



Figure 139: *Iurus kraepelini*, dorsal and ventral views. Adult male (FKCP) (95 mm), 12 km S. Akseki, Antalya, Turkey.



Figure 140: *Iurus kraepelini*, dorsal and ventral views. Adult female (FKCP) (95 mm), 12 km S. Akseki, Antalya, Turkey.



Figure 141: *Iurus kraepelini*, male (100 mm), Silifke, Mersin, Turkey.

1.122 ratio (see Table 2). The lamina terminus is somewhat pointed, especially when compared to the wide and rounded internal nodule. The internal nodule is situated subbasally on the lamina, in a ratio 2.6. The acuminate process terminus is truncated as in most other *Iurus* species. Transverse trunk bolsters are absent. The paraxial organ sleeve was present in some hemi-

spermatophores (Fig. 130–131, 137–138), its attachment to the seminal receptacle is as found in other species. In particular, the sleeve is well represented in the specimen from Muğla (Figs. 130, 137).

In Appendix C, we present a complete analysis of the morphometric trends across the five species of *Iurus*. This analysis shows that the chela width and depth in *I.*



Figure 142: *Iurus kraepelini*, female, Gökbel Village, Ortaca Dist., Muğla, Turkey.

kraepelini dominated in a large majority of morphometric ratio comparisons: averaging 24 and 25 comparisons out of 25 for the male and 21 and 24 for the female. This somewhat stocky chela is accompanied by its relative shortness, only dominating 7 ratio comparisons on average. Figure C2 in Appendix C presents the histograms of the chela width and depth as compared to its length. These two morphometrics, consistent in both genders, provide excellent diagnostic separation characters for *I. kraepelini*. The MVDs for the chelal width ranged 7.6 to 27.2 % for the male and 7.9 to 23.2 % for the female; and the chelal depth ranged 24.6 to 47.3 % for the male and 15.2 to 24.9 % for the female.

Soleglad, Kovařík & Fet (2009) reported several cases of neobothriotaxy in *I. kraepelini* (referred to as *I. dufourei* from Turkey, without İzmir): out of 64 specimens, 37 instances of neobothriotaxy were reported, spanning 5 types, and representing 85 individual accessory trichobothria. During the current study we isolated one more type of neobothriotaxy in this species (type 7), eight instances, and eleven instances of the other five types. The majority of neobothriotaxy cases occurring in *Iurus* is found in *I. kraepelini* (six types), of which a couple of types might have taxonomic potential (types 1 and 5). These two types, which can occur together, are concentrated in Muğla, Antalya, and Konya Provinces (primarily in Antalya), and account for over 70 % of neobothriotaxy found in *Iurus*. Type 5, the most prevalent, occurs in Muğla, Antalya, Konya, and Mersin Provinces. See Appendix B for details on this neobothriotaxy.

Material Examined (217 specimens). TURKEY: *Antalya Province*: Akseki District, 12 km S of Akseki, 8–9 June 1993, 1 ♂, leg. J. Chaloupek (FKCP); Akseki District, 12 km S of Akseki, 11–12 May 2006, 2 ♂, 3 ♂ juv., 3 ♀, leg. F. Kovařík (FKCP); 5 ♂ juv., 3 ♀ juv. (born in captivity from one of the ♀) (FKCP); Alanya District, Alanya, 10 October 1998, 1 ♀ (E. Caraca) (NHMW 19131); Alanya District, Alanya Castle, 36°31'59.8"N 31°59'28.8"E, 22 March 2009, 3 ♂ juv., leg. K.B. Kunt (MTAS); *Antalya Province*: Alanya District, 38 km NE Demirtaş, 11 August 1971, 1 ♀, leg. F. Spigenberger (NMHW); Alanya District, 2 km from Alanya-Taşatan Plateau fork in road, 24.04.2009, 36°38.498'N, 32°04.089'E, 1167 m asl, 2 ♂, leg. A. Kızıltuğ & K. B. Kunt (MTAS); Alanya District, Taşatan Plateau, 36°40.244'N 32°10.210'E, 1208 m asl, 9 June 2009, 1 ♀ sbad., 1 ♂ sbad., 1 juv., leg. A. Kızıltuğ & K. B. Kunt (MTAS); Antalya, 15 May 1965, 1 ♂, leg. F. Ressler (NHMW 2066); Antalya, 19 May 1969, 1 ♂, leg. F. Ressler (NHMW 11323); July 1996, 1 ♂ juv., leg. Hubert (FKCP); Central District, Büyük Çaltıcak Village, 36°47'06"N, 30°34'09"E, 14 m asl, 15 May 2008, 1 ♂, 2 ♀, leg. A. Akkaya & İ. H. Uğurtaş (MTAS); Elmalı District, Çiglikara Nature Reserve,

1680 m asl, 2 ♀, leg. Felten (SMFD 25890); Elmalı District, near Elmalı, 36°24'58"N, 29°40'18"E, 12 May 2007, 3 ♂ sbad., 1 ♂ juv., 2 ♀, 1 ♀ juv., leg. İ. H. Uğurtaş (MTAS); Finike District, ca. 25 km N of Finike, Avlanbeli Geçidi (=Pass), 1200 m asl, 36°32'N, 29°59'E, 13–16 May 2006, 1 ♀, 3 ♀ juv., leg. F. Kovařík (FKCP); Gazipaşa District, side valley near Gazipaşa, 17 May 1969, 1 ♀, leg. G. Pretzmann (NHMW); Kale District, Gölbaşı (ancient Trysa, near Davazlar Village), ["Gölbakticke"], May 1882, 4 ♂, 5 ♀, leg. V. Luschan (NHMW 11321), ["Gjölbanchi"], July 1882, 1 ♂, 2 ♀, leg. V. Luschan (NHMW 11322); Kale District, 2nd km on the road from Demre to Kaş, 36°15'48.8"N, 29°56'37.7"E, 476 m asl, 15 May 2008, 1 ♀ (**neotype**) (NHMW), 1 ♂ juv. (MTAS), leg. A. Akkaya & İ. H. Uğurtaş; Kale District, Tersane Island, 36°38'10"N, 29°5'19"E, 113 m asl, 14 May 2007, 1 ♀ sbad., leg. İ. H. Uğurtaş (MTAS); Kaş District, S of Gömücü Village, 36°24'01"N, 29°41'56"E, 986 m asl, 15 May 2009, 1 ♀, leg. A. Akkaya (MTAS); Kaş District, 2nd km of the road from Kalkan to Patara, 36°17'01"N, 29°24'26"E, 242 m asl, 16 May 2008, 1 ♀ sbad., 1 ♀ juv., leg. A. Akkaya & İ. H. Uğurtaş (MTAS); Kaş District, Kınık (ancient Xanthos), 15–16 April 1990, 1 ♀, 1 ♀ juv. leg. R. Lizler (FKCP); Manavgat District, İrmasan Geçidi (= Pass), 1300 m asl, 2 June 1996, 2 ♀ sbad., leg. M. Snížek (FKCP); Manavgat District, Oymapınar Village, 36°53'52"N, 31°31'53"E, 65 m asl, 15 August 2005, 1 ♂ sbad., leg. E. A. Yağmur & A. Akkaya (MTAS), 5 September 2004, 1 ♂, 2 ♀, leg. A. Akkaya (MTAS); Serik District, Çatallar, 14–15 May 2006, 1 juv., leg. F. Kovařík (FKCP); Serik District, 4 km N of Serik, Belkis (Aspendos), near ruins, 16 May 1965, 1 ♂, 1 juv., leg. F. Ressler (NHMW 2067); Serik District, 4 km N of Serik, Aspendos, 1 ♂, 2 ♀ (NHMW 11319); Korkuteli District, Güllük Mts (=“Güllük-Dagh”) [ancient Termessos on Mt Solymos], 2 ♂, leg. A. Gaheis (NHMW 11320). *Isparta Province*: Eğirdir District, Pazarköy Village, SE of Eğirdir (now Eğirdir), 1400 m asl, 27 May 1966, leg. H. Felten, 1 ♀ (SMFD). *Konya Province*: Beyşehir District, Bademli Village, pasture, July 1998, 2 ♂, 2 ♀ (FKCP). *Mersin Province*: Anamur District, 20 km from Anamur, 22 April 1990, 1 ♀ juv., leg. Mertlik (FKCP); Aydıncık District, Aydıncık, 9 April 1990, 1 ♂, 19 April 1990, 1 ♀ juv., leg. R. Lizler (FKCP); Erdemli District, Doğulu Village, 36°44'58.9"N, 34°25'27.5"E, 161 m asl, 25 April 2007, 1 ♀, leg. M. Z. Yıldız (MTAS); Gülnar District, near Gülnar, July 2000, 1 ♂, leg. K. Werner & R. Lizler (FKCP); Silifke District, Cennet (= Korykos, Corycos) Cave, NE Silifke, 11 April 1981, 1 ♀, leg. Heinz (RKRO 367); same locality, “Corykische Grotte”, 27 March 1966, 6 imm., 2 juv., leg. Dobat (SMFD 25893); same locality (?), rehydrated remnants of 2 ♀ (MNHN RS-5169); with a label, “Korikos” and note in M. Vachon’s hand “types?” (their morphology does not match Brullé’s type specimens, which we consider lost);



Figure 143: *Iurus kraepelini*. **Top.** Subadult, Finike, Antalya, Turkey, type locality of species. **Bottom.** Güğübeli Pass, Muğla, Turkey, specimen molting.

Silifke District, Değirmendere Village, 36°25'53"N, 33°45'21"E, 425 m asl, 13 May 2008, 1 ♀, 1 ♂ sbad., leg. A. Akkaya, İ. H. Uğurtaş (MTAS); Silifke District, Silifke, 27 April 1967, 1 ♂, 1 ♀ sbad., leg. F. Ressler

(NHMW); Silifke District, Göksu Delta Valley, 29 April 1967, 1 ♂, leg. F. Ressler (NHMW 11324); Silifke District, near Silifke, 37°08'19"N, 34°50'25"E, 425 m asl, 12 May 2008, 1 ♀, leg. A. Akkaya & İ. H. Uğurtaş



Figure 144: *Iurus kraepelini* collection localities. **Top.** Akdağ Mts., Fethiye District, Muğla, Turkey. The highest known altitude for the genus and family Iuridae (2130 m a.s.l.). **Bottom.** Avsallar, Alanya District, Antalya, Turkey.



Figure 145: Collection localities of *Iurus kraepelini*. **Top.** Avlanbeli Geçidi, 25 km S. Elmali, Antalya, Turkey, 1200 m., collected with *Mesobuthus gibbosus*. **Bottom.** Taşatan Plateau, Alanya, Antalya, Turkey.



Figure 146: Erdemli, Erdemli District, Mersin, Turkey. Near the most eastern locality of *Iurus kraepelini*.



Figure 147: Collection localities of *Iurus kraepelini*. **Top.** Çiçekbaba Mts., Muğla, Turkey. **Bottom.** Oymapınar, Manavgat District, Antalya, Turkey.

(MTAS); 1 ♀, Silifke District, 5 km NW Silifke, 1969, leg. G. Pretzmann (NHMW); Silifke District, Taşucu Village, 36°18'43"N, 33°51'41"E, 22 May 2007, 1 ♀, 1 ♂ sbad., leg. A. Avcı (MTAS); Silifke District, Uzuncaburç, 26 July 1986, 1 ♂ (RKRO 0732). *Muğla Province*: Bodrum District, Sarıot Island, 36°59'29"N, 27°13'26"E, 27 April 1985, 1 juv., leg. İ. Baran & H. Durmuş (MTAS); Dalaman District, Tersane Island, 36°40'4"N, 28°55'5"E, 178 m, 1 ♀, 13 February 1985, leg. İ. Baran & H. Durmuş (MTAS); Dalyan District, Dalyan, May 1999, 1 ♂, 1 ♀, 1 ♀ sbad (FKCP); Dalyan District, Dalyan, 36°51'14"N, 28°37'25"E, 28 m asl, 28 February 2004, 1 ♂ sbad., 1 ♀, 1 ♀ juv., leg. A. Avcı & K. Olgun (MTAS); Dalyan District, Gökbel Village, 36°53'37"N, 28°15'22"E, 18 April 1991, 1 ♂, 2 ♀, leg. İ. Baran & H. Durmuş (MTAS); Dalyan District, Kışlak Village, 36°50'N, 28°37'E, 15 April 1991, 1 ♂, 2 ♀, leg. İ. Baran & H. Durmuş (MTAS); Fethiye, May 1989, 1 ♂, 1 ♀ (FKCP); Fethiye District, Kidirak, S of Fethiye, 24–28 May 1988, 1 ♀, leg. R. Kinzelbach (RKRO 1055); Fethiye District, 2 September 1985, 1 juv., leg. İ. Baran & H. Durmuş (MTAS); Fethiye District, 36°37' N, 29°07' E, 24 May 1970, 4 ♀, 2 ♂, 1 juv., leg. M. Başoğlu (MTAS); Fethiye District, Gemiler Island, 36°33'11"N, 29°04'10"E, 40 m asl, 7 June 1985, 2 ♀, leg. İ. Baran & H. Durmuş (MTAS); Fethiye District, Göcek, 36°45'25"N, 28°56'40"E, 38 m asl, 22 January 1965, 2 ♀, leg. M. Başoğlu (MTAS); Fethiye District, Göcek Island, opposite to Göcek, 36°43'35"N, 28°56'22"E, 12 February 1985, 1 ♀, leg. İ. Baran & H. Durmuş (MTAS); Fethiye District, 5 km S of Fethiye, Babadağ Mts, 36°33'39"N, 29°09'12"E, 499 m asl, 30 March 2007, 1 ♂, leg. A. Avcı (MTAS); Fethiye District, Domuz Island, 14.03.2008, 36°39'41"N, 28°53'59"E, 8 m asl, 14 March 2008, 2 ♂ sbad., leg. A. Avcı (MTAS); Fethiye District, Kelebekler Valley (Butterflies Valley), 36°29'48"N, 29°07'44"E, 24 November 2003, 1 ♀ sbad., leg. H. Koç (MTAS); Fethiye District, Ovacık Village, 6 km S of Fethiye, 1 ♀ (SMFD 6732/139); Fethiye District, Yeşilüzümlü Village, 36°48'03"N, 29°11'10"E, 990 m asl, 2 May 2008, 1 ♀ sbad., 16 May 2008, 3 ♂, 1 ♂ juv., 3 ♀, 1 ♀ juv., leg. A. Akkaya & İ. H. Uğurtaş (MTAS); Fethiye District, Zeytin Island, opposite to Göcek, 36°41'53"N, 28°55'36"E, 38 m asl, 4 August 1984, 1 ♀, leg. İ. Baran & H. Durmuş (MTAS); Köyceğiz District, 36°56' N, 28°44' E, 31 March 1991, 1 ♂, 3 ♀, 1 juv., leg. İ. Baran & H. Durmuş (MTAS); Köyceğiz District, Ekincik Village, 36°50'39"N, 28°33'10"E, 52 m asl, 17 April 1991, 1 ♂, 2 ♀, leg. İ. Baran & H. Durmuş (MTAS); Köyceğiz District, Kaunos Ruins, 36°49'34"N, 28°37'21"E, 20 m asl, 28 March 1991, 1 ♀, leg. İ. Baran & H. Durmuş (MTAS); Köyceğiz District, Sultanye Spring, 26 April 1991, 1 sbad. ♂, leg. E. Neubert (RKRO 1053); Marmaris District, 25 km N of Marmaris, 37°13' N, 28°14' E, 8 April 1984, 1 ♂, 2 ♀, leg. İ. Baran

& H. Durmuş (MTAS); Marmaris District, Nimara Island, 36°48'15"N, 28°17'15"E, 327 m asl, 8 April 1984, 4 ♀, 3 juv., leg. İ. Baran & H. Durmuş (MTAS); Ortaca District, Gökbel Village, 15 February 2005, 36°47'04"N, 28°40'39"E, 145 m asl, 2 ♀, leg. K. Olgun & A. Avcı (MTAS); Seki District, Çiçekbaba Mts, 37°01'88"N, 28°45'73"E, 11 August 2005, 911 m asl, 2 ♂, 1 ♀, leg. E. A. Yağmur & H. Koç (MTAS); Seki District, Çiçekbaba Mts, near Kartal Lake, 37°03'66"N, 28°48'50"E, 1763 m, 11 August 2005, 1 ♂, 2 ♀, 1 ♀ sbad., leg. E. A. Yağmur & H. Koç (MTAS); Seki District, near Göğübelen Pass, 36°50'32"N, 29°45'16"E, 1807 m asl, 11 August 2005, 1 ♂, 1 ♀, 1 ♀ sbad., leg. E. A. Yağmur & H. Koç (MTAS); Seki District, Göğübelen Pass, 36°50'44"N, 29°44'76"E, 1830 m asl, 11 August 2005, 2 ♂, 1 ♂ sbad., leg. E. A. Yağmur & H. Koç (MTAS); Seki District, Göğübelen Pass, 1794 m asl, 12 August 2005, 2 ♂, 2 ♀, 3 ♀ sbad., 1 ♀ juv., leg. E. A. Yağmur & H. Koç (MTAS); Yatağan District, Bencik Mts, near fire watchtower, 37°14'14"N, 28°03'28"E, 1395 m asl, 19 June 2005, 2 ♂, 1 ♂ sbad., 2 ♀, 1 ♀ sbad., leg. E. A. Yağmur & H. Koç (MTAS). *No exact locality*: "Antalya, Adana, south Mersin", 1 ♀, 1 ♀ juv., May 1991, leg. Nosek, 1 ♂, leg. Hašek (FKCP); Taurus ["Taurien"!], Kricheldorf [dealer's name], 1 ♂, 3 ♂ sbad., 1 ♀ sbad. (ZMHB 15218); "Cilicien", Rolle [dealer's name], 1 ♂ (ZMHB 8315); Taurus, 1 ♀, leg. P. Niedieck (ZMHB 15219); Turkey, 1 ♂ (MESB).

Iurus asiaticus Birula, 1903

(Figs. 1, 3, 14, 23, 27, 28, 39, 41, 53, 60, 69–74, 148–176; Tabs. 1–3, 6)

Iurus dufourei *asiaticus* Birula, 1903: 297–298; type locality: TURKEY (southeast), *Adana Province*, Gülek Pass.

REFERENCES:

- Iurus dufourei*: Birula, 1898: 132, 135–136 (in part; Gülek); Werner, 1934a: 162 (in part); Werner, 1934b: 282 (in part); 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); Vachon, 1966a: 453–461, fig. 7–12, 14, 16, 18, 22 (Tarsus); Vachon, 1966b: 215 (in part); Stahnke, 1974: 123 (in part); Vachon, 1974, fig. 141, 144, 151–153, 216–219 (in part?); Kinzelbach, 1975: 21–26 (in part); Kinzelbach, 1985: Map IV (in part); Fet & Braunwalder, 2000: 18 (in part); Kaltsas, Stathi & Fet, 2008: 227–228 (in part); Soleglad, Kovařík & Fet, 2009: 2 (in part).
Iurus dufourei asiaticus: Borelli, 1913: 3; Sissom & Fet, 2000: 420 (in part); Kaltsas, Stathi & Fet, 2008: 228 (in part); Yağmur, Koç & Akkaya, 2009: 154–159 (in part), fig. 1.

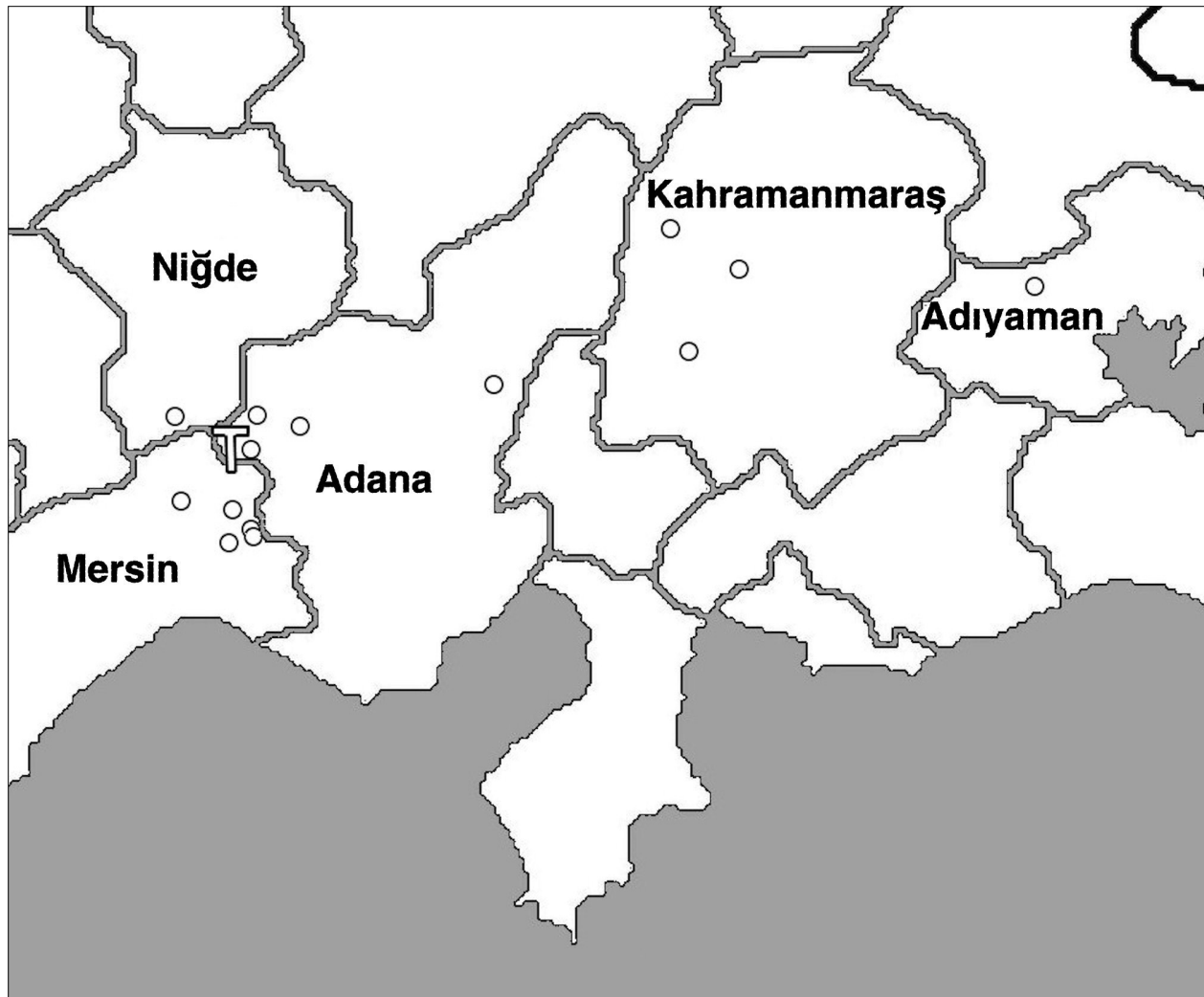


Figure 148: Large-scale map showing distribution of *Iurus asiaticus*. "T" marks type locality, Gülek Pass, Adana Province, Turkey. See Fig. 74 for distribution of all species and Appendix A for detailed locality data.

Iurus dufourei asiaticus: Vachon, 1947a: 162 (in part); Vachon, 1947b: 2 (in part); Vachon, 1948: 63 (in part); Vachon, 1951: 342 (in part).

Iurus asiaticus: Francke, 1981: 221–224 (in part), fig. 4 (Namrun, in part); Vachon & Kinzelbach, 1987: 102 (in part); Crucitti, 1995a: 2 (in part); Crucitti, 1998: 32 (in part); Crucitti & Malori, 1998: 133–135; 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); Kovařík, 2002: 16 (in part; Belemelik); Kovařík, 2005: 55 (in part); Facheris, 2007a: 1 (in part); Facheris, 2007b: 1 (in part).

Lectotype: ♀ (designated here; see discussion below), TURKEY (southeast), *Adana Province*, Gülek Pass, 1300 m a.s.l., May–August 1897, leg. M. Holtz (see original label on Fig. 176) (ZISP 1066); **paralectotypes:**

1 subad. ♂, 1 subad. ♀, same label as lectotype (ZISP 1066).

Diagnosis: Medium to large species, 90 mm. Dark gray to black in overall coloration. Pectinal tooth counts, 10–13 (11.67) males, 9–12 (10.58) females. Chelal movable finger lobe in adults located mid-finger or distal, lobe ratio 0.47–0.58; proximal gap of fixed finger present in adult males; movable finger of adult males essentially straight, not highly curved; chelal palm of adult males elongate, not highly vaulted, chela length/palm depth 2.94–3.14 (3.01) male, 2.98–3.16 (3.06) female; number of inner denticles (*ID*) of chelal movable finger, 11–12 (11.5); constellation array with *two* to *four* sensilla; hemispermaphore lamina internal nodule conspicuously pointed, positioned suprabasally, lamina distal length/lamina basal length 1.614–1.802 (1.729), terminus of the acuminate process truncated, transverse trunk



Figure 149: *Iurus asiaticus*. Dorsal and ventral views. Adult male, Çamlıyayla (=Namrun), Mersin, Turkey.

bolsters absent. Dominant morphometric is palm length (see Appendix C).

Distribution. **Turkey:** Anatolia (southeast): Mersin, Niğde (south), Kahramanmaraş, Adana, and Adıyaman Provinces. See map in Fig. 74 for large-scale distribution of this species.

MALE. Description is based on a male from Çamlıyayla (=Namrun), Mersin Province, Turkey, about 17 km from type locality. Measurements of the Çamlıyayla male and five other specimens are presented in Table 6. See Figure 149 for dorsal and ventral views of the Çamlıyayla male.

COLORATION. Basic color of carapace, mesosoma, metasoma, and pedipalps dark brown, telson a lighter orange; legs light yellowish-brown. Carinae of metasoma, pedipalp, and carapace dark brown. Sternites, pectines, and genital operculum yellowish. Cheliceral fingers dark brown, palms yellow-orange. Essentially void of patterns.

CARAPACE (Fig. 150). Anterior edge with a conspicuous median indentation; most setation missing; anterior edge between lateral eyes covered with large granules, less granulated with smaller granules in interocular area. Interocular area conspicuously delineated by medio-lateral ocular carinae; extreme lateral edges sparsely populated with medium-sized granules; posterior half covered with small to medium sized granules. Medirolateral 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 considerably smaller than middle eye. Median eyes and tubercle somewhat small, positioned anteriorly of the middle with the following length and width formulas: 456|1135 and 141|994.

MESOSOMA (Figs. 151, 153). Tergites I–VI rough to granulated; tergite VII coarsely granulated, lateral carinae detectable but median obscured by heavy granulation on entire surface. Sternites III–VII smooth and lustrous; sternite VII with lateral carinae irregularly granulated, median carinae smooth proximally (Fig. 153). Stigmata (Fig. 151) are medium in size and slit-like in shape, angled 45° in an anterointernal direction.

METASOMA (Fig. 152). Segment I wider than long. Segments I–IV: dorsal and dorsolateral carinae serrated; dorsal carinae with 7/6, 8/8, 8/8, and 8/9 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 one-half of II, absent on segments III–IV; ventrolateral carinae crenulated on

I–II, serrated on III–IV; ventromedian carinae smooth on I, irregularly granulated on II, crenulated on III, and serrated on IV. Dorsolateral carinae of segment IV terminate at articulation condyle. Segment V: dorso-lateral carinae serrated; lateral carinae irregularly serrated for two-thirds of their posterior portion; ventrolateral and single ventromedian carinae serrated; ventromedian carina terminus slightly bifurcated. Anal arch with 16 serrated granules. Intercarinal areas of segments I–V essentially smooth. Metasomal segments moderately covered with long setae.

TELSON (Fig. 152). Vesicle elongated, with highly curved aculeus. Vesicle smooth 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; areolae on aculeus base slightly swollen, setal pair broken off. Vesicular tabs with small granules.

PECTINES (Fig. 154, female Fig. 155). Well-developed segments exhibiting length|width formula 720|300. Sclerite construction complex, with three anterior lamellae and one large middle lamella, with slight traces of a smaller second sclerite; fulcrum of medium development. Teeth number 13/13. 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 (many are broken off). Basal piece large, with subtle indentation along anterior edge, length|width formula 200|320.

GENITAL OPERCULUM (Fig. 154). Sclerites triangular in shape, longer than wide, separated for entire length; conspicuous genital papillae visible at posterior edge (see discussion on female below).

STERNUM (Fig. 154). Type 2, posterior emargination present, well-defined convex lateral lobes, apex visible but not conspicuous; anterior portion of genital operculum situated proximally between lateral lobes; sclerite longer than wide, length|width formula 275|250; sclerite slightly tapers anteriorly, posterior-width|anterior-width formula 250|188 (see discussion on female below).

CHELICERAE (female, Fig. 156). Movable finger dorsal edge with one large subdistal (*sd*) denticle; ventral edge with one large pigmented accessory denticle at finger midpoint; ventral edge serrula not visible. Ventral distal 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.