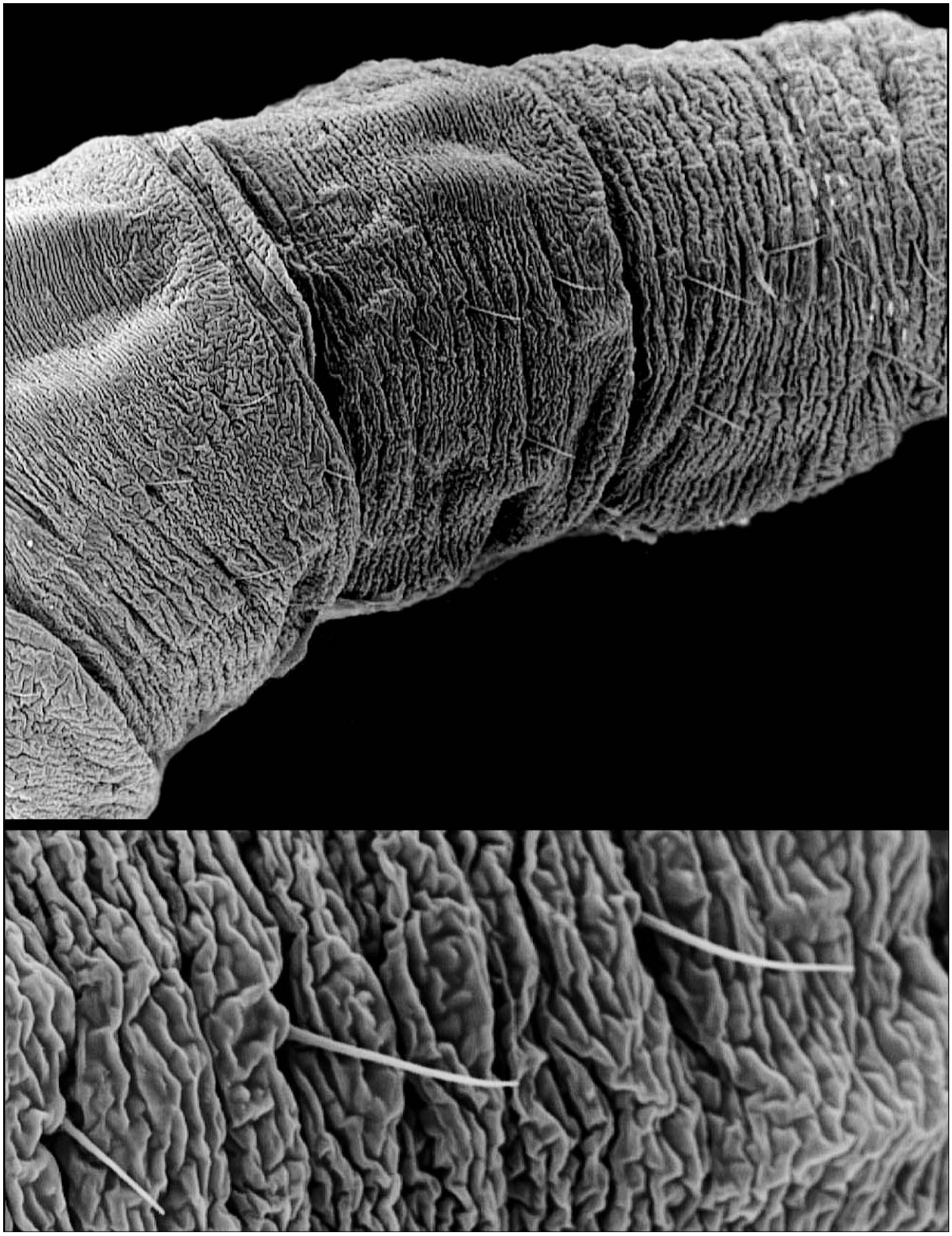

Figure 242: Embryo of *Iurus dufoureius*, Kalivia Sohas, Mystras, Greece. Metasoma, ventral view, showing setae. Large view (top, 50x) and close-up of three setae (bottom, 200x).

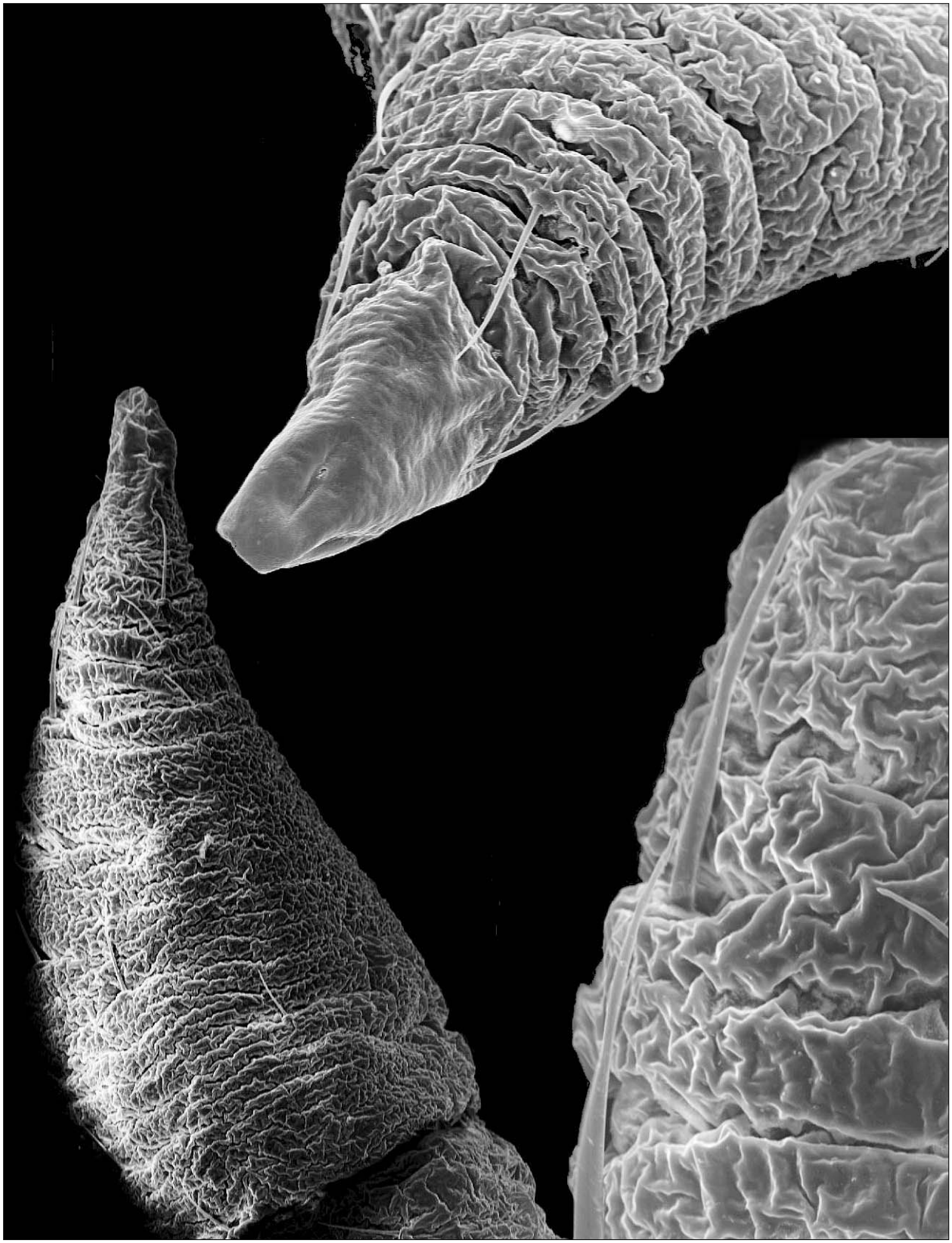

Figure 243: Embryo of *Iurus dufoureius*, Kalivia Sohas, Mystras, Greece. Telson, full lateral view on left (75x); aculeus view on top (150x); and close-up of setation on the vesicle (350x).

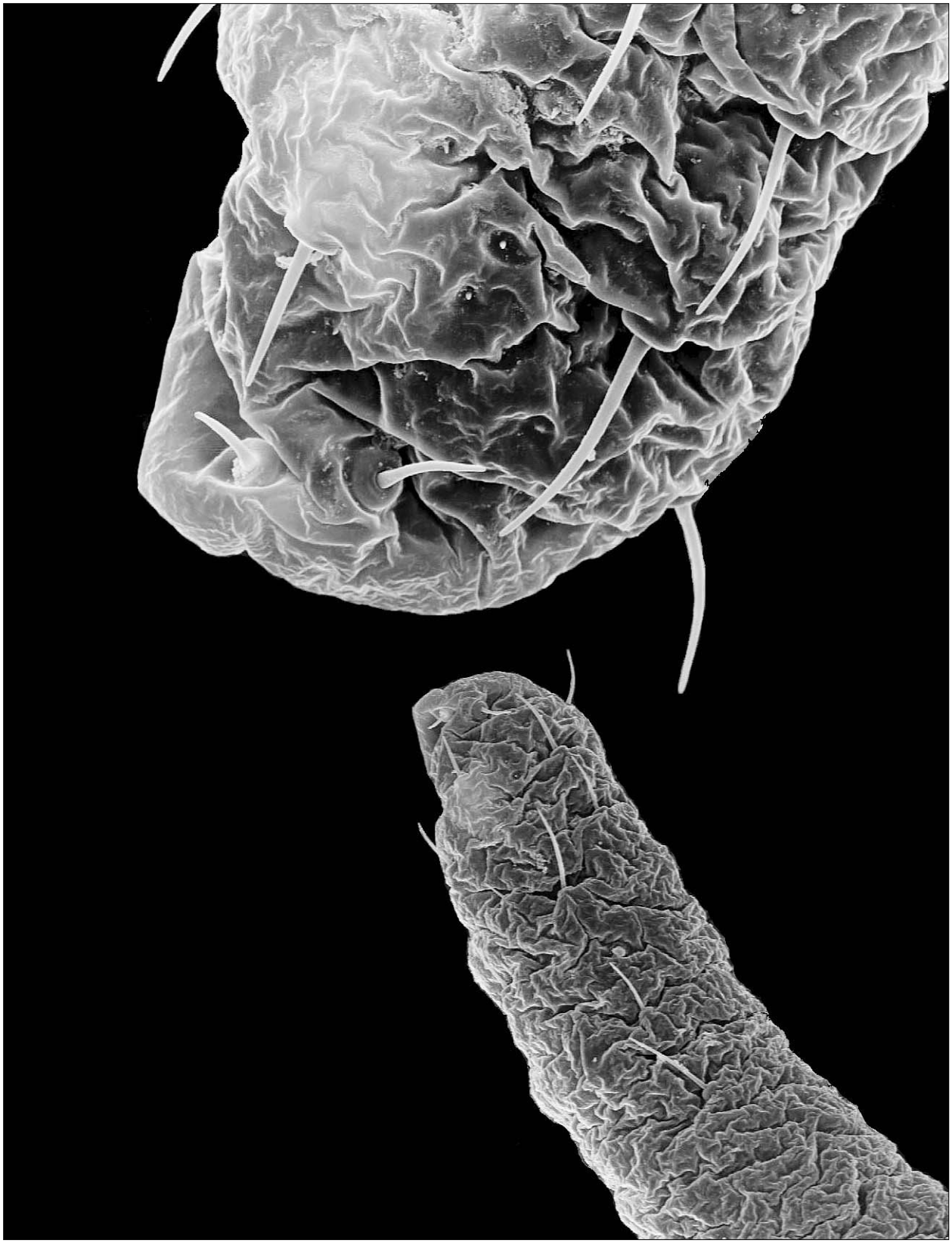

Figure 244: Embryo of *Iurus dufoureius*, Kalivia Sohas, Mystras, Greece. **Bottom.** Left chelal fixed finger showing socketed setae (100x). **Top.** Close-up of distal aspect of fixed finger showing socketed setae and three constellation array sensilla (350x).

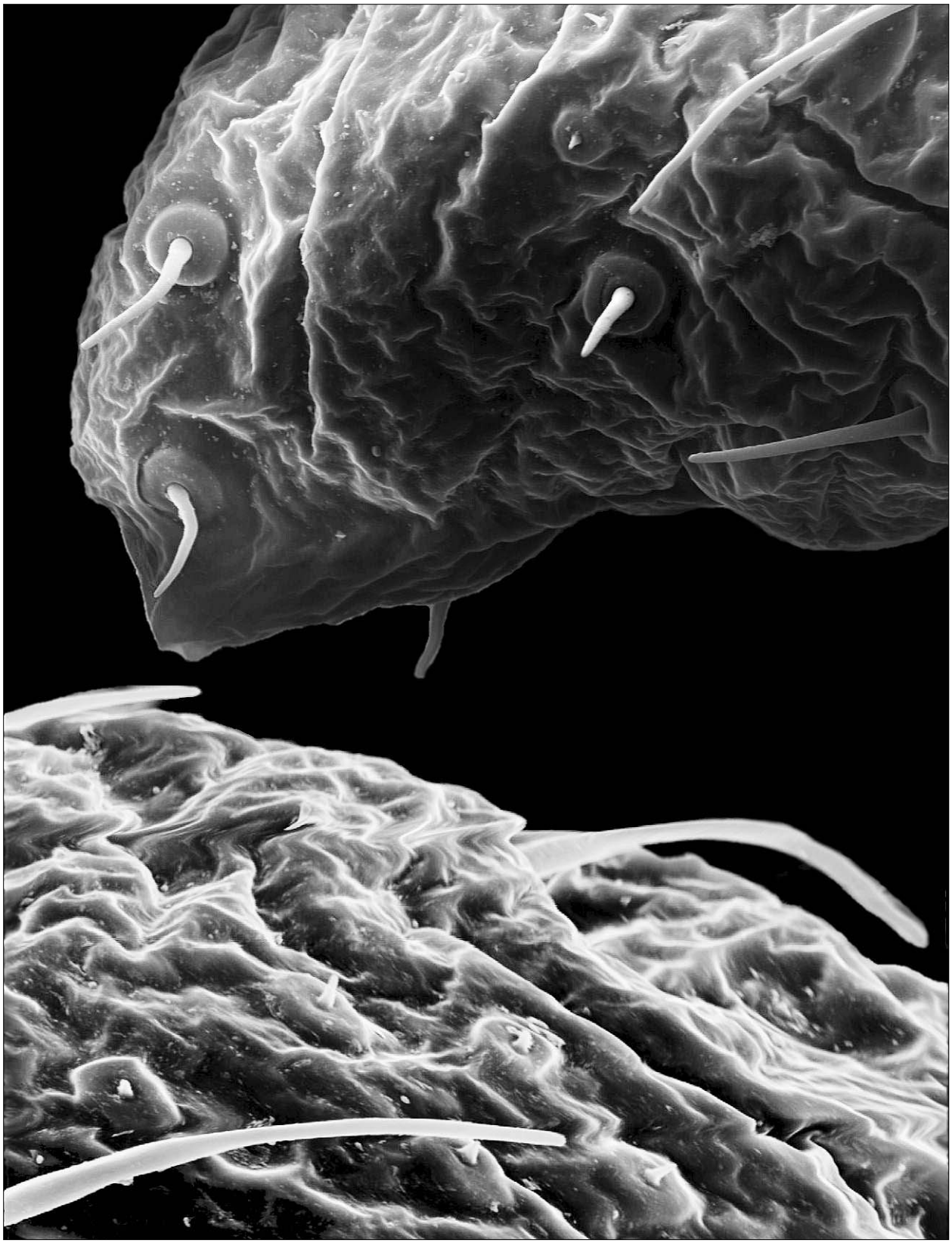

Figure 245: Embryo of *Iurus dufoureius*, Kalivia Sohas, Mystras, Greece. **Top.** Close-up of left chelal fixed finger showing socketed setae and constellation array (500x). **Bottom.** Close-up of right fixed finger showing five constellation array sensilla (750x).

Figure 246: Embryo of *Iurus dufoureius*, Kalivia Sohas, Mystras, Greece. **Top.** Right leg II showing socketed setae (200x). **Bottom.** Close-up of right leg II distal tip (350x).

tolerate a large range of temperatures. In Anatolia, *Iurus* is "a strictly hygrophilic scorpion that lives in dense fir and maple, forests and oak groves, where it is fairly common" (Crucitti, 1999a). One of the authors (EAY) observed and collected three Anatolian species of *Iurus* (*I. kinzelbachi*, *I. kraepelini*, and *I. asiaticus*) in dozens of localities and various natural habitats. According to these observations, *I. kinzelbachi* prefers rocky areas covered with pine forest. Both *I. kraepelini* and *I. asiaticus* prefer rocky areas covered with pine forest and also with shrub vegetation; *I. asiaticus* favors open areas as well. All three Anatolian species hide under large stones and inside cracks in the rocks. The rare Anatolian species *I. kadleci* was found both in the open habitats as well as deep in the Dim Cave, thus some of its populations could be cave dwelling; for the details on ecology and fauna of this cave see Kunt, Yağmur & Elverici (2008). For detailed characteristics of the habitats, see also Crucitti (1995a, 1995b, 1998) for *I. dufoureius* in the Peloponnese, and Crucitti & Malori (1998) for *I. kraepelini* and *I. asiaticus*.

The western Anatolian species with a limited range, *Iurus kinzelbachi* is geographically separated from the southern *I. kraepelini* by the Menderes River (Fig. 247). Localities where *I. kinzelbachi* is found are not as warm as those of *I. kraepelini*. Both *I. kinzelbachi* and *I. kraepelini* do not penetrate further north into Anatolia although there are no mountain barriers to prevent this. It is likely that *Iurus* here is limited by arid climatic conditions.

Although *Iurus kraepelini* penetrates into the slopes of the Taurus Mountains up to 2130 m asl, it clearly prefers low elevations with hot and humid habitats, and is very common in the southern (Mediterranean) coast of Anatolia. In the east, the Göksu River in Mersin Province along with the Bolkar Mountains appear to limit the range of *I. kraepelini*, which does not penetrate further east along the coast to the southern Mersin and Hatay Provinces. The Göksu River also provides the isolation between *I. kraepelini* and *I. asiaticus*. The role of Taurus Mountains in providing zoogeographic barriers for the Anatolian fauna is well-known (Crucitti & Malori, 1998; Çiplak, 2003).

The eastern Anatolian species, *Iurus asiaticus*, clearly prefers higher elevations and cooler places than *I. kraepelini*; however, it also favors humid habitats. All records of *I. asiaticus* from Kahramanmaraş, Adıyaman, Mersin and Adana Provinces always belong to cool, high-altitude places. On the east, the range of *I. asiaticus* appears to be limited by a combination of temperature and humidity: south of Adana, Mersin and Hatay are humid but warm, while Gaziantep and south of Adıyaman are very hot and dry.

Kaltsas, Stathi & Fet (2008) outlined two contrasting published historical scenarios that exist for the dating of *Iurus* vicariance. Francke and Soleglad (1981) followed Vachon (1953) and Kinzelbach (1975) in attributing the distribution pattern of the genus *Iurus* to a vicariant process resulting from the recent tectonic events that occurred between the Turkish Plate and the Anatolian Fault during the Quaternary period (1.8 Mya). On the other hand, the first pilot DNA phylogeny of Parmakelis et al. (2006), and its molecular clock calibration interpreted *Iurus* as a much older taxon that has been differentiating in the studied region at least since the middle Miocene, with a split between major clades ca. 8 Mya. Similar ancient divergence between eastern and western Aegean populations and taxa is known for other terrestrial animals in this area such as lizards and land snails (Schmitt, 2007); it is dated back to the formation of the mid-Aegean trench (12 to 9 Mya).

Assuming a hypothetical dispersal of *Iurus* from east to west (Parmakelis et al., 2006), we expect the populations of *I. asiaticus* Birula, 1903, to be most basal in the genus. Our discovery of two new species in Anatolia (allopatric *I. kinzelbachi* and sympatric *I. kadleci*) revealed an additional local speciation that took place independently on the periphery of the main Anatolian species, *I. kraepelini*. Moreover, *I. kinzelbachi* appears to be closer to the Greek *I. dufoureius* than to the three other Anatolian species.

Within the most widespread *Iurus* species, the Anatolian *I. kraepelini*, we describe for the first time the intraspecific geographic variation reflected in neobothriotaxy patterns (Figs. B1–B2); see also Soleglad, Kovařík & Fet, 2009) provides an evidence for intensive local diversification. Therefore, *Iurus* emerges as a promising model genus for the study of speciation and microevolution, and needs to be tested further with modern techniques in genetics using multiple markers and numerous populations, especially from Anatolia.

Acknowledgments

We are first of all grateful to Pierangelo Crucitti who donated to us an extensive and important series of *Iurus* from Peloponnese**.** We are very grateful to Petar Beron, Christoph Hörweg, Jason Dunlop, Jürgen Gruber, Petr Kabátek, Ragnar Kinzelbach, Pavel Krásenský, Robert Lízler, Marcello Malori, Verena Stagl, Iasmi Stathi, Valerio Vignoli, Sarah Whitman, and the late Gary A. Polis for the loans or gifts of specimens; and to Julia Altmann, Janet Beccaloni, Gernot J. Bergthaler, Matt E. Braunwalder, Marco Colombo, Benjamin Gantenbein, Peter Jäger, Viktor Krivochatsky, Serge Peslier, Wolfgang Schawaller, Peter J. Schwendinger, and the late Jean-Bernard Lacroix for the information on museum holdings and geographic distribution. Wilson R. Lourenço helped to obtain a loan of Paris specimens, including an important Vachon's "Tarsus male." Michal Hoskovec kindly provided photographs of Greek habitats (Figs. 105–106). E.A.Y. is grateful for their help

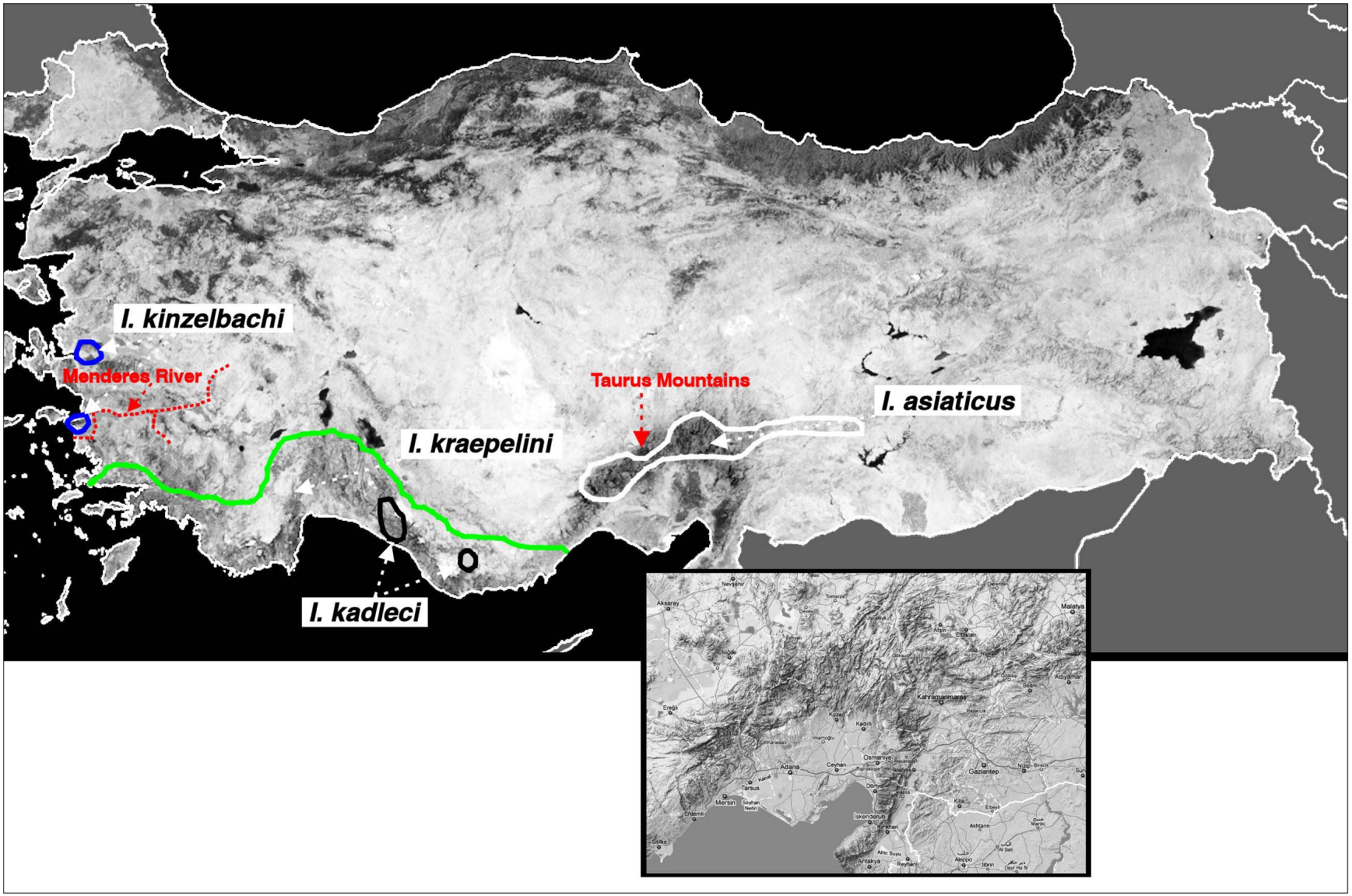

Figure 247: Two natural boundaries separate *Iurus kraepelini* (outlined in green) from *I. kinzelbachi* (outlined in blue), the Menderes River, and *I. asiaticus* (outlined in white), the Taurus Mountains. *I. kadleci* (outlined in black) occurs sympatrically with *I. kraepelini*. SE Taurus mountains shown in inset.

in field collections and gifts of specimens and/or photographs to Abdulmuttalip Akkaya (Fig. 143), Aziz Avcı, Gökhan Çalışır, Salim Dudaklı, Hakan Durmuş, Alexander V. Gromov, Hakan Karaoğlu, Altuğ Kızıltuğ, Halil Koç (Figs. 143–144, 147), Kadir Boğaç Kunt (Figs. 144–145), Kurtuluş Olgun, Mehmet Özkörük, İsmail Hakkı Uğurtaş, Volkan Ülgezer, Mehmet Yalçın, and Mehmet Zülfü Yıldız (Figs. 146, 177–179). Roger Farley generously advised us on embryo morphology. David P. A. Neff was instrumental in embryo fixation and SEM help; SEM microscopy was supported by Marshall University. Finally, we thank two anonymous reviewers for their valuable and expedient review of this paper.

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Appendix A
Detailed Locality Data for *Iurus*

The following table includes all data that could be obtained from literature (with references) as well as all known unpublished label data (with collection depository listed). Published locality information is augmented where possible by administrative division. Administrative division of Greece (Prefecture and District) and Turkey (Province and District) is given as currently accepted. Geographic coordinates are given in traditional (DMS) format and decimal format, the latter used for digital map construction. Coordinates, when not provided in original labels, were estimated to closest identifiable point via GoogleEarth™ and GoogleMaps™. Toponyms were located and verified using gazetteers at http://www.fallingrain.com/world and http://www.gtp.gr. Spelling (especially of Greek toponyms) varies in literature.

No.	Species and Locality	Reference	Coordinates	
			Traditional (DMS) (lat., long.)	**Decimal (lat., long.)**
	***Iurus dufoureius* (Brullé, 1832): Greece:** Peloponnese, Crete, Kythira, Gavdos.			
1	Peloponnese, Achaea Prefecture, Kalavryta District, Kato Zachlorou, Vouraikos River gorge, 700 m asl	Facheris, 2007a, 2007b	38°05'27"N, 22°09'1"E	38.0908, 22.1531
2	Peloponnese, Arcadia Prefecture, Gortyna District, Kakoureika (the northernmost locality of *I. dufoureius*)	Facheris, 2007a, 2007b	37°34'46"N, 21°55'14"E	37.5794, 21.9206
3	Peloponnese, Arcadia Prefecture, Gortyna District, Karitaina, Kalamiou Monastery	Facheris, 2007a, 2007b	37°28'52"N, 22°02'25"E	37.4811, 22.0403
4	Peloponnese, Arcadia Prefecture Gortyna District, Karitaina, Alfios River	Crucitti, 1998	37°29'N, 22°02'E	37.4833, 22.0333
5	Peloponnese, Arcadia Prefecture, Megalopolis District, Likosoura, Kastriti	Crucitti, 1998; Soleglad et al., 2009	34°42'N, 22°01'E	37.4, 22.0167
6	Peloponnese, Arcadia Prefecture, Megalopolis District, Ano Karyes	Crucitti, 1998 ("Ano Karnes")	37°26'17"N, 22°00'11"E	37.4381, 22.0031
7	Peloponnese, Ilia Prefecture, Minthi Oros Mts., Zacharo District, Kalidona, Kurtaina, 35 km SE of Pyrgos	Crucitti, 1995, 1998; Soleglad et al., 2009	37°28'05"N, 21°42'17.27"E (for Kalidona)	37.4681, 21.7047
8	Peloponnese, Ilia Prefecture, Minthi Oros Mts., Zacharo District, Kalidona, Ambula	Crucitti, 1998	37°28'05"N, 21°42'17.27"E (for Kalidona)	37.4681, 21.7047
9	Peloponnese: Laconia Prefecture, Mani Peninsula	Parmakelis et al., 2006	36°45'40"N, 22°28'10"E	36.761, 22.469
10	Peloponnese, Laconia Prefecture, Mani Peninsula, Parnon Mtns.	MESC	37°06'21.6"N, 22°43'48"E	37.106, 22.73

11	Peloponnese, Laconia Prefecture, Mani Peninsula, Oitylo District, Areopolis	Soleglad et al., 2009 (as "Meropolis", in error);	36°40'N, 22°23'	36.6667, 22.3833
12	Peloponnese, Laconia Prefecture, Mani Peninsula, Oitylo District, Oitylo (Itylo)	Soleglad et al., 2009; B. Gantenbein, pers. comm., 2002	36°42′24″N, 22°23′18″E	36.7067, 22.3883
13	Peloponnese, Laconia Prefecture, Mani Peninsula, Oitylo District, Stavri	G. Bergthaler, pers. comm., 2003	36°31′17″N, 22°22′22″E	36.5214, 22.3728
14	Peloponnese, Laconia Prefecture, Gythio District, Selinitsa, 20 m asl	Crucitti, 1995, 1998; Soleglad et al., 2009	36°49'N, 22°17'E	36.8167, 22.2833
15	Peloponnese, Laconia Prefecture, Gythio District, Krini, 160 m asl	Crucitti, 1995, 1998; Soleglad et al., 2009	36°47'56.98"N, 22°28'10.42"E	36.799, 22.4695
16	Peloponnese, Laconia Prefecture, Gythio District, Tripi (Tripis), Magoulitsa River, 410 m asl	Crucitti, 1995, 1998	37°05'N, 22°21'E	37.083, 22.35
17	Peloponnese: Laconia Prefecture, Gythio District, Passavas	Kinzelbach, 1975, 1982	36°45'22"N, 22°32'15"E	36.7561, 22.5375
18	Peloponnese: Laconia Prefecture, East Mani District, Sangias Mts., Mina	Kritscher, 1993	36°33'N, 22°25'01"E	36.55, 22.4167
19	Peloponnese: Laconia Prefecture, Mystras District, Mystras	Kinzelbach, 1982; Kovarik, 1992; Fet, 2000; Soleglad et al., 2009	37°04'N, 22°23"E	37.0667, 22.3833
20	Peloponnese: Laconia Prefecture, Mystras District, Anavryti, 743 m asl	Werner, 1902; Crucitti, 1998; Soleglad et al., 2009	37°02'N, 22°22"E	37.0333, 22.3667
21	Peloponnese, Laconia Prefecture, Mystras District, Kalivia Sohas	Crucitti, 1998; Soleglad et al., 2009	37°01'N, 22°25'E	37.0167, 22.4167
22	Peloponnese, Laconia Prefecture, Mystras District, Ladha	Werner, 1902	37°05'N, 22°13'E	37.0833, 22.2167
23	Peloponnese, Laconia Prefecture, Mystras District, Parori (Parorion), 264 m asl	Kučera, 1992	37°04'N, 22°23'E	37.0667, 22.3833
24	Peloponnese, Laconia Prefecture, Mystras District, Parori, Sátiras	Crucitti, 1998	37°04'N, 22°23'E	37.0667, 22.3833
25	Peloponnese, Laconia Prefecture, Mystras District, Nea Mystras	Kinzelbach, 1975, 1982	37°04'N, 22°22'32"E	37.0667, 22.3756
26	Peloponnese: Laconia Prefecture, Sparti District, Kastorio	Crucitti, 1998	37°10'12.62"N, 22°18'24.76"E	37.1703, 22.3069
27	Peloponnese: Laconia Prefecture, Sparti District, Kastri	Crucitti, 1998	37°10'N, 22°19'E	37.1667, 22.3167
28	Peloponnese, Laconia Prefecture, Sparti District, Taygetos Mts, 12 km W of Sparti	Kinzelbach, 1975	37°05'N, 22°16'E	37.0833, 22.2667
29	Peloponnese, Messinia Prefecture, Messini District, Messini (=Messene) (type locality of *Iurus dufoureius*)	Brullé, 1832	37°03'04"N, 22°00'29"E	37.051, 22.008
30	Peloponnese, Messinia Prefecture, Andania District, Diavolitsi, Ano Psari	Crucitti, 1998	37°17'N, 21°58'E	37.2833, 21.9667

31	Peloponnese, Messinia Prefecture, Artemisia District, ca.7 km on the road to Kalamata	Kritscher, 1993; Facheris, 2007a, 2007b	37°03'N, 22°08'E	37.05, 22.1333
32	Peloponnese, Messinia Prefecture, Artemisia District, Nedontas River, between Artemisia and Kalamata, 13 km from Kalamata, 310 m asl (neotype locality)	Crucitti, 1995, 1998; Soleglad et al., 2009	37°05'N, 22°09'E	37.0833, 22.15
33	Peloponnese, Messinia Prefecture, Avia District, Vorio, W slope of Taygetos Mts, 600 m asl	Facheris, 2007a, 2007b	36°57'30"N, 22°14'19"E	36.9583, 22.2386
34	Peloponnese, Messinia Prefecture, Lefktro District, Kalyves	Peslier, 2005; pers. comm., 2009	36°54'12.72"N, 22°14'44.57"E	36.9035, 22.2457
35	Peloponnese, Messinia Prefecture, Oichalia District, Katsaros, Pefko	Crucitti, 1998	37°12'23.55"N, 22°04'50.28"E	37.2067, 22.0806
36	Crete, Iraklio (formerly Kandia)	Lucas, 1853; Birula, 1903	35°20'N, 25°08'E	35.333, 25.133
37	Crete, Katharo Plateau	Stathi & Mylonas, 2001	35°08'47.88"N, 25°33'50.36"E	35.1467, 25.5639
38	Crete, Kournas Lake	Stathi & Mylonas, 2001	35°19'34.94"N, 24°16'40.61"E	35.3264, 24.2781
39	Crete, Kritsa	Stathi & Mylonas, 2001	35°09'26.79"N, 25°38'36.50"E	35.1575, 25.6436
40	Crete, Mariou	I. Stathi, pers. comm.., 2001	35°12'N, 24°25'E	35.20, 24.4167
41	Crete, Mt Lefka Ori, south slope, 1200 m asl	Stathi & Mylonas, 2001	35°15'01.78"N, 24°06'42.51"E	35.2506, 24.1119
42	Crete, Megalokastron	Raulin, 1869	35°19'30"N, 25°07'50"E	35.325, 25.1306
43	Crete, Melisoudaki	Parmakelis et al., 2006	35°16'30"N, 24°14'40"E	35.275, 24.2444
44	Crete, Neapolis	Penther, 1906	35°15'14"N, 25°36'35"E	35.2539, 25.6097
45	Crete, Messara Valley (south of the island)	Lucas, 1853; Birula, 1903	35°04'N, 24°48'E	35.0667, 24.8
46	Crete, Sitia	Vachon, 1948	35°12'39"N, 26°06'27"E	35.2108, 26.1075
47	Crete: Vianos (formerly Viano)	Soleglad et al., 2009	35°02'52.46"N, 25°24'08.96"E	35.0478, 25.4025
48	Crete, Lasithi	Kinzelbach, 1975	35°04'N, 25°42'E	35.0667, 25.7
49	Crete, Potami (Potamia, unclear locality)	Kinzelbach, 1975		
50	Gavdos Island	Facheris, 2007a, 2007b	34°50'N, 24°04'E	34.8333, 24.083
51	Kythira Island	Werner, 1937, 1938; Vachon, 1953; Kinzelbach, 1975 (unconfirmed); Parmakelis et	36°10'N, 23°00'E	36.1667, 23.00

		al., 2006 (Agia Sofia cave)		
	***Iurus sp.* (status undetermined): Greece** (eastern Aegean islands: Fourni, Karpathos, Kasos, ?Kos, ?Leros, Samos, Saria, Rhodes)			
1	Fourni Island, Votsos Panagias pothole	Stathi & Mylonas, 2001	37°35'0.19"N, 26°29'07.42"E	37.5834, 26.4854
	Karpathos Island	Werner, 1936b, 1938; Menozzi, 1941; Vachon, 1953; Kinzelbach, 1966, 1975, 1982; Kritscher, 1993; Stathi & Mylonas, 2001; Parmakelis et al., 2006; Kaltsas et al., 2008.	see detailed localities	
2	Karpathos Island, Apella Beach, 2 km from Myrtonas	MESC	35°36'12"N, 27°09'34"E	35.6033, 27.1594
3	Karpathos Island, Avlona, 401 m asl	Kinzelbach, 1982	35°46'N, 27°12'E	35.7667, 27.2
4	Karpathos Island, Karpathos town (=Pigadia)	Werner, 1936b; Kritscher, 1993	35°30'N, 27°14'E	35.5, 27.2333
5	Karpathos Island, Kiriaki Peninsula, SE of Pigadia	Kinzelbach, 1975, 1982; Kritscher, 1993	35°29'38"N, 27°13'33"E	35.4939, 27.2258
6	Karpathos Island, western Lastos Mts.	Kinzelbach, 1975, 1982	35°34'N, 27°08'E	35.5667, 27.1333
7	Karpathos Island, Menetes, Profitis Ilias	Kritscher, 1993	35°29'28.29"N, 27°10'02.88"E	35.4911,27.1675
8	Karpathos Island, Mesochori to Piles	Stathi & Mylonas, 2001; Parmakelis et al., 2006.	35°32'38.42"N, 27°07'43"E	35.5439, 27.1286
9	Karpathos Island, Myrtonas (Mertonas)	Kinzelbach, 1975, 1982	35°34'49"N, 27°10'14"E	35.5803, 27.1706
10	Karpathos Island, between Myrtonas and Spoa	Kinzelbach, 1982	35°38'N, 27°09'E	35.6333, 27.1500
11	Karpathos Island, Olymbos (Olympos)	Menozzi, 1941	35°44'22.73"N, 27°10'25.27"E	35.7397, 27.1736
12	Karpathos Island, Othos, 700 m	Kritscher, 1993	35°32'30.98"N, 27°09'10.9"E	35.5419, 27.1531
13	Karpathos Island, Volada	Menozzi, 1941; Kinzelbach, 1975, 1982	35°33'40.32"N, 27°09'17.32"E	35.5611, 27.1547
14	Saria Island (Karpathos Archipelago)	Kinzelbach, 1982	35°52'N, 27°13'E	35.8667, 27.2167
15	Kasos Island, Stylokamara Cave	Fet, 2000	35°24'N, 26°55'01"E	35.40, 26.917

	Rhodes Island	Borelli, 1913; Caporiacco, 1928; Werner, 1936b, 1938; Menozzi, 1941; Vachon, 1953; Kinzelbach, 1975, 1982; Kritscher, 1993; Fet, 2000; Kovařík & Whitman, 2005; Parmakelis et al., 2006	see detailed localities	
16	Rhodes Island, Agios Isidoros, 678 m asl	Borelli, 1913	36°10'N, 27°51'E	36.1667, 27.85
17	Rhodes Island, Archangelos	Fet, 2000	36°11'N, 28°07'E	36.1833, 28.1333
18	Rhodes Island, Mt. Ataviros (Attairo)	Menozzi, 1941	36°12'N, 27°52'E	36.2, 27.867
19	Rhodes Island, Mt. Filerimos (Fileremo, Eremofilo)	Caporiacco, 1928; Kovařík & Whitman, 2005	36°24'N, 28°08'E	36.4, 28.1333
20	Rhodes Island, Kritinia (formerly Kastelos)	Soleglad et al., 2009 (“Kastelo”)	36°14'55.4"N, 27°49'51.42"E	36.2486, 27.8308
21	Rhodes Island, Lindos (Lindosa), 400 m asl	Kinzelbach, 1982; Stathi & Mylonas, 2001	36°05'57.20"N, 28°04'43.86"E	36.0992, 28.0789
22	Rhodes Island, Masari	Parmakelis et al., 2006	35°30'55"N, 27°08'50"E	35.5153, 27.1472
23	Rhodes Island, Mt. Profitis Ilias	Werner, 1936b; Menozzi, 1941; Stathi & Mylonas, 2001	36°16'34.44"N, 27°56'30.88"E	36.2761, 27.9419
24	Rhodes Island, Rhodes town	Borelli, 1913; Menozzi, 1941; Kinzelbach, 1982; Kritscher, 1993 (Rhodes town; Rodini Park)	36°26'27"N, 28°13'21"E	36.4408, 28.2225
	Samos Island	Werner, 1934, 1938; Vachon, 1953; Kinzelbach, 1975; Kritscher, 1993; Parmakelis et al., 2006; Francke & Prendini, 2008	see detailed localities	
25	Samos Island, Agios Nikolaos, 3 km W of Karlovasi	Francke & Prendini, 2008; Soleglad et al., 2009	37°47'25"N, 26°42'16"E	37.7903, 26.7044
26	Samos Island, Manolates, 649 m asl	Kritscher, 1993	37°47'04"N, 26°49'43"E	37.7844, 26.8286
27	Samos Island, Marathokampos	Werner, 1934a	37°43'35"N, 26°41'24"E	37.7264, 26.6900
	? Kos Island, Asfendiou	Kinzelbach, 1975 (unconfirmed); dubious record (Stathi & Mylonas, 2001)	36°51'03"N, 27°12'32E	36.8508, 27.2089
	? Leros Island	Kinzelbach, 1975 (unconfirmed); dubious record	37°09'N, 26°51'E	37.15, 26.85

		(unconfirmed); dubious record (Stathi & Mylonas, 2001)		
	***Iurus asiaticus* Birula, 1903: Turkey** (southeast)			
1	Adana Province: Gülek Pass (Gülek Boğazı, Cilician Gates), Taurus Mts (type locality of *I. asiaticus*).	Birula, 1898, 1903	37°19'40"N, 34°47'40"E	37.3278, 34.7944
2	Adana Province: Karaisalı District, Kızıldağ Plateau, 1600 m asl	Karataş, 2001	37°25'03"N, 35°02'25"E	37.4175, 35.0403
3	Adana Province: Kozan District, Eski Mantaş Village, Beşiktaş area, 450 m asl	Yağmur et al., 2009	37°30'43"N, 35°52'31"E	37.5119, 35.8753
4	Adana Province: Pozantı District, E of Pozantı	Yağmur et al., 2009	37°26'02"N, 34°53'57"E	37.4339, 34.8992
5	Adana Province: Pozantı District, Belemedik	Kovařík, 2002 ("Belemedek Mara")	37°20'N, 34°54'E	37.3333 34.90
6	Adıyaman Province: Tut District, Kaşlıca Village, S slopes of Akdağ Mts, 1183 m asl (the easternmost locality of *I. asiaticus* and genus *Iurus*)	Yağmur et al., 2009	37°48'34.6"N, 37°59'21.9"E	37.8096, 37.9894
7	Kahramanmaraş Province: Central District, Süleymanlı Village (the northernmost locality of *I. asiaticus* and genus *Iurus*)	NHMW	37°52'35"N, 36°50'02"E	37.8764, 36.8339
8	Kahramanmaraş Province: Central District, 2 km W of Yaylaüstü Village fork in the road to Andırın, 1237 m asl	Yağmur et al., 2009	37°34'33"N, 36°35'06"E	37.5758, 36.585
9	Kahramanmaraş Province: Göksun District, Göksun, 1500 m asl	Lacroix, pers comm., 1992	38°01'N, 36°30'E	38.0167, 36.5
10	Mersin Province: Çamlıyayla District, Çamlıyayla (= Namrun)	Francke, 1981 ("Namrum"); Soleglad et al., 2009	37°10'35"N, 34°36'22"E	37.1764, 34.6061
11	Mersin Province: Çamlıyayla District, Çamlıyayla Plateau, 425 m asl	Yağmur et al., 2009	37°08'19"N, 34°50'25"E	37.1386, 34.8403
12	Mersin Province: Tarsus District, Tarsus, "Haci Hamfal" (possibly Haci Hamzalı)	Vachon, 1966, 1971	37°04' N, 34°50'E	37.0667, 34.8333
13	Mersin Province: Tarsus District, Taşobası Village, 256 m asl	Karataş, 2001	37°05'27"N, 34°55'48"E	37.0908, 34.93
14	Mersin Province: Tarsus District, 1 km from Taşobası Village, 209 m asl	MTAS	37°05'55"N, 34°55'40"E	37.0986, 34.9278
15	Niğde Province: Ulukışla District, Madenköy Village, 1710 m asl	NHMW	37°26'59"N, 34°37'32"E	37.4497, 34.6256
	***Iurus kraepelini* von Ubisch, 1922: Turkey** (south); **Greece** (Megisti)			
1	Antalya Province: Akseki District, 12 km S of Akseki	Soleglad et al., 2009	37°03'07"N, 31°47'03"E	37.0486, 31.79

2	Antalya Province: Akseki District, Bademli Village	Crucitti & Malori, 1998	37°38'22"N, 31°42'02"E	37.3092, 31.7367
3	Antalya Province: Akseki District, Güzelsu Village	Crucitti & Malori, 1998	36°53'47"N, 31°51'20"E	36.896, 31.855
4	Antalya Province: Akseki District, Yarpuz Village, 1800 m asl	MBCH	37°07'45"N, 31°51'27"E	37.129, 31.857
5	Antalya Province: between Akseki District and Gündoğmuş District, 26 km from Gündoğmuş (near Alacabel Pass)	Crucitti & Malori, 1998	36°58'44"N, 31°44'04"E	36.9789, 31.7344
6	Antalya Province: Alanya District, Alanya	Karataş, 2001; Soleglad et al., 2009	36°33'N, 31°59'E	36.55, 31.9833
7	Antalya Province: Alanya District, Alanya Castle	MTAS	36°31'59.8"N, 31°59'28.8"E	36.5333, 31.9913
8	Antalya Province: Alanya District, Avsallar	Karataş, 2001	36°38'13"N, 31°45'04"E	36.6369, 31.7511
9	Antalya Province: Alanya District, 2 km from Alanya - Taşatan Plateau fork in the road, 1167 m asl	MTAS	36º38.498'N, 32º04.089'E	36.6417, 32.0681
10	Antalya Province: Alanya District, Taşatan Plateau, 1208 m asl	MTAS	36º40.244'N, 32º10.210'E	36.6706, 32.1767
11	Antalya Province: Alanya District, 38 km NE from Demirtaş	NHMW	36°33'N, 32°27"E	36.55, 32.45
12	Antalya Province: Alanya District, Uzunöz Village	Parmakelis et al., 2006; Francke & Prendini, 2008; NHMW	36°32'25"N, 32°12'19"E	36.5403, 32.2053
13	Antalya Province: Antalya	Kinzelbach, 1975; Soleglad et al., 2009	36°54'N, 30°41'E	36.913, 30.69
14	Antalya Province: Central District, Çakırlar Village, 17 km SE of Antalya	Kritscher, 1993	36°52'14"N, 30°33'43"E	36.8706, 30.5619
15	Antalya Province: Central District, Büyük Çaltıçak Village , 14 m asl	Yağmur et al., 2009	36°47'06"N, 30°34'09"E	36.785, 30.5722
16	Antalya Province: Central District, Küçük Çaltıçak Village, 2 m asl	Yağmur et al., 2009	36°46'26"N, 30°34′14"E	36.7739, 30.5706
17	Antalya Province: Demre District, 2nd km of the road from Demre to Kaş	Yağmur et al., 2009	36°15'48.8"N, 29°56'37.7"E	36.2636, 29.9438
18	Antalya Province: Elmalı District, Çiglikara Nature Reserve, 1680 m asl	Kinzelbach, 1975; Kovařík, 2002 (“Giglicara”)	36°37'34"N, 30°00'40"E	36.6261, 30.0111
19	Antalya Province: Elmalı District, near Elmalı	Yağmur et al., 2009	36°24'58"N, 29°40'18"E	36.4161, 29.6717
20	Antalya Province: Finike District, Finike (“Finika”) (type locality of *I. kraepelini*).	von Ubisch, 1922	36°18'N, 30°09'E	36.295, 30.141
21	Antalya Province: Finike District, Arifköy Village, 30 km from Finike	MBCH	36°30'23"N, 30°03'35"E	36.5064, 30.0597

22	Antalya Province: Finike District, Avlanbeli Geçidi (Pass), ca. 25 km N of Finike, 1200 m asl	Soleglad et al., 2009	36°32'15"N, 29°59'49"E	36.5375, 29.9969
23	Antalya Province: Gazipaşa District, Gazipaşa	Karataş, 2001	36°16'N, 32°19'E	36.2667, 32.3167
24	Antalya Province: Gündoğmuş District, Gündoğmuş	Crucitti, 1999	36°48'39"N, 32°00'11"E	36.8108, 32.0031
25	Antalya Province: Kale District, Gölbaşı (“Gölbaktiche”, “Gjölbaschi”) (ancient Trysa, near Davazlar Village)	Soleglad et al., 2009	36°16'18"N, 29°52'20"E	36.2717, 29.8722
26	Antalya Province: Kale District, 2nd km on the road from Demre to Kaş, 476 m asl	MTAS	36°15'48.8"N, 29°56'37.7"E	36.2636, 29.9438
27	Antalya Province: Kale District, Tersane Island, 113 m asl	Yağmur et al., 2009	36°38'10"N, 29°05'19"E	36.6361, 29.0886
28	Antalya Province: Kaş District, Çamlik, near Kemerkoy Village	Crucitti & Malori 1998	36°29'35"N, 29°42'09"E	36.4931, 29.7025
29	Antalya Province: Kaş District, S of Gömücü Village, 986 m asl	MTAS	36°24'01"N, 29°41'56"E	36.4003, 29.6989
30	Antalya Province: Kaş District, 2nd km of the road from Kalkan to Patara, 242 m asl	Yağmur et al., 2009	36°17'1"N, 29°24'26"E	36.2836, 29.4072
31	Antalya Province: Kaş District, Kınık (ancient Xanthos)	Soleglad et al., 2009	36°21'19"N, 29°19'05"E	36.3553, 29.3181
32	Antalya Province: Korkuteli District, Güllük Mts. (“Güllik-Dagh”) (ancient Termessos on Mt. Solymos)	Soleglad et al., 2009	36°58'57"N, 30°27'53"E	36.9825, 30.4647
33	Antalya Province: Manavgat District, Oymapınar Village, 65 m asl	Yağmur et al., 2009	36°53'52"N, 31°31'53"E	36.8978, 31.5314
34	Antalya Province: Manavgat District, İrmasan Geçidi (Pass), 1300 m asl	Soleglad et al., 2009	37°01'46"N, 31°14'43"E	37.0297, 31.2456
35	Antalya Province: Serik District, Çatallar	Soleglad et al., 2009	36°29'23"N, 30°04'14"E	37.135, 30.879
36	Antalya Province: Serik District, Aspendos (Belkis) Ruins, 4 km N of Serik	Kinzelbach, 1975; Soleglad et al., 2009	36°56'28"N, 31°10'17"E	36.9411, 31.1714
37	Isparta Province: Eğirdir District, Pazarköy Village, SE of Eğridir (now Eğirdir), 1200 m asl	Kinzelbach, 1975; Kovařík, 2002	37°46'35"N, 31° 02'35"E	37.7764, 31.0431
38	Isparta Province: Sütçüler District, Sütçüler (“Sütgüler”)	Francke & Prendini, 2008	37°29'19"N, 30°59'37"E	37.4886, 30.9936
39	Karaman Province: Ermenek District, Adiller Village	Crucitti & Malori, 1998	36°40'40"N, 32°37'33"E	36.6778, 32.6258
40	Konya Province: Beyşehir District, Bademli Village	Soleglad et al., 2009	37°17'18"N, 32°10'50"E	37.2883, 32.1805
41	Konya Province: Beyşehir District, Sıvalıin Cave, Yeşildağ, 1147 m asl	Karataş, 2001	37°32'40"N, 31°28'28"E	37.5444, 31.4744
42	Mersin Province: Anamur District, Abanoz Plateau, ca. 45 km N of Anamur	Crucitti & Malori, 1998	36°17'53"N, 32°54'51"E	36.2981, 32.9142
43	Mersin Province: Anamur District, Anemurium (“Anemouryon”) ruins, 2 km SW of Anamur	Francke & Prendini, 2008	36°01'27"N, 32°48'09"E	36.078, 32.834

	ruins, 2 km SW of Anamur			
44	Mersin Province: Aydıncık District, Aydıncık	Soleglad et al., 2009	36°10'N, 33°21'E	36.167, 33.35
45	Mersin Province: Erdemli District, Doğulu Village, 161 m asl (the easternmost locality of *I. kraepelini*).	MTAS	36°44'58.9"N, 34°25'27.5"E	36.7497, 34.4243
46	Mersin Province: Gülnar District, Akkuyu road	Karataş, 2001	36°20'N, 33°24'E	36.3333, 33.4
47	Mersin Province: Gülnar District, Gülnar	Soleglad et al., 2009	36°20'18"N, 33°24'28"E	36.3383, 33.4078
48	Mersin Province: Gülnar District, Manavgat Mts	Crucitti & Malori 1998	36°30'1"N, 33°15'7"E	36.5003, 33.2519
49	Mersin Province: Mersin [locality unclear]	Kinzelbach, 1975		
50	Mersin Province: Mut District, Alahan Village	Crucitti & Malori, 1998	36°47'4"N, 33°20'47"E	36.7844, 33.3464
51	Mersin Province: Silifke District, Cennet Cave (Korikos or Corycos Cave), near Silifke	Vachon, 1951; Kinzelbach, 1975; Kovařík, 2002; Francke & Prendini, 2008; Soleglad et al., 2009	36°27'08.2"N, 34°06'22.3"E	36.378, 33.934
52	Mersin Province: Silifke District, Değirmendere Village, 425 m asl	Yağmur et al., 2009	36°25'53"N, 33°45'21"E	36.4314, 33.7558
53	Mersin Province: Silifke District, Göksu Deltası (Göksu Delta Valley), 10 km S of Silifke	Vachon, 1951; Kinzelbach, 1975; Soleglad et al., 2009	36°16'21"N, 33°57'44"E	36.2725, 33.9622
54	Mersin Province: Silifke District, 5 km NW of Silifke	NHMW	36°25'34"N, 33°54'09"E	36.4261, 33.9025
55	Mersin Province: Silifke District, near Silifke, 425 m asl	Yağmur et al., 2009	36°23'03"N, 33°54'21"E	36.3842, 33.9058
56	Mersin Province: Silifke District, Silifke Castle, 159 m asl	Karataş, 2001	36°22'36"N, 33°54'55"E	36.3767, 33.9153
57	Mersin Province: Silifke District, Taşucu Village	Yağmur et al., 2009	36°18'43"N, 33°51'41"E	36.3119, 33.8614
58	Mersin Province: Silifke District, Uzuncaburç Village (ancient Diocaesarea-Olba)	Soleglad et al., 2009	36°35'2"N, 33°55'35"E	36.5839, 33.9263
59	Mersin Province: Silifke District, Liman Kalesi, Ağalar Limanı, 8 km SW of Taşucu	MBCH	36°16'40"N, 33°50'10"E	36.2778, 33.8361
60	Muğla Province: Bodrum District, Bodrum (ancient Halicarnassus)	Kinzelbach, 1975	37°02'N, 27°26'E	37.033, 27.433
61	Muğla Province: Bodrum District, Sarıot Island (across Turgutreis) (the westernmost locality of *I. kraepelini*).	MTAS	36°59'29"N, 27°13'26"E	36.9914, 27.2239
62	Muğla Province: Dalaman District, Tersane Island, 178 m	MTAS	36°40'04"N, 28°55'05"E	36.6678, 28.918
63	Muğla Province: Dalaman District, 7 km E of Dalaman	Kinzelbach, 1982	36°49'07"N, 28°55'50"E	36.8186, 28.9306
64	Muğla Province: Dalyan District	Yağmur et al., 2009	36°51'14"N, 28°37'25"E	36.8539, 28.6236

65	Muğla Province: Dalyan District, Dalyan, 28 m asl	Soleglad et al., 2009	36°50'03"N, 28°38'33"E	36.834, 28.6425
66	Muğla Province: Dalyan District, Kışlak Village	MTAS	36°50'N, 28°37'E	36.8333, 28.6167
67	Muğla Province: Fethiye District	MTAS	36°37'N, 29°07'E	36.6167, 28.1167
68	Muğla Province: Fethiye	Francke & Prendini, 2008; Soleglad et al., 2009	36°39'05"N, 29°07'23"E	36.651, 29.123
69	Muğla Province: Fethiye District, 5 km S of Fethiye, Babadağ Mts, 499 m asl	Yağmur et al., 2009	36°33'39"N, 29° 09'12"E	36.5608, 29.1533
70	Muğla Province: Fethiye District, Akdağ Mts, Eren Hill,	Yağmur et al., 2009	36°43'51"N, 29°38'24"E	36.7308, 29.64
71	Muğla Province: Fethiye District, 10 km S of Arpacık Village, 70 m asl	Yağmur et al., 2009	36°43'08"N, 29° 01'48"E	36.7189, 29.03
72	Muğla Province: Fethiye District, Dodurga ("Dorduga")	Kinzelbach, 1975	36°23'54"N, 29°12'19"E	36.3983, 29.2053
73	Muğla Province: Fethiye District, Domuz Island, 8 m asl	Yağmur et al., 2009	36°39'41"N, 28°53'59"E	36.6614, 28.8997
74	Muğla Province: Fethiye District, Gemiler Island, 40 m asl	MTAS	36°33'11"N, 29°04'10"E	36.553, 29.0694
75	Muğla Province: Fethiye District, Göcek, 38 m asl	MTAS	36°45'25"N, 28°56'40"E	36.7569, 28.9444
76	Muğla Province: Fethiye District, Göcek Island, opposite to Göcek	MTAS	36°43'35"N, 28°56'22"E	36.7264, 28.9394
77	Muğla Province: Fethiye District, Gökbel Village	MTAS	36°53'37"N, 28°15'22"E	36.8936, 28.2561
78	Muğla Province: Fethiye District, Kıdırak Village, near Ölüdeniz, S of Fethiye	Soleglad et al., 2009	36°31'52"N, 29°07'41"E	36.5311, 29.128
79	Muğla Province: Fethiye District, Kelebekler Valley (Butterflies Valley)	MTAS	36°29'48"N, 29°07'44"E	36.4967, 29.1289
80	Muğla Province: Fethiye District, Ovacik Village, 6 km S of Fethiye (=Mekri)	Werner, 1936a; Kovařík, 2002; Francke & Prendini, 2008	36°34'49"N, 29°08'1"E	36.5803, 29.1336
81	Muğla Province: Fethiye District, Yeşilüzümlü Village, 990 m asl	Yağmur et al., 2009	36°48'03"N, 29°11'10"E	36.8008, 29.1861
82	Muğla Province: Fethiye District, Zeytin Island, opposite to Göcek,38 m asl	MTAS	36°41'53"N, 28°55'36"E	36.6981, 28.9267
83	Muğla Province: Köyceğiz District	MTAS	36°56'N, 28°44'E	36.9333, 28.7333
84	Muğla Province: Köyceğiz District, Ekincik Village, 52 m asl	MTAS	36°50'39"N, 28°33'10"E	36.8442, 28.5528
85	Muğla Province: Köyceğiz District, near Karagöl Lake	Yağmur et al., 2009	37°04'06"N, 28°48'50"E	37.0683, 28.8139
86	Muğla Province: Köyceğiz District, Kaunos Ruins	MTAS	36°49'34"N, 28°37'21"E	36.8261, 28.6225
87	Muğla Province: Köyceğiz District, Sultaniye Spring	Soleglad et al., 2009	36°53'25"N, 28°35'12"E	36.8903, 28.5867

88	Muğla Province: Marmaris District, 25 km N of Marmaris	MTAS	37°13'N, 28°14'E	37.2167, 28.9181
89	Muğla Province: Marmaris District, Nimara Island, 327 m asl	MTAS	36°48'15"N, 28°17'15"E	36.8042, 28.2875
90	Muğla Province: Ortaca District, Gökbel Village, 145 m asl	Yağmur et al., 2009	36°47'4"N, 28°40'39"E	36.7844, 28.6775
91	Muğla Province: Seki District, Çiçekbaba Mts, 911 m asl	Yağmur et al., 2009	37°01'88"N, 28°45'73"E	37.033, 28.7663
92	Muğla Province: Seki District, Çiçekbaba Mts, near Kartal Lake, 1763 m asl	Yağmur et al., 2009	37°03'66"N, 28°48'50"E	37.0664, 28.8139
93	Muğla Province: Seki District, Çiçekbaba Mts, near Kartal Lake, 1763 m asl	Yağmur et al., 2009	37°02'54"N, 28°46'37"E	37.0483, 28.7769
94	Muğla Province: Seki District, Göğübelen Pass, 1830 m asl	Yağmur et al., 2009	36°50'44"N, 29°44'76"E	36.8456, 29.7497
95	Muğla Province: Seki District, near Göğübelen Pass, 1794 m asl	Yağmur et al., 2009	36°50′54"N, 29°44'40"E	36.8483, 29.7444
96	Muğla Province: Seki District, near Göğübelen Pass, 1807 m asl	Yağmur et al., 2009	36°50'32"N, 29°45'16"E	36.8422, 29.7544
97	Muğla Province: Yatağan District, Bencik Mts, near fire watchtower, 1395 m asl	Yağmur et al., 2009	37°14'68"N, 28°01'29"E	37.2497, 28.0247
98	Muğla Province: Yatağan District, Bencik Mts, near fire watchtower, 1395 m asl	Yağmur et al., 2009	37°14'14"N, 28°03'28"E	37.2372, 28.0578
99	**Greece:** Megisti (Kastelorizo) Island: Palaiokastro	Fet & Braunwalder, 2000; Stathi & Mylonas, 2001; Parmakelis et al., 2006.	36°08'20"N, 29°34'50"E	36.1389, 29.5806
	***I. kadleci* sp. nov.: Turkey** (south: Antalya Province)			
1	Antalya Province: Akseki District, 12 km S of Akseki (type locality of *I. kadleci*).	Soleglad et al., 2009 (as *I. dufoureius asiaticus*)	37°03'07"N, 31°47'03"E	37.0486, 31.79
2	Antalya Province: Alanya District, Dim Cave, 11 km E of Alanya, at 25 m depth, cave entrance 221 m asl	MTAS	36°32'21"N, 32°06'33"E	36.5392, 32.1092
3	Mersin Province: Gülnar District, Gülnar	FKCP	36°20'N, 33°24'E	36.3333, 33.4
	***I. kinzelbachi* sp. nov.: Turkey** (west: İzmir and Aydın Provinces)			
1	İzmir Province: Bornova District, Naldöken, formerly Narlıköy ("Narli Kioi", "Marli Kioi"), population now extinct	Kinzelbach, 1975; Soleglad et al., 2009 (as *I. dufoureius asiaticus*)	38°27'31"N, 27°16'30"E	38.4586, 27.275
2	Aydın Province: Söke District, Dilek Peninsula National Park, Canyon (type locality of *I. kinzelbachi*).	Koç & Yağmur, 2007; Yağmur et al., 2009 (as *I. dufoureius asiaticus*)	37°41'37″N, 27°09'37″E	37.6936, 27.1603

3	Aydın Province: Söke District, Davutlar, 800 m asl	Francke & Prendini, 2008 (as *I. dufoureius asiaticus*)	37°43'33"N, 27°18'15"E	37.7258, 27.3014
	Unclear or Erroneous Localities:			
	Turkey: Gazane (BMNH)	Kinzelbach, 1975		
	Turkey: Gökce-Kısık (="Göktsche-Kisik", ="Koktsche-Kissik") [SW of Eskişehir], Eskişehir Province, possibly mislabeled or introduction; specimen not found	Werner, 1902; Birula, 1903		
	Turkey: "Antakya, Adana, south Mersin" (FKCP; not a single locality)	Soleglad et al., 2009		
	Turkey: Antakya [in error; refers to Antalya]	Soleglad et al., 2009		
	Turkey: Şile (near Istanbul): possibly mislabeled or introduction	Kinzelbach, 1975		
	Lebanon: Beirut: possibly mislabeled or introduction	Kinzelbach, 1975		
	Egypt: possibly mislabeled or introduction	Thorell, 1877; Kraepelin, 1894, 1899		
	Cyprus (a large series in ZMHB; possibly mislabeled, most likely Crete)	Kamenz & Prendini, 2008		

Table A1: Locality data for *Iurus*.

Appendix B
Neobothriotaxy in *Iurus*

Neobothriotaxy in *Iurus* was reported for the first time by Soleglad, Kovařík & Fet (2009). In their study, 77 occurrences of neobothriotaxy were reported, segegated into nine separate "types", spanning 101 specimens, and thoroughly described. Since Soleglad, Kovařík & Fet's (2009) study, 341 specimens of *Iurus* have been examined for our current study, and additional cases of neobothriotaxy and new "types" were discovered.

Neobothriotaxic Types

Since Soleglad, Kovařík & Fet's (2009) study, four new neobothriotaxic types were detected in our current analysis. Figure B1 illustrates all 13 types, occurring on the chela and the patella.

In three types (types 1–3), accessory trichobothria occur on the *internal* surface of the chelal palm, all in the vicinity of trichobothrium *ib*. Two of these accessory trichobothria are petite in size. One type (type 4) is found on the *ventral* surface of the chelal palm. This accessory trichobothrium is petite in size. Five types of neobothriotaxy (types 5–9) have been identified on the *external* surface of the chelal palm, three of which (types 6, 7, 9) are new. Except for type 5, all neobothriotaxy types found on the external surface are comprised of a solitary petite accessory trichobothrium. Type 5, in almost all cases, has full size accessory trichobothria, numbering from one to two.

The external surface of the patella exhibits four types of neobothriotaxy (types 10–13), one of which (type 10) is new. Types 10 and 11 are found in the *et* series, both represented by a single, petite trichobothrium. Type 12 is comprised of full size trichobothria, numbering from one to two, occurring close to the *em* series. Type 13 is represented by a single, petite trichobothrium, occurring in the *esb* series.

Number of Neobothriotaxic Instances

Table B1 presents detailed statistics of all neobothriotaxic occurrences in *Iurus*, grouped by the species in which they occur, and the general geographic distribution of these species.

247 occurrences of neobothriotaxy have been detected in *Iurus*. Generally, these occurrences involved a solitary accessory trichobothrium, though in some cases two accessory trichobothria are included within a type. Statistically, accessory trichobothria are somewhat rare on the patella, with only 19 occurrences, accounting for 7.7 %. Of these accessory trichobothria, type 12 is found in more than half of all cases (10 occurrences). The chela accounts for a large majority of neobothriotaxic occurrences, 92.3 %. Of these, three types are most common: type 5, 100 occurrences (40.5 %), type 1, 78 occurrences (31.6 %), and type 8, 24 occurrences (9.7 %).

Distribution of Neobothriotaxy within *Iurus*

Figure B2 shows the geographical distribution of the 13 neobothriotaxic types in *Iurus*, involving the Greek Peloponnese and six provinces in Turkey.

Neobothriotaxy is quite rare in Greece, only three instances were detected in the 34 specimens of *I. dufourius* examined, representing three exclusive types (2, 6, 13), one specimen per each type, and only one chela, clearly minimal representation. The remaining ten types were detected in specimens from Turkey. Of particular interest are four types found exclusively in species *I. kinzelbachi* (types 8–11), which are considered diagnostic for this species. These types are distributed in extreme western Anatolia in İzmir and Aydın Provinces, isolated from the other types (Fig. B2). The Anatolian species *I. kraepelini*, which occupies the largest georaphic range, has six neobothriotaxic types: 1, 3–5, 7, and 12. These types are found across the entire species' range, in Muğla, Antalya, Konya, and Mersin Provinces; Antalya has all six types. In the third Anatolian species, *I. asiaticus*, neobothriotaxy (type 7) was detected only in a single specimen, (one chela), in extreme eastern Mersin, the most western edge of its distribution. Neoothriotaxy was not found in *I. kadleci*, where only five specimens are known.

It is worth mentioning that type 7, found in one specimen of *I. asiaticus*, was also found in *I. kraepelini* across most of its range. This is the only known case when two *Iurus* species *share* a certain type of neobothriotaxy.

The most common neobothriotaxic type in *I. kraeplini*, is type 5, occurring in all four provinces. This type also occurs in the "Taurus" population (actual locality unknown). This is an interesting type, accessory trichobothria are in general full size, and in many cases can occur in pairs. The second most prevalent type, type 1, is clustered in north-central Antalya and adjacent

	Turkey							Greece
	İzmir (7)	Aydın (23)	Muğla (44)	Antalya (88)	Konya (4)	"Taurus" (8)	Mersin (15)	(34)
Type 1: Chela Internal, *ia* Total = 78 (31.6 %)			8 (9 %)	55 (33 %)	8 (100 %)	7 (62.5 %)		
Type 2: Chela Internal, *ia* Total = 1 (0.04 %)				1 (4.5 %)				
Type 3: Chela Internal, *ia* Total = 1 (0.04 %)								1 (2.9 %)
Type 4: Chela Ventral, *va* Total = 1 (0.04 %)				1 (4.5 %)				
Type 5: Chela External, *Et* Total = 100 (40.5 %)			8 (9 %)	73 (42 %)	8 (100 %)	11 (75 %)		
Type 6: Chela External, *Et* Total = 1 (0.04 %)								1 (2.9 %)
Type 7: Chela External, *Est* Total = 7 (2.8 %)			2 (4.5 %)	4 (2.3 %)			1 (6.7 %)	
Type 8: Chela External, *Est* Total = 24 (9.7 %)	14 (100%)	10 (35 %)						
Type 9: Chela External, *Eb* Total = 15 (6.1 %)	3 (43 %)	12 (48 %)						
Type 10: Patella External, *et* Total = 2 (0.8 %)		2 (9 %)						
Type 11: Patella External, *et* Total = 6 (2.4 %)	4 (57 %)	2 (9 %)						
Type 12: Patella External, *em* Total = 10 (4.0 %)			2 (4.5 %)	7 (4.5 %)			1 (6.7 %)	
Type 13: Patella External, *esb* Total = 1 (0.04 %)								1 (2.9 %)
TOTAL = 247	21	26	20	141	16	18	2	3

Table B1: Neobothriotaxic occurrences in genus *Iurus* based on the examination of 343 specimens. Distribution in Turkey is broken down into provinces and in Greece all occurrences are found in the Peloponnese. For eight specimens, localities were simply stated as "Taurus" (GREY). We suspect this probably refers to Antalya or Konya Provinces, which also exhibit these two types of neobothriotaxy. 247 occurrences of neobothriotaxy have been detected (an occurrence represents a single pedipalp). Types 8–11 (BLUE) are found exclusively in *I. kinzelbachi*. Only three occurrences of neobothriotaxy were detected in *I. dufoureius* (RED). The large majority of neobothriotaxic occurrences was found in *I. kraepelini* (GREEN). Only one occurrence was detected in *I. asiaticus* (WHITE) in Mersin Province. Percentages accompanying type totals are percentages of occurrences. Percentages accompanying occurrences counts are percentages of specimens exhibiting this type. Numbers accompanying province names are number of specimens examined in that province. See Fig. B1 for illustrations of these 13 types of neobothriotaxy and the map in Fig. B2 for their distribution.

Konya, sometimes found along with type 5 in the same population. Based on this distribution, type 1 could be possibly diagnostic for a local clade within *I. kraepelini*. However, further investigation of additional material and the identification of new characters will be necessary before this can be determined.

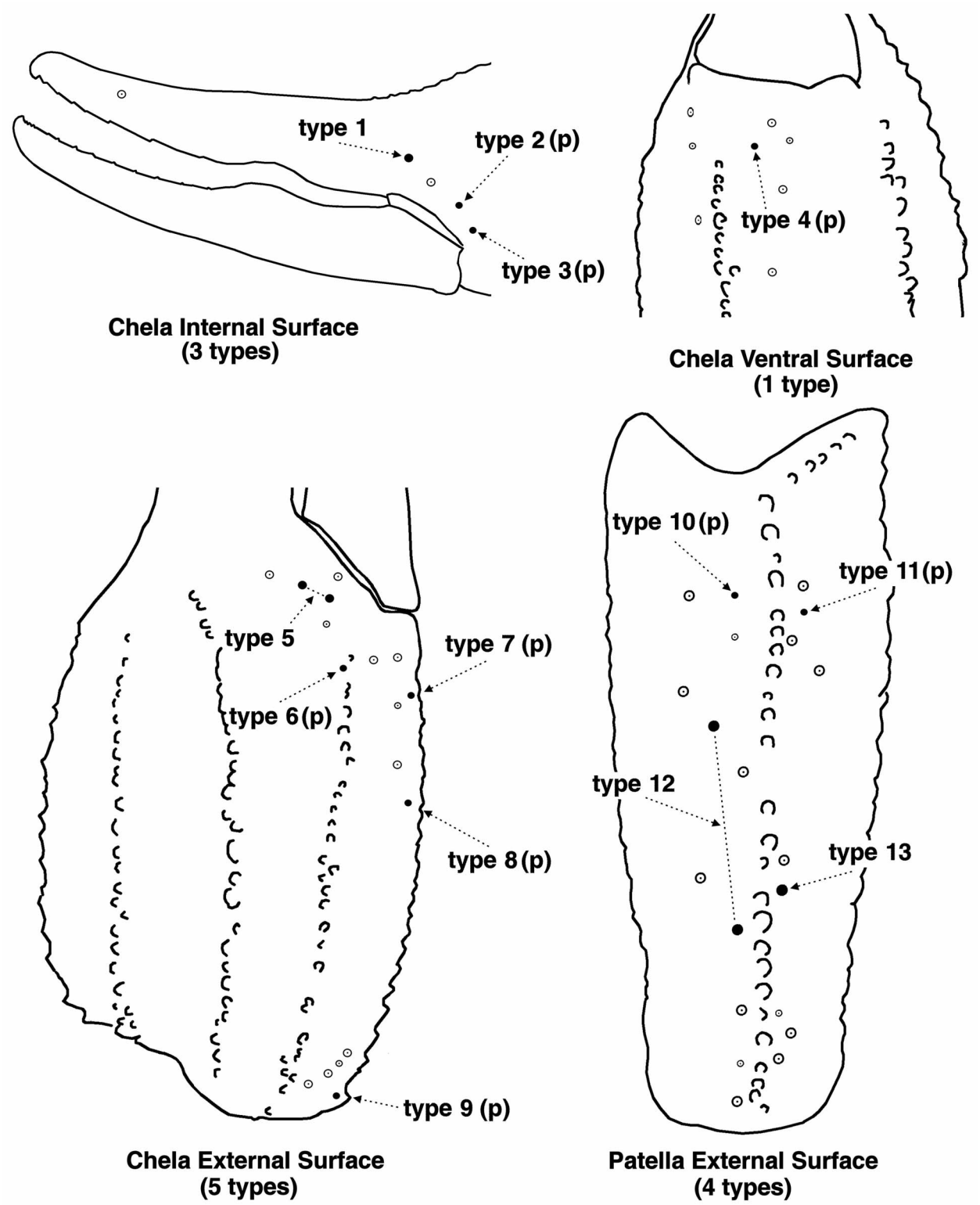

Figure B1: Diagrammatic trichobothria pattern (partial) of *Iurus* showing 13 types of neobothriotaxy. Also see map in Figure B2 that plots locations of specimens examined that exhibit these 13 accessory trichobothria types. Accessory trichobothria indicated by closed circles. (p) = petite.

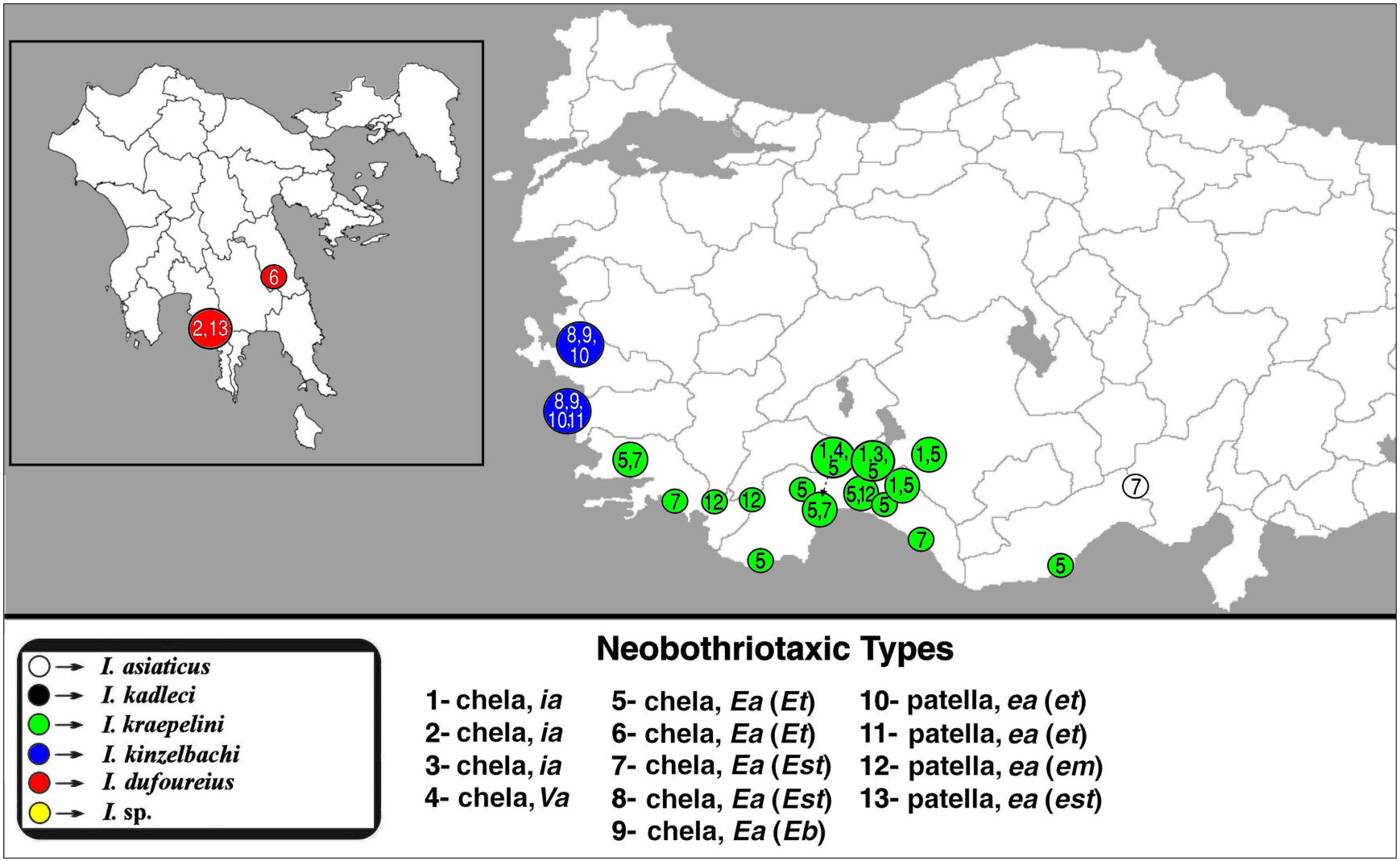

Figure B2: Map showing instances of neobothriotaxy in genus *Iurus*. Thirteen types of neobothriotaxy are identified (see Fig. B1 for illustrations of these types). Neobothriotaxy is found in four of the five *Iurus* species currently recognized in this paper (i.e.,except for *I. kadleci* (BLACK)).

Appendix C
Morphometric Tendencies in *Iurus*

Based on 31 sets of measurements taken from the five species of *Iurus*, we conducted an extensive morphometric ratio analysis to determine tendencies in the relative segment proportions of these species. This involved a total of 762 measurements. We digitized 26 specific measurements (out of a total 33) of each specimen and computed all possible combinations of morphometric ratios, a total of 325 for each paired comparison (i.e., each species and each gender, a total of 20 comparison sets). Based on this analysis, we established a large subset (19 measurements) of the original measurement set, which included potentially diagnostic characters for one or more species. Full measurement sets of each species are presented in the body of this paper in Tables 4–7 and 10. The map (Figure C1) shows the distribution of *Iurus* species involved in this analysis. In all cases, with the exception of the subadult *I. kadleci* female from the Dim Cave (Antalya, Turkey), all specimens used in this analysis were adult.

Each of the 19 measurements (listed in Tables C1, C2) were evaluated as to their dominance in a ratio comparison (i.e., a ratio involves two morphometrics). This evaluation was conducted for each species pair, male and female. Tables C1 and C2 present the results of this evaluation. The individual values depicted for each species for a specific morphometric states the number of ratio comparisons that the morphometric dominated in a species-by-species comparison, thus four sets of numbers. For example (Tab. C1), in *I. kraepelini* male the chelal depth dominated in *all* ratio comparisons. This means that no matter which other morphometric the chelal depth was combined with to form a ratio, its resulting ratio value was always the largest if the chelal depth was the numerator or the smallest if it was the denominator of the ratio. This implies unequivocally that the chelal depth in this species is significantly greater than in the other four species. We will discuss this further in the species discussions below. As a side note it must be stated that if a morphometric dominance value is small it implies that the measurement affected the ratio value in an opposite fashion, implying that the measurement is relatively small. This is equally important when considering potential diagnostic characters (see Fet & Soleglad (2002: 4–5) for further information on this technique).

In Tables C1 and C2, morphometrics that are considered useful diagnostically are shaded grey if they show high dominance values and yellow if they reflect low dominance values. Only the particular morphometrics (19 in all) used in the histograms in Figs. C2–C7 are shaded; therefore, not all high or low dominant morphometrics are considered in this analysis. Each species will now be discussed as follows: first, we will provide an overview of the data in Tables C1 and C2 highlighting morphometric trends seen in the species as to its chela, metasoma, and telson. Second, specific ratios using high and low dominant measurement pairs will be discussed, as presented in Figs. C2–C7, illustrating their value as diagnostic characters. In some cases the ratio will separate the species from all other *Iurus* species, in other cases, it will contrast it with only one or two species. It is important to stress here, however, in general the 19 morphometrics presented in Tables C1 and C2 reflect the same dominance values in both genders across the five species, therefore providing excellence diagnostic potential. In the end, we present a key using only these ratios to separate the five species of *Iurus* based on adult material, male and female.

I. dufoureius. For the chela, the dominance values were somewhat low in *I. dufoureius*, only the chelal width, a value of 11.5, was above ten. This result can be seen also in the histogram in Fig. C2 where the chelal width is compared to the chelal length, exhibiting the second highest ratio value (though considerably less than *I. kraepelini*). The metasoma is quite interesting in *I. dufoureius*. Both its length and width exhibit somewhat high dominance values. Of course, this does not predict much about the stoutness or slenderness of the metasoma since both metrics dominated. The same is reflected in Figs. C4–C5 where the metasoma of *I. dufoureius* essentially clustered with three other species, all noticeably disjoint from the relatively slender *I. kadleci*. *I. dufoureius* does, however, have the stoutest telson of the five species. This is reflected in Fig. C6 where the telson width and depth is compared to the telson length. Data in Tables C1 and C2 also indicate this result, the telson length with low to medium values and the telson width and depth with high values. As seen in the histogram in Fig. C6, *I. dufoureius*, though the species with the lowest ratio value, does cluster somewhat with *I. kraepelini* and *I. asiaticus*, species *I. kinzelbachi* and *I. kadleci* showing considerable separation. From a diagnostic perspective, we would only use these two telson ratios to separate *I. dufoureius* from the latter two species.

I. kraepelini. The chelal width and depth provide outstanding diagnostic characters for this species, especially the latter. As discussed in detail elsewhere, the adult male in this species exhibits a highly vaulted chelal palm further exaggerating its overall depth. In Tables C1 and C2 ratio values for the depth and width

Male	*I. dufoureius*	*I kraepelini*	*I. kinzelbachi*	*I. kadleci*	*I. asiaticus*
Chela_W	• | 1 | 12 | 23 | 10 [11.5]	24 | • | 24 | 24 | 24 [24.0]	13 | 1 | • | 23 | 16 [13.25]	2 | 1 | 2 | • | 2 [1.75]	15 | 1 | 9 | 23 | • [12.0]
Chela_D	• | 0 | 6 | 22 | 6 [8.5]	25 | • | 25 | 25 | 25 [25.0]	19 | 0 | • | 25 | 17 [15.25]	3 | 0 | 0 | • | 0 [0.75]	19 | 0 | 8 | 25 | • [13.0]
Chela_L	• | 10 | 3| 10 | 3 [6.5]	15 | • | 2 | 10 | 1 [7.0]	21 | 23 | • | 15 | 7 [16.5]	15 | 15 | 9 | • | 7 [11.5]	22 | 24 | 18 | 18 | • [20.5]
Palm_L	• | 3 | 2 | 16 | 2 [5.75]	22 | • | 6 | 23 | 5 [14.0]	23 | 19 | • | 24 | 12 [19.50]	9 | 2 | 1 | • | 1 [3.25]	23 | 20 | 13 | 24 | • [20.0]
MF_L	• | 2 | 0 | 6 | 5 [3.25]	23 | • | 9 | 15 | 17 [16.0]	25 | 16 | • | 20 | 23 [21.0]	19 | 10 | 4 | • | 15 [12.0]	20 | 7 | 2 | |10 • [9.75]
FF_L	• | 8 | 1| 4 | 9 [5.5]	16 | • | 0 | 8 | 8 [8.0]	24 | 25 | • | 14 | 25 [22.00]	21 | 17 | 10 | • | 17 [16.25]	16 | 17 | 0 | 8 | • [10.25]
MS_I_L	• | 20| 15 | 2 | 11 [12.0]	5 | • | 7 | 0 | 4 [4.0]	10 | 18 | • | 1 | 4 [8.25]	23 | 25 | 24 | • | 22 [23.5]	14 | 21 | 21 | 3 | • [14.75]
MS_II_L	• | 24| 22 | 8 | 21 [18.75]	1 | • | 11 | 2 | 7 [5.25]	3 | 14 | • | 2 | 14 [8.25]	16 | 23 | 23 | • | 20 [20.5]	4 | 18 | 11 | 5 | • [9.5]
MS_III_L	• | 23| 16 | 3 | 23 [16.25]	2 | • | 1 | 1 | 10 [3.5]	9 | 24 | • | 3 | 21 [14.25]	22 | 24 | 22 | • | 24 [23.0]	2 | 15 | 4 | 1 | • [5.5]
MS_IV_L	• | 25 | 19 | 12 | 24 [20.0]	0 | • | 5 | 3 | 9 [4.25]	6 | 20 | • | 4 | 20 [12.50]	13 | 22 | 21 | • | 20 [19.0]	1 | 16 | 5 | 5 | • [6.75]
MS_V_L	• | 14 | 11 | 8 | 18 [12.75]	11 | • | 12 | 7 | 21 [12.75]	14 | 13 | • | 7 | 24 [14.5]	17 | 18 | 18 | • | 18 [17.75]	7 | 4 | 1 | 7 | • [4.75]
MS_I_W	• | 18 | 14 | 24 | 17 [18.25]	7| • | 13 | 21 | 16 [14.25]	11 | 12| • | 22| 18 [15.75]	1 | 4 | 3 | • | 7 [3.75]	8 | 9 | 7 | 18 | • [10.5]
MS_II_W	• | 19 | 20 | 20 | 14 [18.25]	6 | • | 16 | 17 | 11 [12.5]	5 | 9| • | 18 | 10 [10.5]	5 | 8 | 7 | • | 8 [7.0]	9 | 14 | 15 | 17 | • [13.75]
MS_III_W	• | 17 | 17 | 18 | 13 [16.25]	8 | • | 17 | 13 | 14 [13.0]	8 | 8 | • | 10 | 12 [9.5]	7 | 12 | 15 | • | 13 [11.75]	9 | 10 | 13 | 12 | • [11.0]
MS_IV_W	• | 16 | 23 | 21 | 19 [19.75]	7 | • | 19 | 18 | 17 [15.25]	2 | 6 | • | 14 | 6 [7.0]	4 | 7 | 10 | • | 10 [7.75]	6 | 7 | 19 | 15 | • [11.75]
MS_V_W	• | 22 | 25 | 25 | 25 [24.25]	3 | • | 18 | 22 | 13 [14.0]	0 | 7 | • | 20 | 2 [7.25]	0 | 3 | 5 | • | 4 [3.0]	0 | 11 | 23 | 21 | • [13.75]
Tel_L	• | 11 | 9 | 1 | 13 [11.0]	14 | • | 15 | 5 | 21 [13.75]	16 | 10 | • | 5 | 22 [13.25]	24 | 20 | 20 | • | 23 [21.75]	12 | 4 | 3 | 2 | • [5.25]
Tel_W	• | 13 | 24 | 19 | 22 [19.5]	12 | • | 23 | 20 | 23 [19.5]	1 | 2 | • | 10 | 10 [5.75]	6 | 5 | 14 | • | 13 [9.5]	3 | 2 | 15 | 12 | • [8.0]
Tel_D	• | 15 | 21 | 17 | 14 [16.75]	10| • | 22 | 14 | 19 [16.25]	4 | 3 | • | 8 | 8 [5.75]	8 | 11 | 16 | • | 16 [12.75]	9 | 6 | 17 | 9 | • [10.25]

Table C1: Summary of major measurements of **males** that show dominance in morphometric ratios across the five species of *Iurus* where all possible ratios are calculated. Each species is compared to the other four species, thus four sets of data per species. Each value states the number of ratios the measurement dominated for that species when compared to the other species. Highlighted entries indicate morphometrics used in constructing ratios, *grey* for high dominant and *yellow* for low dominant values.

Female	*I. dufoureius*	*I kraepelini*	*I. kinzelbachi*	*I. kadleci*	*I. asiaticus*
Chela_W	• | 2 | 15 | 20 | 9 [11.5]	23 | • | 21 | 23 | 17 [21.0]	9 | 4 | • | 22 | 5 [10.0]	5 | 2 | 3 | • | 2 [3.0]	16 | 8 | 19 | 23 | • [16.5]
Chela_D	• | 1 | 7 | 16 | 5 [7.25]	24 | • | 25 | 25 | 23 [24.25]	18 | 0 | • | 21 | 7 [11.5]	9 | 0 | 4 | • | 3 [4.0]	20 | 2 | 17 | 22 | • [15.25]
Chela_L	• | 17 | 5 | 12 | 6 [10.0]	8 | • | 4 | 12 | 4 [7.0]	20 | 21 | • | 14 | 16 [17.75]	13 | 18 | 10 | • | 13 [13.5]	19 | 21 | 9 | 12 | • [15.25]
Palm_L	• | 9 | 2 | 18 | 0 [7.25]	16 | • | 3 | 17 | 0 [9.0]	23 | 22 | • | 25 | 5 [18.75]	6 | 8 | 0 | • | 0 [3.5]	25 | 25 | 19 | 25 | • [23.5]
MF_L	• | 11 | 3 | 10 | 6 [7.5]	14 | • | 3 | 10 | 7 [8.5]	22 | 22 | • | 15 | 21 [20.0]	15 | 14 | 10 | • | 16 [13.75]	19 | 18 | 7 | 9 • [13.25]
FF_L	• | 19 | 0 | 8 | 10 [9.25]	6 | • | 0 | 5 | 5 [4.0]	25 | 25 | • | 18 | 25 [23.25]	17 | 20 | 7 | • | 17 [15.25]	15 | 20 | 0 | 8 | • [10.75]
MS_I_L	• | 21 | 18 | 1 | 14 [13.5]	4 | • | 11 | 0 | 6 [5.25]	7 | 14 | • | 0 | 4 [6.25]	24 | 25 | 21 | • | 23 [23.25]	10 | 19 | 21 | 2 | • [13.0]
MS_II_L	• | 23| 20 | 3 | 24 [17.5]	2 | • | 9 | 1 | 11 [5.75]	4 | 15 | • | 1 | 18 [9.5]	22 | 24 | 24 | • | 25 [23.75]	1 | 14 | 7 | 0 | • [5.5]
MS_III_L	• | 25| 20 | 4 | 21 [17.5]	0 | • | 6 | 2 | 8 [4.0]	4 | 19 | • | 2 | 14 [9.75]	21 | 23 | 23 | • | 24 [22.75]	3 | 17 | 11 | 1 | • [8.0]
MS_IV_L	• | 24 | 19 | 7 | 23 [18.25]	1 | • | 7 | 3 | 10 [5.25]	6 | 18 | • | 4 | 19 [11.75]	18 | 21 | 21 | • | 20 [20.0]	2 | 15 | 6 | 5 | • [7.0]
MS_V_L	• | 10 | 9 | 6 | 20 [11.25]	15 | • | 9 | 7 | 23 [13.5]	16 | 15 | • | 7 | 24 [15.5]	19 | 18 | 18 | • | 19 [18.5]	5 | 2 | 1 | 6 | • [3.5]
MS_I_W	• | 5 | 11 | 21 | 14 [12.75]	20 | • | 18 | 22 | 20 [20.0]	14 | 7 | • | 23 | 15 [14.75]	3 | 3 | 2 | • | 4 [3.0]	10 | 5 | 8 | 21 | • [11.0]
MS_II_W	• | 7 | 11 | 24 | 11 [13.25]	18 | • | 16 | 24 | 15 [18.25]	13 | 9 | • | 24 | 13 [14.75]	1 | 1 | 1 | • | 1 [1.0]	14 | 10 | 12 | 24 | • [15.0]
MS_III_W	• | 8 | 15 | 18 | 13 [13.5]	15 | • | 18 | 18 | 16 [16.75]	9 | 7 | • | 19 | 10 [11.25]	6 | 7 | 6 | • | 7 [6.5]	12 | 9 | 15 | 18 | • [13.5]
MS_IV_W	• | 3 | 17 | 17 | 12 [12.25]	22 | • | 22 | 19 | 19 [20.5]	8 | 3 | • | 15 | 6 [8.0]	8 | 6 | 10 | • | 8 [8.0]	13 | 6 | 18 | 17 | • [13.5]
MS_V_W	• | 12 | 24 | 23 | 18 [19.25]	13 | • | 23 | 20 | 18 [18.5]	1 | 2 | • | 11 | 1 [3.75]	2 | 5 | 13 | • | 6 [6.5]	7 | 7 | 24 | 19 | • [14.25]
Tel_L	• | 4 | 8 | 2 | 16 [7.5]	21 | • | 15 | 6 | 22 [16.0]	17 | 10 | • | 4 | 21 [10.5]	23 | 19 | 21 | • | 20 [20.75]	12 | 3 | 4 | 4 | • [5.75]
Tel_W	• | 18 | 25 | 25 | 25 [23.25]	7 | • | 24 | 21 | 25 [19.25]	0 | 1 | • | 18 | 10 [4.75]	0 | 4 | 6 | • | 9 [4.75]	0 | 0 | 15 | 15 | • [7.5]
Tel_D	• | 22 | 23 | 21 | 21 [21.75]	3 | • | 16 | 15 | 13 [11.75]	2 | 9 | • | 10 | 9 [7.5]	3 | 10 | 15 | • | 11 [9.75]	4 | 12 | 16 | 14 | • [11.5]

Table C2: Summary of major measurements of females that show dominance in morphometric ratios across the five species of *Iurus* where all possible ratios are calculated. Each species is compared to the other four species, thus four sets of data per species. Each value states the number of ratios the measurement dominated for that species when compared to the other species. Highlighted entries indicate morphometrics used in constructing ratios, *grey* for high dominant and *yellow* for low dominant values.

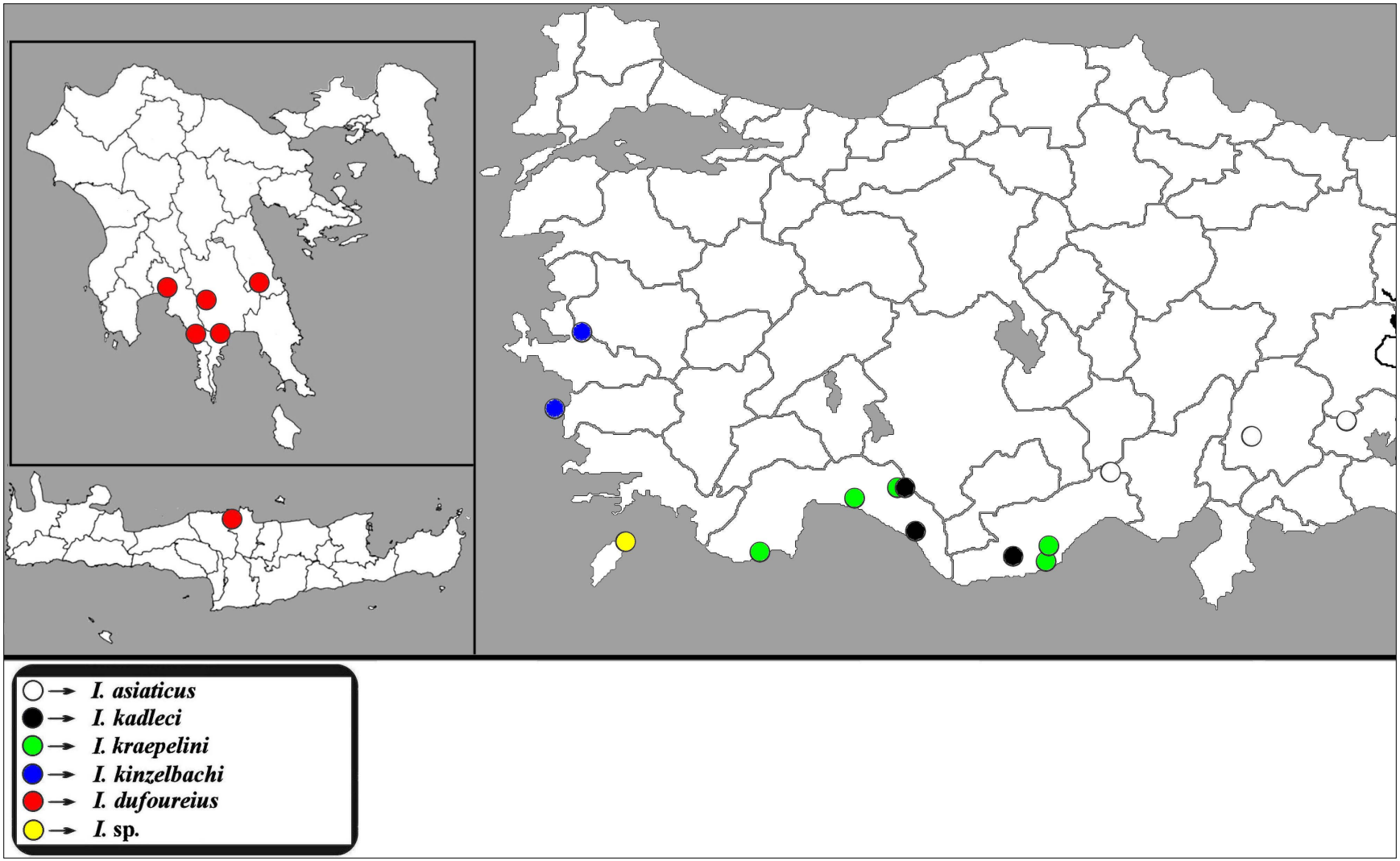

Figure C1: Localities of *Iurus* specimens measured.

are quite high, 21 or higher. These high values are accompanied by the somewhat low chelal length reflected both in the male and female. These three morphometrics form two ratios as shown in Fig. C2, chelal width and chelal depth compared to the chelal length. As seen from these histograms, *I. kraepelini* shows significant separation from the other four species with respect to the chelal depth. The metasoma of *I. kraepelini* is the stockiest in the genus, especially for segments I–IV. This is predictable by analyzing the data in Tables C1 and C2. The individual metasomal segment lengths show low dominant values whereas the segment widths all exceed 12.5. Figures C3–C4 also indicate the stocky metasoma in *I. kraepelini* for segments I–IV. The telson in *I. kraepelini* is somewhat stocky but less than that in *I. dufoureius*. Its vesicle width and depth ratios values approach that of *I. dufoureius*, but the telson is relatively longer thus decreasing its stockiness.

I. kinzelbachi. The chela in *I. kinzelbachi* is somewhat elongated, especially the fingers. We purposedly constructed two ratios based on the elongated chelal fingers with a morphometric with a low dominance value, the telson width which exhibited values under 6. Fig. C illustrates the success of these two morphometric ratios, *I. kinzelbachi* showing considerable separation from all other species except *I. kadleci*. The two species closest geographically to *I. kinzelbachi*, *I. dufoureius* and *I. kraepelini*, show the most separation in these ratios. The low ratio values in these two species is caused by the relatively wide telson vesicle discussed elsewhere. *I. kadleci*, whose telson is somewhat narrow, also has the second longest chelal fingers, thus causing its clustering with *I. kinzelbachi*. The metasoma in *I. kinzelbachi* is somewhat slender on the terminal segments, especially IV–V. Interestingly, in Tables C1 and C2 we see the reason for this is the somewhat low values for these segment widths, all 8 or less. In *I. kinzelbachi*, telson is the second most slender in *Iurus*; only *I. kadleci* has a more elongated telson. This is apparent in the histograms presented in Fig. C6 where the telson width and depth are compared to its length.

I. kadleci. *I. kadleci* has the thinnest chela in *Iurus*. Although its fingers are somewhat elongate, as discussed above, the overall thinness of the chela is due to its narrow width and depth. Tables C1 and C2 certainly support this observation where the dominance values are extremely low, all 4 or less, representing some of the lowest values in all. In Fig. C2 are two ratios based on the chelal width and depth as compared to its length. *I. kadleci* has the lowest ratio values in all four histograms, showing standard error separation from three of the four other species. Accompanying the thin chela in *I. kadleci* is the thinnest metasoma found in *Iurus*. This is predictable by inspecting Tables C1 and C2 where we see not only large values for individual segment lengths, but low values for corresponding segment widths, both contributing to a thin ratio. Figs. C4–C5 also show the thin metasoma, with significant standard error separation for all five metasoma segments, for both male and female. Consistent with the thin chela and metasoma, *I. kadleci* also has the thinnest telson in *Iurus*. All data in Tables C1 and C2 point to this result as well as the histograms in Fig. C6. The ratio dominance values are high for the telson length and somewhat small for the vesicle width and depth. It is important to note here that these three ratios sets all confirm that *I. kadleci* is indeed a much more slender species than all other species in the genus.

I. asiaticus. The chela of *I. asiaticus*, when compared to *I. kraepelini*, appears to be somewhat more elongated. This is due, in part, to the wider and much deeper chelal palm in *I. kraepelini*. However, in *I. asiaticus* the palm is somewhat elongated, contributing to the overall chelal length. The largest values for this morphometric in Tables C1 and C2 are for *I. asiaticus*. We purposedly combined this measurement with another that exhibited low values, the telson length. The telson length values for *I. asiaticus* are the lowest of all *Iurus* species. Fig. C7 shows the result of comparing the chelal palm length to the telson length. *I. asiaticus* shows decent separation from the other species, exhibiting the largest ratio values. The metasoma in *I. asiaticus* is somewhat stocky, typically showing lower ratio values in most segments in Figs. C4–C5, only exceeded by *I. kraepelini*. There is no particular tendency in telson of *I. asiaticus*, it is relatively short, as discussed above, but the vesicle width and depth also have somewhat low values, so the histograms in Fig. C6 place this species clustered with the others, only *I. kadleci* showing separation.

Key to *Iurus* species using morphometrics (male and female adults)

1 - Long fingered, narrow telson: Chelal fixed finger_ length / Telson_width = 3.36–3.46 (3.412) male, 3.40–3.63 (3.532) female …….……..…… **2**

■ **-** Medium fingered, wide telson: Chelal fixed finger_ length / Telson_width = 2.61–3.14 (2.837) male, 2.60–3.23 (2.883) female …….…….…..…… **3**

2 - Thin metasoma: Metasomal segments I–III length / width = 1.09–1.25 (1.193), 1.36–1.45 (1.400), 1.63–1.68 (1.663) male, 1.11–1.12 (1.113), 1.39–1.53 (1.458), 1.58–1.68 (1.630) female; elongated telson: Telson_L / Telson_W = 4.34–4.34 (4.343) male, 4.04–4.29 (4.162) female …….……..…… ***I. kadleci* sp. nov.**

■ **-** Medium metasoma: Metasomal segments I–III length / width = 0.82–0.86 (0.840), 1.13–1.17 (1.149),

1.34–1.49 (1.411) male, 0.76–0.80 (0.783), 1.03–1.10 (1.059), 1.26–1.34 (1.293) female; medium telson: Telson_L / Telson_W = 3.54–3.76 (3.674) male, 3.52–3.72 (3.637) female ……. ***I. kinzelbachi* sp. nov.**

3 - Medium depth chelal palm; Chela_depth/ Chela_length = 0.32–0.36 (0.340) male, 0.31–0.34 (0.326) female …….……... **4**

■ **-** Deep chelal palm; Chela_depth /Chela_length = 0.40–0.45 (0.434) male, 0.37–0.38 (0.377) female ….. ……..….. ***I. kraepelini* von Ubisch, 1922**

4 - Medium lengthed finger, narrow vesicle: Movable finger_length / Telson_width = 3.77–4.02 (3.897) male, 3.99–4.08 (4.033) female; elongated chelal palm, short telson: Palm_length / Telson_length = 0.85–0.92 (0.894) male, 0.90–0.95 (0.929) female ……..…….. ……..…… ***I. asiaticus* Birula, 1903**

■ **-** Short lengthed finger, wide vesicle: Movable finger_length / Telson_width = 3.19–3.38 (3.302) male, 3.37–3.70 (3.495) female; short chelal palm, medium telson: Palm_length / Telson_length = 0.73–0.77 (0.755) male, 0.73–0.85 (0.796) female ……..…….. **……... *I. dufoureius* (Brullé, 1832)**

The statistics in the above key exhibit *absolute range separation* in all cases. The MVDs for the sixteen ratios (eight per male and female) ranged 18.0–42.0 (23.025) % for the male, and 14.4–42.1 (23.813) % for the female. In the primary key provided in the body of this paper, several of these morphometrics are used, supporting major morphology differences in the pedipalp chela and hemispermatophore.

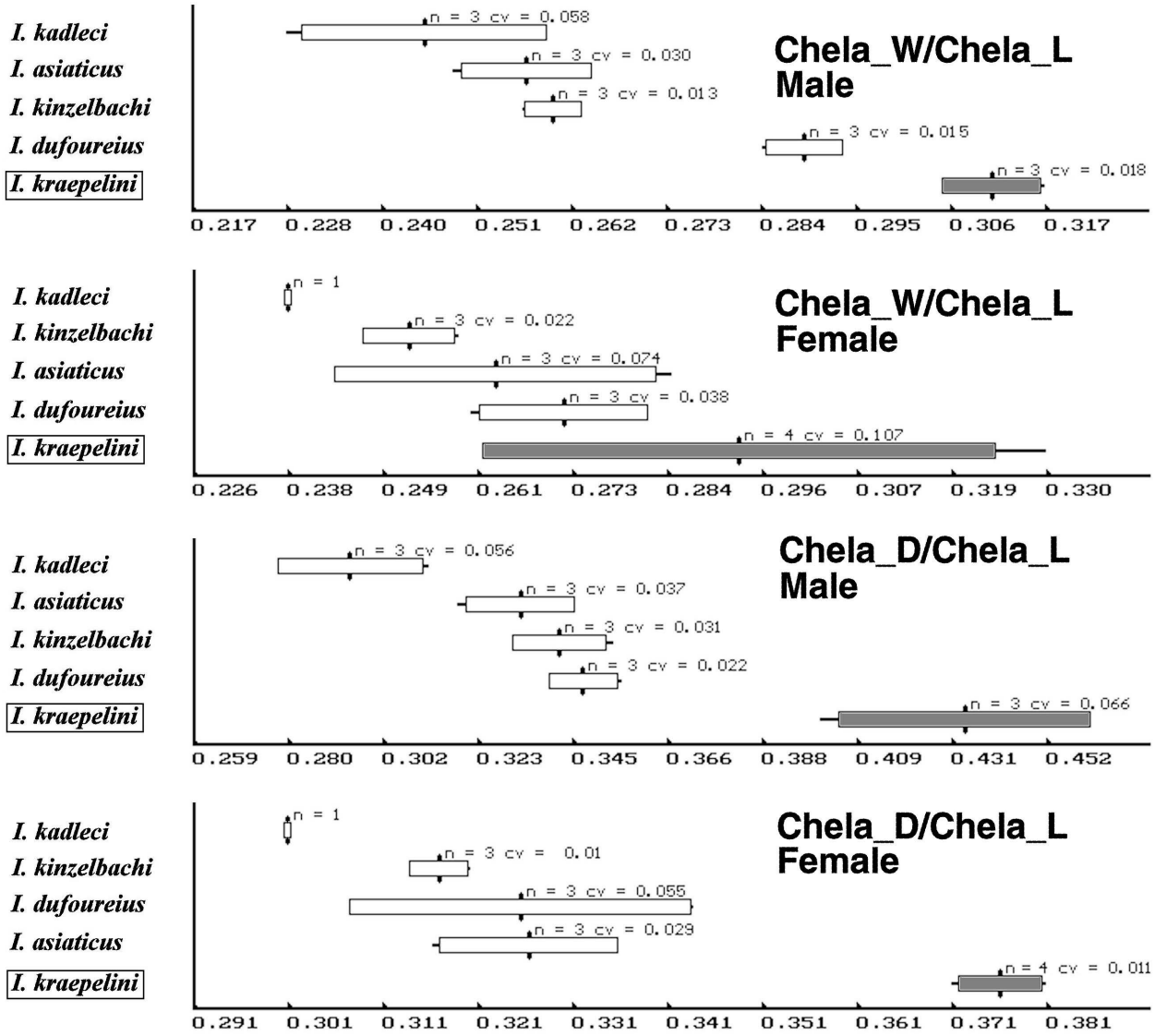

Figure C2: Morphometric ratio contrasting chelal width with chelal length (**top**) and chelal depth with chelal length (**bottom**). This histogram demonstrates two significant trends: the wide and deep chelal palm exhibited in *I. kraepelini* and, in contrast, the slender chelal palm, both in width and depth, in *I. kadleci*, **sp. nov**.

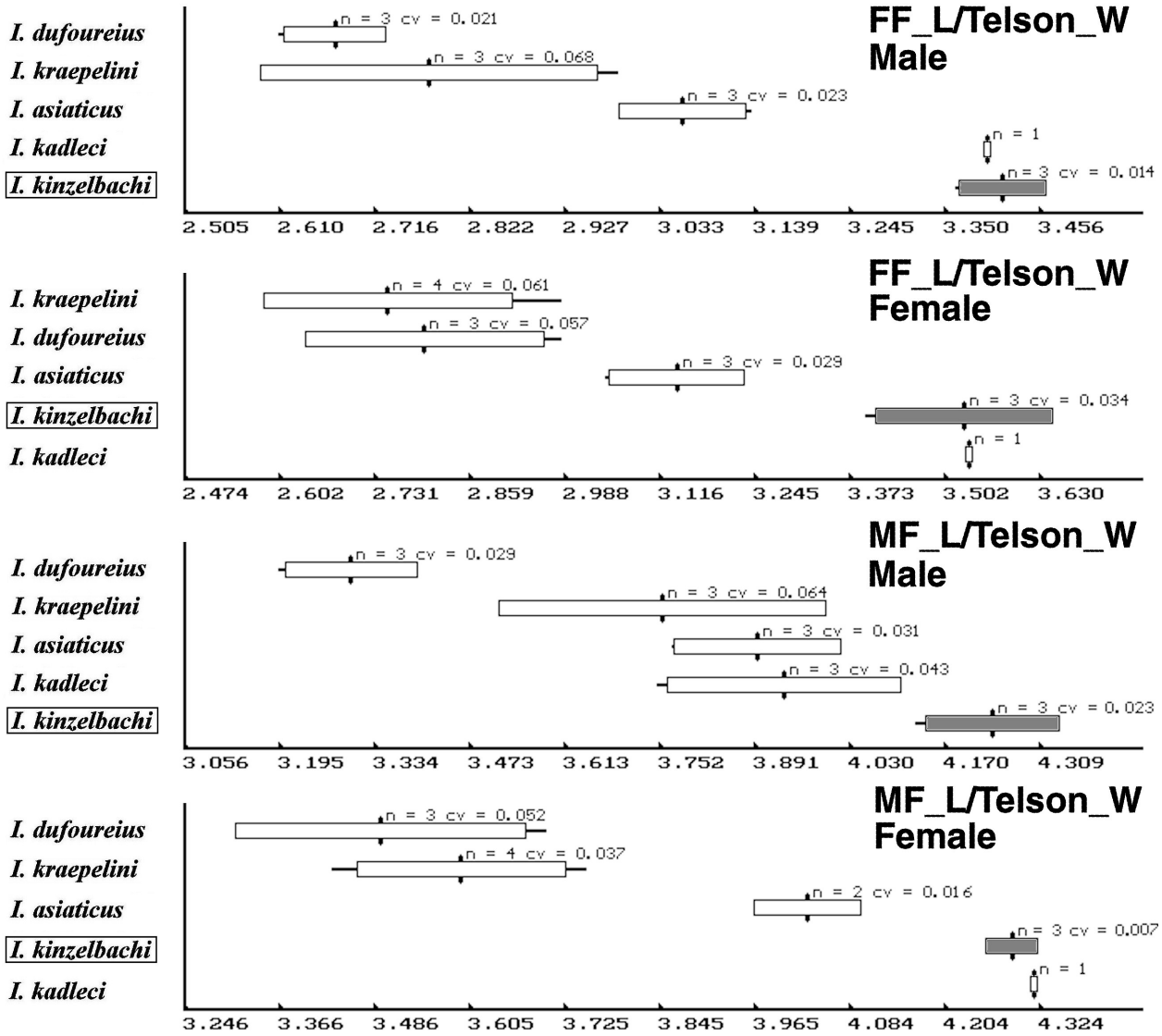

Figure C3: Morphometric ratio contrasting chelal fixed finger length with telson width (**top**) and chelal movable finger length with telson width (**bottom**). This histogram demonstrates the elongated chelal fingers exhibited in *I. kinzelbachi,* **sp. nov.** as compared to its somewhat narrow telson. In contrast, the relatively shorter fingers seen in *I. duforueius* and *I. kraepelini* who also have a heavier telson, cluster the farthest from *I. kinzelbachi*. *I. kadleci*, **sp. nov.**, whose fingers are somewhat elongate and telson narrow, clusters with *I. kinzelbachi*.

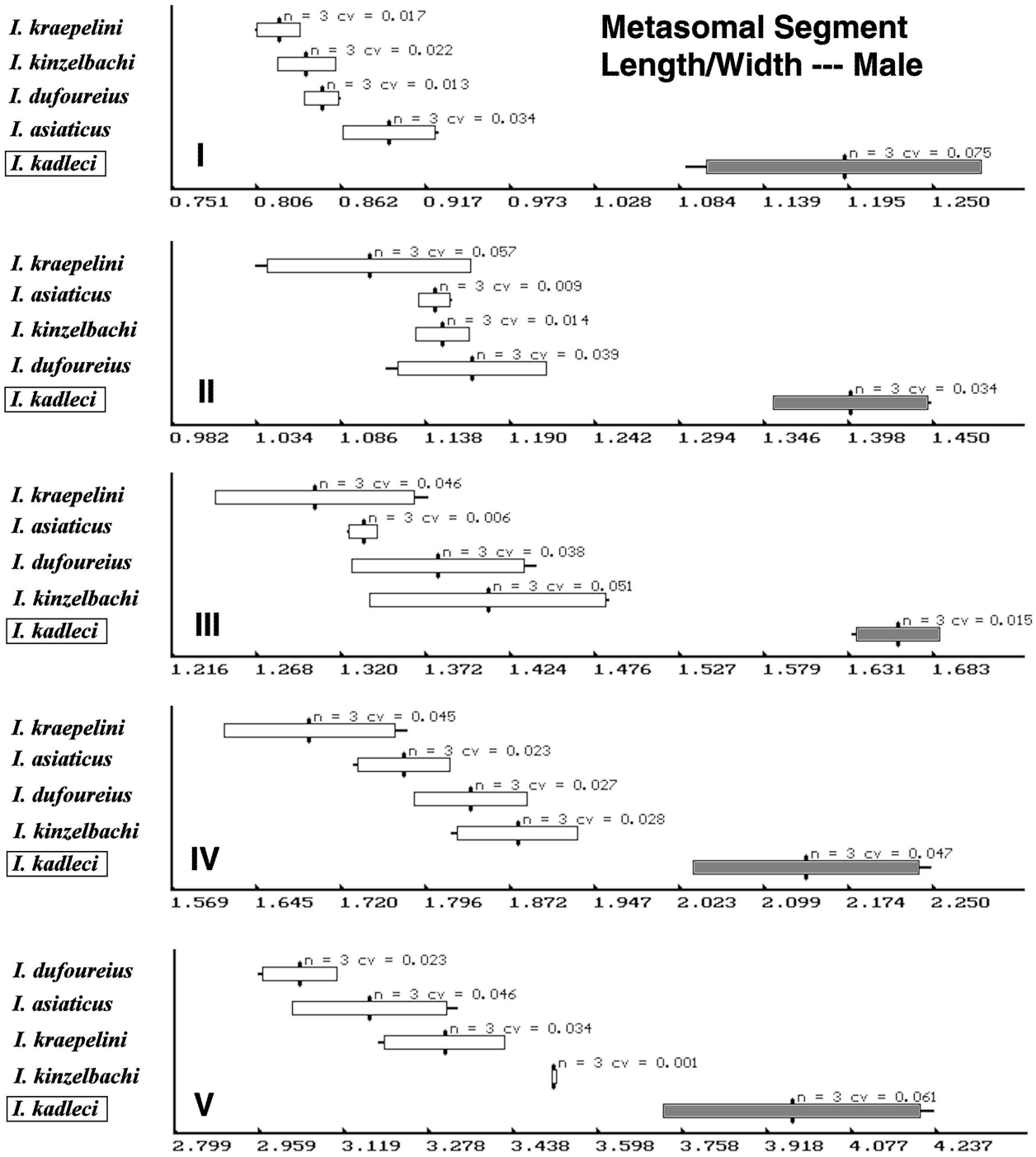

Figure C4: Morphometric ratio contrasting metasomal segments (length/width) for the **male**. This histogram demonstrates the elongated metasomal segments exhibited in *I. kadleci,* **sp. nov.** in contrast to the relatively stouter metasoma of *I. kraepelini*.

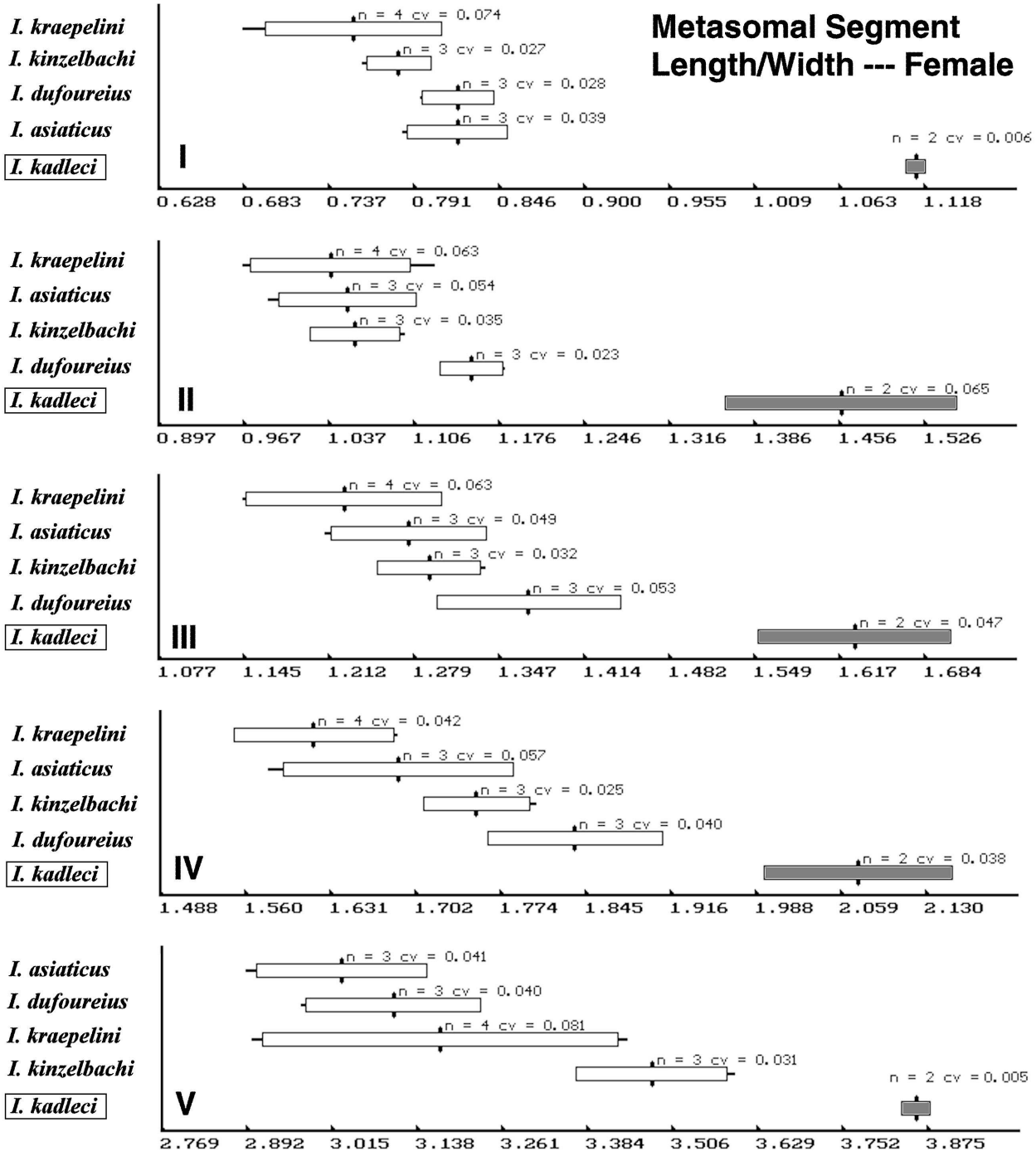

Figure C5: Morphometric ratio contrasting metasomal segments (length/width) for the **female**. This histogram demonstrates the elongated metasomal segments exhibited in *I. kadleci,* **sp. nov.** in contrast to the relatively stouter metasoma of *I. kraepelini*.

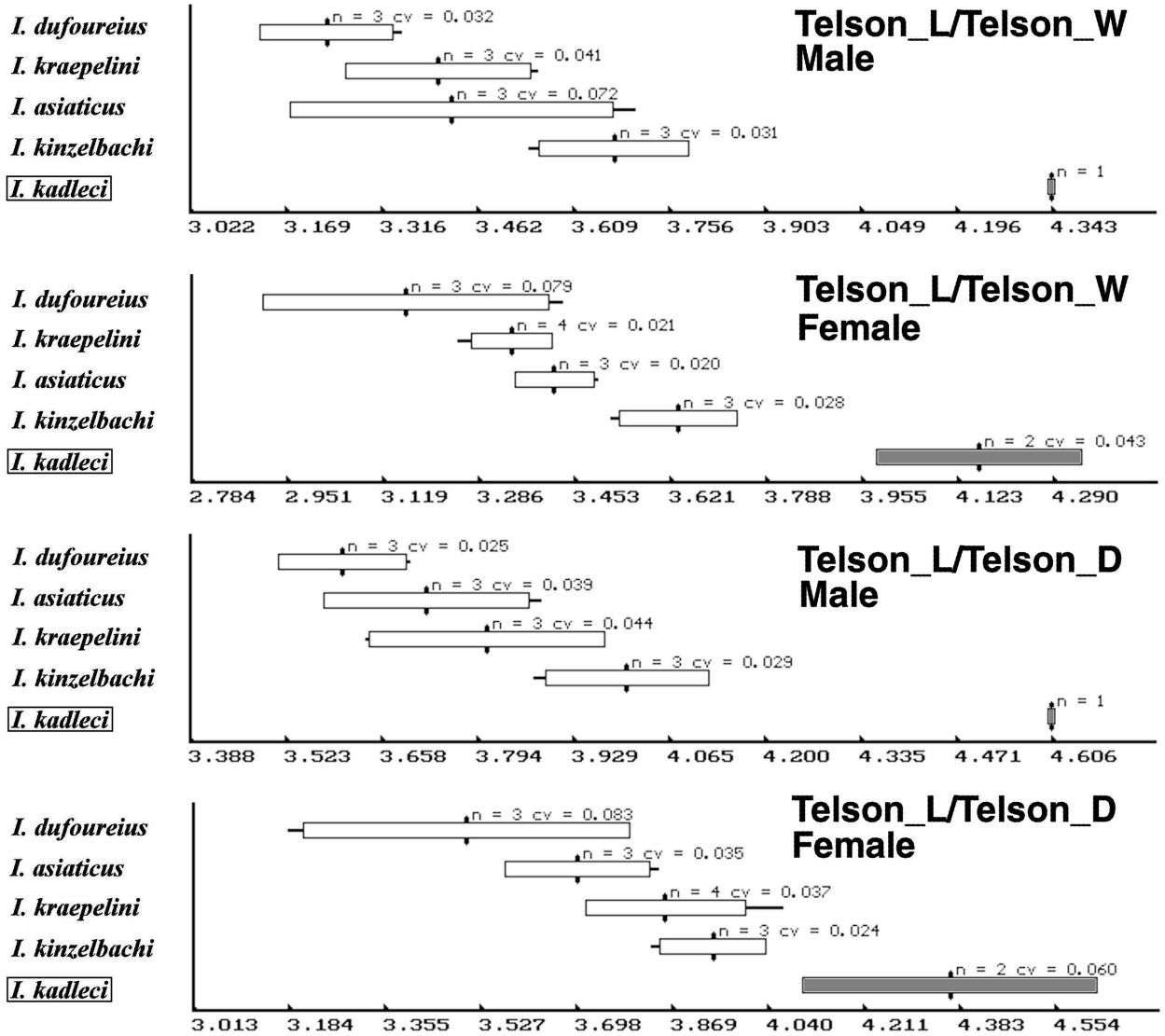

Figure C6: Morphometric ratio contrasting telson length with telson width (**top**) and telson length with telson depth (**bottom**). This histogram demonstrates the elongated, thin telson of *I. kadleci,* **sp. nov.** in contrast to the relatively stouter telson of *I. dufoureius*.

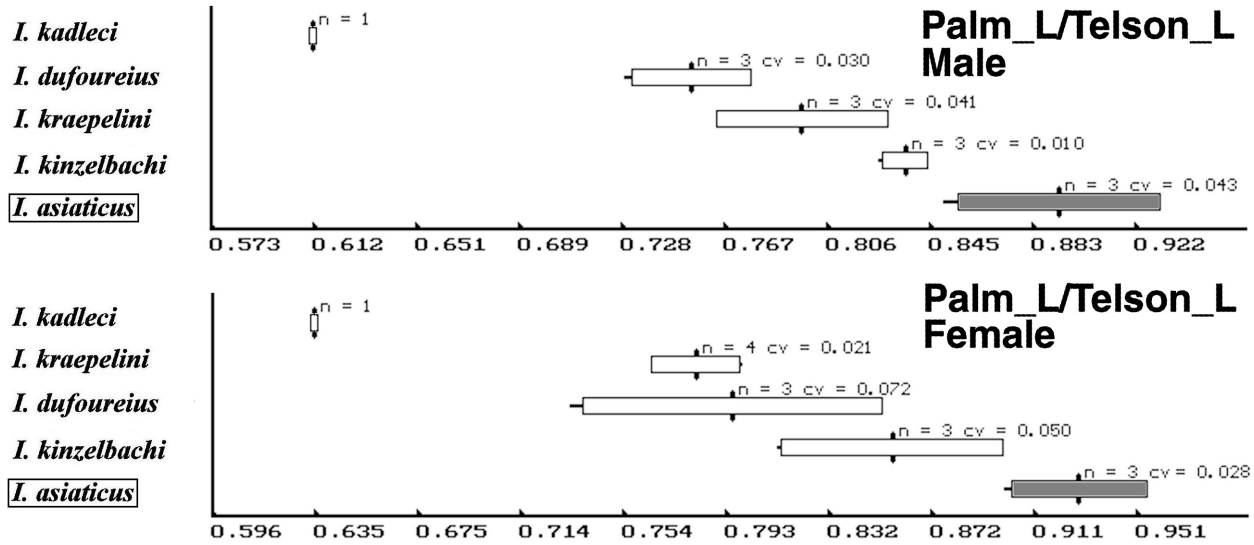

Figure C7: Morphometric ratio contrasting the chelal palm length to the telson length. This histogram demonstrates the relatively elongated chelal palm and short telson exhibited in *I. asiaticus* in contrast to the relatively shorter palm and elongated telson of *I. kadleci,* **sp. nov**.