



**ISOMETRUS (REDDYANUS) KURKAI SP. N. FROM INDONESIA  
(SCORPIONES, BUTHIDAE)**

**František Kovařík**

*U Botiče 1/1389, CZ-140 00 Praha 4, Czech Republic*

Received December 2, 1996

Accepted February 14, 1997

**Abstract.** *Isometrus (Reddyanus) kurkai* sp. n. is described from Indonesia. It is compared with all species of the subgenus *Reddyanus* VACHON, 1972, from which it differs in having only two granules on the subaculear tooth. The number of granules on the subaculear tooth divides the species of the subgenus *Reddyanus* into four groups. A checklist of all species of the genus *Isometrus* HEMPRICH & EHRENBURG, 1828, is included.

■ Taxonomy, description, new species, Scorpiones, Buthidae, *Isometrus*, *Reddyanus*, *I. kurkai* sp. n., Indonesia.

*Isometrus (Reddyanus) kurkai* sp. n. (Figs 1-5, 11, Tab. 1)

Type material. Holotype - female preserved in alcohol, labelled: Java, Tigenter, Mündung, 6.VIII.1969, leg. R. Schenkel, in the collection of the Naturhistorisches Museum Basel, Switzerland. This specimen was examined by Prof. Max Vachon in 1975 (No. VA-491) and identified by him as *Isometrus (Reddyanus)* sp. ?.

Etymology. Named in honor of the arachnologist RNDr. Antonín Kůrka, Curator of Zoology at the National Museum in Prague, who has been very helpful to me.

Description. The total length is 23.5 mm. The habitus is shown in Fig. 11. Measurements of the carapace, telson, segments of the metasoma and of the pedipalps, and numbers of pectinal teeth are given in Table 1. There are 13 pectinal teeth. For the position and distribution of trichobothria on the pedipalps see Figs 2-4.

The base color is yellow, with well marked black reticulation.

The chelicerae are reticulated, more densely so on the anterior margin. Movable fingers of the chelicerae bear a large black spot.

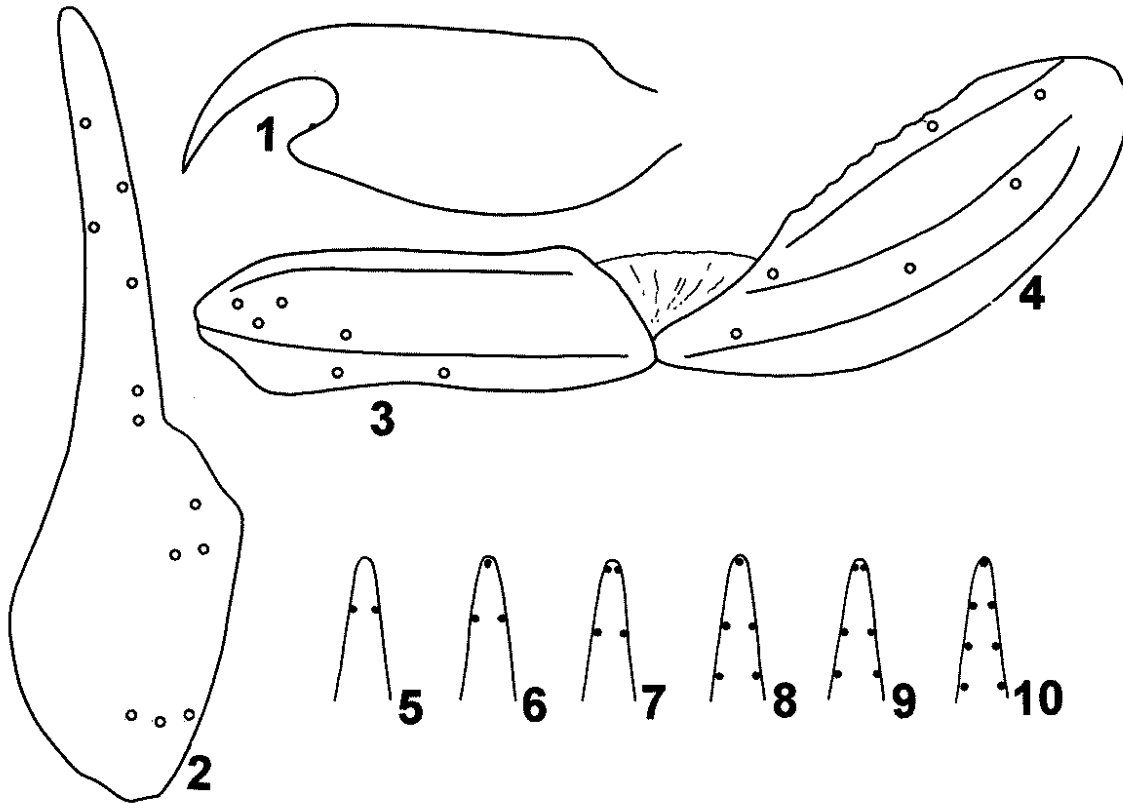
The carapace lacks keels but bears large granules. The color pattern is spotted. The area in front of the eyes is more densely granulated and dark, similar to the genus *Lychas* and *Isometrus (Reddyanus) zideki* Kovařík, 1994.

The femur of the pedipalps is spotted, with well developed keels. The dorsal surface bears sparse but pronounced granules. The patella also has keels and is spotted, with dark blotches being dominant. The manus is yellow with several isolated dark spots, and the fingers are dark. The movable fingers have six cutting edges with seven such edges on the fixed fingers.

The mesosoma is dorsally spotted, with three dark bands of uneven width, and a medial keel that is yellow along much of its length. Its ventral surface is pale yellow to white with four inconspicuous keels on the seventh segment.

The legs are more spotted dorsally than ventrally.

The metasoma is spotted as well. The anterior halves of the first through fourth segments, the telson, and the anterior third of the fifth segment are yellow, whereas the remaining posterior parts are dark with sparse yellow spots. The aculeus is yellow to reddish brown. The first segment bears 10



Figs 1-10. Figs. 1-5 *Isometrus (Reddyanus) kurkai* sp.n. (holotype). Fig. 1. Telson, Fig. 2. Tibia, Fig. 3. Femur dorsal, Fig. 4. Patella dorsal, Fig. 5. Subaculear tooth. Figs 6-10. Subaculear tooth (schematic presentation). Fig. 6. *I. (R.) zideki* (female, paratype No. 4). Fig. 7. *I. (R.) heimi* (see Vachon 1976: 43, figs 16-17). Fig. 8. *I. (R.) zideki* (male, paratype No. 1). Fig. 9. *I. (R.) besucheti*. Fig. 10. *I. (R.) basilicus* (see Vachon 1976: 94, fig. 49a).

keels, the second through fourth segments eight, and the fifth segment bears five. All keels are well developed and consist of fine granules of the same size. However, the dorsolateral keels terminate in a slightly larger granule. There are two ventral keels on the first through fourth segments and one ventral keel on the fifth segment. The subaculear tooth has two granules in a row (Fig. 5).

**Affinities.** *I. (R.) kurkai* sp. n. differs from all other species of the subgenus *Reddyanus* in having only two granules on the subaculear tooth (Figs 5-10). This number of granules is common in species of the nomotypical subgenus (*Isometrus*), which can however, be easily differentiated from the subgenus *Reddyanus* on only six cutting edges of fixed fingers of the pedipalps (figs 64-67 in Vachon 1982: 100) and by the positions of the trichobothria dt, db and et, est on fixed fingers of the pedipalps (Fig. 2 and figs 13-14 in Vachon 1972: 176).

The geographically closest species is *I. (R.) zideki* from the Cameron Highlands in Malaysia (Kovářik 1994: 195). *I. (R.) zideki* shares with *I. (R.) kurkai* sp. n. pronounced ventral keels on the metasomal segments (figs 10 and 12 in Kovářik 1994: 200), but differs in having three and often up to five granules on the subaculear tooth (Figs 5, 6, 8), in the coloration of the metasomal segments (the first three yellow and the last two dark), and a greater width of the manus of pedipalps.

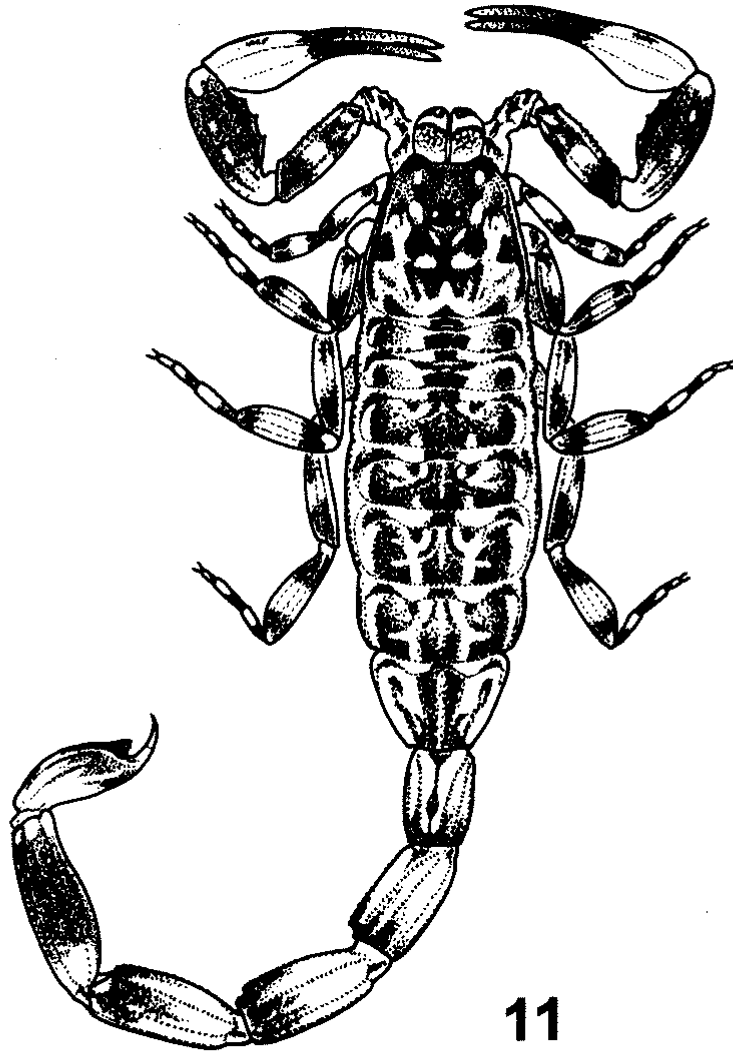


Fig. 11. *Isometrus (Reddyanus) kurkai* sp. n. (holotype). Dorsal aspect.

**Subdivision of species of the subgenus *Reddyanus* VACHON, 1972 according to the number of granules on the subaculear tooth.**

Subaculear tooth with 2 granules (Fig. 5)

*I. kurkai* sp. n.

Subaculear tooth with 3 or 4 granules (Figs 6-7)

*I. assamensis* OATES, 1888 (Tikader & Bastawade 1983: 298-299)

*I. corbeti* TIKADER & BASTAWADE, 1983 (Tikader & Bastawade 1983: 310)

*I. heimi* VACHON, 1976 (Vachon 1976: 43, figs 16 and 17)

*I. rigidulus* POCOCK, 1897 (Tikader & Bastawade 1983: 266)

*I. zideki* KOVAŘÍK, 1994 (author's collection)

Subaculear tooth with 5 or 6 granules (Figs 8-9)

*I. acanthurus acanthurus* POCOCK, 1899 (Tikader & Bastawade 1983: 304)

*I. acanthurus loebli* VACHON, 1982 (Vachon 1982: 94, fig. 48a)

*I. besucheti* VACHON, 1982 (Vachon 1982: 94, fig. 47a; author's collection)



11 - *I. rigidulus* POCOCK, 1897  
 12 - *I. vittatus* POCOCK, 1900  
 13 - *I. zideki* KOVAŘÍK, 1994

India (Madhya Pradesh)  
 India (Maharashtra, Tamil Nadu),  
 Indochina (Laos, Cambodia, ? Vietnam)  
 Malaysia, Indonesia (Kalimantan)

**Table 1. Measurements in millimeters of holotype of *Isometrus (Reddyanus) kurkai* sp. n. Line denoted "pectinal teeth" contains numbers of both left and right teeth separated by a colon.**

		<i>Isometrus</i> ( <i>Reddyanus</i> ) <i>kurkai</i> sp. n. holotype
Total length		23.5
Carapace	length	2.4
	width	2.4
Metasoma segment I	length	13.4
	length	1.5
segment II	width	1.1
	length	2.0
segment III	width	1.0
	length	2.2
segment IV	width	1.0
	length	2.4
segment V	width	0.9
	length	2.5
telson length	width	0.8
		2.4
Pedipalp femur	length	2.1
	width	0.7
patella	length	2.4
	width	0.9
tibia manus	length	3.9
	width	0.8
movable finger	length	1.9
Pectinal teeth		13:13

#### ACKNOWLEDGEMENTS

I thank Matt E. Braunwalder and Ambros Hänggi of the Naturhistorisches Museum Basel, Switzerland, for lending me the specimen; Matúš Kocián of Prague for the habitus drawing of *Isometrus (R.) kurkai* sp. n.; and Jiří Zídek of Socorro (USA) for helping with the language.

#### REFERENCES

- De Geer, K. (1778): Mémoires pour servir a l'histoire des Insectes. Stockholm, 7: 337-349.  
 Hemprich, F. G., Ehrenberg, Ch. G. (1828): Symbolae physicae seu icones et descriptiones Animalium evertabratorum sepositis insectis quae ex itinere per Africam Borealem et Asiam Occidentalem. Decas Prima. Berolini. Officina Academica.  
 Hemprich, F. G., Ehrenberg Ch. G. (1829): Vorläufige Uebersicht der in Nord-Afrika und West-Asien einheimischen Scorpione und deren geographischen Verbreitung, nach den eigenen Beobachtungen. Gesells. Nat. Freunde Verh. 1: 348-362.

- Jaume, M. L. (1954): Catalogo de la fauna Cubana. IV. Catalogo de los Scorpionida de Cuba. *Circul Mus. Bibl. Zool. Habana* 13, No. 351: 1085-1092.
- Keyserling, E. (1885): Die Arachniden Australiens nach der Natur beschrieben und abgebildet begonnen von Dr L. Koch. Part 2: 1-51. Nürnberg, 1884-1889. Verlag von Bauer & Raspe.
- Koch, L. E. (1977): The taxonomy, Geographic Distribution and evolutionary radiation of Australo-Papuan Scorpions. *Rec. West. Austr. Mus.* 5(2): 83-367.
- Kovařík, F. (1994): *Isometrus zideki* sp. n. from Malaysia and Indonesia, and a taxonomic position of *Isometrus formosus*, *I. thurstoni* and *I. sankariensis* (Arachnida: Scorpionida: Buthidae). *Acta Soc. Zool. Bohem.* 58 (3-4): 195-203.
- Kraepelin, K. (1891): Revision der Skorpione. I. Die Familie des Androctonidae. *Jahrb. Hamburg. wiss. Anst.*, 8(1890): 144-286 (1-144).
- Lamoral, B. H., Reynders S. (1975): A catalogue of the scorpions described from the Ethiopian Faunal Region up to December 1973. *Ann. Natal. Mus* 22(2): 489-576.
- Lourenco, W. R. (1996): Origins and affinities of the scorpion fauna of Madagascar. *Biog. Madagascar* 1996: 441-455.
- Pavesi, P. (1881): Studi sugli Aracnidi Africani. II. Aracnidi d'Inhambane, raccolti da Carlo Fronasini, e considerazioni sull' Aracnofauna de Mozambico. *Ann. Mus. Civ. St. Nat. Genova* 16: 536-560.
- Peters, W. (1862): Über eine neue Eintheilung der Skorpione und über die von ihm in Mossambique gesammelten Arten von Skorpionen. *Monatsberichte Akad. Wiss. Berlin* (1861): 507-520.
- Thorell, T. (1876): On the Classification of Scorpions. *Ann. Mag. Nat. History* 4(17): 1-15.
- Thorell, T. (1888): Pedipalpi e scorpioni dell' Archipelago Malese conservati nel Museo Civico di Storia Naturale di Genova. *Ann. Mus. Civ. Stor. Nat. Giacomo Doria.* 26: 327-428.
- Tikader, B. K., Bastawade D. B. (1983): Scorpions (Scorpionida: Arachnida). In: *The Fauna of India*, Vol. 3. (Edited by the Director). Calcutta: Zoological Survey of India, 671 pp.
- Vachon, M. (1972): Remarques sur les scorpions appartenant au genre *Isometrus* H. et E. (Buthidae) á propos de l'espèce *Isometrus maculatus* (GEER) habitant l'île de Pâques. *Cahiers Pacifique* 16: 169-180.
- Vachon, M. (1976): *Isometrus* (*Raddyanus*) *heimi*, nouvelle espèce de Scorpions Buthidae habitant la Nouvelle-Calédonie. *Cahiers Pacifique* 19: 29-45.
- Vachon, M. (1982): Les scorpions de Sri Lanka (Recherches sur les scorpions appartenant ou déposés au Muséum d'Histoire naturelle de Genève III.). *Revue Suisse Zool.* 89(1): 77-114.