

## Two New *Distenia* Lepeletier & Serville from Fiji with a Key to the Known Melanesian Species (Coleoptera: Cerambycidae: Disteniinae)<sup>1</sup>

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**Abstract.** Two new species of *Distenia* are described and a key to all known species of the genus *Distenia* in Melanesia is presented. *Distenia dillonorum* sp. nov. is from Taveuni (Fiji) and *D. gressitti* sp. nov. is from Taveuni, Kadavu, and Vanua Levu (Fiji).

### INTRODUCTION

The Disteniinae is an unusual group of longhorned beetles that occurs throughout Asia, Africa, and the New World (but absent from the most of the Palearctic and Australia). Due to unusual characters [*adults*: antennae inserted anteriorly near the base of mandibles; reduced or absent antennal tubercles; mesal antennal setose groove (described herein); *larvae*: gular bridge absent; clypeus membranous and lacking setae], they have been treated by some authors as a distinct family (e.g., Svácha & Danilevsky, 1987). Of the approximately 12 genera and 200 species, the genus *Distenia* Lepeletier & Serville is the most widespread and speciose (Monné & Hovore, 2005). Host plants for *Distenia* are poorly known. Those listed for Asia include *Holigarna*, *Mangifera*, *Dipterocarpus*, *Abies*, *Pinus*, and *Picea* (Duffy, 1968; Gressitt, 1951c).

The Melanesian fauna of *Distenia* has few known species. In 1923, Schwarzer described the first known species, *D. bougainvilleana*. Gressitt described *D. bougainvillea*, also from Bougainville (Gressitt, 1951a), but later that year recognized that it was a synonym of *D. bougainvilleana* Schwarzer (Gressitt, 1951b). The next described species was *D. punctulata* from Viti Levu in Fiji, described by Dillon & Dillon in 1952. In 1959, Gressitt described the most recent species of *Distenia*, *D. minor* from New Britain. Bigger & Schofield (1983) listed all the known species of *Distenia* from Melanesia but did not mention *D. punctulata* Dillon & Dillon. In the present work, two new species are described and differentiated from the previously known species. A key to all species of *Distenia* from Melanesia is presented.

### MATERIALS AND METHODS

This study is the result of a National Science Foundation Biotic Surveys and Inventories grant for Fiji (Evenhuis & Bickel, 2005) for which I am a collaborator. The material included is based on an expedition there in November 2005 and from Malaise trap sampling conducted by Neal Evenhuis and Evert Schlinger throughout many Fijian islands. Additional material was examined from the Bishop Museum (BPBM) and U.S. National Museum (USNM).

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1. Contribution No. 2007-008 to the NSF-Fiji Arthropod Survey.

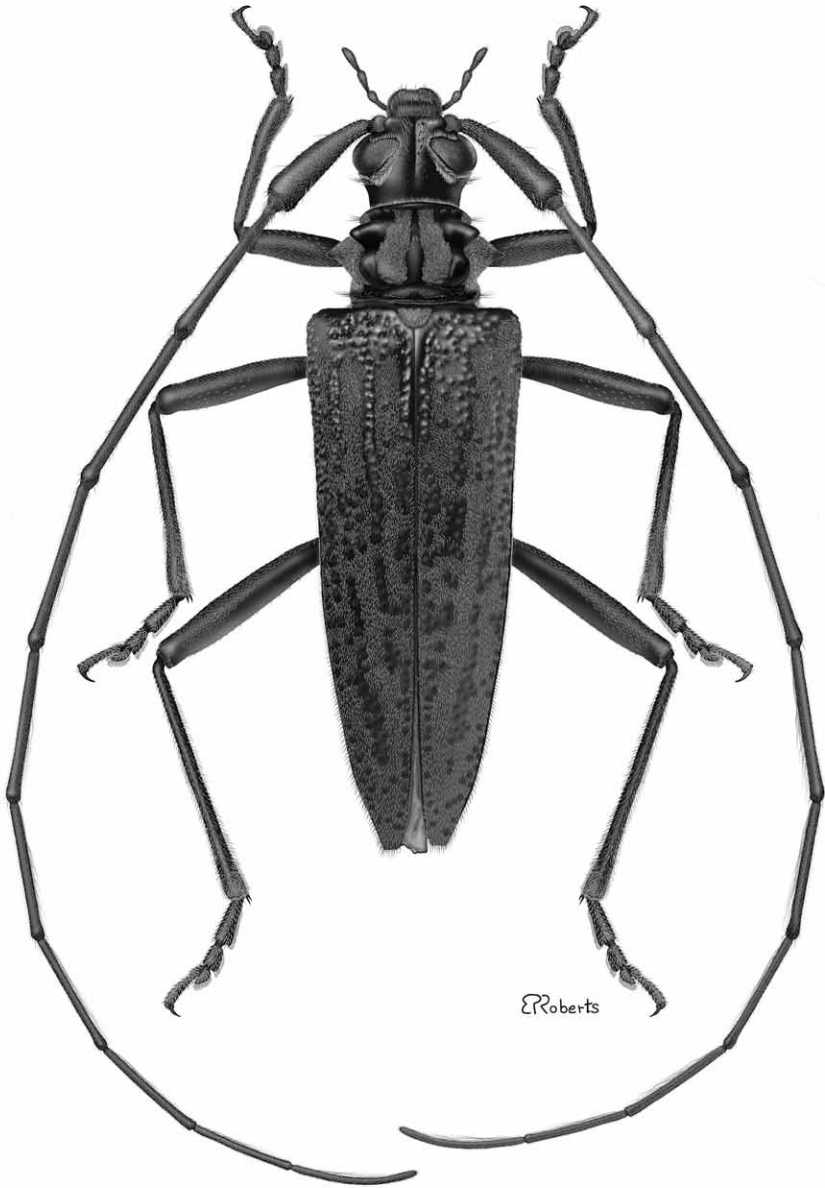
## SYSTEMATICS

*Distenia dillonorum* Lingafelter, new species

(Figs. 1, 3a)

**Description.** Moderate size, 21–24 mm long; width at humeri 5–6 mm; integument piceous except for reddish brown antennae, femora and venter. Elytra and pronotum shining, but mostly covered in conspicuous, short, orange pubescence. Pubescence elsewhere (except for margins of eyes) inconspicuous. *Head* with antennal tubercles not protruding and connecting anteriorly in straight line. Head mostly impunctate and glabrous with exception of few fine punctures at extreme post-occiput, and dense fringe of orange hairs around eyes; head moderately, gradually constricted at post-ocular region. Head with pronounced vertex and frontal sulcus extending approximately to posterior margin of eyes. Eyes large, coarsely faceted, with weak indentations around antennal insertions; eye lobe extends over two-thirds thickness of head with lower lobe larger than remainder when viewed laterally. Upper eye lobes separated by distance greater than middle pronotal callus width. *Antennae* of male long, slender, extending by about 6 segments beyond elytral apex. Scape at apex less than twice as wide as base, remaining antennomeres cylindrical, barely enlarged and darkened apically; antennomere 2 very short, 3 longest, thereafter successively decreasing slightly in length to the tenth. Antennomere 11 slightly longer than 10, with vaguely noticeable subapical constriction. Antennae covered with very fine, short, orange pubescence, slightly longer towards apex of antennomeres. Antennae with unusual mesal groove extending from 3–11, with very long but recessed orange hairs lying lengthwise in groove. Antennae of females as in male, but extending by about 5 segments beyond elytron. *Pronotum* with large middle callus surrounded by four peripheral calli and with two large, broadly based lateral tubercles; anterolateral calli strongly projecting dorsally. Pronotum generally impunctate, with moderate anterior and posterior constrictions; middle callus indistinctly rugose. Dense, orange pubescence around middle callus and between middle and peripheral calli. Lateral pronotal tubercle with broad base tapering to narrow, blunt apex. *Elytra* at base much broader than pronotal base; slightly broader than lateral tubercles; strongly tapering to apex; apex subtruncate. Coarsely, deeply punctate and granulate around basal one-third; large punctures continuing mostly in about 4 rows to apex; rows separated by broad fasciae of dense, orange pubescence. *Scutellum* with dense, orange pubescence, rounded and tapering posteriorly. *Legs* reddish brown on femora, darker piceous on tibiae and tarsi. Femora cylindrical; metafemora not attaining elytral apex in either sex. *Venter* with inconspicuous coating of orange and translucent pubescence; impunctate except for sparse punctures on metasternum. Prosternal process very narrow (narrower than base of palpi); weakly expanded at apex. Procoxal cavities widely open posteriorly by at least two-thirds width of procoxa. Mesosternal process broad between coxae over half as broad as mesocoxa. Metasternal sulcus pronounced, attaining anterior third of metasternum. Abdominal sternites successively narrowing; ventrite 5 longer than wide and relatively longer in females than males.

**Discussion and Diagnosis.** *Distenia dillonorum* is very similar in appearance to *D. punctulata* Dillon & Dillon, but differs in having the elytral pubescence orange (not gray-fulvous) and interrupted by rather distinct rows of punctures and lacking a large apical interruption that is present in *D. punctulata*. *Distenia dillonorum* has the elytral granules extending to the basal one-third to one-half of the elytron (but restricted to the extreme base in *D. punctulata*). All three known specimens of *D. dillonorum* are larger than 20 mm (ranging from 21–25 mm), whereas in *D. punctulata* the specimens range from 14–17 mm. *Distenia dillonorum* is known only from Taveuni island in Fiji while *D. punctulata* is known only from Viti Levu.



**Figure 1.** *Distenia dillonorum* Lingafelter, new species (female, length 21 mm). Illustration by Elisabeth Roberts.

**Etymology.** This species is named in honor of Lawrence and Elizabeth Dillon who made the foundational study of Cerambycidae of Fiji in 1952.

**Types.** *Holotype* male from FIJI: **Taveuni:** Devo Forest Reserve, 21 Nov 2005, 800 m, 16°50'S, 179°59'E, Steven W. Lingafelter, on dead tree trunk at night (BPBM, to be deposited in Fiji National Insect Collection, Suva, Fiji). *Paratypes:* 1 male, same data as holotype (USNM); 1 female, same data as holotype (BPBM).

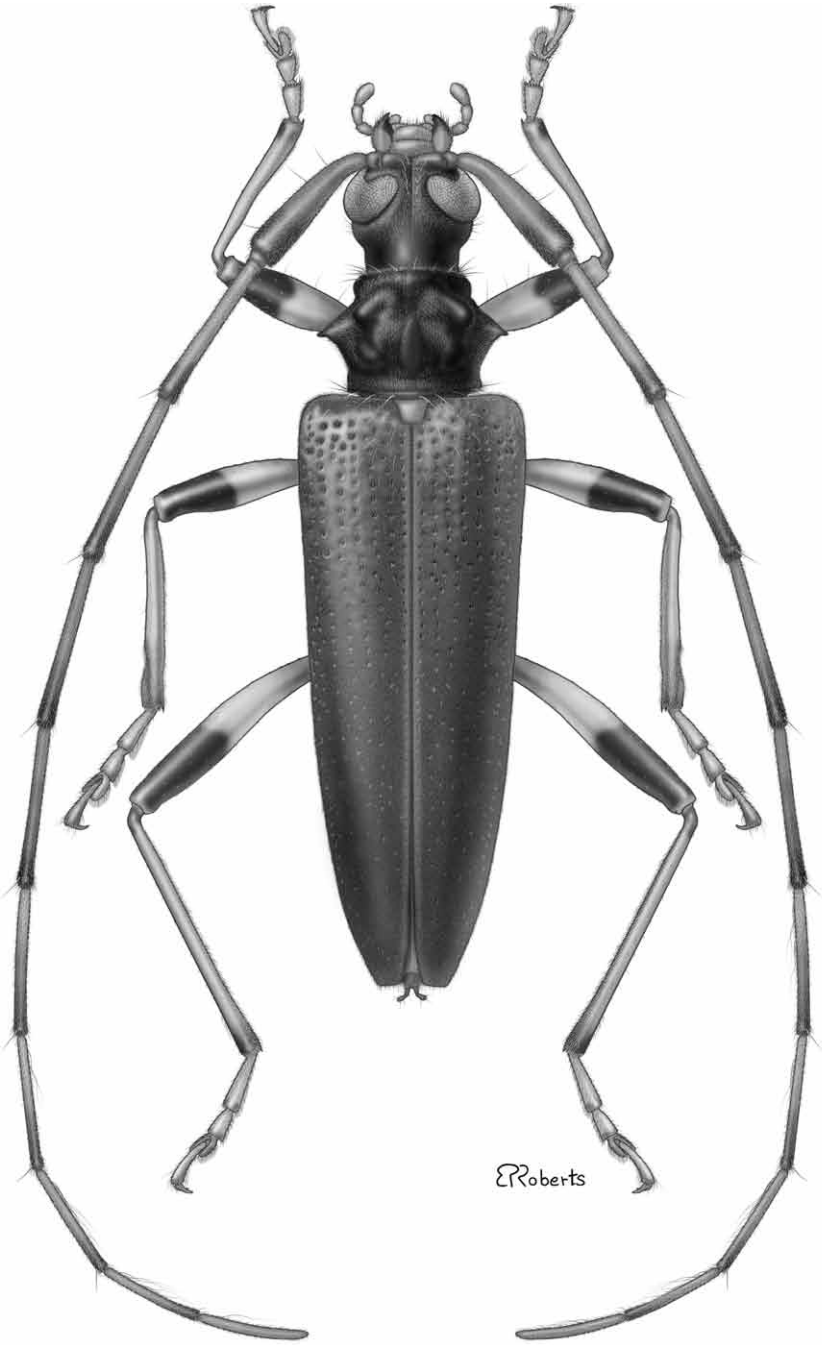
***Distenia gressitti* Lingafelter, new species**

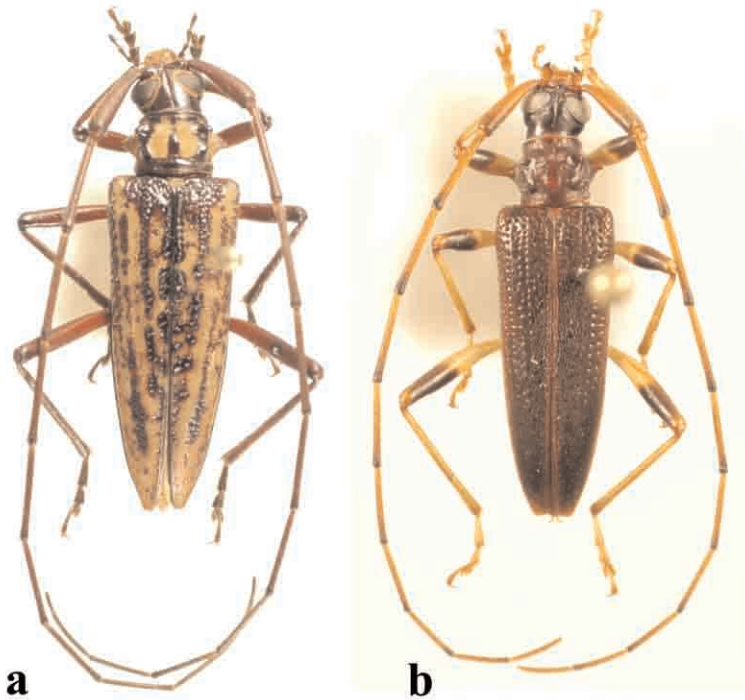
(Figs. 2, 3b)

**Description.** Moderate size, 9–13 mm long; width at humeri 2–3 mm; integument mostly dark reddish brown. Antennomeres (except apices), basal half of femora, tibiae (except for extreme base and apex), pale yellow-brown. Elytra, sides of prothorax, venter, and antennae moderately shining, but covered in short, translucent pubescence and sparsely scattered long setae. Pubescence elsewhere sparse and inconspicuous. *Head* with antennal tubercles not protruding; connecting anteriorly in weakly concave line. Head generally micropunctate and glabrous. Punctures larger between upper eye lobes. Eye margins without dense fringe of hairs; head moderately, gradually constricted at post-ocular region. Head with shallow vertex and frontal sulcus extending just posterior to margin of eyes. *Eyes* large, coarsely faceted, with weak indentations around antennal insertion; eye lobe extending nearly full thickness of head with lower lobe two-thirds larger than remainder when viewed laterally. Upper eye lobes separated by distance greater than middle pronotal callus width. *Antennae* of male long, slender, extending by about 5 segments beyond elytral apex. Scape at apex less than twice as wide as base, remaining antennomeres cylindrical, not enlarged apically; darkened at apical one-fourth to one-third; antennomere 2 very short; 3–10 subequal or successively decreasing slightly in length; antennomere 11 slightly longer than 10, with vaguely noticeable subapical constriction. Antennae covered with very fine, short, translucent pubescence, slightly longer towards apex of antennomeres. Antennae with vague mesal groove extending from segments 3–11, with very long hairs lying recessed, lengthwise in groove. Antennae of females as in male, but extending by about 4 segments beyond elytron. *Pronotum* with small middle callus surrounded by four peripheral calli and with two large, broadly based lateral tubercles; anterolateral calli weakly projecting dorsally. Pronotum micropunctate, with scattered indistinct, larger punctures; weak anterior and posterior constrictions; middle callus not rugose. Pubescence uniformly sparse, translucent and inconspicuous on disk; more dense laterally. Lateral pronotal tubercles with broad base, variably tapering to short or long, narrow, blunt apex. *Elytra* at base much broader than pronotal base; slightly broader than lateral tubercles; moderately tapering to apex; apex subtruncate. Elytra with coarse, separate, deep punctures throughout; becoming shallower and sparser towards apex. Punctures each slightly darker than surrounding integument. No granules present. Pubescence uniformly inconspicuous, without fasciae. *Scutellum* without denser pubescence than surrounding integument; truncate and tapering posteriorly. *Legs* yellow brown except for basal half of femora and extreme apex and base of tibiae which are darker piceous. Profemora weakly enlarged at middle; meso- and metafemora cylindrical in males to very weakly enlarged at middle in females. Metafemora attaining apical fourth of elytra in both sexes. *Venter* with inconspicuous vestiture of translucent pubescence; impunctate except for sparse punctures on metasternum. Prosternal process very narrow (narrower than base of palpi); weakly expanded at apex. Procoxal cavities open posteriorly by between one-half and two-thirds width of procoxa. Mesosternal process broad between coxae, about one-third (males) to half

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**Figure 2.** *Distenia gressitti* Lingafelter, new species (female, length 13 mm). Illustration by Elisabeth Roberts.





**Figure 3.** Color dorsal habitus of *Distenia*: a) *Distenia dillonorum* Lingafelter, new species; b) *Distenia gressitti* Lingafelter, new species.

(females) as broad as mesocoxa. Metasternal sulcus pronounced, attaining anterior third of metasternum. Abdominal sternites successively narrowing; ventrite 5 longer than wide in both sexes. Ventrite 5 moderately notched at apex in males; rounded in females.

**Discussion and Diagnosis.** *Distenia gressitti* is very similar to *D. bougainvilleana* Schwarzer but differs in not having the outer elytral apex produced (or very slightly), in having punctures on the elytron extending beyond the basal half, in not having the prothoracic spines angled posteriorly and upward, and in having the tarsomeres unicolorous. Furthermore, *D. bougainvilleana* is known only from the island of Bougainville (approximately 3000 km distant from Fiji). From *D. minor* Gressitt, *D. gressitti* differs in being reddish brown or dark brown (not purplish brown), in not having the slight sutural and apicolateral projections at the end of the subtruncate elytral apices, and in the slightly larger size of most specimens (greater than 10 mm in length). Furthermore, *D. minor* is known only from New Britain (approximately 3500 km distant from Fiji).

**Etymology.** This species is named in honor of J. Linsley Gressitt who published extensively on Cerambycidae of Asia, Micronesia, and Melanesia.

**Types.** *Holotype*, male, FIJI: **Taveuni**: Devo Forest Reserve, 10–17 Oct 2002, FJ-9 Malaise, M. Irwin, E. Schlinger, M. Tokota'a, 800 m, 179°59'E, 16°50'S, [FBA 008340] (BPBM, to be deposited in Fiji National Insect Collection, Suva, Fiji). *Paratypes* (23 total): FIJI: **Taveuni**: Devo Forest Reserve, 21 Nov 2005, 800 m, 16°50'S, 179°59'E, Steven W. Lingafelter, on dead tree trunk at night (2 females, USNM); 3.3 km NW Lavena Village, Mt. Koronibuabua, 219 m, 8 Jan–5 Feb 2005, Malaise 4, Soroalau, 16.855°S, 179.880°W, [FBA 512322] (1 female, BPBM); 5.3 km SE Tavuki Village, Mt. Devo, 1064 m, 28 Jan–11 Feb 2005, Malaise 3, P. Vodo, 16.841°S, 179.968°W, [FBA 511888] (1 male, USNM); same but FJTA09 (1 female, USNM); same but 734 m, 7–23 Oct 2004, Malaise trap, FJTA09 [FBA 512058] (1 male, 2 females, USNM); same but FBA 512059, 512070 (2 females, BPBM); same but 30 Jun–31 Jul 2004, Malaise 3, [FBA 148342] (1 female, BPBM); same but 3–20 Jul 2002, [FBA 154680] (1 female, BPBM); 5.6 km SE Tavuki Village, Malaise, rainforest 3–10 Jan 2003, Schlinger, Tokota'a, FJTA8aM01-12, 179.965°E, 16.843°S, 1187 m, [FBA 058780] (1 female, BPBM); Devo Peak, 5.6 km SE Tavuki Village, 1187 m, Malaise 1, 20–27 Jul 2002, Schlinger, Tokota'a, 16.843°S, 179.966°W, [FBA 144666–144667] (2 females, BPBM); same but FBA 144665 (1 female, USNM). **Vanua Levu**: 0.6 km S. of Rokosalase Village, 23 Apr–8 May 2004, Malaise in forest, Schlinger, Tokota'a, FJVN57eM05-03, 179.0181°E, 16.5333°S, 180 m, [FBA 054320] (1 female, BPBM); Trans-insular Road, above summit, 500–550 m, 6–9 Oct 1979, Malaise Trap, S.N. Lal, G.A. & S.L. Samuelson (1 female, BPBM); Kilaka, FJ-58E, 28 Jun–21 Jul 2004, 178°59'290"E, 16° 48'41.2"S, M.E. Irwin, E. Schlinger, M. Tokota'a, 98 m, Malaise, [FBA 029049] (1 female, BPBM). **Kadavu**: 1.3 km E. Kadavu air strip, nr. Ramilata Village, 120 m, 18 Sep 2004–11 January 2005, Malaise 2, M. Reece, 19.06°S, 178.169°E, FBA 511733, 511851 (2 females, BPBM); 0.25 km SW Solodamu Village, Moanakaka Bird Sanctuary, 178.121°E, 19.078°S, 60 m, 23 Oct–6 Nov 2004, Malaise trap, M02, S. Lau (2 females, USNM).

KEY TO *DISTENIA* OF MELANESIA

1. Elytral pubescence dense, contrastingly colored with integument, and distinctly interrupted by rows or areas of punctures. Pronotum with conspicuous pubescence that is interrupted by glabrous vittae ..... 2
- Elytral pubescence uniformly dense, but not conspicuous or distinctly interrupted by punctures. Pronotum with pubescence inconspicuous and not divided by glabrous vittae ..... 3
2. Only extreme base of elytra granulate. Elytral pubescence color grayish fulvous. Known specimens 14–17 mm in length. (Fiji: Viti Levu) ..... *Distenia punctulata* Dillon & Dillon
- Basal one-third to one-half of elytra granulate. Elytral pubescence color orange. Known specimens 21–24 mm in length. (Fiji: Taveuni)..... *Distenia dillonorum* Lingafelter, n. sp.
3. Elytral punctures restricted to basal half. Lateral prothoracic spines angled posteriorly and upward. Outer apex of elytra acute and produced more than at suture. Tarsomeres darkened at apices. Known specimens 16–18 mm in length. (Bougainville) ..... *Distenia bougainvilleana* Schwarzer



- . Elytral punctures extending beyond basal half (although not as pronounced towards apex). Lateral prothoracic spines not posteriorly directed and barely angled upward or not at all. Elytral apex subtruncate or with small sutural and outer apical projections. Tarsomeres mostly unicolorous. Known specimens 9–15 mm in length. (Fiji & New Britain) ..... 4
- 4. Integument dark purplish brown and covered with inconspicuous, but dense, thin silvery pubescence. Elytra very slightly tapered towards apex which is subtruncate with slight sutural and outer apical projections. Known specimens 8–10 mm in length. (New Britain) ..... *Distenia minor* Gressitt
- . Integument reddish brown to dark brown and covered with inconspicuous translucent pubescence. Elytra moderately tapering posteriorly towards apex which is subtruncate and without projections. Known specimens 9–13 mm in length. (Fiji: Kadavu, Taveuni, Vanua Levu) ..... *Distenia gressitti* Lingafelter, n. sp.

#### ACKNOWLEDGMENTS

I thank Neal Evenhuis and Evert Schlinger for inviting me to be a collaborator on the NSF grant. Funds from this study came in part from USDA, the Schlinger Foundation, Bishop Museum, and the National Science Foundation (DEB 0425790). The Fiji Ministries of Environment and Forestry are thanked for their support of the project. David Olson, Al Samuelson, Moala Tokota'a, and Akinisi (Cagi) Caginitoba handled the Fiji travel and collecting logistics. Thanks to Chuck Bellamy, Chris Reid, Al, David, Moala, and Cagi for their camaraderie and longhorned beetles collected during the 2005 expedition. Thanks to Alistair Ramsdale and Terry Lopez (BPBM, Honolulu, Hawaii) and Leah Brorstrom (The World Spider-Endoparasitoid Lab, Santa Ynez, California) for their work in sorting and distributing specimens on which this study and others are based. Natalie Allen and Elisabeth (Lisa) Roberts pinned specimens from the Malaise trap samples. Special thanks to Lisa for the excellent computer illustrations of the new species. Thanks to Jens Prena for translating Schwarzer's German description of *Distenia bougainvilleana*, and to Gino Nearn, Norman Woodley, Diethard Dauber, and Allen Norrbom for their reviews of the manuscript.

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