A new species of *Heteropoda* (Araneae, Sparassidae, Heteropodinae) from Laos, the largest huntsman spider?

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ABSTRACT
Heteropoda maxima n. sp. (Araneae, Sparassidae, Heteropodinae) is described from a collection from Laos deposited in the Muséum national d'Histoire naturelle, Paris. The new species can be distinguished from all other *Heteropoda* species by its impressive size and the genital characters of male and female: male cymbium is elongated and at least three times as long as its tegulum; females possess a characteristical shape of their epigyneal field (including two anterior directed bands) and typical course of their internal ducts. *Heteropoda maxima* n. sp. could be the largest sparassid with over 46 millimeters body length and 250 to 300 millimeters legspan. Elongated legs and palps, pale colour, and special hairs at male metatarsus of second legs let suggest that this species is cave-dwelling, although no reduction of the eyes appear.

KEY WORDS
Arachnida,
Araneae,
Sparassidae,
Heteropodinae,
Heteropoda,
Laos,
new species,
largest sparassid,
cave-dwelling.

RÉSUMÉ
Une nouvelle espèce d'*Heteropoda* (Araneae, Sparassidae, Heteropodinae) du Laos, la plus grande des araignées chasseuses ?
Heteropoda maxima n. sp. (Araneae, Sparassidae, Heteropodinae) est décrite à partir d'une collection de spécimens du Laos déposés au Muséum national d'Histoire naturelle, Paris. Cette nouvelle espèce peut être distinguée de toutes les autres espèces d'*Heteropoda* par sa taille impressionnante et les caractères génitaux mâle et femelle : le cymbium mâle est allongé et au moins trois fois plus long que son tegulum ; les femelles possèdent un épigyne à forme caractéristique (avec deux bandes antérieures orientées) et une direction typique de leurs canaux internes. *Heteropoda maxima* n. sp. peut être la plus grande sparasside avec presque 46 millimètres de longueur de corps et de 250 à 300 millimètres pattes étalées. Les pattes et les palpes allongés, la couleur pâle et les poils spéciaux du métatarse mâle de la deuxième paire de pattes laissent supposer que cette espèce est cavernicole, même s'il n'existe pas de réduction des yeux.

MOTS CLÉS
Arachnida,
Araneae,
Sparassidae,
Heteropodinae,
Heteropoda,
Laos,
nouvelle espèce,
plus grande sparasside,
maison troglodyte.

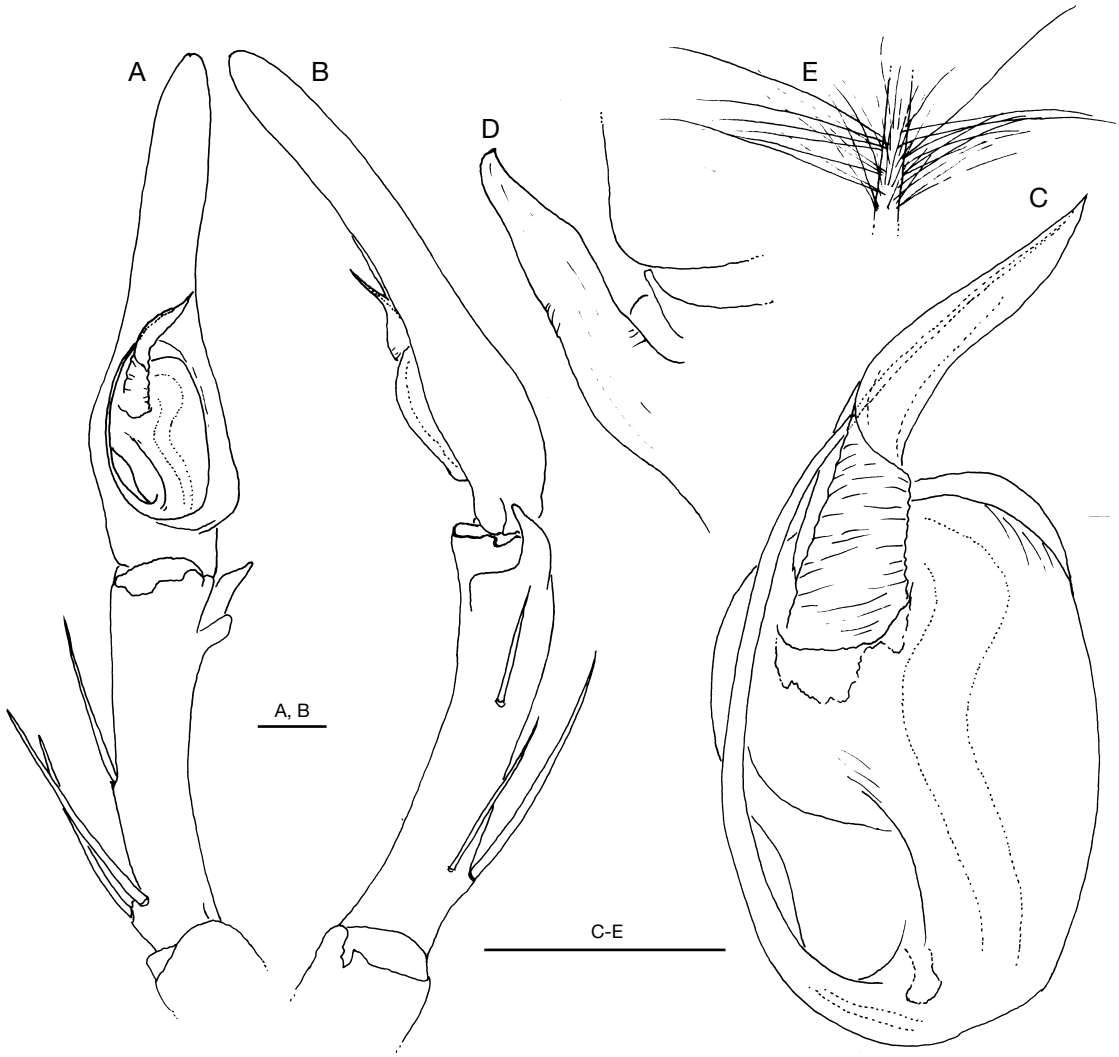

FIG. 1. — *Heteropoda maxima* n. sp., holotype ♂ (PJ 1476); **A**, **B**, male palp (1 ventral view, 2 retrolateral view); **C**, tegulum (ventral view); **D**, retrolateral apophysis (dorsal view); **E**, section of male metatarsus II with spread hairs (dorsal view). Scale bars: 1 mm.

INTRODUCTION

During a visit in the Muséum national d'Histoire naturelle (MNHN) in Paris, material from the so-called Zoothèque was investigated. Sparassidae were sorted out by the author and determined as far as possible. Amomg them a small collection of large heteropodines from Laos was striking. While investigating these colossal spiders, the question appeared, whether they could be the largest representatives of the family Sparassidae in the world. The largest sparassids so far known are the Australian delenine *Beregama aurea* (L. Koch, 1875) of 41 mm body length (Hirst pers. comm.), an undescribed *Heteropoda* spp. from Sulawesi of about 40 mm body length and a *Gnathopalystes* sp. from the Solomon Islands of a similar size (Jaeger pers. obs.).

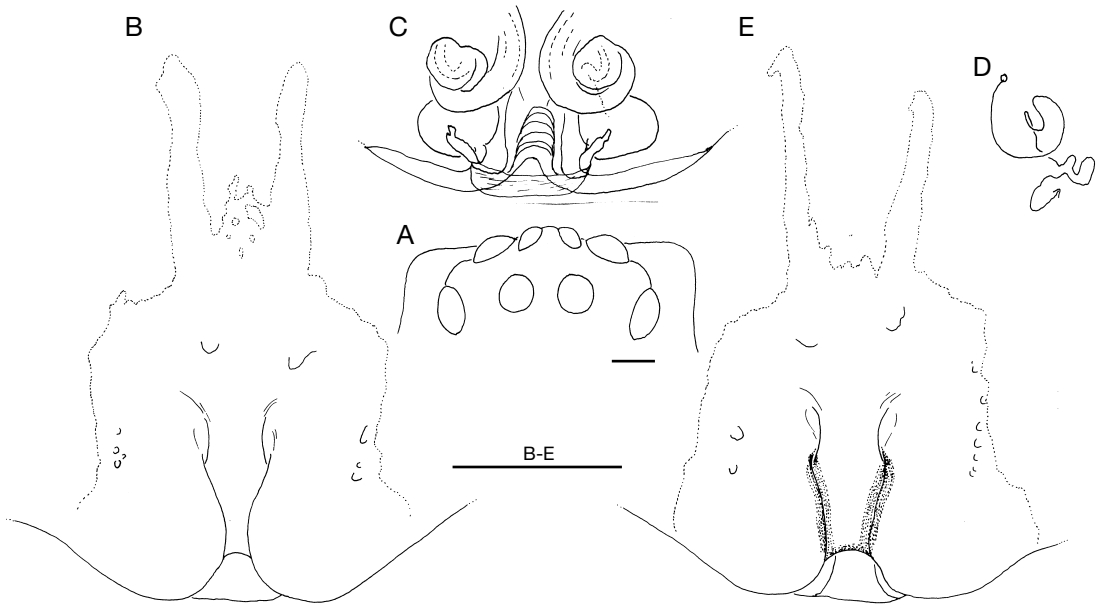

FIG. 2. — *Heteropoda maxima* n. sp.; **A**, holotype ♂ (PJ 1476), eye position (dorsal view); **B**-**D**, paratype female (PJ 1477); **B**, epigyne (ventral view); **C**, vulva (dorsal view); **D**; schematic course of internal ducts (right half, dorsal view); **E**, paratype ♀ (PJ 1490), epigyne (ventral view). Scale bars: 1 mm.

MATERIAL AND METHODS

Because of the fragile condition of the specimens only two specimens were measured totally. From other paratypes only those measurements were taken, that were allowed by safest handling of the specimens. All measurements are in millimeters. Leg spination follows Davies (1994).

SYSTEMATICS

Family SPARASSIDAE Bertkau, 1872
Subfamily HETEROPODINAE Thorell, 1873
Genus *Heteropoda* Latreille, 1804

Heteropoda maxima n. sp.
(Figs 1; 2)

TYPE MATERIAL. — Holotype 1 ♂ (PJ 1476), paratypes 2 ♀ ♀ (PJ 1477, 1478), with label: LIV-no. 2, province du Cammon (Laos), village de Tham, altitude 140 m, don de Mademoiselle Colani, entrée no. 5-1933; 1 ♀ paratype (PJ 1479), 2 immature paratypes (PJ 1480, 1481), with label: LV-no. 1, province du Cammon (Laos), village de Tham, altitude 140 m, don de Mademoiselle Colani, entrée no. 5-1933; 1 ♀ paratype (PJ 1482), with label: XLII no. 1, province du Cammon (Laos), grottes près du village de Kouan Pha Vang, altitude 140 m, 19-11-30, don de Mademoiselle Colani, entrée no. 5-1933; 2 ♀ ♀ paratypes (PJ 1483, 1484), with label: XL no. 1, 3, province du Cammon (Laos), Grotte de Kouan Pha Vang, altitude 140 m, entrée SE, 18-11-30, don de Mademoiselle Colani, entrée no. 5-1933; 3 immature paratypes (PJ 1485-1487), with label: LXIV no. 1, province du Cammon (Laos), village de Na Kay Khia, altitude 140 m, 17-12-30, don de Mademoiselle Colani, entrée no. 5-1933; 1 ♂ paratype (PJ 1488), with label: LXI no. 1, province du Cammon (Laos), village de Na Kay Khia, altitude 140 m, 17-12-30, don de Mademoiselle Colani, entrée no. 5-1933; 2 ♀ ♀ paratypes (PJ 1489, 1490), with label: LXI no. 1, province du Cammon (Laos), village de Na Kay Khia, altitude 140 m, 17-12-30, don de Mademoiselle Colani, entrée no. 5-1933. All types deposited in MNHN, Paris.

ETYMOLOGY. — From Latin *maximus*: the largest. The specific epithet refers to the large size of the species. This is the largest known sparassid spider.

DISTRIBUTION. — Laos, province of Cammon (villages Tham, Kouan Pha Vang, Na Kay Khia).

DIAGNOSIS. — The new species can generally be recognized by its impressive size. Males can be recognized by their elongated cymbium, which is at least three

TABLE 1. — Measurements of palp and legs of ♂ holotype.

♂	femur	patella	tibia	metatarsus	tarsus	total
Palp	7.0	4.0	6.4		7.3	24.7
I	28.0	8.6	34.3	37.3	6.6	114.8
II	31.1	10.1	39.0	41.0	6.9	128.1
III	25.2	8.0	28.8	26.6	4.9	93.5
IV	25.7	7.5	29.4	30.0	5.3	97.9

TABLE 2. — Measurements of palp and legs of ♀ paratype (PJ 1477).

♀	femur	patella	tibia	metatarsus	tarsus	total
Palp	6.3	3.0	5.1		6.3	20.7
I	24.5	3.6	27.8	24.6	5.0	85.5
II	26.4	10.0	30.4	25.8	5.1	97.7
III	23.8	8.8	25.0	21.3	4.3	83.2
IV	24.2	8.2	26.0	25.8	4.7	88.9

times as long as the tegulum (Fig. 1A, B). Females by the combination of the shape of the epigyneal field with its characteristic anterior-directed bands (Fig. 2B, E) and the course of the internal ducts (Fig. 2D).

DESCRIPTION

Male

Holotype first, with measurements of male paratype in parentheses: prosoma length 14.6 (15.1), prosoma width 13.8 (13.2), anterior width of prosoma 6.2 (6.2), opisthosoma length 12.6 (14.6), opisthosoma width 7.4 (7.7). Eyes as in Fig. 2A. Leg formula: 2143, spination: palp 131,101,2121, femur I 323, II-III 333, IV 331, patella 101, tibia I-II 2226, II-IV 2126, metatarsus I-III 1014, IV 3035. Leg measurements as in Table 1. Leg II at metatarsus with long, spread hairs, these eight times long as metatarsus width (Fig. 1E). Cymbium and tibia elongated (Fig. 1A, B). Embolus arising at 6 o'clock-position from tegulum, sperm-duct only slightly 's'-shaped (Fig. 1C).

Color. Yellowish-brown with annulate legs (especially femora distally with dark patch). Prosoma with dark fovea, several irregular dark spots on anterior half and dark transverse band at posterior end of fovea, behind this bright transverse band (as typical for *Heteropoda* spp.). Chelicerae, labium and gnathocoxae dark red-brown. Opisthosoma yellowish-brown, slightly darker than prosoma, without distinct pattern. Two pairs of sigilla on dorsal opisthosoma darkened.

Female

Paratype (PJ 1477) first, with measurements of other adult paratypes in parentheses: prosoma length 17.1 (14.6-19.1), prosoma width 14.9 (12.9-16.3), anterior width of prosoma 8.3 (7.0-9.3), opisthosoma length 25.0 (18.0-29.3), opisthosoma width 18.5 (11.7-22.0). Leg formula: 2413, spination: palp 131,101, 2121, 1014, femur I-II 323, III 333, IV 331, patella 101, tibia I 2126, II-III 2226, IV 2126, metatarsus I-II 1014, III 2014, IV 3036. Leg measurements as in Table 2. Palpal claw with nine long teeth. Epigyneal field with two long, distinct anterior-directed bands, lateral lobes not covering median septum (Fig. 2B, E). Course of internal duct-system as in Fig. 2C, D.

Color. As in male.

BIOLOGY

At least one label indicates, that the specimens were caught in a grot. The elongated legs (and especially the male cymbium), the special hairs on the second metatarsus of the male, and the pale color suggest that this species may be cavernicolous. All three characters were found by the author also in other cave-dwelling sparassids. The eyes, however, are not reduced. A distinct reduction of the eyes has been found within the Sparassidae so far only in one species of another genus: *Sinopoda microphthalma* (Fage, 1929). Some large *Heteropoda* species occur not only deep in the caves, but also in their entrance areas (Deeleman pers. comm.).

RELATIONSHIPS / SYSTEMATIC POSITION

From male and female genitalia *Heteropoda maxima* n. sp. is considered a primitive *Heteropoda* species. Indications are the embolus, which originates at a 6 o'clock-position from the tegulum and runs a 180° course, and the retrolateral apophysis, which seems to represent a plesiomorphic character state in the genus *Heteropoda.* The female genitalia also support the basal position of

the new species within *Heteropoda*: median septum is visible (i.e. not covered by lateral lobes), first winding of copulatory ducts is directed laterally, and duct system contains only a low number of windings.

Other large cave-dwelling *Heteropoda* species, such as *H. robusta* Fage, 1924 and an undescribed species from Sulawesi, represent different phylogenetic lineages and are not closely related to *H. maxima* n. sp. Characters mentioned above, occurring in these species, are considered independently evolved structures.

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