

## New genus and species of fig-inhabiting Leucophoropterini (Heteroptera: Miridae: Phylinae) from Australia

### Новый вид и новый род Leucophoropterini (Heteroptera: Miridae: Phylinae), обитающий на фиговых деревьях Австралии

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KEY WORDS. Miridae, Phylinae, Leucophoropterini, new genus, new species, Australia.

КЛЮЧЕВЫЕ СЛОВА. Miridae, Phylinae, Leucophoropterini, новый род, новый вид, Австралия.

ABSTRACT. *Dilatops fici*, a new genus and new species of Leucophoropterini Schuh, from Australia are described. This species differs from other Leucophoropterini by the absence of ant-mimetic features, the large size, the unique formation of the short head with pedunculate eyes, and the reddish orange, orange, cream, and purple coloration. *Dilatops fici* sp.n. is known from the Australian east coast, where it occurs in New South Wales and Queensland on species of *Ficus* (Moraceae).

РЕЗЮМЕ. Описан новый вид и новый род Leucophoropterini Schuh, 1974 из Австралии. *Dilatops fici*, новый род и новый вид, отличается от других Leucophoropterini отсутствием мимикрии под муравьёв, большими размерами, уникальным строением короткой головы с расположенными на стебельках глазами, красновато-оранжевой, кремовой и пурпурной окраской. *Dilatops fici* sp.n. известен с западного побережья Австралии, где встречается в штатах Новый Южный Уэльс и Квинсленд на *Ficus* spp. (Moraceae).

#### Introduction

A limited number of genera and species of Phylinae (Heteroptera: Miridae) are known from Australia and adjacent regions [Cassis & Gross 1995]. Carvalho & Gross [1982] and the extensive fieldwork conducted by R. T. Schuh and G. Cassis over the past decade show that the paucity of described Australian species is a result of limited sampling of this fauna rather than its true diversity. Examination of material from the Schuh and Cassis collecting trips between 1995 and 2002 and of previously collected material on loan from several institutions allows the prediction that more than 300 species of Phylinae await description. The genus and species described in this paper represent the first steps into this largely unknown fauna.

Bar code labels, which uniquely identify each specimen (“unique specimen identifiers” or “USIs”), were attached to the specimens. Additional specimen information can be obtained from the website of the Planetary Biodiversity Project on Plant Bugs [<http://research.amnh.org/pbi/index.html>].

Habitat photographs, illustrations of male and female genitalia, and scanning electron micrographs (SEMs) of habitus, head and prothorax, evaporatory area, pretarsus, and vestiture on the corium are provided. Appendix 1 shows the USI for the given illustration.

Unless otherwise stated, measurements are in millimetres and scales on the illustrations are in micrometers.

The map of host plants is derived from data at the website of Australia’s Virtual Herbarium [<http://www.cpbr.gov.au/avh/>] and consists of 1122 records.

This paper is dedicated to Izyaslav Moiseevich Kerzhner in recognition for his inestimable contribution to hemipterology.

*Dilatops* Weirauch, gen. n.  
Figs 1–21.

Type species: *Dilatops fici* Weirauch, sp.n.

DIAGNOSIS. Recognized among Leucophoropterini by the large size (mean total length, male: 4.33 mm, female: 5.1 mm) and stout, ovoid body, absence of ant-mimetic features, the very short and broad head with pedunculate eyes that are wider than the pronotal width (Figs 1, 10–13), rather short and dense, subadpressed vestiture, the reddish orange, orange, cream, and purple coloration, the S-shaped vesica with long and straight base, and slender and tapering apex (Fig. 2), left paramere with distinct dorsal lobe on body (Figs 5, 6), and right paramere with curved apex (Fig. 4). Most similar among Leucophoropterini to *Lasiolabops* Poppius due to the large size, short and wide head, antennal segment one stout, segment two long, tubular, and slightly curved, the short labium, the similar shape of the denticles on the ventral claw surface, and the spinelike setae ventrally on the pygophore. *Dilatops* gen. n. is distinguished from *Lasiolabops* by

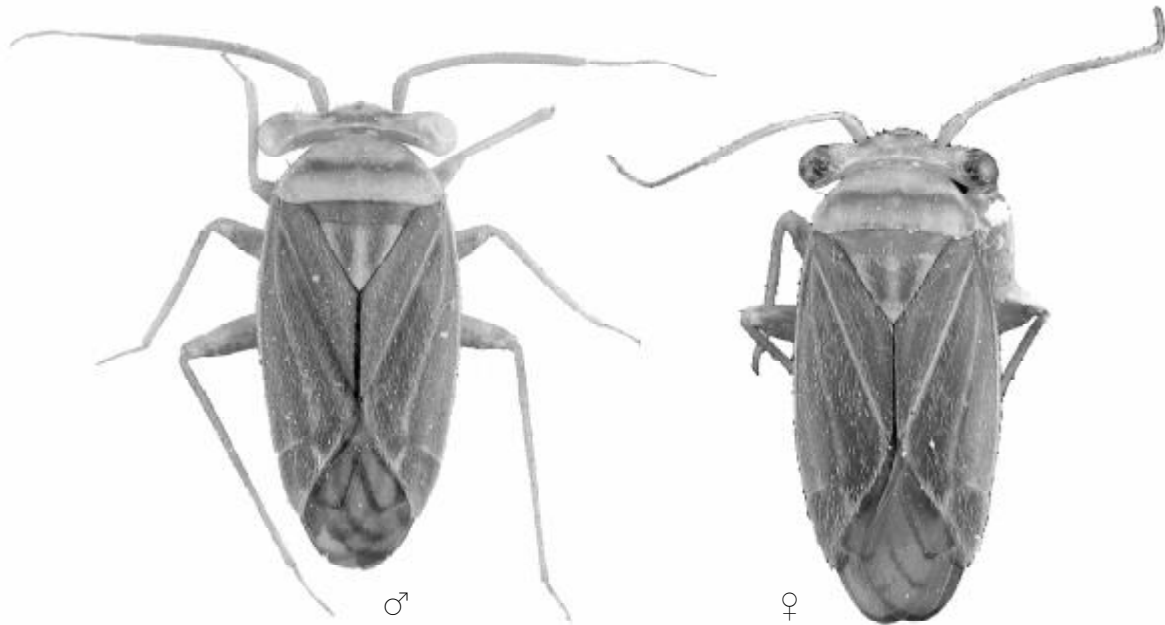
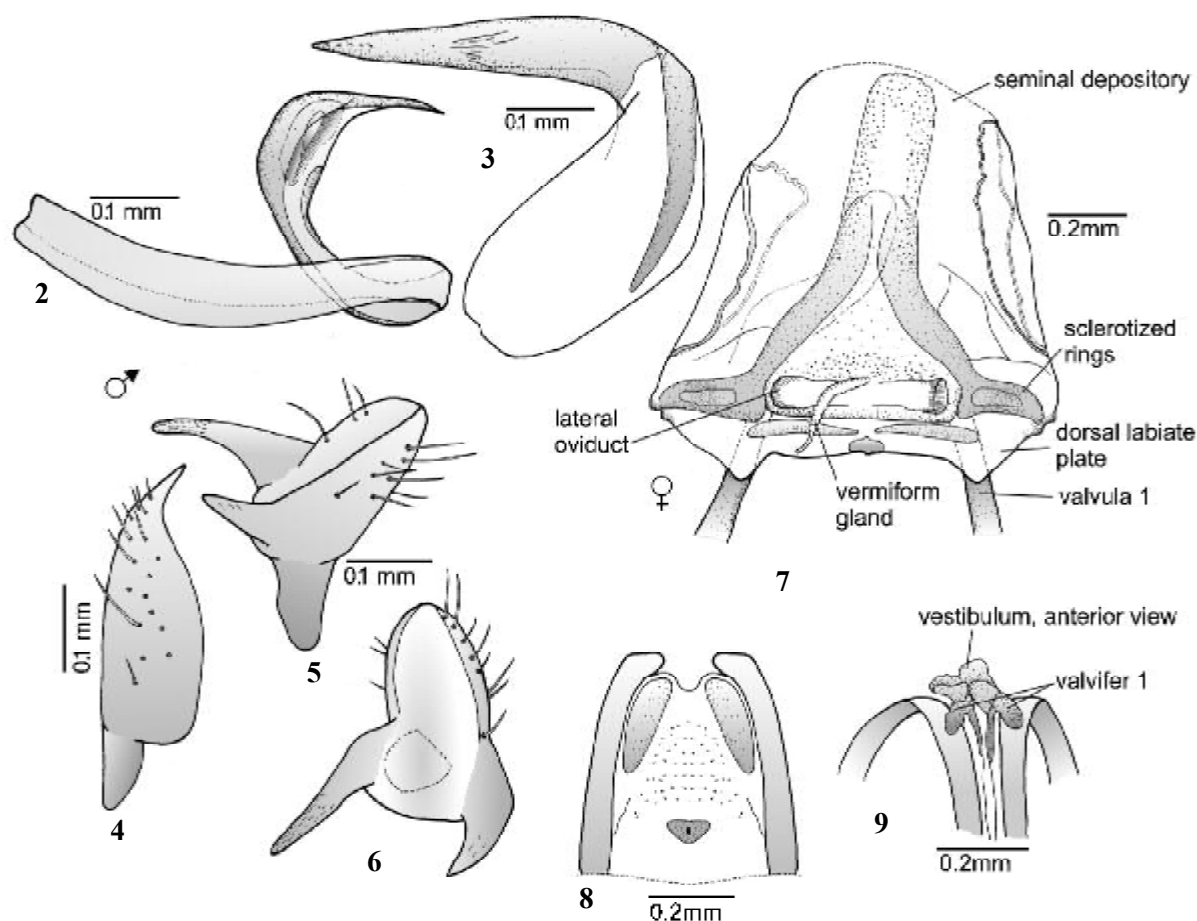


Fig. 1. Habitus of *Dilatops fici* sp.n.  
Рис. 1. Внешний вид *Dilatops fici* sp.n.

the head including eyes wider than pronotum, absence of flattened, transversely grooved setae, parempodia with acute apex, male and female genitalia, and the bright reddish, orange, cream, and purple coloration.

**DESCRIPTION. Male:** Macropterous, large and stout, ovoid, with short pronotum, very short and broad head, and slender legs (Figs 1, 10–13). **COLORATION:** General coloration reddish orange, orange, cream, light brown, and purple. **Head:** Cream colored or pale orange with purple marks on vertex, posterior surface of head bright orange, reddish orange marks dorsal to antennifer, dorsal to clypeus, and on ventral margin of mandibular plate; antenna cream colored; labium orange with distal segment apically suffused with brown. **Thorax:** Pronotum cream colored or pale orange, with transverse purple band across dividing line of anterior and posterior lobe and orange band on anterior margin of posterior lobe; mesoscutum orange; scutellum whitish with paramedian longitudinal reddish orange stripes; propleuron orange with faint purple suffusion and dorsal and ventral margin cream colored; mesopleuron orange with purple suffusion and anterodorsal area cream colored; metapleuron orange with cream colored evaporatorium of metathoracic gland and evaporative bodies surrounding mesothoracic spiracle. **Legs:** Pale orange with femora sometimes suffused with orange, tarsi suffused with light brown. **Hemelytra:** Reddish orange with more brownish and orange transverse (in extended wing) bands along costal margin, medial fracture, posterior margin of endocorium, and posterior margin of clavus; membrane pale with several large dark brown marks, anterior cell (in extended wing) bordered by orange vein, posterior cell by brown vein. **Abdomen:** Center of abdominal sternites orange, lateral margin with two longitudinal bands, lateral band cream colored, median band red; pygophore ventrally orange, laterally and dorsally suffused with brown. **SURFACE AND VESTITURE** (Fig. 18): Dorsum and hemelytra furnished densely with two types of simple, decumbent, subadpressed, golden setae, the shorter setae (white asterisk) slightly more erect, more flattened, with finer stria-

tion, and darker than the longer setae (black asterisk). **STRUCTURE: Head** (Figs 1, 10–13): Short; vertex very wide, vertex and gena extended into peduncle, which carries eyes; maxillary and mandibular plates small; clypeus flat; posterior margin of head concave and with carina that diminishes toward eye; eye almost globular, size moderate; antenna with first segment short and stout, narrow at base, second segment long, tubular and slightly curved, third and fourth segments short and slender; labium short, moderately stout, barely surpassing apex of fore coxa. **Thorax** (Figs 1, 10–17): Pronotum short and broad, with rounded posterior lateral angles, posterior margin slightly concave, anterior and posterior lobe weakly demarcated by shallow transverse impression, calli weakly defined; mesepimeron with narrow and elongate area with evaporative bodies anterior to spiracle; metapleural evaporatorium large, peritreme almost circular. **Legs** (Figs 15–17): Slender, claws moderately stout, curved, frontal claw surface with narrow groove extending to tip of claw, ventral claw surface with row of about six denticles, pulvillus shallow, extending to about middle of claw, parempodia slender and tapering toward apex, dorsomedian sensillum distinct. **Hemelytra:** Slightly convex, cuneus elongate and cone-shaped due to oblique costal fracture. **Abdomen** (Fig. 19): Relatively broad and stout. **GENITALIA** (Figs 2–6, 19): **Pygophore** (Fig. 19): Size moderate, more than 1/3 of abdomen, tapering gradually, ventral surface subapically with group of 15 to 20 erect, spinelike setae on left side. **Parameres** (Figs 4–6): Right paramere broad lanceolate, with elongate, gradually tapering, curved apex (Fig. 4); left paramere with anterior process straight and pointed, moderately long, posterior process slender, slightly curving ventrally, rather long, body of paramere extended into lateral and dorsal lobe (Figs 5, 6). **Phallosome** (Fig. 3): Apical half lightly sclerotized, slender, straight, and elongate, apex gradually tapering and with row of lateral spicules, basal half with sclerotized strap, subapical opening in ventral position and slit-like. **Vesica** (Fig. 2): S-shaped, with long, almost straight basal portion, base lightly sclerotized, dorsal sclerotized strap ap-



Figs 2–9. Male and female genitalia of *Dilatops fici* sp.n.: 2 — vesica in lateral view from left; 3 — phalotheca in posterolateral view; 4 — right paramere in dorsolateral view; 5 — left paramere in anterolateral view; 6 — left paramere in dorsal view; 7 — female internal genitalia, showing bursa copulatrix and associated structures in dorsal view; 8 — posterior wall in dorsal view; 9 — valvifers 1 and vestibulum in ventral view.

Рис. 2–9. Гениталии самца и самки *Dilatops fici* sp.n.: 2 — везика, слева; 3 — фаллотека, постеролатерально; 4 — правый парамер, дорсолатерально; 5 — левый парамер, антеролатерально; 6 — левый парамер, дорсально; 7 — внутренние структуры гениталий самки, показана копулятивная сумка и ассоциированные структуры, дорсально; 8 — задняя стенка, дорсально; 9 — вальвиферы 1 и вестибулюм, вентрально.

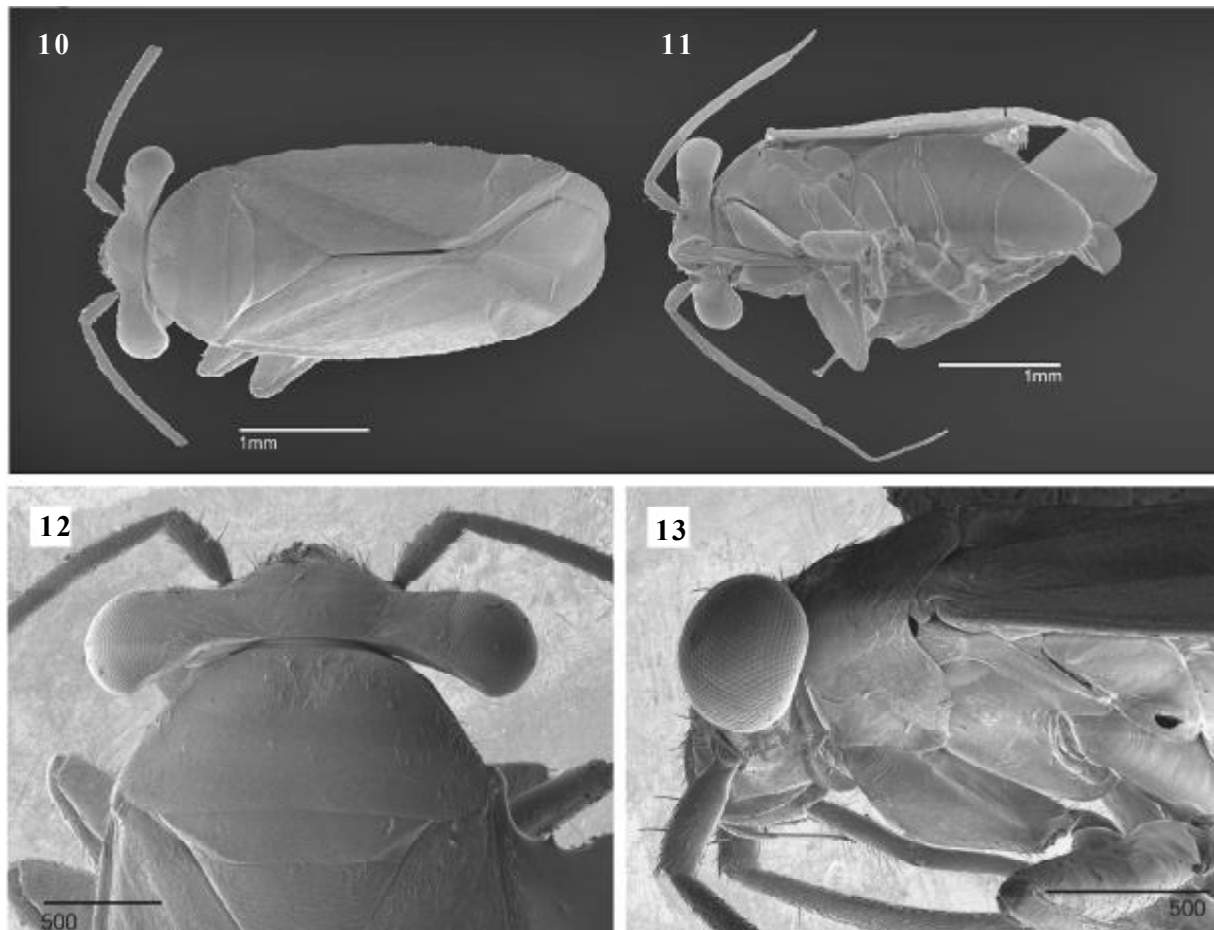
pearing in apical half of vesica and forming single, elongate, and acute apical spine, dorsal strap covering part of secondary gonopore, very short ventral strap in ventral and basal position to secondary gonopore, secondary gonopore subapical, large and elliptical, opening dextro-terminal, without ornamentation or distinct gonopore sclerite.

**Female** (Figs 1, 7–9): Coloration as in male, larger than male (Fig. 1, table 1). Structure as in male, but with second antennal segment more slender. Dorsal labiate plate with paired sclerotizations representing sclerotized rings and extending onto seminal depository as an unpaired median strap, additional sclerotized loops in lateral position on seminal depository (Fig. 7), vestibulum indistinct, valvifers 1 well developed (Fig. 9), posterior wall membranous with roughly symmetrical paired elongate oval sclerites and small median sclerite (Fig. 8).

**ETYMOLOGY.** From Latin verb “dilato, -are” meaning “to spread out, extend”, and Greek noun “ops”, meaning “look, countenance”, referring to the wide set eyes in specimens of this taxon. The gender is masculine.

**DISCUSSION.** *Dilatops fici* sp.n. is distinct amongst Phylinae by virtue of its large size and ovoid shape, peduncu-

late eyes, which make the head wider than the pronotum, and bright coloration. The placement of this taxon in the Leucophropterini is tentative as it does not possess the three diagnostic characters of the tribe [Schuh, 1984]: small pygophore and genitalia, indistinct secondary gonopore, and C- or J-shaped vesica. However, *Dilatops* gen.n. closely resembles *Lasiolabops*, which is placed in a polytomy with *Tytthus* and part of *Sejanus* at the base of Leucophropterini [Schuh, 1984]. Dissections of unidentified species of *Lasiolabops* from Ghana, reveal similarities with *Dilatops* gen.n., with both genera having similar male genitalia, being moderate in size rather than small. A row of denticles on the ventral claw surface that was mentioned as a diagnostic character for the genus *Lasiolabops* [Schuh, 1984] is also present in *Dilatops fici* sp.n.. A row of denticles or ridges is present in the same position in all species of Leucophropterini for which SEMs were provided by Schuh [1984], with the exception of *Tytthus*. The denticles or ridges, which are seen in *Sejanus*, *Abuyogocoris*, *Ctypomiris*, *Waterhauseana*, *Gulacapsus*, *Trichocephalocapsus*, may be homologous to those in *Lasiolabops* and *Dilatops* gen.n. and may represent an additional defining character for the Leucophropterini.



Figs 10–13. SEM of *Dilatops fici* sp.n.: 10–11 — habitus (10 — dorsal view, 11 — ventrolateral view); 12–13 — head (12 — dorsal view; 13 — lateral view).

Рис. 10–13. Электроннограммы *Dilatops fici* sp.n.: 10–11 — внешний вид (10 — сверху, 11 — вентролатерально); 12–13 — голова (12 — сверху, 13 — сбоку).

These structural correspondences, together with the fact that *Lasiolabops* and *Dilatops* gen.n. both occur on fig trees, support a hypothesis of a close relationship between these taxa, and inclusion of *Dilatops* gen.n. in the Leucophoropteriini. Apart from *D. fici* sp.n., *Lasiolabops obscurus* [Odhiambo, 1959; Schuh, 1995] is the only other Phylinae that is known to occur on *Ficus*.

*Dilatops* gen.n. and *Eminoculus* Schuh (Phylini) resemble each other on the basis of the joint possession of stalked eyes, but this is not regarded as phylogenetically significant, as structures of the body and genitalia are not alike.

*Dilatops fici* Weirauch, sp.n.  
Figs 1–21.

**MATERIAL.** HOLOTYPE, ♂, AUSTRALIA: New South Wales: Ashfield, 33.8991°S 151.1246°E, 5 Jan 1979, D. A. Doolan, ♂ (AMNH\_PBI 00087334) (AM). PARATYPES: AUSTRALIA: New South Wales: Royal Botanic Garden, 33.86404°S 151.21683°E, 16 Feb 1993, E. Turak, *Ficus macrophylla* (Moraceae), ♂ (AMNH\_PBI 00087538) *Ficus macrophylla* (Moraceae), ♀ (AMNH\_PBI 00087335) (AM); 3 Mar 1993, E. Turak, *Ficus obliqua* (Moraceae), ♂ (AMNH\_PBI 00087584), ♀ (AMNH\_PBI 00087585) (AM); 27 Jan 1993, E. Turak, *Ficus rubiginosa* (Moraceae), ♂ (AMNH\_PBI 00087583) (AM). Sydney, 33.8652°S 151.2096°E, 4 Mar 1943, K. C. M. Keown, ♂ (AMNH\_PBI 00087586) (AM). Queensland: Bellenden Ker

Range, 1 km S of Cable Tower 6, North Queensland, 17.23409°S 145.86514°E, 500 m, 17 Oct 1981 – 5 Nov 1981, Earthwatch, ♂ (AMNH\_PBI 00160109) (QM). Mount Berryman Road, Laidley, 27.65255°S 152.38037°E, 31 Oct 1990, W. F. Chamberlain, Light Trap, ♂ (AMNH\_PBI 00119026) (TAMU).

**DIAGNOSIS.** Recognized by the characters given in the generic diagnosis.

**DESCRIPTION. Male:** Total length: 4.13–4.63, length apex clypeus-cuneal fracture 2.91–3.26, width across pronotum 1.46–1.56. COLORATION, SURFACE AND VESTITURE, and STRUCTURE: As in generic description.

**FEMALE.** Total length 5.08–5.12, length apex clypeus-cuneal fracture 3.60–3.70, width across pronotum 1.67–1.70. Coloration, structure and genitalia as in generic description.

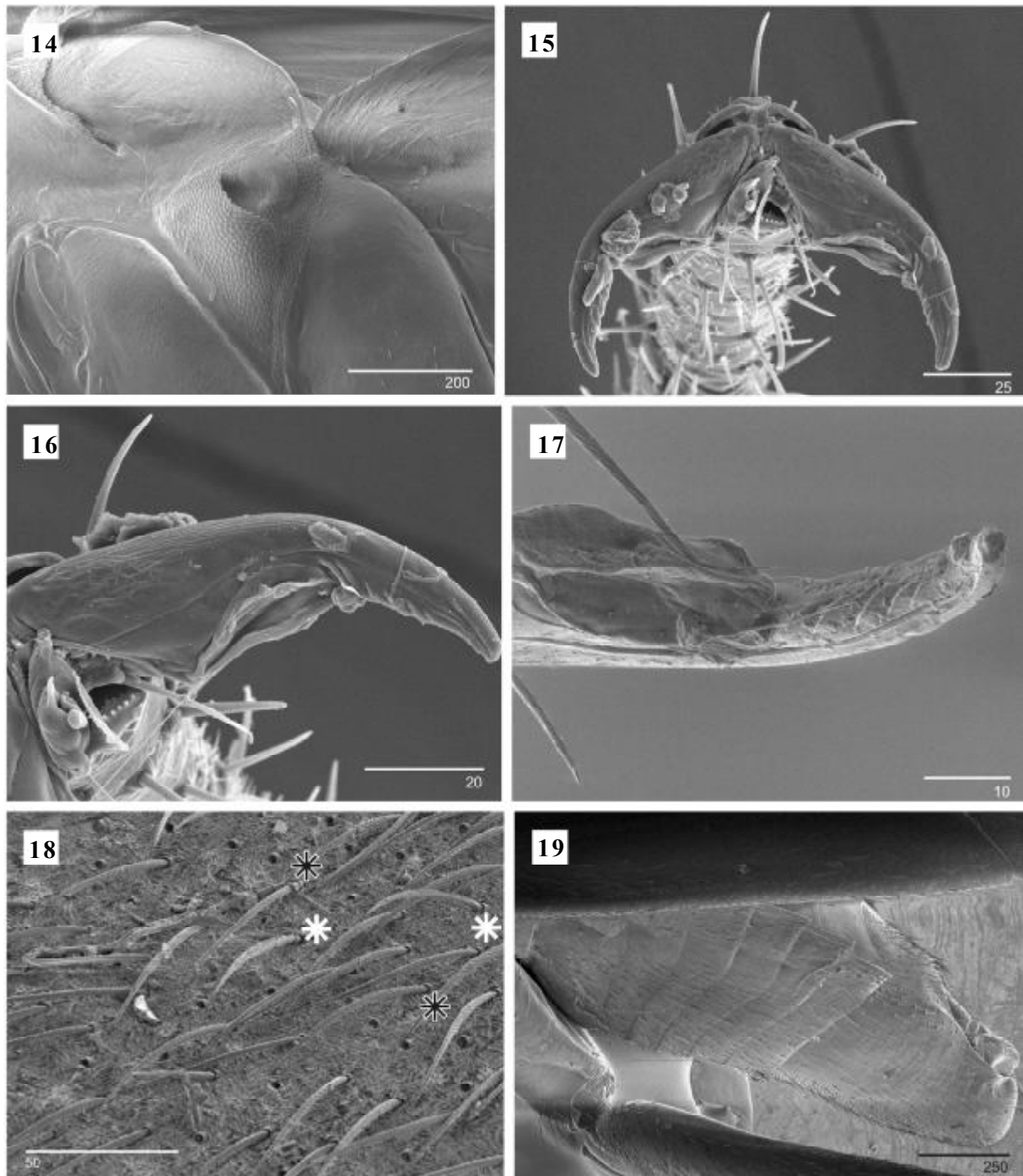
**ETYMOLOGY.** Named for the hosts of *D. fici* sp.n., species of the genus *Ficus*. The gender is masculine.

**HOST.** Known from several species of *Ficus* (Moraceae), *F. obliqua*, *F. macrophylla*, and *F. rubiginosa*. The distribution of *D. fici* lies within the range of distribution of these three species of the genus *Ficus* (Figs 20–21).

**DISTRIBUTION.** Known from three localities in Sydney, and two localities in Queensland, one in the south and one near Cairns (Fig. 20).

**DISCUSSION.** See generic description.

**ACKNOWLEDGEMENTS.** I thank Randall T. Schuh, Michael D. Schwartz, and Gerasimos Cassis for discussions



Figs 14–19. SEM of *Dilatops fici* sp.n.: 14 — mushroomlike cuticle close to spiracle and metathorax with evaporatorium of metathoracic gland; 15 — pretarsus in frontal view; 16 — close-up of one claw; 17 — ventral surface of one claw; 18 — vestiture on the forewing; 19 — abdomen and pygophore in lateral view.

Рис. 14–19. Электронограммы *Dilatops fici* sp.n.: 14 — грибовидная кутикула вокруг дыхальца и заднегрудь с испарительной площадкой заднегрудной железы; 15 — претарзус, фронтально; 16 — коготок, крупным планом; 17 — ventральная поверхность одного из коготков; 18 — опушение переднего крыла; 19 — брюшко и пигофор, латерально.

and comments on the manuscript. This paper is a contribution to the NSF Planetary Biodiversity Inventory grant (PBI) DEB-0316495 to Randall Schuh and Gerasimos Cassis, and was conducted while supported as a postdoctoral research fellow on this project. Jason Larimer kindly took the habitus photographs. Thanks is also give to the custodians of the

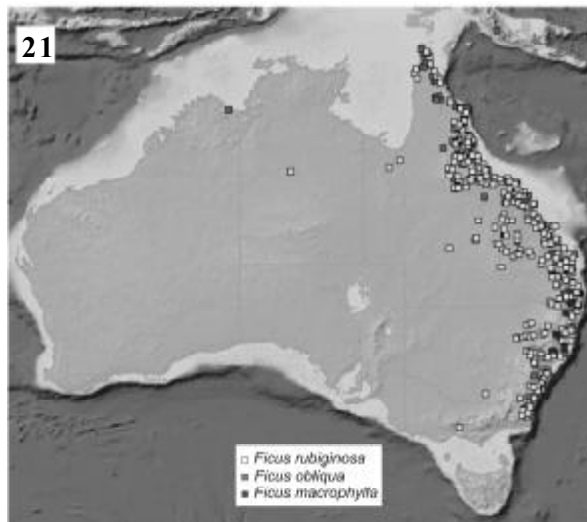
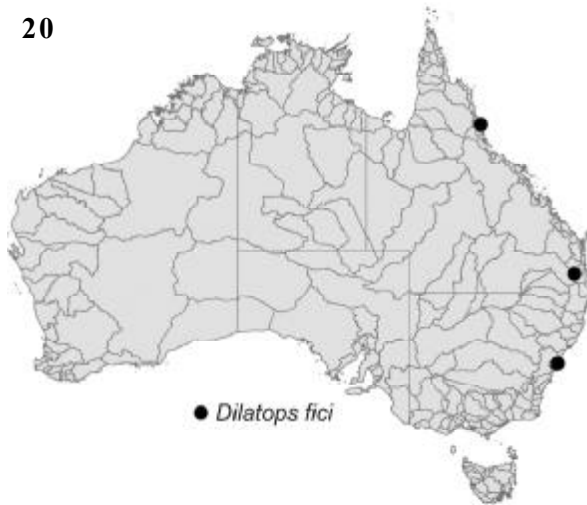
Australia's Virtual Herbarium (<http://www.cpbr.gov.au/avh/>) for making the *Ficus* specimen records available.

Sincere thanks to the institutions and curators listed below for providing the specimens studied here. The institutional abbreviations listed are used throughout this paper: AM Australian Museum, Sydney; Gerasimos Cassis

Table 1. Measurements of *D. fici* sp.n.  
Таблица 1. Промеры *D. fici* sp.n.

		Length						Width				
		Body	CunClyp	Head	Pron	Scut	Cun	Head	Pron	Scut	InterOc	AntSeg2
VI (N=7)	Mean	4.33	3.14	0.28	0.62	0.60	0.67	1.84	1.51	0.88	1.13	1.62
	SD	0.20	0.12	0.08	0.05	0.03	0.07	0.04	0.04	0.26	0.02	0.13
	Range	0.50	0.35	0.22	0.14	0.11	0.19	0.11	0.10	0.73	0.07	0.35
	Min	4.13	2.91	0.20	0.52	0.55	0.59	1.79	1.46	0.74	1.10	1.46
	Max	4.63	3.26	0.42	0.67	0.66	0.78	1.89	1.56	1.47	1.17	1.81
F (N=2)	Mean	5.10	3.65	0.35	0.71	0.71	0.78	2.03	1.69	0.93	1.32	1.61
	Range	0.05	0.10	0.04	0.05	0.03	0.01	0.07	0.03	0.02	0.03	0.05
	Min	5.08	3.60	0.33	0.68	0.70	0.78	1.99	1.67	0.92	1.31	1.58
	Max	5.12	3.70	0.37	0.73	0.73	0.79	2.07	1.70	0.95	1.33	1.63

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Figs 20–21. 20 — Distribution of *Dilatops fici* sp.n. in Australia; 21 — map derived from the Australia's Virtual Herbarium database showing the distribution of *Ficus* spp. that are hosts of *D. fici* sp.n.

Рис. 20–21. 20 — Распространение *Dilatops fici* sp.n. в Австралии; 21 — карта распространения *Ficus* spp., кормового растения *D. fici* sp.n.; получена из базы данных Австралийского Виртуального Гербария.

QM Queensland Museum, Brisbane; Geoff Monteith  
TAMU Texas A & M University, College Station; Joseph  
C. Schaffner and Edward C. Riley

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Appendix 1.  
Приложение 1.

Figure no.	image of	USI
1	habitus, male	AMNH_PBI 00087354
1	habitus, female	AMNH_PBI 00087335
2	vesica	AMNH_PBI 00087338
3	phallosome	AMNH_PBI 00087338
4	right paramere	AMNH_PBI 00087338
5	left paramere, lateral	AMNH_PBI 00087338
6	left paramere, dorsal	AMNH_PBI 00087338
7	bursa copulatrix	AMNH_PBI 00087385
8	posterior wall	AMNH_PBI 00087385
9	vestibulum	AMNH_PBI 00087385
10	habitus, dorsal, SEM	AMNH_PBI 00087384
11	habitus, ventrolateral, SEM	AMNH_PBI 00087383
12	head, dorsal, SEM	AMNH_PBI 00087384
13	head, lateral, SEM	AMNH_PBI 00087338
14	evaporatorium, SEM	AMNH_PBI 00087383
15	pretarsus, SEM	AMNH_PBI 00087384
16	pretarsus, SEM	AMNH_PBI 00087384
17	pretarsus, SEM	AMNH_PBI 00087338
18	vestiture, SEM	AMNH_PBI 00087383
19	abdomen, SEM	AMNH_PBI 00087338