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## Description of new species of *Palpelius* SIMON, 1903 from Fiji archipelago (Araneae: Salticidae)

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ABSTRACT. Three new species of the jumping spider genus *Palpelius* SIMON 1903: *P. vanuaensis* from Vanua Levu Is, *P. vitiensis* from Viti Levu Is. and *P. taveuniensis* from Taveuni Is. are described, diagnosed and illustrated.

Key words: arachnology, taxonomy, *Palpelius*, new species, Salticidae, Pacific Is., Fiji.

### INTRODUCTION

Genus *Palpelius* was erected by SIMON (1903) for *P. beccari*. Fourteen species have formally been known altogether so far, including three new species described here (PLATNICK 2007, PRÓSZYŃSKI 2007). *Palpelius* is a tropical genus (MURPHY & MURPHY 2000), whose range stretches from Borneo, Moluccas, NE Australia, to New Guinea and some Pacific Islands (Carolines and Fiji). Until now only one species (*P. namosi*) was known from the Fiji archipelago.

The three species of *Palpelius* herein described have characters that allow their easy identification, but they are known from only one sex specimen (e.g. M, F, F) each from the different island of the archipelago. Further studies, including collecting male and female specimens together, is required to assign these species properly. The Fiji is a hotspot archipelago, so the finding of the lacking sex of these species would be interesting in order to verify their speciation.

### MATERIAL AND METHODS

The study is based on ethanol-preserved material from Fiji, provided by Dr Robert RAVEN (Queensland Museum, Brisbane = QMB). Measurements are given in millimeters.

The drawings were made using a grid system. The epigynes were removed for study. Dissected epigynes were digested in 10% KOH.

Abbreviations used: AEW - anterior eye width, AME – anterior median eyes, AL - abdomen length, CH - cephalothorax height, CL - cephalothorax length, co - copulatory openings, CW - cephalothorax width, EFL - eye field length, F - female, M - male, PEW - posterior eye width.

### **Genus *Palpelius* SIMON 1903**

*Palpelius* SIMON 1903, p. 735; BERRY et al 1996, p. 243; MURPHY & MURPHY 2000, p. 277.

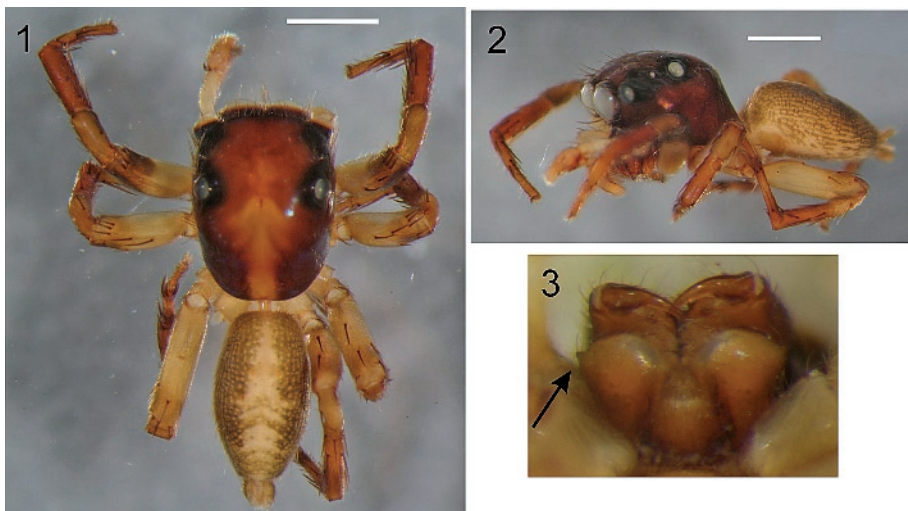
**Diagnosis:** (after BERRY et al. 1996): unidentate salticids having leg III equal to or exceeding leg IV in length, and ocular quadrangle occupying about half the length of carapace, narrowing posteriorly. The male palp is euophryine with embolus confined to distal portion of the bulb, curving counter-clockwise (left palp). The epigynum has two large membranous windows with the copulatory openings at their posterior edges, relatively short median ducts turn outward to lateral spermathecae.

### ***Palpelius taveuniensis* n. sp.**

(Figs 1-5)

#### **Etymology**

Named after the Taveuni Island, type locality.



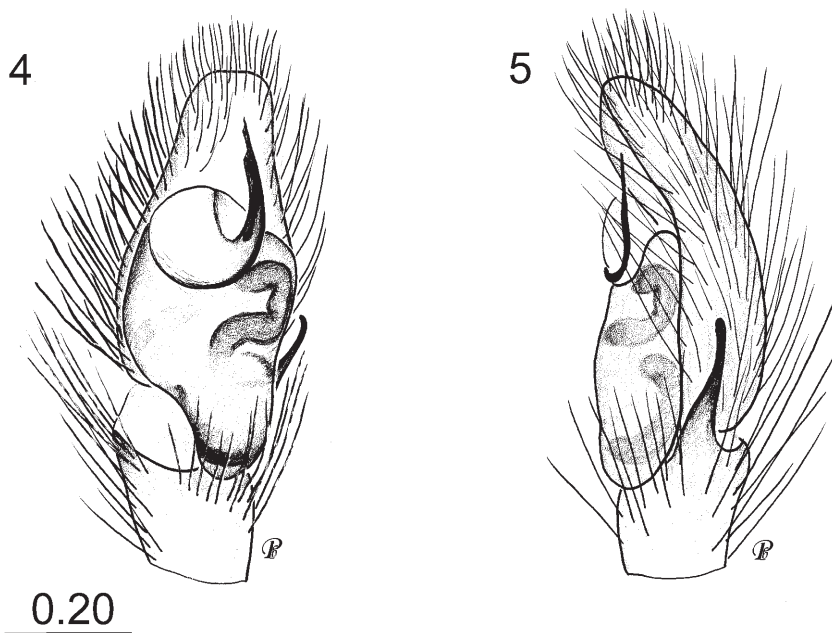
1-3. *Palpelius taveuniensis* sp. n., general appearance: 1. dorsal view; 2. lateral view; 3. maxillae and labium. Scales: 1.00 mm

## DIAGNOSIS

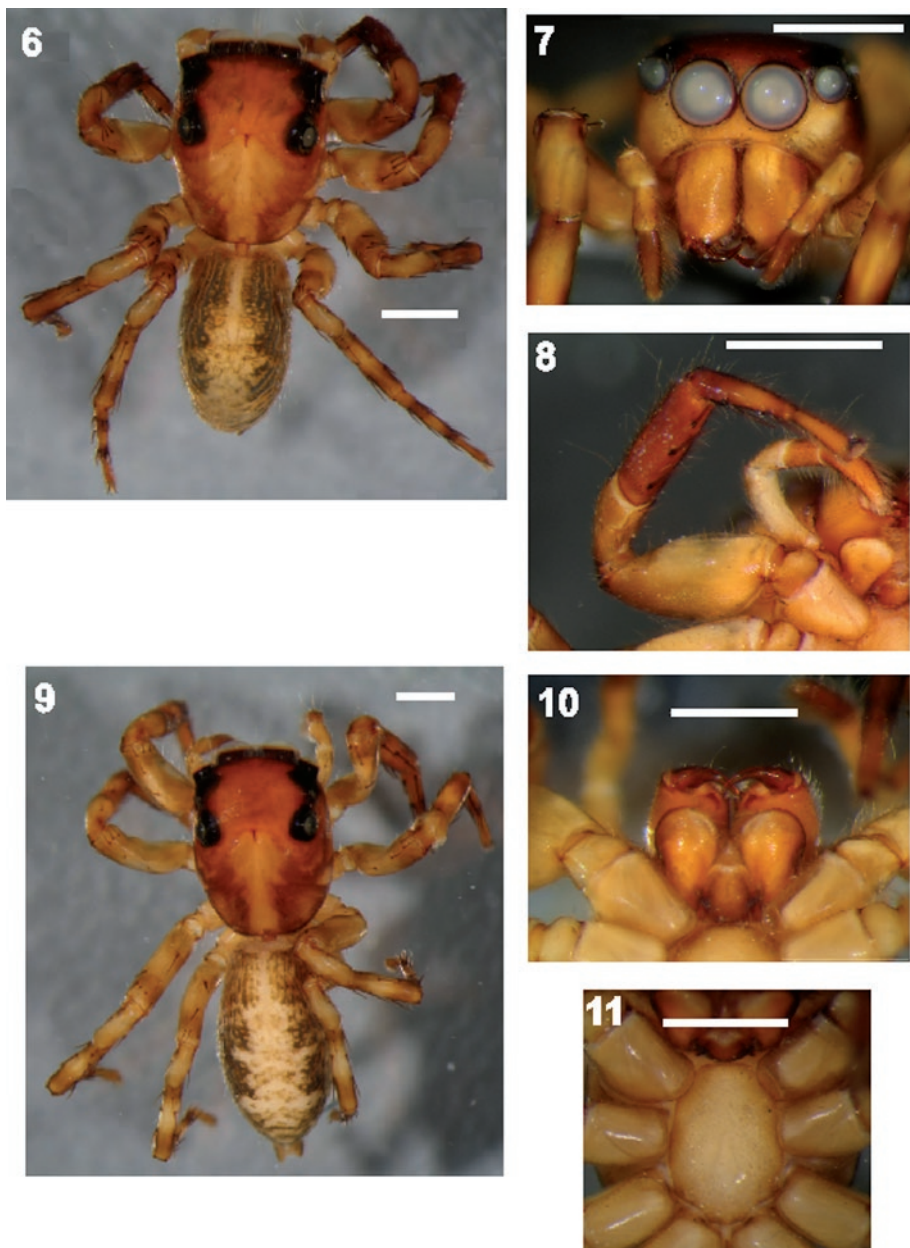
In comparison with *P. beccari* it can be distinguished by shorter palpal tibia and absence of stout dorsal seta on it. From *P. namosi* it differs by narrower tegulum and longer posterior lobe.

## DESCRIPTION.

Male. Holotype. Carapace sloping anteriorly to highest point at PLE. Eye field wider than long, dark-brown, surrounding of eyes black with greyish scales. Fovea visible. Posterior slope steep, brown with lighter leaf-like belt. Sides brown. Abdomen oval, grey brown, its pattern as in fig. 1. Spinnerets greyish with white tips. Clypeus low, brown, with three protruding setae and sparse brownish hairs. Chelicerae brown with one conical retromarginal tooth and two promarginal teeth. Maxillae and labium light brown, their tips yellowish, the former with lateral process (fig. 3). Sternum oval, pale yellow. Venter whitish, with grey spots. Palps euophryine type, tegulum with long postero-lateral lobe, embolus making flat coil on antero-ventral surface of the bulb, its structure as in figs 4, 5. Tibia and patella whitish, tibial apophysis long, slightly curved. Femur whitish with dorsal spines (1-1-1). Legs brown with lighter coxa, trochanter and femur, the last darker distally. Legs with numerous spines; ventral spination of tI and tII: 2-2-2, (outer row 2-1), mI and mII: 2-2.



4-5. *Palpelius taveuniensis* sp. n.: 4. palpal organ, ventral view; 5. palpal organ, lateral view. Scales: 0.20 mm



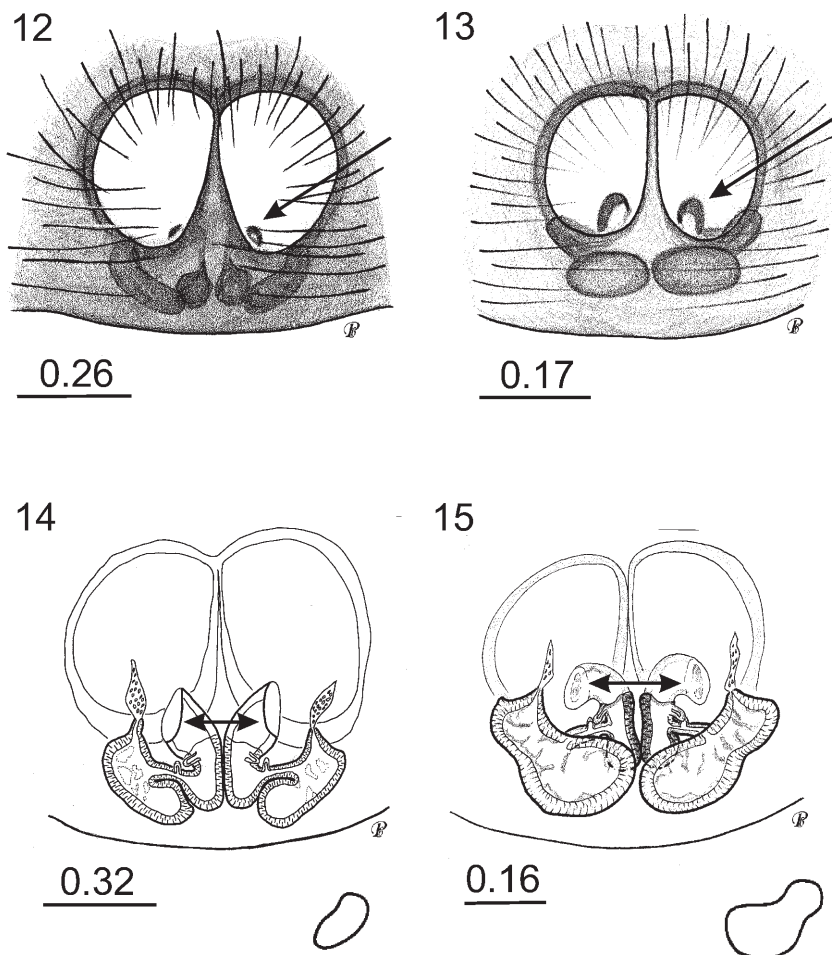
6-8. *Palpelius vanuaensis* n. sp.: 6 – dorsal view; 7 – frontal view; 8 – leg I; 9-11. *P. vitiensis* n. sp.: 9 – dorsal view; 10 – cheliceral dentition; 11 – sternum; scales: 1.00 mm

Measurements: CL 2.07, CW 1.65, CH 1.27, AL 1.99, AW 1.14, EFL 1.04, AEW 1.61, PEW 1.59, L1 5.89, L2 5.48, L3 6.86, L4 7.00.

Female unknown.

MATERIAL EXAMINED

Holotype: male, (QM S35584), Fiji: Taveuni, Des Voeux Peak Rd., 16 Jul 1987, 900-1100 m alt., coll. MONTEITH & COOK.



12-13. Epigyne: 12 – *Palpelius vitiensis* sp. n. (holotype female); 13 – *P. vanuaensis* sp. n. (holotype female).  
14-15. Internal structure of epigyne with scheme of shape of spermathecae: 14 – *P. vitiensis* sp. n. (holotype female); 15 – *P. vanuaensis* sp. n. (holotype female); scales as in figs

***Palpelius vanuaensis* n. sp.**

(Figs 6-8, 13, 15)

## ETYMOLOGY

Named after the Vanua Levu Island, type locality.

## DIAGNOSIS

In comparison with *P. namosi* and *P. vitiensis* it can be distinguished by well visible copulatory openings at posterior edge of windows (fig. 13). Insemination ducts longer than in *P. namosi* and *P. vitiensis*, but shorter than in *P. trigyrus*. Second chambers of spermathecae larger than in *P. namosi* and *P. vitiensis* (fig. 15).

## DESCRIPTION

Male unknown.

Female. Holotype. Carapace sloping anteriorly to highest point at PLE. Eye field wider than long, brown, surrounding of eyes black with thin greyish scales. Fovea visible. Posterior slope steep, grey-brown with lighter leaf-like belt. Sides grey-brown. Abdomen oval, grey brown, its pattern as in fig. 6. Spinnerets greyish with white tips. Clypeus low, light-brown, with sparse brownish hairs (fig. 7). Chelicerae light-brown with one conical retromarginal tooth and two promarginal teeth. Maxillae and labium light brown with tips yellowish. Sternum oval, pale yellow. Venter whitish, with grey spots. Pedipalps light brown, tibia and patella yellowish. Legs light-brown with darker tarsus, metatarsus and tibia; metatarsus and tibia of the III and IV legs with darker spots on its proximal and distal parts. Legs with numerous spines; ventral spination of tI and tII: 2-2-2, (outer row 2-1), mI and mII: 2-2. Epigynum as in figs. 13, 15.

Measurements: CL 2.80, CW 2.20, CH 1.30, AL 2.90, AW 1.80, EFL 1.35, AEW 2.15, PEW 2.05, L1 5.88, L2 5.40, L3 6.60, L4 6.84.

## MATERIAL EXAMINED

Holotype: female, (QM S35638), Fiji: Vanua Levu: Mt. Delaikoro, 700 m, coll. MONTEITH & COOK, 21.07.1987; 1 paratype, the same data.

***Palpelius vitiensis* n. sp.**

(Figs 9-12, 14)

## ETYMOLOGY

Named after the Viti Levu Island, type locality.

## DIAGNOSIS

Copulatory openings located at posterior edge of windows as in *P. namosi*, but the second chambers of spermathecae bean-shaped (figs. 12, 14).

## DESCRIPTION

Male unknown.



Female. Holotype. Carapace sloping anteriorly to highest point at PLE. Eye field wider than long, brown, surrounding of eyes black with sparse, thin greyish scales. Fovea visible. Posterior slope steep, brown with lighter leaf-like belt. Sides grey-brown with light triangular patches. Abdomen oval, grey, with whitish leaf-like pattern (fig. 9). Spinnerets grey-brown with white tips. Clypeus low, grey-brown, with sparse greyish hairs. Chelicerae light-brown with one conical retromarginal tooth and two promarginal teeth (fig. 10). Maxillae and labium light brown with tips whitish. Sternum oval, pale yellow (fig. 11). Venter whitish, with grey, irregular spots. Pedipalps brown, tibia and patella light-brown. Legs light-brown with darker tarsus, metatarsus and tibia; metatarsus and tibia of all legs with darker spots on its proximal and distal parts. Legs with numerous spines; ventral spination of tI and tII: 2-2-2 (outer row 2-1), mI and mII: 2-2. Epigynum as in figs. 12, 14.

Measurements: CL 3.10, CW 2.30, CH 1.40, AL 3.60, AW 2.00, EFL 1.40, AEW 2.20, PEW 2.10, L1 6.76, L2 5.88, L3 7.84, L4 7.88.

#### MATERIAL EXAMINED

Holotype: female, QM S35609), Fiji: Viti Levu: Nadarivatu Reserve, 850 m alt., coll. MONTEITH & COOK.

#### ACKNOWLEDGMENTS

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