

On two species of *Bowie* Jäger, 2022 (Aranei: Ctenidae) from Vietnam

Dmitri V. Logunov

Zoological Institute of the Russian Academy of Sciences, Universitetskaya Embankment 1, St Petersburg 199034 Russia. E-mail: Dmitry.Logunov@zin.ru
ORCID: 0000-0002-1983-7535

ABSTRACT. A new species of wandering spiders — *Bowie giang* sp.n. (♂♀) — is described from south-eastern Vietnam. This new species, *B. martensi* Jäger, 2022 and *B. fame* Jäger, 2022 are grouped into a separate *martensi*-species group. A new record and illustrations for *B. bigbrother* Jäger, 2022 from Vietnam are provided as well.

How to cite this paper: Logunov D.V. 2024 On two species of *Bowie* Jäger, 2022 (Aranei: Ctenidae) from Vietnam // Invert. Zool. Vol.21. No.1. P.97–102. doi: 10.15298/invertzool.21.1.06

KEY WORDS: Araneae, Da Lat Plateau, diagnosis, wandering spiders.

О двух видах *Bowie* Jäger, 2022 (Aranei: Ctenidae) из Вьетнама

Д.В. Логунов

Зоологический институт Российской Академии наук, Университетская наб. 1, Санкт-Петербург, 199034 Россия. E-mail: Dmitry.Logunov@zin.ru

РЕЗЮМЕ. Новый вид бродячих пауков — *Bowie giang* sp.n. (♂♀) — описан из юго-восточного Вьетнама. Этот новый вид, *B. martensi* Jäger, 2022 and *B. fame* Jäger, 2022 объединены в отдельную видовую группу *martensi*. Также приводятся новая находка и иллюстрации *B. bigbrother* Jäger, 2022 из Вьетнама.

Как цитировать эту статью: Logunov D.V. 2024 On two species of *Bowie* Jäger, 2022 (Aranei: Ctenidae) from Vietnam // Invert. Zool. Vol.21. No.1. P.97–102. doi: 10.15298/invertzool.21.1.06

КЛЮЧЕВЫЕ СЛОВА: Araneae, Плато Да Лат, диагноз, бродячие пауки.

Introduction

The wandering spider genus *Bowie* Jäger, 2022 was recently erected and revised by Jäger (2022). The genus currently accounts for 115 Oriental and Australasian species (WSC, 2024), of which 16 species have been recorded/described from Vietnam (Chu *et al.*, 2022; Jäger, 2022; Lu *et al.*, 2022). While sorting recently collected spider materials from Vietnam, a new and one recently described *Bowie* species have been found. The aims of the present paper are (1) to diagnose and describe the new species, and (2)

to illustrate the already known species. A brief discussion of the *Bowie* diversity in Vietnam is presented as well.

Material and Methods

The materials studied in the present work were collected by my colleague Alexei V. Abramov (St. Petersburg, Russia) during 2022 and 2023 expeditions to the Vietnam organized and supervised by the Joint Russian-Vietnamese Tropical Research and Technological Centre (Hanoi).

The type specimens of a new species have been shared between the following museums: MMUE —



Figs 1–10. *Bowie bigbrother* Jäger, 2022, male, 1, 4 — palp, ventral view, 2, 5 — same, retrolateral view, 3 — bulbus, ventral view, 6 — palp, dorsal view, 7 — body, dorsal view, 8 — same, ventral view, 9 — eye field, front view, 10 — chelicerae, ventral view. Scale bars: 2 mm (7–8), 1 mm (9), 0.5 mm (1–6, 10).

Рис. 1–3. *Bowie bigbrother* Jäger, 2022, самец, 1, 4 — пальпа, вид снизу, 2, 5 — то же, вид сбоку-сзади, 3 — бульбус, вид снизу, 6 — пальпа, вид сверху, 7 — тело, вид сверху, 8 — то же, вид снизу, 9 — глазное поле, вид спереди, 10 — хелицеры, вид снизу. Масштаб: 2 мм (7–8), 1 мм (9), 0,5 мм (1–6, 10).

Manchester Museum, University of Manchester, Manchester, UK (curator: D. Arzuza Buelvas); ZISP — Zoological Institute, the Russian Academy of Sciences, St. Petersburg, Russia (curator: D.V. Logunov); ZMMU — Zoological Museum of the

Moscow University, Moscow, Russia (curator: K.G. Mikhailov).

Digital photographs were made at the Manchester Museum, using an Olympus SZX16 stereo microscope with a DP27 Digital Colour Camera, and

Helicon Focus 7.7.2 as the processing software. The distributional map was produced by using the online mapping software SimpleMappr (Shorthouse, 2010).

The terminology and format of description follow Jäger (2022), with modifications. In the following description, leg segments are abbreviated as follows: Fm — femur, Pt — patella, Tb — tibia, Mt — metatarsus, Tr — tarsus. Position of leg spines: d — dorsal, pr — pro-lateral, rt — retrolateral, v — ventral. For the leg spination the system adopted is that used by Ono (1988). The term ‘spine’ is used to describe pointed, rigid and usually articulating macrosetae on legs, the term ‘vulva’ is used for internal structures of female copulatory organs, and the term ‘receptacle’ is used as a synonym of ‘spermatheca’ (Jocque, Dippenaar-Schoeman, 2006: 25). The sequence of leg podomeres in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus (total). All measurements are in mm.

Results

Bowie bigbrother Jäger, 2022

Figs 1–11.

MATERIAL. VIETNAM: 2 ♂♂ (ZISP, ARA_ARA_0001533), Thua Thien-Hue Prov., A Luoi Distr., Saola Nature Reserve (16°06'09"N, 107°27'47"E), 830 m a.s.l., 8–13.V.2023, A.V. Abramov.

REMARKS. The new species belongs to the *rebel* species group (*sensu* Jäger, 2022) and, since its description, has been known from the type locality only. It is the second record of the species, which is currently known from two close localities in central Vietnam (Fig. 11).

Bowie giang sp.n.

Figs 11–23.

TYPES. HOLOTYPE ♂ (ZISP, ARA_ARA_0001532; Figs 12–21), Vietnam, Lam Dong Prov., Lac Duong Distr., c. 5 km NE of Long Lanh Vil., Bidoup - Nui Ba National Park, Giang Ly Forest Station (12°10'58.62"N, 108°40'48.96"E), 1400 m a.s.l., 24.V–4.VI.2023, A.V. Abramov. — PARATYPES: 2 ♂♂ (ZISP, ARA_ARA_0001535), 4 ♂♂ (ZMMU), 2 ♂♂ (MMUE), together with the holotype; 2 ♂♂ 1 ♀ (ZISP, ARA_ARA_0001534; Figs 22–23), same locality, June–July 2022, A.V. Abramov.

ETYMOLOGY. A noun in apposition taken from the Giang Ly Forest Station of the Bidoup – Nui Ba National Park, Vietnam, where the type series was collected.

DIAGNOSIS. In having the notched (hook-shaped) tegular apophysis, the new species is most similar to the Nepalese *B. martensi* Jäger, 2022, from



Fig. 11. Collecting localities of three *Bowie* species in Vietnam.

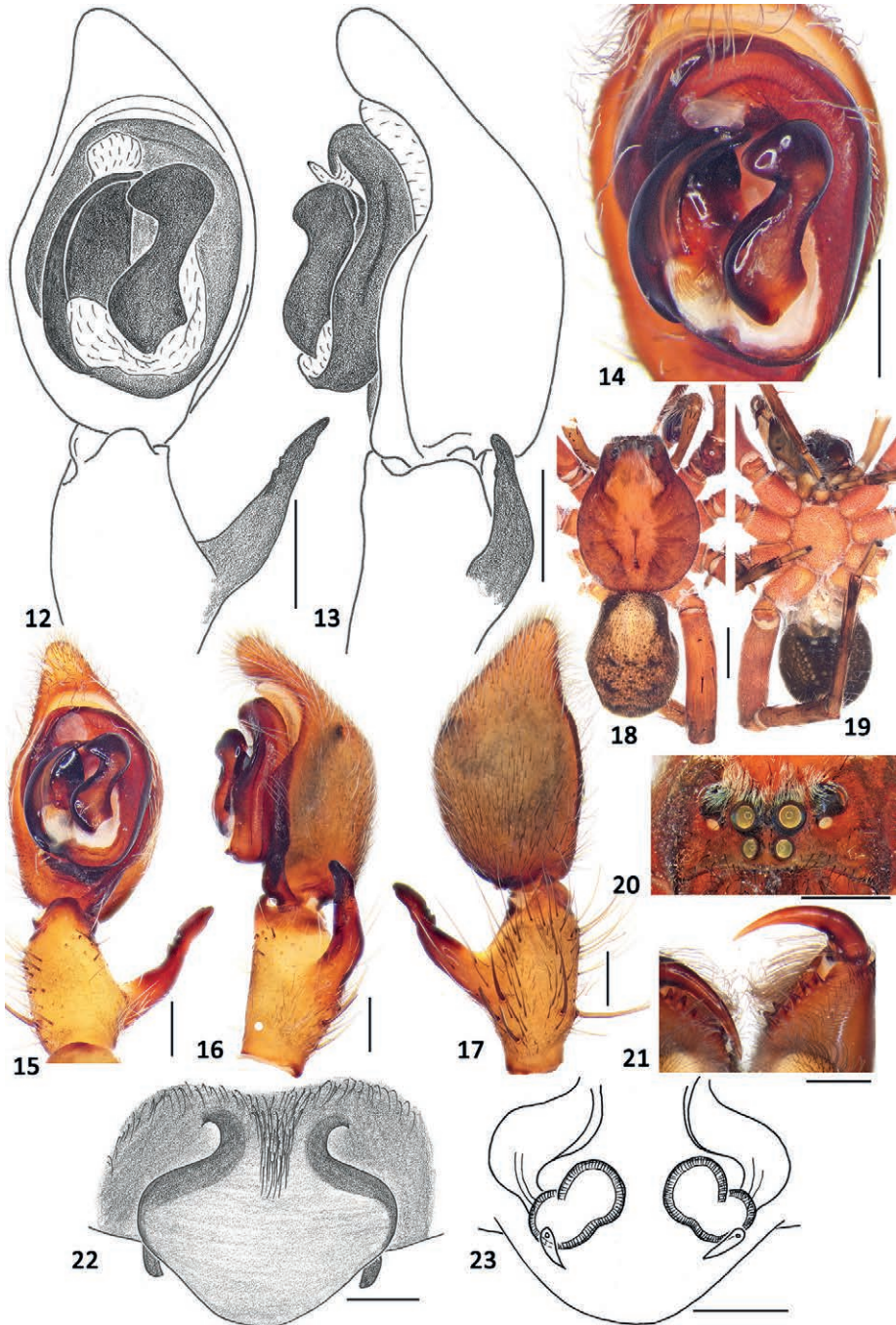
Рис. 11. Точки находок трех видов *Bowie* species во Вьетнаме.

which it differs in having the less bent and thicker retrolateral tibial apophysis, the thinner embolus and a different shape of the tegular apophysis in the males and the epigyne with smaller lateral teeth and the median plate which overhangs significantly more over the epigastric furrow in the females (cf Figs 12–17 and 22–23 with figs 40–42 in Jäger (2012) and figs 54–56 in Jäger (2022)). Besides, the male of *B. giang* sp.n. has no palpal patellar crack, which presents in *B. martensi*.

The new species is also similar to two Vietnamese species that were placed by Jäger (2022) outside any particular species group: *B. fame* Jäger, 2022 described from the male, and *B. win* Jäger, 2022 described from the female (cf Figs 22–23 with figs 412–417 in Jäger, (2022)). The male of *B. giang* sp.n. differs from that of *B. fame*, as well as of all other congeners in having the prominently notched (hook-shaped) tegular apophysis (not notched in other species, but *B. martensi*, see above) and the strong tibial apophysis originating from the middle part of palpal tibia. The female of *B. giang* sp.n. differs from that of *B. win* in the shape of the triangular median plate lacking anterior “shoulders” and the median keel (present in *B. win*), the median plate significantly overhanging the epigastric furrow (not overhanging in *B. win*), and comparatively larger receptacles.

DISTRIBUTION. Only the type locality (Fig. 11).

DESCRIPTION. MALE (holotype). Carapace 6.30 long, 4.95 wide. Eye sizes and interdistances: AME 0.30, ALE 0.28, PME 0.40, PLE 0.40, AME-



Figs 12–23. *Bowie giang* sp.n., holotype male (11–21) and paratype female (ARA_ARA_0001534; 22–23), 12, 15 — palp, ventral view, 13, 16 — same, retrolateral view, 14 — bulbus, ventral view, 17 — palp, dorsal view, 18 — body, dorsal view, 19 — same, ventral view, 20 — eye field, front view, 21 — chelicerae, ventral view, 22 — epigyne, ventral view, 23 — vulva, dorsal view. Scale bars: 2 mm (18–19), 1 mm (20), 0.5 mm (11–17, 21–23).

AME 0.23, AME-ALE 0.33, PME-PME 0.23, PLE-
PLE 0.45. Chelicera length 2.53; promargin with 3
teeth, retromargin with 5 teeth. Abdomen 5.25 long,
3.75 wide. Length of leg segments: I 4.60 + 2.50 +
4.90 + 4.70 + 1.30 (18.00); II 4.80 + 2.30 + 3.90 +
1.20 (16.10); III 4.20 + 2.10 + 3.10 + 3.30 + 1.20
(13.90); IV 5.40 + 2.20 + 4.60 + 5.70 + 1.50 (19.40).
Leg spination: I — Fm d 2-2-1-3; Pt pr 0-1-0; Tb d
1-1-0, pr 0-1-0, rt 1-1, v 2-2-2-2ap; Mt d 0-1, pr and rt
1-1-1ap, v 2-2-2ap. II — Fm d 3-3-4; Pt pr 0-1-0; Tb
d 1-1-1, pr 1-0-0, rt 1-1-0, v 2-2-2-2ap; Mt pr and rt
1-1-1ap, v 2-2-2ap. III — Fm d 3-3-4; Pt rt 0-1-0; Tb
d 2-2, pr 0-1, rt 1-1, v 2-2-2-2ap; Mt pr and rt 1-1-1ap,
v 2-2-2ap. IV — Fm d 2-2-5; Pt pr and rt 0-1-0; Tb
d 1-1-1, pr and rt 1-1, v 2-2-2ap; Mt d 0-1-0, pr and
rt 1-1-1ap, v 2-2-2-2ap. *Colouration* (Figs 18–19).
Carapace brownish yellow, with brown radial lines
and sides sparsely covered with brown recumbent
scales, and with a wide longitudinal yellow stripe that
is covered anteriorly with white recumbent scales.
Strenum orange. Labium and endites, yellow-orange,
with white tips. Chelicerae light brown. Abdomen
grey brownish, but dorsum yellow anteriorly, and
venter with a pair of longitudinal, slightly included
lines of white spots. Book-lung covers light yellow
brownish. Spinnerets yellow, but the first pair with
large brown lateral spots. All legs: coxae and Fm orange,
remaining segments orange-yellow. Palps light
brownish yellow. Palpal structure as in Figs 12–17:
patella without crack; tibia medium-sized, 1.4 times
shorter than cymbium; retrolateral tibial apophysis
long, strong and U-shaped (1.2 times shorter than
tibia), arising from the proximal end of tibia;
cymbium elongated, 1.7 times as long as wide, with
tapered top and with no outgrowths or extensions;
tergulum well-developed, heavily chitinous; tegular
apophysis hook-shaped (with a median notch); embolus
C-shaped, originating at 7 o'clock; conductor
membranous and prominent.

FEMALE (paratype, ARA_ARA_0001534).
Measurements. Carapace 7.40 long, 5.70 wide. Eye
sizes and interdistances: AME 0.30, ALE 0.23, PME
0.43, PLE 0.43, AME-AME 0.23, AME-ALE 0.48,
PME-PME 0.33, PLE-PLE 0.43. Chelicera length
5.85. Abdomen 7.90 long, 5.30 wide. Length of leg
segments: I 5.30 + 2.50 + 4.20 + 3.90 + 1.20 (16.80);
II 4.80 + 2.60 + 3.80 + 3.50 + 1.30 (16.00); III 4.30 +
2.30 + 3.00 + 3.40 + 1.20 (14.20); IV 5.60 + 2.40 +
43.0 + 5.50 + 1.70 (19.50). Leg spination: I — Fm d
2-2-3; Tb pr 0-0-1, v 2-2-2-2ap; Mt 2-2-2ap. II — Fm
d 3-3-3; Tb v 2-2-2-2-2ap; Mt v 2-2-2ap. III — Fm d

2-3-5; Pt rt 0-1-0; Tb d 1-1, pr 0-1, rt 1-1, v 2-2-2ap;
Mt d 0-1-0, pr and rt 1-1-2ap, v 2-1-2-2ap. IV — Fm
d 1-2-5; Pt pr and rt 0-1-0; Tb d 1-1-1, pr and rt
1-1, v 2-2-2ap; Mt pr and rt 1-1-2ap, v 2-1-2-2ap.
Colouration as in the male. Epigyne and vulva as
in Figs 22–23: epigyne with swollen median plate
that is notably tapered proximad and significantly
overhangs epigastric furrow; 'neck' of median plate
with a median longitudinal row of dense black/brown
hairs; copulatory openings hidden beneath lateral sides
of plate 'neck'; lateral teeth prominent; vulva with
wide insemination ducts and large, two-chambered
receptacles directed to each other; fertilization ducts
poorly visible, directed latero-proximad.

Discussion

To date, a total of 17 *Bowie* species have
been reported from Vietnam (Chu *et al.*, 2022;
Jäger, 2022; Lu *et al.*, 2022; present data). Of
them, eight species (47%) are currently known
from both sexes, seven (41%) from males and
two (12%) from females.

The newly described species could not be
placed to any particular species group (*sensu*
Jäger, 2022). It is close to *B. fame*, *B. martensi*
and *B. win* which were also left out of any species
group because they had a "uniquely shaped RTA"
in males and unusual epigynes in the females
(Jäger, 2022: 12, 90). It seems reasonable to
accommodate at least *B. fame*, *B. martensi* and
B. giang sp.n. to a separate, *martensi*-species
group that can be diagnosed by the presence of
very long, U-shaped retrolateral tibial apophy-
sis (almost as long as palpal tibia; Figs 15–17)
arising proximally from tibia in the males, and
the median plate of the epigyne overhanging
epigastric furrow (not known yet in *B. fame*)
(Jäger, 2022; present data). Besides, *B. giang*
sp.n. has five retromarginal teeth on chelicerae
(Fig. 21), which is a unique state withing *Bowie*
(usually four teeth, with an exception — *B.*
martensi having only three retromarginal teeth
(Jäger, 2022)). Whether *B. win* belongs to this
species group can be established when its male
is collected and studied, but its epigyne does not
overhang the epigastric furrow (cf. Figs 415–417
in Jäger (2022)).

Рис. 12–23. *Bowie giang* sp.n., самец-голотип (11–21) и самка-паратип (ARA_ARA_0001534; 22–23),
12, 15 — пальпа, вид снизу, 13, 16 — то же, вид сбоку-сзади, 14 — бульбус, вид снизу, 17 — пальпа,
вид сверху, 18 — тело, вид сверху, 19 — то же, вид снизу, 20 — глазное поле, вид спереди, 21 —
хелицеры, вид снизу, 22 — эпигина, вид снизу, 23 — вульва, вид сверху. Масштаб: 2 мм (18–19), 1
мм (20), 0,5 мм (11–17, 21–23).

It is also interesting to note that the type locality of *B. win* is only 40–50 km away from that of *B. giang* sp.n. (Fig. 11) but at different elevations: 950 and 1400 m a.s.l., correspondingly. Both sites are located on the Da Lat Plateau (Central Highlands of Vietnam), the mountainous area known not only as a very species-rich area, but also as an area with a high level of endemism in many groups (Anon., 2024). Obviously, the discovery of many new *Bowie* species in Vietnam should be expected with continued taxonomic inventories of spiders.

Compliance with ethical standards

CONFLICTS OF INTEREST: The author declares that he has no conflicts of interest.

Acknowledgements. I wish to express my warmest thanks to the administration of the Joint Russian-Vietnamese Tropical Research and Technological Centre for organizing the field trip of Alexei V. Abramov (St. Petersburg, Russia) to Vietnam in 2022 and 2023, during which the materials presented in this paper were collected. I am also grateful to Alexei V. Abramov for giving access to his spider collections from Vietnam. The research was carried out under the government research project no. 122031100272-3.

References

- Anon. 2024. Bi Dup-Nui Ba Nature Reserve // Sourcebook of existing and proposed protected areas in Vietnam, second edition (updated 4/23/04), online at: https://thienhien-viet.org.vn/sourcebook/source_book/index_EN.html#, accessed on 16 January 2024.
- Chu C., Lu Y., Li S.Q., Yao Z.Y. 2022. Taxonomic notes on eleven species of the subfamily Cteninae (Araneae, Ctenidae) from Asia // Biodiversity Data Journal. Vol.10. Art.e96003. P.1–46. doi:10.3897/BDJ.10.e96003
- Jäger P. 2012. Asian species of the genera *Anahita* Karsch 1879, *Ctenus* Walckenaer 1805 and *Amauropelma* Raven, Stumkat & Gray 2001 (Arachnida: Araneae: Ctenidae) // Zootaxa. Vol.3429. P.1–63. doi:10.11646/zootaxa.3429.1.1
- Jäger P. 2022. *Bowie* gen. nov., a diverse lineage of ground-dwelling spiders occurring from the Himalayas to Papua New Guinea and northern Australia (Araneae: Ctenidae: Cteninae) // Zootaxa. Vol.5170. No.1. P.1–200. doi:10.11646/zootaxa.5170.1.1
- Jocqué R., Dippenaar-Schoeman A.S. 2006. Spider families of the world. Tervuren: ARC-PPRI, 336 pp.
- Lu Y., Chu C., Yao Z.Y., Li S. Q. 2022. Four new species of ctenid spiders (Araneae, Ctenidae) from Southeast Asia, with the first description of the female of *Sinoctenus zhui* Marusik, Zhang & Omelko, 2012 // Biodiversity Data Journal. Vol.10. Art.e91350. P.1–20. doi:10.3897/BDJ.10.e91350
- Ono H. 1988. A revisional study of the spider family Thomisidae (Arachnida, Araneae) of Japan. Tokyo: National Science Museum, 252 pp.
- Shorthouse D.P. 2010. SimpleMappr, an online tool to produce publication-quality point maps. Accessed 1 March 2024. Online at: <http://www.simplemappr.net>.
- WSC 2024: World Spider Catalog. Version 25. Natural History Museum Bern. Accessed on 2 March 2024. Online at: <http://wsc.nmbe.ch>, doi: 10.24436/2

Responsible editor K.G. Mikhailov