



**Figure 104:** *Iurus* sp., dorsal and ventral views. Adult female (FKCP), Agios Nikolaos, 3 km west of Karlovasi, Samos, Greece.





**Figure 105:** Collection locality of *Iurus dufourei*, Areopolis, Oitylo District, Laconia Prefecture, Mani Peninsula, Peloponnese, Greece.





**Figure 106:** Collection locality of *Iurus dufourei*, Areopolis, Oitylo District, Laconia Prefecture, Mani Peninsula, Peloponnese, Greece.



its length. Although *I. dufourei* exhibits the smallest ratio values in the genus (implying a stocky telson), it does cluster somewhat with species *I. kraepelini* and *I. asiaticus*. The relatively stocky telson seen in *I. dufourei* is visible when compared to other *Iurus* species, see Figs. 35–40.

Soleglad, Kovařík & Fet (2009) reported two cases of neobothriotaxy in *I. dufourei*. During this current study we isolated one more example of accessory trichobothria in this species. These three instances of neobothriotaxy are found in three different areas of the pedipalp, on the fixed finger internal surface, in the *Et* series of the chelal palm, and on the patella external surface. These three cases are assigned unique neobothriotaxic types (types 3, 6, and 13) because their specific positions on the pedipalp are not matched in the other four species of *Iurus*. See Appendix B for details on this neobothriotaxy.

**Material Examined (51 specimens).** GREECE: *Peloponnese*: Arcadia Prefecture, Megalopolis District, Kastri, Likosoura, 31 July 1995, 1 ♂, 1 ♀, leg. P. Crucitti (VFWV); Ilia Prefecture, Minthi Oros Mts., Zacharo District, Kurtaina (near Kalidona), 1 ♂, 13 August 1995, 1 ♂, 20 August 1995, leg. P. Crucitti (VFWV); Laconia Prefecture, Gythio District, Krini, 16 August 1995, 1 ♂, 1 ♂ sbad., 2 ♀, 14 August 1995, 1 ♀, leg. P. Crucitti (VFWV); Laconia Prefecture, Gythio District, Selinita, 1 ♂, 30 July 1995, 1 ♂, 1 ♀, 3 August 1995, 1 ♀, 9 August 1995, leg. P. Crucitti (VFWV); Laconia Prefecture, Mani Peninsula, Oitylo District, Areopolis, 30 April 1991, 1 ♂, leg. P. Rejsek (FKCP), June 1992, 1 juv., leg. P. Krásenský (FKCP); Laconia Prefecture, Mani Peninsula, Mina, 10 May 1965, 1 ♂, 1 ♂ juv., leg. E. Kritscher (NHMW 15920.1-2); Laconia Prefecture, Mani Peninsula, Paron Mts., 10 September 2002, 1 ♂, leg. I. Stathi (MCNH 81.1.5.15, donated to MESB); Laconia Prefecture, Mystras District, Anavriti, 17 August 1995, 1 ♀, 1 ♂ juv., leg. P. Crucitti (VFWV); Laconia Prefecture, Mystras District, Kalivia Sohas, 10 August 1995, 2 ♀, 16 embryos; leg. P. Crucitti (VFWV); Laconia Prefecture, Mystras District, Mystras, 18 September 1983, 1 ♂, leg. P. Beron & S. Beshkov (SOFM 68); same locality, July 1990, 4 juv. (FKCP), 1 juv. (NMPC), leg. I. Šklíba; Messinia Prefecture, Artemisia District, Nedontas River, between Artemisia and Kalamata, 29 July 1995, 1 ♀, leg. P. Crucitti (**neotype**; NHMW); 1 ♀, leg. P. Crucitti (VFWV); Messinia Prefecture, Artemisia District, Nedontas River, 13 km from Kalamata, 10 August 1995, 1 ♂, leg. P. Crucitti (VFWV); Laconia Prefecture, Artemisia District, Taygetos Mts., 31 May 1984, 1 ♂ juv. leg. E. Kritscher (NHMW 15918). *Crete*: Vianos (=Viano), 25 April 1887, 1 ♀, leg. E. von Oertzen (ZMHB 8701); 1 juv., born in captivity from a ♀ collected in Mariou, 2001, leg. I. Stathi (MCNH 81.1.5.1, donated to

VFWV). *Kythira*: Agia Sofia Cave (Mylopotamos), 25 August 2001, 1 ♂, leg. I. Stathi (MCNH 81.1.5.3, donated to MESB).

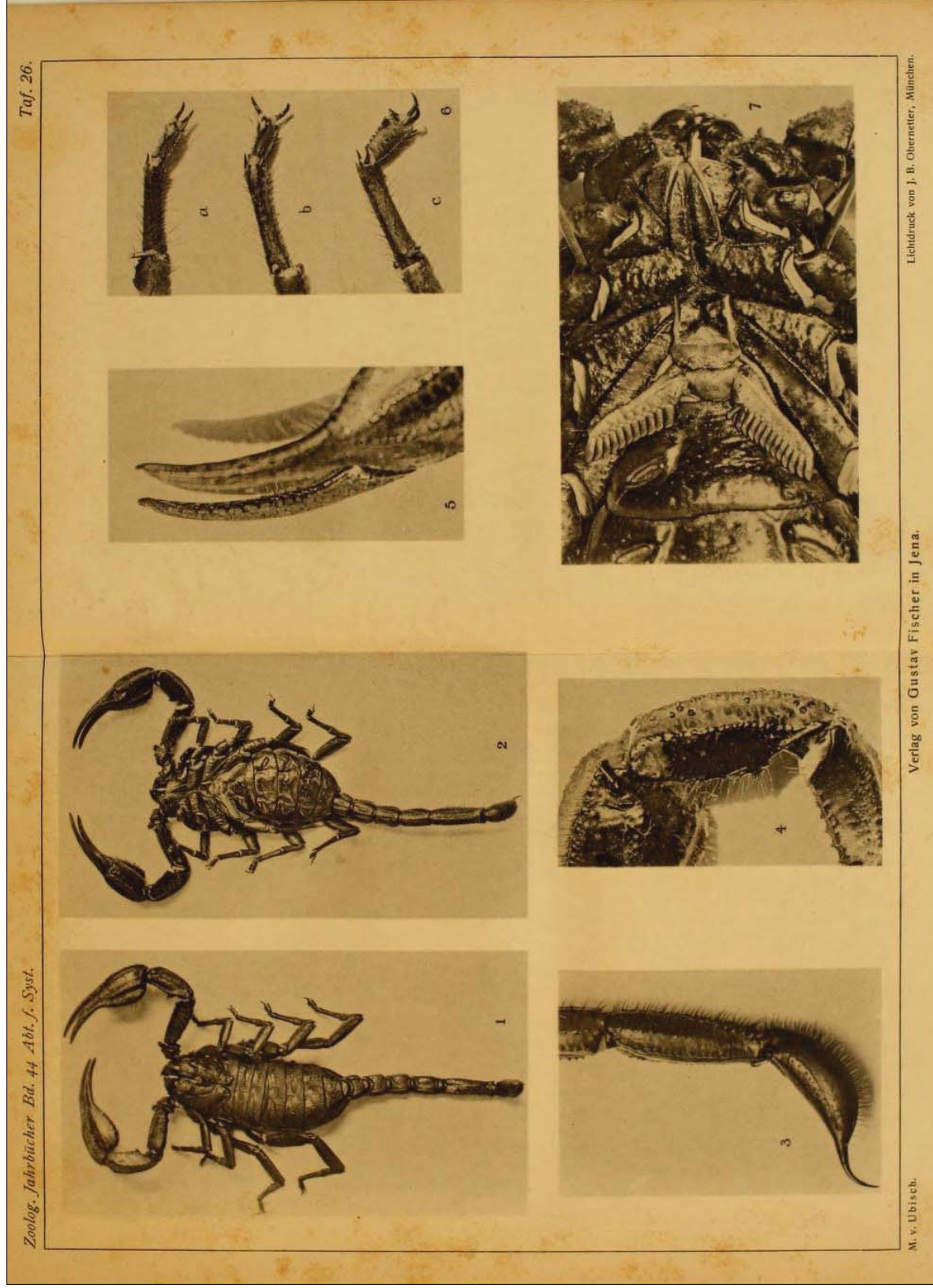
### *Iurus kraepelini* von Ubisch, 1922

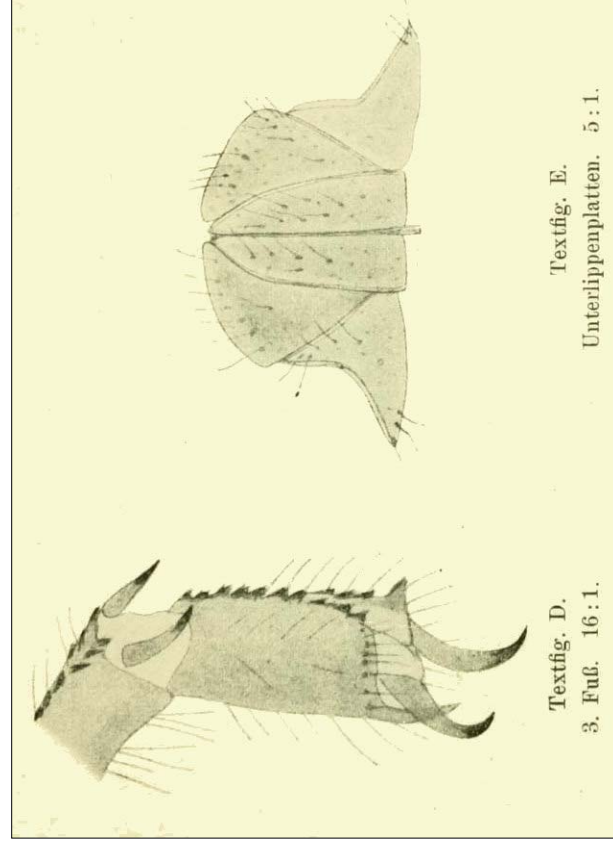
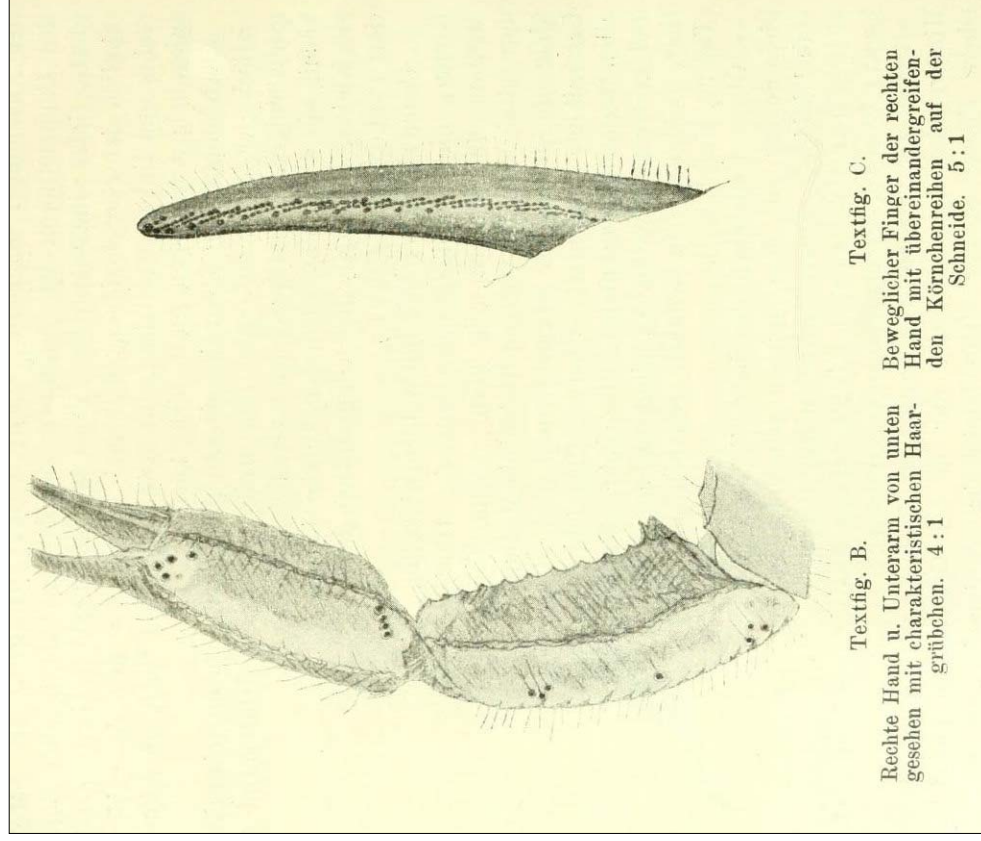
(Figs. 2, 6, 8, 12, 14, 15, 17, 19, 22, 26, 29–32, 36, 54–55, 60, 64–68, 73, 74, 107–142; Tabs. 1–3, 5)

*Iurus kraepelini* von Ubisch, 1922: 503–515, text-figs. A–F, tab. 26, figs. 1–7; type locality: TURKEY, Antalya Province, Finike (“Fineka”), September 1902 (leg. J. Vosseler); holotype (female?) formerly in SMNS (Figs. 107–108), now lost (W. Schawaller, pers. comm., 2008).

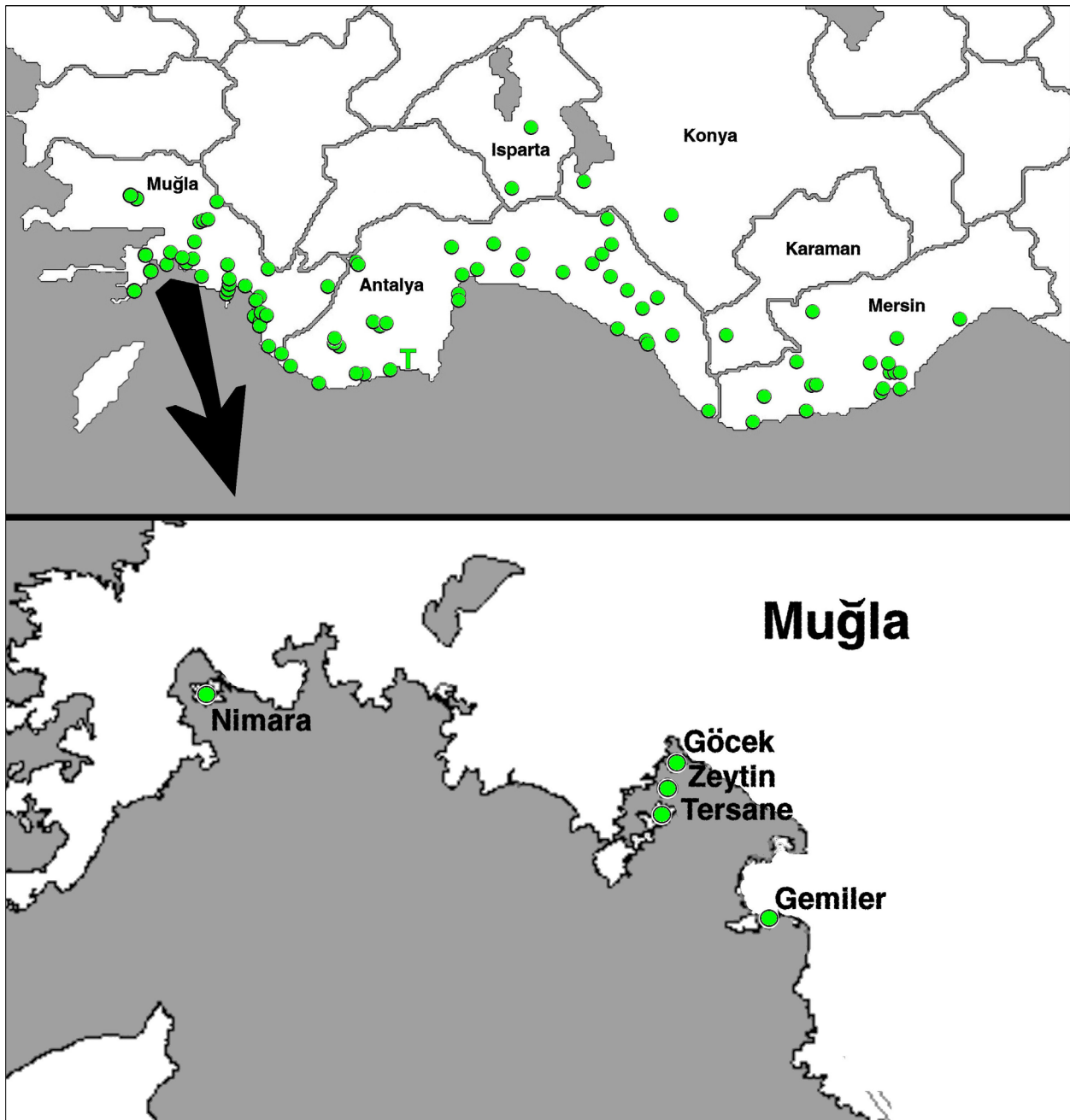
### REFERENCES:

- Iurus dufourei*: Werner, 1902: 605 (Eskişehir; dubious locality); Werner, 1934a: 162 (in part); Werner, 1934b: 282 (in part); Werner, 1936a: 192 (Ovacik); Werner, 1938: 172 (in part); Vachon, 1948: 63 (in part); Vachon, 1951: 343 (in part); Vachon, 1953: 96–100 (in part).
- Iurus dufourei*: Kraepelin, 1899: 178–179 (in part); Roewer, 1943: 235; Vachon, 1966b: 215 (in part); Kinzelbach, 1975: 21–26 (in part); Kinzelbach, 1982: 58 (in part); Kinzelbach, 1985: Map IV (in part); Fet & Braunwalder, 2000: 18 (in part); Soleglad & Fet, 2003: 8, fig. 20, 44, 53; Fet et al., 2004: 18 (in part); Fet & Soleglad, 2008: 256 (in part); Kaltsas, Stathi & Fet, 2008: 227–228 (in part); Soleglad, Kovařík & Fet, 2009: 2–3 (in part), fig. 10–15 (in part).
- Iurus kraepelini*: Werner, 1934a: 162; Werner, 1934b: 282; Werner, 1936a: 192; Vachon, 1948: 63.
- Iurus dufourei asiaticus*: Vachon, 1947a: 162 (in part); Vachon, 1947b: 2 (in part); Vachon, 1948: 63 (in part); Vachon, 1951: 342 (in part).
- Iurus kraepelini*: Stahnke, 1974: 123 (in part; doubtful species).
- Iurus asiaticus*: Francke, 1981: 221–224 (in part), fig. 3 (“Namrun”, probably wrong locality), 5–6 (Antalya); Vachon & Kinzelbach, 1987: 102 (in part); Crucitti, 1995a: 2 (in part); Crucitti, 1998: 32 (in part); Kovařík, 1998: 136 (in part); Crucitti, 1999a: 87–88, fig. 2 (in part); Kovařík, 1999: 40 (in part); Crucitti & Cicuzza, 2001: 227, 229, fig. 7 (in part); Karataş, 2001: 14 (in part); Stathi & Mylonas, 2001: 290 (Megisti); Kovařík, 2002: 16–17 (in part); Kovařík, 2005: 55 (in part); Facheris, 2007a: 1 (in part); Facheris, 2007b: 1 (in part).
- Iurus* sp.: Francke & Soleglad, 1981: 252, fig. 53–56 (?Antalya; hemispermatophore).
- Iurus dufourei asiaticus*: Kritscher, 1993: 383 (in part; Çakırlar); Sissom & Fet, 2000: 420 (in part); Parmakelis et al., 2006: 253 (in part); Francke & Prendini, 2008: 218 (in part); Kamenz & Prendini, 2008:

Figure 107: Illustrations of *Iurus kraepelini* from von Ubiaseb (1922).



**Figure 108:** Illustrations of *Iurus kraepelini* from von Ubisch (1922).



**Figure 109:** Large-scale map showing distribution of *Iurus kraepelini*. "T" marks type locality, Fineka, Antalya Province, Turkey. Bottom map shows close-up of Muğla Province island localities. See Fig. 74 for distribution of all species and Appendix A for detailed locality data.

43; Kaltsas, Stathi & Fet, 2008: 228 (in part); Yağmur, Koç & Akkaya, 2009: 154–159 (in part).

species of *Iurus*, which is clarified in the present revision.

**Neotype** (designated here): ♀ (NMHW), TURKEY, *Antalya Province*: Kale District, 2nd km of the road from Demre to Kaş, 15 May 2008, leg. A. Akkaya & İ. H. Ugurtaş. The neotype is designated from the closest available locality to Finike. Its designation is warranted by a complicated taxonomic situation in Anatolian

**Diagnosis.** Large species, up to 100 mm. Dark gray to black in overall coloration. Pectinal tooth counts largest in genus, 10–16 (12.63) males, 10–14 (11.48) females. Chelal movable finger lobe in adults located on mid-finger or distally, lobe ratio 0.44–0.64; proximal gap of fixed finger present in adult males; number of inner



denticles (*ID*) of chelal movable finger, 11–14 (12.5); chelal palm of adult males short, deep and highly vaulted, chela length/palm depth 2.21–2.49 (2.31) male, 2.62–2.69 (2.66) female; chelal movable finger of adult male conspicuously curved; constellation array with *five* sensilla; hemispermatophore lamina internal nodule widely rounded, positioned basally, lamina distal length/lamina basal length 2.159–3.074 (2.564), terminus of acuminate process truncated, transverse trunk bolsters are absent. Dominant morphometrics are chelal width and depth (see Appendix C).

**Distribution.** Turkey: Anatolia (south). Greece: Megisti (Kastelorizo). See map in Fig. 74 for large-scale distribution of this species.

**FEMALE.** Description based on neotype female collected in Kale District, Antalya Province, Turkey. Measurements of the neotype and four other specimens are presented in Table 5. See Figure 110 for dorsal and ventral views of the female neotype.

**COLORATION.** Basic color of carapace, mesosoma, metasoma, telson, and legs dark blackish, except for tarsus which is orange; carinae of metasoma and pedipalp black, barely distinguishable from background color. Sternites light brown; genital operculum, pectines, basal piece yellow. Essentially void of patterns.

**CARAPACE (Fig. 111).** Anterior edge with a conspicuous median indentation, with approximately 25–30 irregularly placed setae visible; anterior edge covered with large granules; interocular area delineated by mediolateral ocular carinae essentially smooth except for scattered sparse small granules; extreme lateral edges sparsely populated with medium-sized granules. Mediolateral ocular carinae, which are conspicuous due to the somewhat smooth interocular area, are well-developed and granulated, extending to the lateral eyes; there are three lateral eyes, the posterior eye the smallest, roughly half the size of the middle eye. Median eyes and tubercle somewhat small, positioned anteriorly of the middle with the following length and width formulas: 421|1185 and 166|1015.

**MESOSOMA (Figs. 112, 115).** Tergites I–VII coarsely granulated; tergite VII carinae not detectable due to heavy granulation on entire surface. Sternites III–VII smooth and lustrous; sternite VII with lateral carinae irregularly granulated, median carinae smooth proximally (Fig. 112). Stigmata (Fig. 115) are medium in size and slit-like in shape, angled 45° in an anterointernal direction.

**METASOMA (Fig. 113).** Segments I–II wider than long. Segments I–IV: dorsal and dorsolateral carinae serrated;

dorsal carinae with 10/9, 8/7, 8/8, and 10/9 serrated spines (left/right carina); dorsal (I–IV) and dorsolateral (I–III) carinae do not terminate with an enlarged spine; lateral carinae serrated on I, crenulated on two-thirds of II, irregularly crenulated on one-half of III, absent on segment IV; ventrolateral carinae crenulated on I–IV; ventromedian carinae irregularly granulated on I, irregularly crenulated on II, and crenulated on III–IV. Dorsolateral carinae of segment IV terminate at articulation condyle. Segment V: dorsolateral carinae serrated; lateral carinae serrated for three-fifths of their posterior portion; ventrolateral and single ventromedian carinae serrated; ventromedian carina terminus irregularly bifurcated. Anal arch with 16 serrated granules. Intercarinal areas of segments I–V essentially smooth. Metasomal segments with numerous long setae on all surfaces.

**TELSON (Fig. 113).** Vesicle of medium length with highly curved aculeus. Vesicle with slight traces of minute granules ventrally; ventral surface densely covered with medium-length, straight setae; dorsal setation much less dense, with shorter setae; base of aculeus with setation ventrally and dorsally, slightly enlarged setal pair located on aculeus midpoint, their areolae area slightly swollen. Vesicular tabs smooth.

**PECTINES (Fig. 116, male Fig. 117).** Well-developed segments exhibiting length|width formula 810|300. Sclerite construction complex, with three anterior lamellae and one large middle lamella; fulcrum of medium development. Teeth number 11/10. Sensory areas developed along most of tooth inner length on all teeth, including basal tooth. Scattered setae found on anterior lamellae and distal pectinal tooth. Basal piece large, with subtle indentation along anterior edge, length|width formula 370|760.

**GENITAL OPERCULUM (Fig. 116).** Sclerites elongate, wider than long, connected for entire length except for a swallow medial indentation on proximal edge (see discussion on male below).

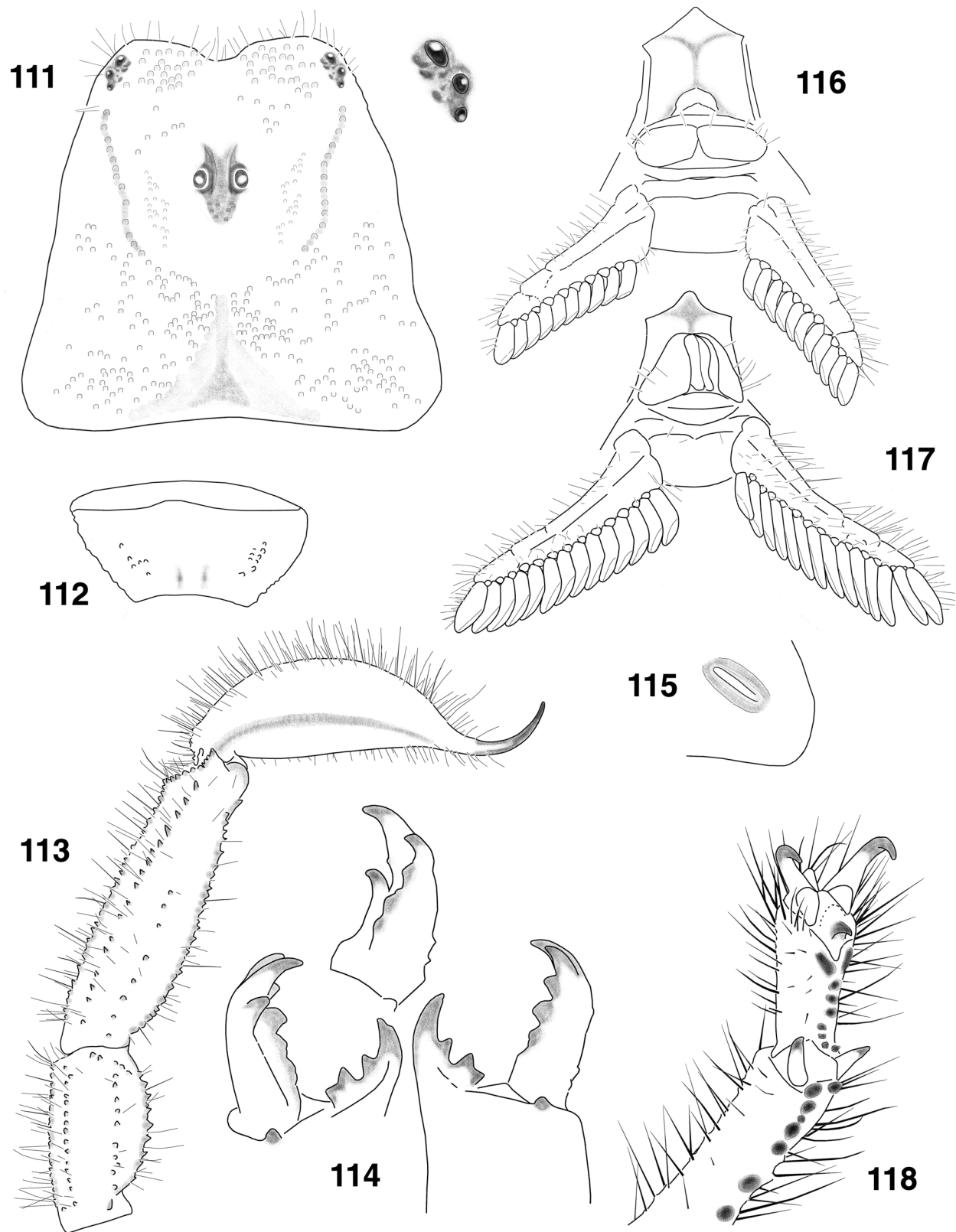
**STERNUM (Fig. 116).** Type 2, posterior emargination present, well-defined convex lateral lobes, apex visible but not conspicuous; conspicuous membranous plug situated proximally between lateral lobes; sclerite longer than wide, length|width formula 300|280; sclerite slightly tapers anteriorly, posterior-width|anterior-width formula 280|245 (see discussion on male below).

**CHELICERAE (Fig. 114).** Movable finger dorsal edge with one large subdistal (*sd*) denticle; ventral edge with one large pigmented accessory denticle at finger midpoint and a small *va* denticle distal of this large denticle; ventral edge serrula not visible. Ventral distal





**Figure 110:** *Iurus kraepelini*, dorsal and ventral views. Female **neotype**, between Demre and Kaş, Kale District, Antalya Province, Turkey.



**Figures 111–118:** *Iurus kraepelini*. 111–116. Female neotype, between Demre and Kaş, Antalya, Turkey. 117–118. Male, 5 km south of Fethiye, Babadağ Mountains, Muğla, Turkey. 111. Carapace and close-up of lateral eyes. 112. Sternite VII. 113. Telson and metasomal segments IV–V, lateral view. 114. Right chelicera, ventral and dorsal views. 115. Stigma II, left. 116. Sternopectinal area. 117. Sternopectinal area. 118. Tarsus and partial basitarsus, right leg I.



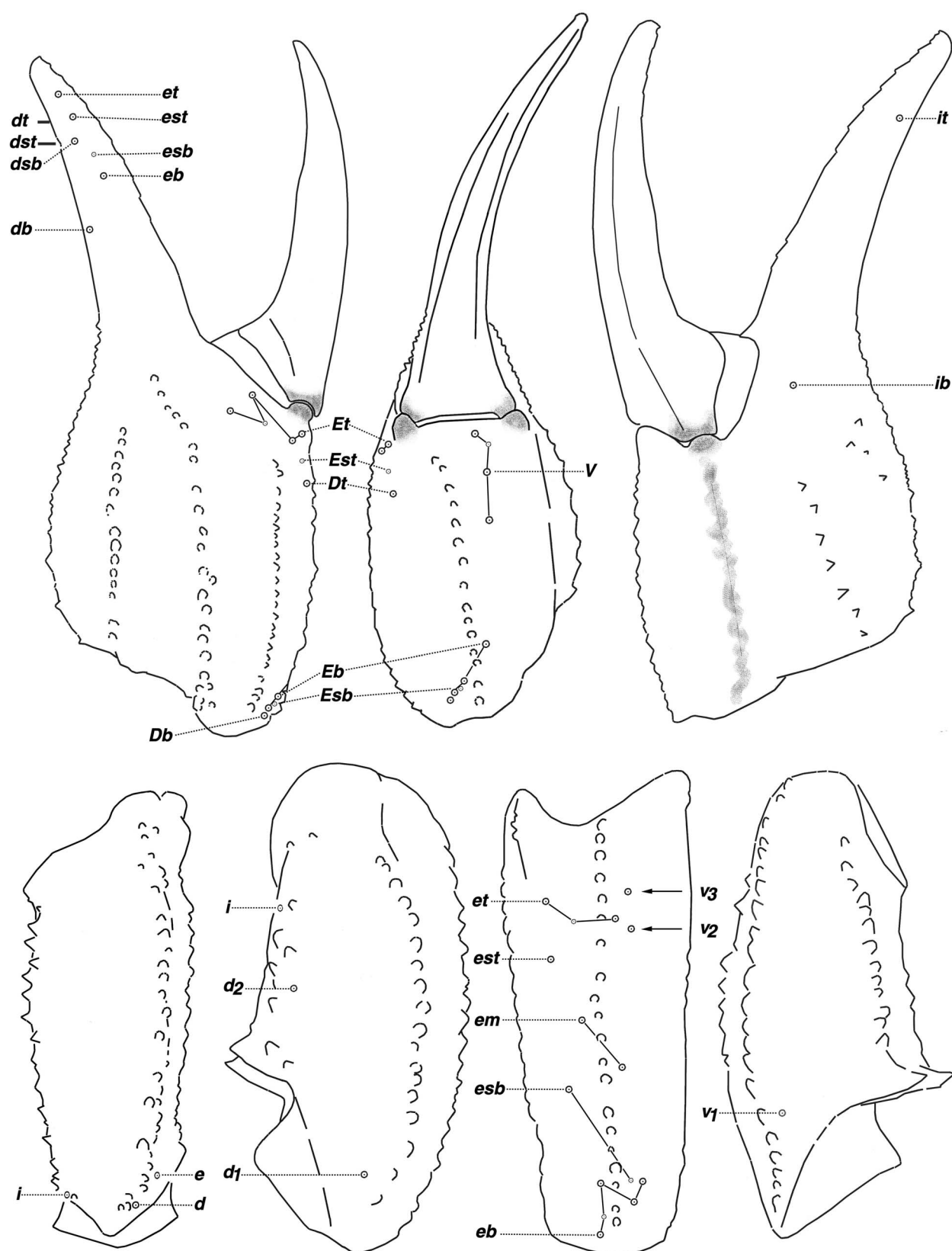


Figure 119: Trichobothrial pattern of *Iurus kraepelini*, female neotype. Between Demre and Kaş, Antalya, Turkey.

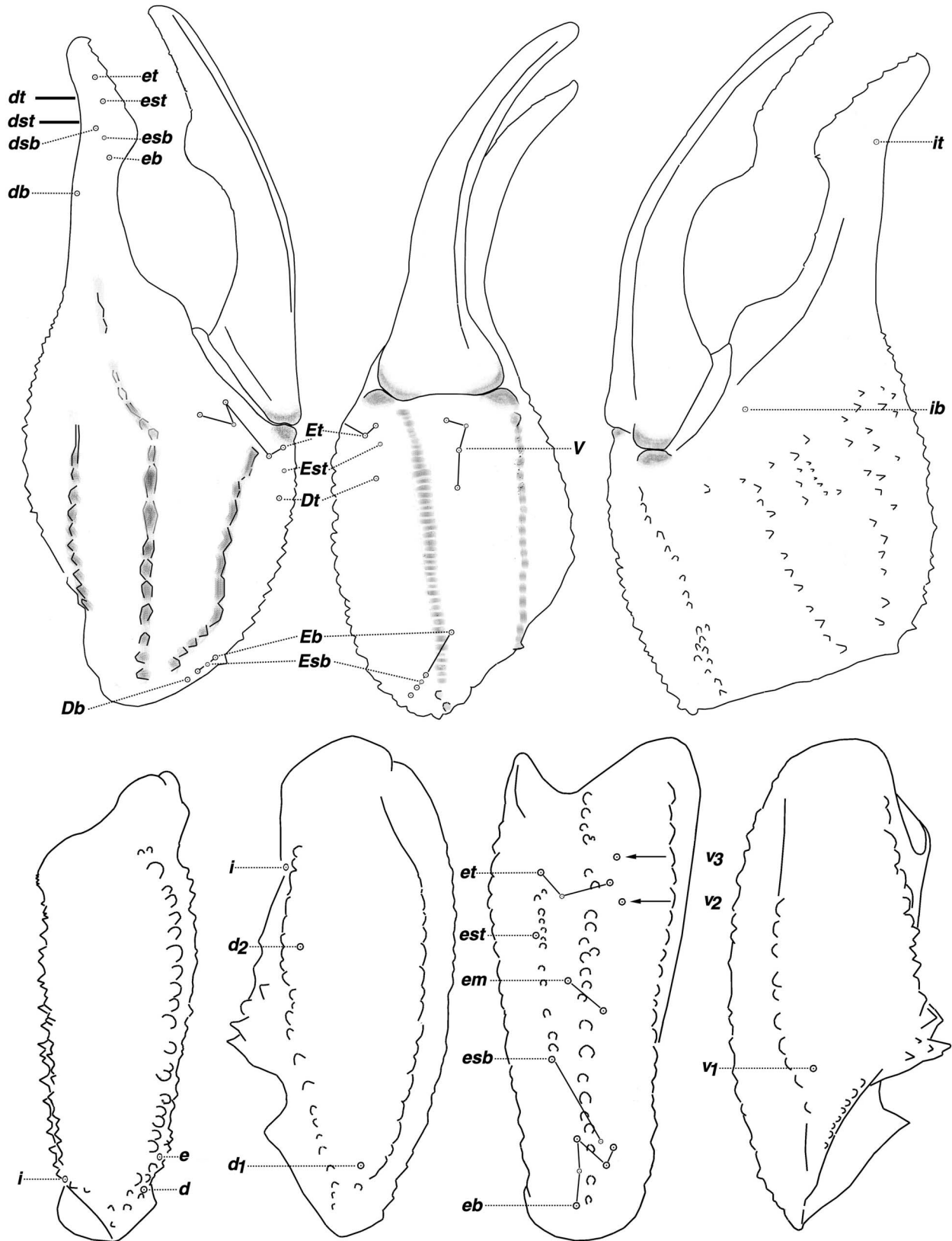
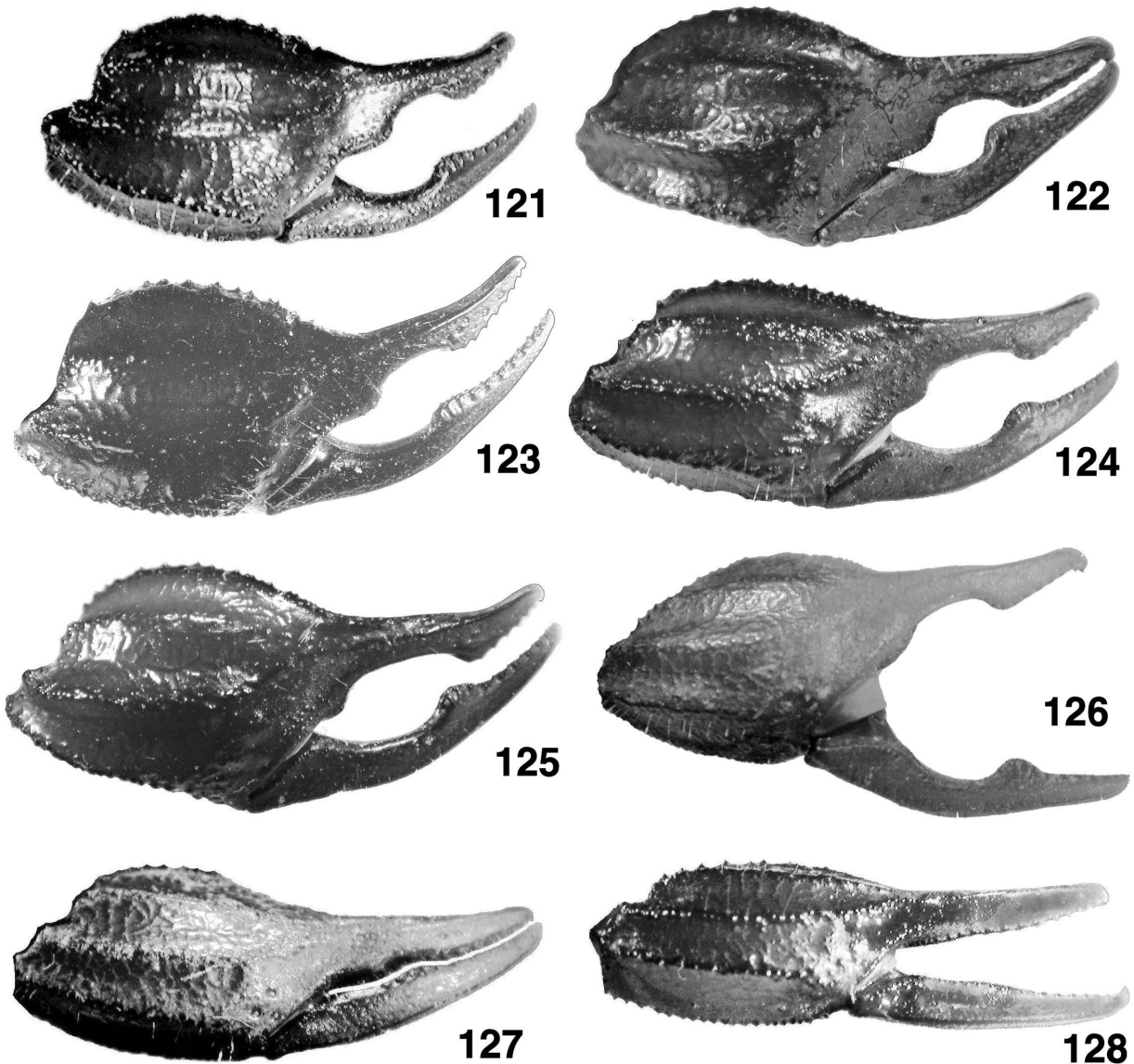


Figure 120: Trichobothrial pattern of *Iurus kraepelini*, male. Silifke, Mersin, Turkey.





**Figures 121–128:** Chela, lateral view, *Iurus kraepelini*, adults unless stated otherwise. **121.** Male, Akseki, Antalya, Turkey. **122.** Male, Gölbaşı, Antalya, Turkey. **123.** Male, Akseki, Antalya, Turkey. **124.** Male, Uzuncaburg, Antalya, Turkey. **125.** Male, Silifke, Mersin, Turkey. **126.** Male, Fethiye, Mugla, Turkey. **127.** Female, Akseki, Antalya, Turkey. **128.** Juvenile male, Akseki, Antalya, Turkey. Note in adults, the movable finger lobe is positioned *distal* of finger midpoint and the fixed finger proximal gap is conspicuously *present* in adult males. Also, unique to this species, is the deep, vaulted chelal palm and highly curved movable finger in adult males.

denticle (*vd*) slightly longer than dorsal (*dd*). Fixed finger with four denticles, median (*m*) and basal (*b*) denticles conjoined on common trunk; no ventral accessory denticles present.

**PEDIPALPS (Fig. 119).** Well-developed chelae, with medium length fingers, heavily carinated, scalloping of chelal fingers essentially obsolete: lobe on movable finger barely visible, positioned at midpoint; proximal gap of fixed finger absent. **Femur:** Dorsointernal,

dorsoexternal and ventrointernal carinae serrated, ventroexternal rounded and granulated. Dorsal surface granulated, ventral scattered with minute granules, internal and external surface with line of 10 serrated granules each. **Patella:** Dorsointernal and ventrointernal carinae serrated, dorsoexternal crenulated, ventroexternal granulated; exteromedian carina strong, serrated, and single. Dorsal surface rough under 10x and ventral surface smooth; external surface smooth with serrated exteromedian carina; internal surface smooth

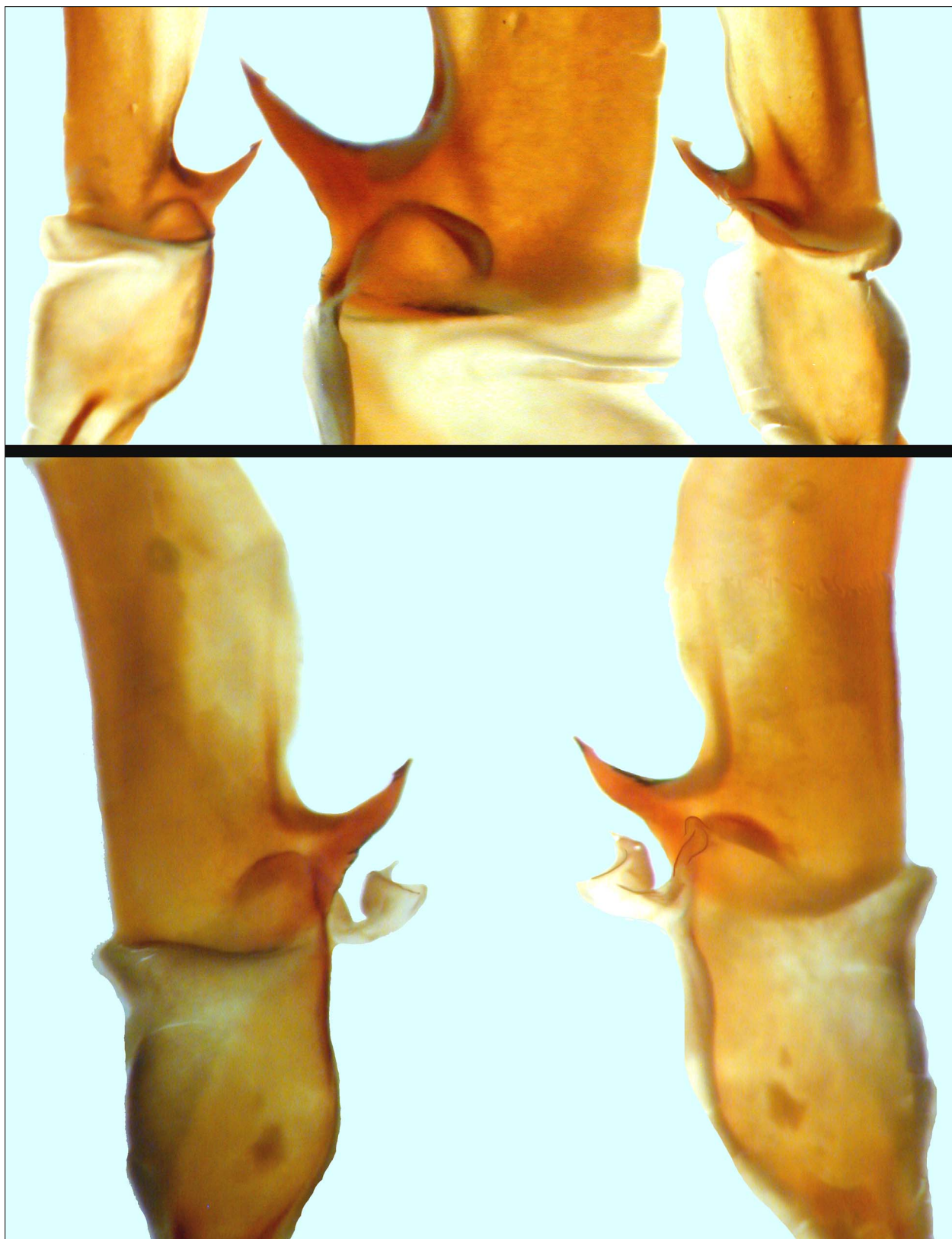


**Figure 129:** Close-up of median area of right hemispermatophore, *Iurus kraepelini*. **Top.** Dorsal, ventroexternal, and ventral views, Silifke, Mersin, Turkey. **Bottom.** Dorsal, internoventral, and ventral views, Antalya, Antalya, Turkey.

with well-developed, doubled DPS and VPS. **Chelal carinae:** Complies with the “8-carinae configuration”. Digital (*D1*) carina strong, granulated; dorsosecondary (*D3*) granulated; dorsomarginal (*D4*) serrated, doubled; dorsointernal (*D5*) irregularly serrated; ventroexternal

(*V1*) strong and serrated, terminating to external condyle of movable finger; ventrointernal (*V3*) rounded and rough, continuous to internal condyle; external (*E*) strong, continuous, and serrated; internal (*I*) serrated. **Chelal finger dentition:** Median denticle (*MD*) row





**Figure 130:** Close-up of median area of right hemispermaphore, *Iurus kraepelini*. **Top.** Dorsal, ventral, and internoventral views, Central District, Antalya Province, Turkey. **Bottom.** Dorsal and ventral views, Seki District, Muğla Province, Turkey. Note the fine detail of the paraxial organ sleeve emanating from the seminal receptacle on the ventral surface.



**Figure 131:** Close-up of median area of right hemispermatophore, *Iurus kraepelini*, dorsal and ventral views, Akseki, Antalya, Turkey.

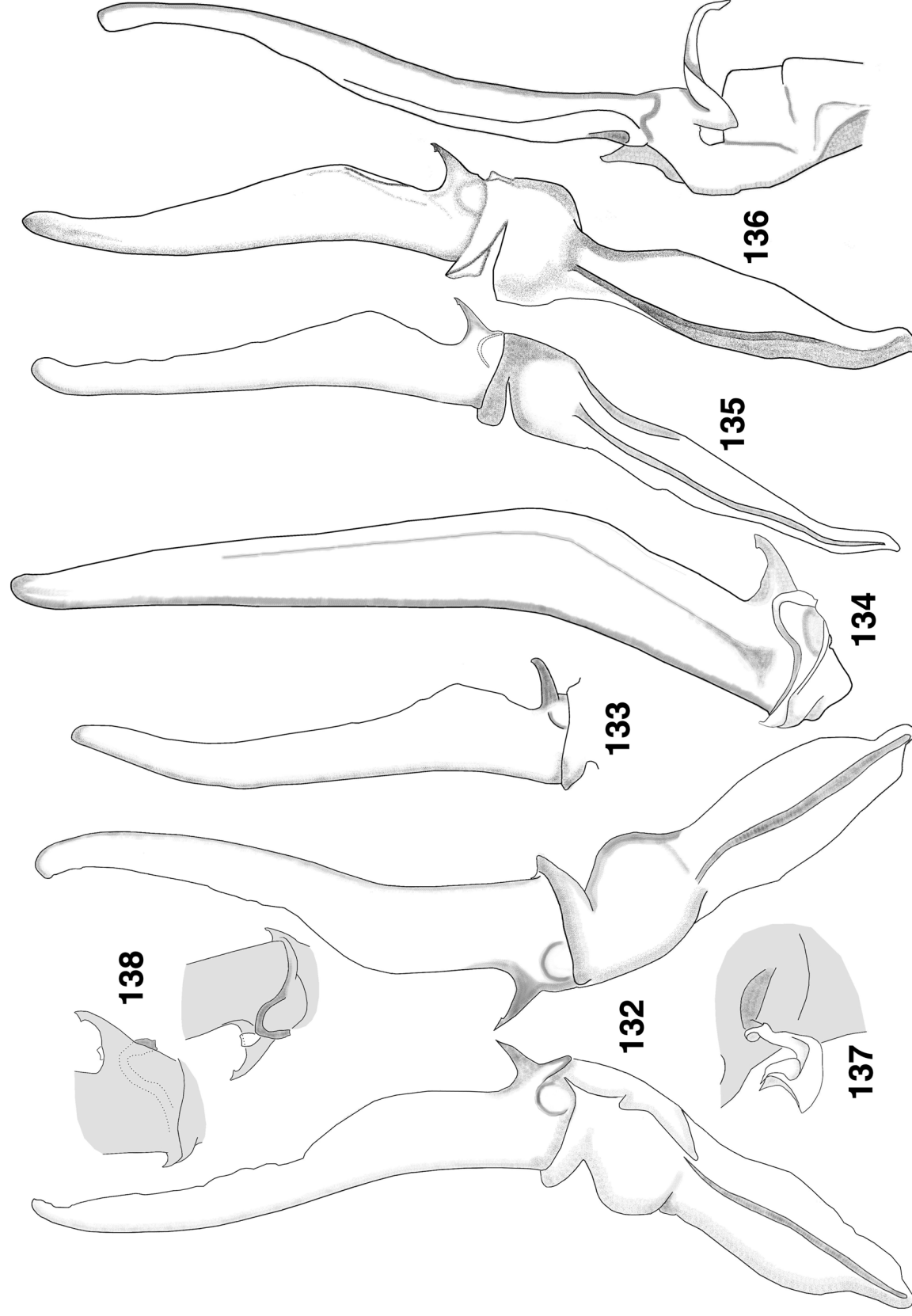
groups oblique and highly imbricated; 11/11 *ID*s on fixed fingers and 13/13 *ID*s on movable fingers; 14/14 *OD*s on fixed fingers and 15/15 *OD*s on movable fingers. No accessory denticles present. **Trichobothrial pattern (Fig. 119):** Type C, orthobothriotaxic, typical of genus (but see below on neobothriotaxy in this species).

**LEGS (male, Fig. 118).** Both pedal spurs present on all legs, lacking spinelets; tibial spurs absent. Tarsus with conspicuous spinule clusters in single row on ventral surface, terminating distally with a pair of enlarge spinule clusters. Unguicular spine well-developed and pointed.

**HEMISPHERMATOPHORE (Figs. 129–138).** We have examined several hemispermatophores of *I. kraepelini*, spanning major provinces of its distribution, Muğla, Antalya, and Mersin (see map in Fig. 60). The hemispermatophore of *I. kraepelini* is unique among *Iurus* species, exhibiting a pointed terminus on the lamina, a rounded internal nodule, absence of transverse trunk bolsters, and a truncated acuminate process terminus (see below for more data).

**Male and female variability.** The overall morphology of the chela exhibits significant sexual dimorphism in this species (Figs. 123–127). In the sexually mature male, the pincer is very robust, the dorsal edge of the

palm quite vaulted. Its movable finger is quite curved, forming a 30° or larger angle (Fig. 59). The movable finger lobe is conspicuous in the male, fitting into an equally well developed fixed finger socket. The proximal gap on the fixed finger is greatly developed in the male. There is no significant sexual dimorphism in morphometrics except for the chelal depth which is relatively larger in the male (exhibiting a 14.8 % MVD with the female when compared to the chela length). The metasomal segments are relatively longer in the male, but the MVDs across all five segments only favored the male by 4.4 to 9.0 % when compared to the segment's width. Pectinal tooth counts in males exceed those of females by approximately one tooth (1.15), male 10–16 (12.63) [165], female 10–14 (11.48) [211] (see histograms in Fig. 73). The genital operculum of the male is dramatically different from that in the female (Figs. 116–117). The sclerites, subtriangular in shape, are as long as or longer than wide in the male, whereas in the female the sclerites are short and wide, more than twice as wide as long. Whereas the sclerites are fused medially in the female, they are separated along their entire length in the male, exposing significantly developed genital papillae. The enlarged genital operculum of the male extends distally between the lateral lobes of the sternum partially obscuring its proximal region. Figures 139–147 show dorsal and



**Figures 132–138:** Hemispermatophore, *Iurus kraepelini* (right hemispermatophore unless stated otherwise). **132.** Antalya, Antalya, Turkey, dorsal and ventral views. **133.** "Taurus", Turkey, dorsal view. **134.** Akseki, Antalya, Turkey, dorsal view. **135.** Central District, Antalya, Turkey, dorsal view. **136.** Silifke, Mersin, Turkey, dorsal and ventroexternal views. **137–138.** Close-up of paraxial organ sleeve showing its attachment to the seminal receptacle. **137.** Seki District, Mugla, Turkey. **138.** Akseki, Antalya, Turkey.



	<i>I. kraepelini</i> von Ubisch, 1922				
	Between Demre and Kaş, Antalya, Turkey	Akseki, Antalya, Turkey		Silifke, Mersin, Turkey	
	Female Neotype	Male	Female	Male	Female
Total length	82.50	88.15	91.20	100.05	85.95
Carapace length	11.85	13.40	13.05	14.65	12.00
Mesosoma length	29.20	24.15	31.75	30.45	27.95
Metasoma length	28.80	35.50	32.90	39.10	31.95
Segment I length/width	3.55/5.20	4.55/5.50	4.20/5.70	4.95/5.95	4.10/5.20
Segment II length/width	4.35/4.50	5.40/4.80	5.00/4.90	6.00/5.20	4.75/4.55
Segment III length/width	4.75/4.15	5.85/4.60	5.40/4.60	6.60/4.80	5.20/4.05
Segment IV length/width	5.70/3.65	6.95/4.20	6.55/4.20	7.75/4.35	6.25/3.70
Segment V length/width	10.45/3.60	12.75/4.00	11.75/3.90	13.80/4.05	11.65/3.50
Telson length	12.65	15.10	13.50***	15.85	14.05***
Vesicle length	9.05	10.35	9.70	11.85	9.50
width/depth	3.80/3.35	4.60/4.15	4.15/3.55	4.70/4.15	4.15/3.45
Aculeus length	3.60	4.75	3.80***	4.00	4.55***
Pedipalp length	42.55	49.25	46.65	55.15	44.75
Femur length/width	10.80/3.90	12.50/4.20	11.75/4.30	13.80/4.65	11.10/4.30
Patella length/width*	10.25/4.25	12.65/4.75	11.35/4.45	13.15/5.30	10.80/4.45
DPS height**	1.20	1.75	1.10	1.75	1.40
Chela length	21.50	24.10	23.55	28.20	22.85
Palm length	9.70	11.55	10.70	13.15	10.80
width/depth	6.60/8.20	7.65/10.80	6.35/8.75	8.75/12.75	7.55/8.65
Fixed finger length	10.40	12.10	11.10	14.05	10.80
Movable finger length	13.70	16.20	14.90	18.80	14.25
Pectines teeth	11-10	13-14	12-11	12-12	11-11
middle lamellae	1-1	1-1++	4-4++	2-2	1-1++
Sternum length/width	3.00/2.80	2.80/2.60	3.45/3.30	3.25/2.50	3.45/3.00

**Table 5:** Morphometrics (mm) of *Iurus kraepelini* von Ubisch, 1922, \* Patella width is widest distance between the dorso-internal and externomedial carinae. \*\* DPS height is from tip of spines to dorsointernal carina center.

ventral views of both male and female specimens, and various collection localities for this species.

## Discussion

Unique to this species is the extraordinarily developed chela of sexually mature males. The palm is highly vaulted, making it the deepest palm found in *Iurus*. The movable finger is highly curved, forming an angle with its base of approximately 30°, roughly 50 % greater than that found in other species. *I. kraepelini* has the most distally positioned movable finger lobe in the genus. The movable finger lobe ratio is larger in the male than the female, 0.465–0.640 vs. 0.440–0.575 (ratios calculated from adults with carapaces 11 mm long or larger; see scatter chart in Fig. 56 for a complete

analysis of this character). *I. kraepelini* also has the most exaggerated proximal gap in the genus (Figs. 121–126).

*I. kraepelini* has the highest number of pectinal teeth (Fig. 73), roughly one tooth more than found in *I. asiaticus*, the species with the next highest number of teeth. This species is also the largest in *Iurus*, males exceeding 100 mm in length (see measurements in Table 5).

The hemispermaphore of *I. kraepelini* (Figs. 129–138) has been examined from six specimens, each from a separate locality, spanning the provinces of Muğla, Antalya, and Mersin (see map in Fig. 60). The relative proportions of the hemispermaphore component in this species is situated between *I. asiaticus* with the smallest ratio values and *I. dufourei* and *I. kinzelbachi*, the species with the largest values (see Table 2). The lamina is of average length, slightly longer than its trunk, in a