

## A NEW SPECIES OF *CHAERILUS* SIMON, 1877 (SCORPIONES, CHAERILIDAE) FROM THE PHILIPPINES

Wilson R. Lourenço<sup>1</sup> & Eric Ythier<sup>2</sup>

<sup>1</sup> Muséum national d'Histoire naturelle, Département de Systématique et Evolution, USM 0602, Section Arthropodes (Arachnologie), CP 053, 57 rue Cuvier 75005 Paris, France – arachne@mnhn.fr

<sup>2</sup> SynTech Research, 613 route du Bois de Loyse, 71570 La Chapelle de Guinchay, France – eythier@syntechresearch.com

**Abstract:** A new species belonging to the genus *Chaerilus* Simon, 1877, *Chaerilus philippinus* sp. n. is described from the north of the Island of Luzon, Philippines. *Chaerilus celebensis* Pocock, 1894, originally described from the Celebes Islands (Sulawesi), is also redescribed on the basis of specimens recently collected in the south of the same island and now deposited in the Muséum national d'Histoire naturelle, Paris.

**Key words:** Scorpiones, Chaerilidae, *Chaerilus*, new species, Philippines.

### Una nueva especie de *Chaerilus* Simon, 1877 (Scorpiones, Chaerilidae) de las Filipinas

**Resumen:** Se describe una nueva especie perteneciente al género *Chaerilus* Simón, 1877, *Chaerilus philippinus* sp. n. del norte de la Isla de Luzón, Filipinas. *Chaerilus celebensis* Pocock, 1894, originalmente descrito de las islas Celebes (Sulawesi), es igualmente redescrito en base a los especímenes recientemente colectados en el sur de la misma isla y ahora depositados en el Muséum national d'Histoire naturelle, París.

**Palabras clave:** Scorpiones, Chaerilidae, *Chaerilus*, nueva especie, Filipinas.

**Taxonomy/Taxonomía:** *Chaerilus philippinus* sp. n.

### Introduction

In recent publications several historical aspects, but also other insights concerning the taxonomy of the genus *Chaerilus* Simon, 1877 were the subject of discussion (Qi *et al.*, 2005; Lourenço & Zhu, in press). Presently, other studies concerning obscure or poorly characterized species of this genus are in preparation by the senior author. One of these, *Chaerilus celebensis* Pocock, 1894, originally described from Luwu, Celebes (Sulawesi) Island, was the subject of several misidentifications; see for example the description of *Chaerilus petrzekai* Kovařík, 2000 from the South of Vietnam (Kovařík, 2000, Lourenço & Zhu, in press). This was the consequence of superficial studies (see Fage, 1946), or of insufficient available fresh material.

Biological studies were recently conducted on individuals collected in a population from the north of Island of Luzon, Philippine Islands. These scorpions seem close associated to *C. celebensis*, but present several morphological differences. This situation lead us to conclude that this population from the northern Luzon was distinct from that of the Celebes (Sulawesi) Island. Moreover, we found in the collections of the Muséum national d'Histoire naturelle, Paris two specimens of *C. celebensis* 'freshly' collected in the Celebes Island, allowing a more precise redescription of this species than those previously proposed by other authors. In the present note *C. celebensis* is redescribed and illustrate, and one new species is described from the northern Luzon in the Philippines.

Biological observations on the life cycle of the new species will be a subject of a future publication (Lourenço & Ythier, in preparation).

### Material and Methods

Illustrations and measurements were produce using a Wild M5 stereo-microscope with a drawing tube (camera lucida) and an ocular micrometer. Measurements follow Stahnke (1970) and are given in mm. Trichobothrial notations follow Vachon (1974) and morphological terminology mostly follows Hjelle (1990).

Specimens used in this taxonomic work come from the Muséum national d'Histoire naturelle, Paris (MNHN), Natural History Museum, London (BMNH) and Zoologisches Museum, Hamburg (ZMUH).

### Taxonomic treatment

#### CHAERILIDAE Pocock, 1893

#### *CHAERILUS* Simon, 1877

#### *Chaerilus celebensis* Pocock, 1894 (Fig. 1-11)

*Chaerilus celebensis* Pocock, 1894: 93; Kraepelin, 1899: 158; Kraepelin, 1913: 145; Fage, 1946: 72 (misidentification); Takashima, 1945: 99; Kovařík, 2000: 43

**MATERIAL:** Indonesia, Luwu, Celebes (Sulawesi) Island, 1 female-juvenile holotype, leg. M. Weber, BMNH-1896. 10.6.5. Celebes (Sulawesi), Sadara-Spitze, 4/III/1897 (1894) (Sarasin leg.), 1 female, ZMUH. Malino, slopes of the Lompobatang, 1500 m alt., 6/VII/1986 (P. Leclerc), 1 female, MNHN, Paris. Tacipi-Lampo, Bone, 17/VII/1986 (P. Leclerc), 1 male-juvenile, MHNH, Paris.

**DIAGNOSIS.** Species with small to moderate size in relation to the other species of the genus with 22 to 26 mm in total length. Carapace with the anterior margin weakly concave; carinae weakly marked; moderately granular in males, more densely granular in females; furrows moderately to weakly deep. Metasomal carinae moderately to strongly granular; ventral carinae absent from segment I. Dentate margins of fixed and movable fingers of pedipalp chela with 6-7 rows of granules, not well delimited. Pectinal tooth count 3-4 in males, 3 in females. Genital operculum plates have a sub-oval shape. Trichobothriotaxy of type B, orthobothriotaxic.

#### DESCRIPTION

**Coloration:** Basically reddish-yellow to yellowish-brown; the specimens from the MNHN, freshly collected, are not faded at all in ethanol, consequently all the details of the pigmentation can still be observed on body and appendages. Carapace reddish to reddish-brown, with two posterior spots on posterior edge; tergites yellowish, intensely marked with brownish confluent spots. Metasoma: All segments yellowish with variegated brownish spots; carinae dark reddish-brown. Telson yellowish with diffused brownish spots; aculeus reddish. Chelicerae yellowish with very diffused variegated spots; fingers with reddish teeth. Pedipalps: reddish to reddish-brown with some diffused brownish spots; carinae blackish-brown; chela fingers very dark. Legs yellowish with diffused brownish variegated spots. Venter and sternites yellowish; with the exception of the pectines, all other structures are marked with diffused brownish spots.

**Morphology:** Carapace with anterior margin weakly concave; carinae weakly marked; densely granular in particular on the central zone of the carapace; furrows moderately to weakly deep. Two pairs of lateral eyes; median eyes moderate, about 2.5 times the size of lateral eyes; median eyes anterior to the centre of the carapace. Tergites with moderately intense granulation. Tergites I to VI without carinae on posterior margins; tergite VII with two pairs of weak carinae developed only on posterior portion. Sternum pentagonal, longer than wide; genital operculum plates with a sub-oval shape. Pectinal tooth count 3-4 in males and 3 in females. Sternites smooth with spiracles very small and round; carinae absent from VII. Metasoma: Segment I wider than long; II as long as wide; segments III to V longer than wide. Carinae moderately to strongly granular; ventral carinae absent from segment I, vestigial on II; segment V with five carinae; spinoid granules are present on most carinae, and are better marked on ventral and dorsal; ventral carinae on segment V forming an Y. Vesicle smooth, with a very short aculeus. Pedipalp chela not elongated in both sexes and more globular in females; pedipalp femur with five carinae; dorsal internal and ventral internal strongly granular, with spinoid granules; dorsal external weakly granular; ventral external weak to vestigial. Pedipalp patella with six to seven carinae; only dorsal external and ventral internal with some spinoid granules; the others vestigial. Chela with eight to nine carinae, all moderately to weakly granular. Tegument of chela with a thin granulation and some punctations. Fingers almost as long as manus with 6-7 rows of granules on the dentate margins but not well delimited. Chelicerae characteristic of the family Chaerilidae (Vachon, 1963). Trichobothriotaxy of type B; orthobothriotaxic (Vachon, 1974); femur with 9 trichobothria, patella with 14, and

chela with 14. Legs with pedal spurs moderately developed. Tarsi with two series of thin setae and some lateral setae.

#### *Chaerilus philippinus* sp. n. (Fig. 12-25)

**MATERIAL:** Philippines, North of Luzon, Region of Appari (rain forest), 1/XI/2006 (E. Ythier leg.), Male holotype, 1 female, 1 juvenile paratypes, deposited in the collections of the Muséum national d'Histoire naturelle, Paris.

**Note:** We also examined three specimens (two females and one female-juvenile) from the collections of the ZMUH. These were collected in the Island of Luzon (without any precision) and identified as *C. celebensis*. In all three specimens carapace is almost acarinate, weakly granulated to smooth and pectinal tooth count 4-4. Most certainly these specimens can be assigned to the new species *C. philippinus* sp. n. We do not include, however, these specimens in the type series, because of their poorly preserved conditions, and lack of precise data on their site of collection.

**DIAGNOSIS.** Species of small size compared to the other species of the genus, total length of adults 15 to 19 mm. Carapace with the anterior margin straight, almost acarinate and weakly granulated to smooth; furrows shallow. Metasomal carinae moderately marked; ventral carinae absent on segments I and II, vestigial on segment III. Dentate margins of fixed and movable fingers of pedipalp chela with 6 rows of granules, not well delimited. Pectinal tooth count 5 in male and 4 in females. Genital operculum plates have a sub-oval shape. Trichobothriotaxy of Type B, orthobothriotaxic.

**RELATIONSHIPS:** By its general morphology and the pattern of pigmentation, *Chaerilus philippinus* sp. n., can be associated with *Chaerilus celebensis* Pocock, 1894, described from Celebes (Sulawesi) Island. The new species can, however, be distinguished by the following features: (i) a smaller total size and distinct morphometric values (see Table I), (ii) a carapace very weakly granulated to smooth (iii) higher number of pectinal teeth (iv) an overall darker pigmentation than that of *C. Celebensis*.

**ETYMOLOGY:** the specific name makes reference to the Philippines, the country where the new species was collected.

#### DESCRIPTION

Based on male holotype and female paratype.

**Coloration:** Basically reddish-yellow to reddish-brown, with a dark variegated pigmentation on body and appendages. Carapace reddish-yellow, strongly marked with brownish pigmentation, in particular on the anterior half. Tergites with the same colour and pigmentation of the carapace. Metasoma: All segments reddish-yellow with dark variegated pigmentation; carinae darker than the tegument. Telson reddish-yellow to dark reddish with diffused brownish spots; aculeus yellowish at the base and reddish at the extremity. Chelicerae yellowish intensely marked with variegated spots; fingers with reddish teeth. Pedipalps: reddish-brown with dark variegated pigmentation; femur and patella dark brown; chela fingers much darker than chela hand. Legs yellowish intensely marked with brownish spots. Venter and sternites brownish-yellow; with the exception of the pectines all other structures are marked with brownish spots.

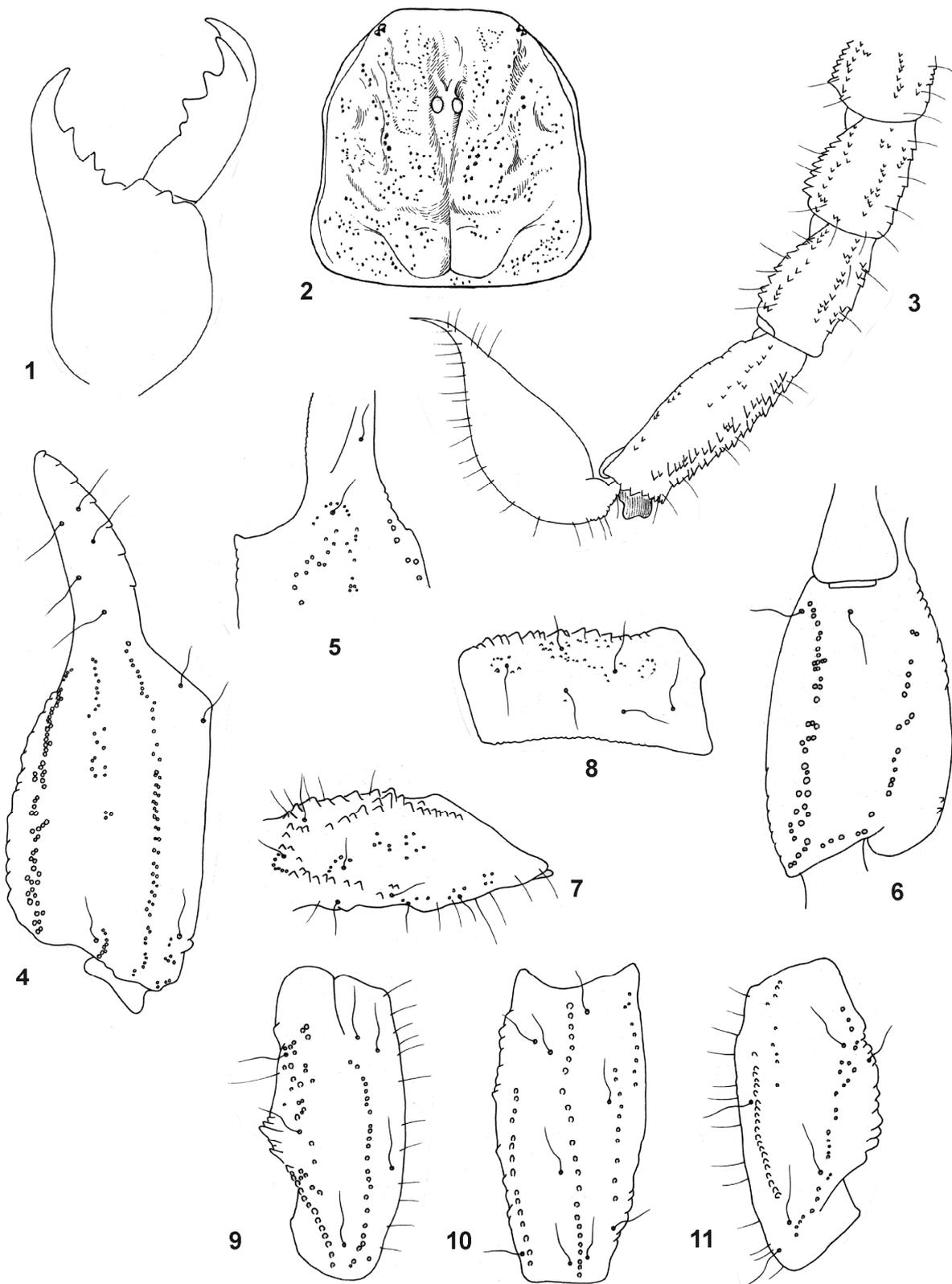


Fig. 1-11. *Chaerilus celebensis*, female from Malino, Luwu, Celebes (Sulawesi) Island. 1. Chelicera. 2. Carapace. 3. Metasomal segments II to V and telson, lateral aspect. 4-11. Trichobothrial pattern. 4-6. Chela, dorso-external, internal and ventral aspects. 7-8. Femur, dorsal and external aspects. 9-11. Patella, dorsal, external and ventral aspects.

**Morphology:** Carapace with anterior margin straight, almost acarinate and very weakly granular to smooth; furrows shallow. Two pairs of lateral eyes; median eyes moderate, about twice the size of lateral eyes; median eyes anterior to

the centre of the carapace. Tergites with only very minute granulation; carinae obsolete. Sternum pentagonal, longer than wide; genital operculum plates with a sub-oval shape. Pectinal tooth count 5-5 in male holotype (4-4 in female

**Table I. Morphometric values (in mm) of *Chaerilus celebensis*, female from Malino and *Chaerilus philippinus* sp. n., male holotype and female paratype.**

		<i>C. celebensis</i>		<i>C. philippinus</i> sp. n.
		♀	♂	♀
Total length		25.8	19.5	15.5
Carapace:	length	4.2	3.7	3.3
	anterior width	2.3	1.9	1.8
	posterior width	4.3	4.3	3.5
Metasomal segment I:	length	1.5	1.5	1.0
	width	2.2	2.1	1.4
Metasomal segment II:	length	1.8	1.6	1.2
	width	1.8	1.9	1.5
Metasomal segment III:	length	1.9	1.7	1.3
	width	1.7	1.8	1.4
Metasomal segment IV:	length	2.0	1.9	1.4
	width	1.5	1.6	1.3
Metasomal segment V:	length	3.4	3.0	2.6
	width	1.5	1.5	1.3
	depth	1.3	1.3	1.2
Vesicle:	width	1.6	1.5	1.4
	depth	1.4	1.5	1.3
Pedipalp:	Femur length	3.8	2.9	2.4
	Femur width	1.6	1.2	1.2
	Patella length	4.1	3.2	2.8
	Patella width	1.9	1.2	1.2
	Chela length	7.8	6.0	5.7
	Chela width	2.6	2.3	1.7
	Chela depth	2.4	2.4	1.8
Movable finger:	length	3.8	3.1	2.9

paratype). Sternites smooth with spiracles small and round; carinae absent from VII. Metasoma: Segments I to III wider than long; IV and V longer than wide. All the carinae moderately granular; ventral carinae absent on segments I and II, vestigial on segment III; segment V with five carinae and spinoid granules on ventral surface. Vesicle smooth, with a short aculeus. Pedipalps: Femur with five carinae; dorsal internal and dorsal external moderately granular; ventral internal weakly granular; ventral external vestigial. Patella with five to six carinae; dorsal and ventral weakly granular to smooth. Chela with seven to eight carinae, all weakly granular; ventral median carinae weak. Tegument with very few granulations almost smooth. Finger almost as long as manus with 6 rows of granules on the dentate margins, not well delimited. Chelicerae characteristic of the family Chaerilidae (Vachon, 1963). Trichobothriotaxy of type B; orthobothriotaxic (Vachon, 1974); femur with 9 trichobothria, patella with 14, and chela with 14. Legs with pedal spurs moderately developed. Tarsi with two rows of thin setae.

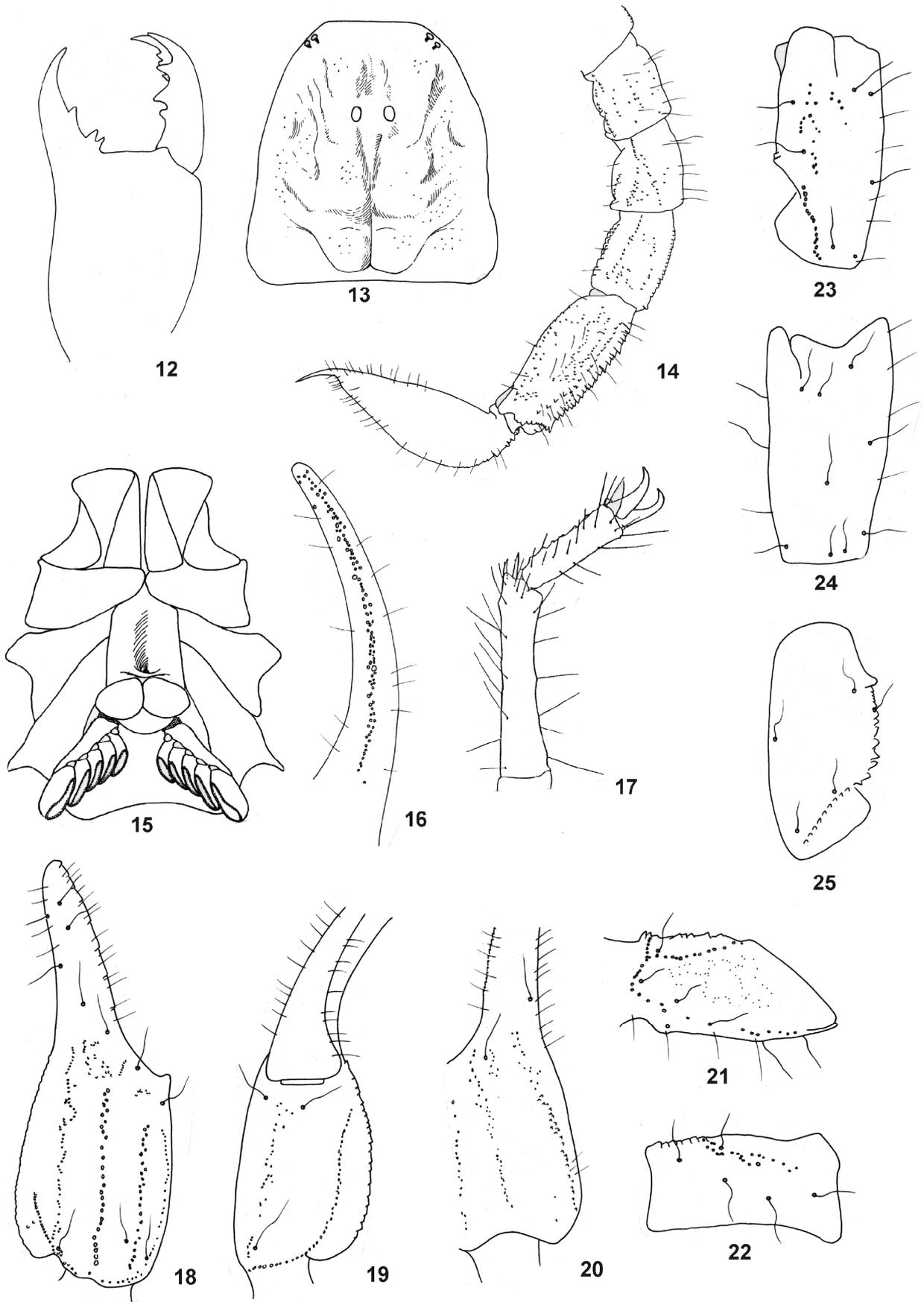
### Acknowledgements

We are most grateful to Dr. Janet Beccaloni, Natural History Museum, London, for the loan of the type specimen of *Chaerilus celebensis*, Dr. Hieronymus Dastych, Zoologisches Museum, Hamburg, for the loan of specimens of *Chaerilus celebensis*, and to Dr. Victor Fet, Marshall University for reviewing the manuscript.

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**Fig. 12-25.** *Chaerilus philippinus* sp. n., male holotype. 12. Chelicera. 13. Carapace. 14. Metasomal segments II to V and telson, lateral aspect. 15. Ventral aspect showing coxapophysis, sternum, genital operculum and pectines. 16. Disposition of granulations on the dentate margins of the pedipalp chela movable finger. 17. Tarsus of leg IV, showing typical setae and spurs. 18-20. Chela, dorso-external, internal and ventral aspects. 21-22. Femur, dorsal and external aspects. 23-25. Patella, dorsal, external and ventral aspects.