plate curved. Anterior pockets strongly sinuous. Anterior part of copulatory ducts swollen and distinct. Copulatory openings situated in the lateral parts of epigyne. Spermathecae swollen, well separated and double lobed.

DISTRIBUTION. Cyprus. Known only from the type series localities.

Lachesana blackwalli (O. Pickard-Cambridge, 1872)
Figs 3, 8, 13–14, 15.

Lachesis blackwalli: O. Pickard-Cambridge, 1872: 266, pl. 13, f. 5 (♂♀).

Lachesana blackwalli: Levy, 1990: 333, f. 1–6, 8–14 (♂♀).

L. blackwalli: Jocqué, 1991: 36, f. 16, 52-58 (♂♀).

L. blackwalli: Thaler, Knoflach, 2004: 41, f. 4, 12, 14, 17, 19, 22, 25 (♂).

MATERIAL EXAMINED: TURKEY (all in ETZM): 1 ♂, ***Muğla*** Prov., Seydikemer Dist., Girdev Plateau, 36°44′N 29°37′E, 2150 m, 14.08.2005, leg. E.A. Yağmur. 1 ♂, ***Manisa*** Prov., Spil Mountain National Park, 38°33′N 27°24′E, 1326 m, 7.10.2008, leg. E.A. Yağmur. ***İzmir*** Prov.: 3 juv., Buca Dist., Kaynaklar Vill, 38°21′N 27°17′E, 377 m, 27.02.2010, leg. E.A. Yağmur 1 ♂, Bergama Dist., Güneşli Vill., 39°19′N 27°8′E, 578 m, 5.05.2013, leg. E.A. Yağmur. 1 ♂, ***Karaman*** Prov., Sertavul Pass, 36°51′24″N 33°17′01″E, 1435 m, September–December 2010, leg. K.B. Kunt, R.S. Özkütük & E.A. Yağmur. ***Antalya*** Prov.: 1 ♂, Alanya Dist., Taşatan Plateau, 36°40′N 32°10′E, 1186 m, pitfall traps, 14.07–12.09.2011, leg. K.B. Kunt & R.S. Özkütük; 1 ♂, Alanya Dist., Elikesik Vill., 36°33′55″N 31°55′31″E, 36 m, 17.01.2016–1.04.2017, leg. K.B. Kunt. ***Eskişehir*** Prov.: 2 ♂♂, Tepebaşı Dist., Tandır Vill., 39°56′N 30°29′E, 1145 m, 14.08.2012, leg. F. Altunsoy; 8 ♂♂, Odunpazarı Dist., Yukarı Kalabak Vill., 39°30′N 30°24′E, 17.02–2.05.2013, leg. R.S. Özkütük; 5 ♂♂, ***Isparta*** Prov., Atabey Dist., Hıdırlık Area, 37°56′N 30°39′E, 1033 m, 27.10.2016, leg. G. Aydın. CYPRUS: 1 ♂ (ZMMU), Karpaz Peninsula, Dipkarpaz Vill., 35°40′N 34°34′E, 2 m, 16.01.2018–22.03.2018, leg. K.B. Kunt & S. Gücel.

DISTRIBUTION. *Lachesana blackwalli* is the most studied species of the genus (see Levy, 1990; Jocqué, 1991; Thaler, Knoflach, 2004). The species is known from Israel, Cyprus, Lebanon, Greece (Crete and North Aegean islands), and Turkey (Fig. 15) [WSC, 2020].

Levy [1990] mentions that *L. blackwalli* possibly exists in Syria, since the Israeli populations of the species could be found in a wide range of habitats from cold and humid mountainous areas to the semi-desert regions. Although we did not find the species during our field trips at the Turkey-Syria border, a previous record of *L. blackwalli* by Jocqué [1991] from the Syrian border may support Levy's suggestion [1990]. During our field studies, we collected *L. blackwalli* specimens from almost sea level within the arid Mediterranean maquis and up to the high mountain habitats around 2,000 m (Fig. 15).

Thaler & Knoflach [2004] recorded this species from the coastal part of Baf City, which is located the western side of the Cyprus. Recently, Bosmans *et al*. [2019] also recorded *L. blackwalli* in their checklist on the spiders of Cyprus from Baf, Girne, Gazi Mağusa and Limasol cities. Our single record is from Cape Andreas which is the easternmost point of the island and is very close to the sea.

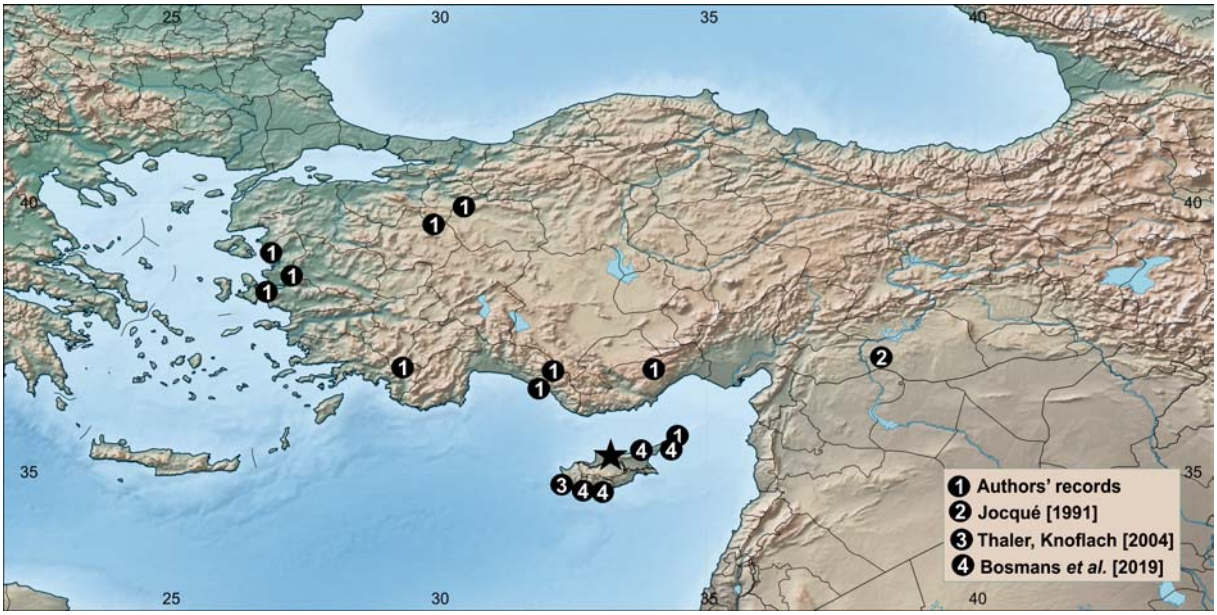


Fig. 15. Collecting localities of *Lachesana blackwalli* (●) and *L. bayramgocmeni* sp.n. (★).
Рис. 15. Места сборов *Lachesana blackwalli* (●) и *L. bayramgocmeni* sp.n. (★).

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