



A new species of *Planococcus* Ferris (Hemiptera: Cocomorpha, Pseudococcidae) from Indonesia

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ABSTRACT. *Planococcus* Ferris (Hemiptera: Cocomorpha, Pseudococcidae) is a genus of mealybug containing 49 species worldwide. Many species of *Planococcus* are important pests of agricultural crops. Surveys have been set up in Bengkulu Province, Sumatra-Indonesia, on coffee plantations, in 2023. *Planococcus bengkuluensis* Zarkani & Kaydan **sp. nov.** was found in association with *Coffea robusta* Lindl. ex De Will. (Rubiaceae), described and illustrated. The new species has multilocular disc pores and oral collar tubular ducts on the posterior dorsum in limited numbers. It is another species of *Planococcus* possessing dorsal multilocular disc pores. An identification key to the known *Planococcus* species of southern Asia is also provided.

Key words: host plant, identification key, insect pest, mealybug, Southeast Asia

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INTRODUCTION

The genus *Planococcus* (Hemiptera: Cocomorpha: Pseudococcidae) was established by Ferris (1950) with *Dorthisia citri* Risso 1813 as the type species. The genus *Planococcus* was revised by Cox (1989) and contains 49 valid species over the world (Garcia-Morales et al., 2016). About 19 *Planococcus* species are listed from southeast Asia of which 8 species are recorded in Indonesia (Zarkani et al., 2021, 2023a, 2023b). The genus can be recognized by the following morphological characteristics: adult female normally oval, more rarely rotund; anal lobes each with ventral anal lobe bar. Antennae each normally with 8 segments. Legs well developed; claws each without a denticle; translucent pores normally present on hind coxa and tibiae, more rarely on femura. Circulus well developed or absent. Ostioles represented by anterior and posterior pairs. Anal ring apical, with 6 setae. Cerarii numbering 18 pairs, each with 2 conical setae, occasionally some thoracic cerarii indistinct, normally without auxiliary setae except for anal lobe cerarii. Body setae flagellate or almost lanceolate. Multilocular disc pores rarely present on dorsum but are numerous on ventral parts of abdominal segments. Quinquelocular pores absent. Trilocular pores evenly distributed. Oral collar tubular ducts usually present on venter,

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sometimes present on dorsum, where they often have indistinct rims. Discoidal pores present larger than trilocular pores (Williams & Granara de Willink, 1992; Williams, 2004, Danzig & Gavrilov, 2010).

Many species of *Planococcus* are important pests of agricultural crops in the world (Franco et al., 2009; Daane et al., 2012; Zarkani et al., 2022). The insects are sap-sucking pests that are also potent to transmit some plant viruses (Franco et al., 2009; Daane et al., 2012). Infested plants become chlorosis, growth stagnation, drying of pods, twigs and branches, and even of entire plants under heavy infestation. Furthermore, the insect produces honeydew, a sugar substrate for the development of sooty mold, affecting photosynthesis, and causing faster plant deterioration. Most *Planococcus* species are polyphagous and may feed on hundreds of different host plants (Garcia-Morales et al., 2016), but some of them are oligophagous and even monophagous. There are several *Planococcus* species, namely *P. angkorensis* (Takahashi), *P. bagmaticus* Williams, *P. bendovi* Williams, *P. citri* (Risso), *P. dischidia* (Takahashi), *P. lilacinus* (Cockerell), *P. minor* (Maskell), and *P. sulawesi* Cox (Garcia-Morales et al., 2016; Zarkani et al., 2022, 2023a) recorded from Indonesia, which are important insect pests mostly cosmopolitan and polyphagous. *Planococcus dischidia* and *P. sulawesi* are endemic species first reported in Kalimantan and Sulawesi islands, respectively (Williams, 2004).

In this paper, a new *Planococcus* species is described and illustrated. Moreover, an identification key to southern Asia *Planococcus* species is provided.

MATERIAL AND METHODS

A series of surveys have been set up in 2023. Specimens were collected on coffee, *Coffea robusta* Lindl. ex De Will. (Rubiaceae) growth spreading in Bengkulu province, southern Sumatra island, Indonesia. The adult females were prepared as specimen collections. They were kept in 70% alcohol and later slide mounted in Canada Balsam following the method described by Kosztarab & Kozár (1988) with some modifications.

The specimens were examined by a phase-contrast compound microscope (LEICA DM750) and identified using the keys by Williams and Granara de Willink (1992) and Williams (2004). Terminology of the morphological characters used for the description of the new species followed Williams & Granara de Willink (1992) and Williams (2004). All the measurements given are for the maximum dimensions (e.g., body length is recorded at the longest part) and are expressed as ranges. Tarsal length excludes the claw. The setal length includes the setal base. Cerarii are numbered from cerarius C₁ on the head, anterior to the antenna, to cerarius C₁₈ on abdominal segment VIII. A taxonomic illustration is provided for the new species based on the holotype used for the description. Details are shown as enlargements around the central drawing and are not all drawn to the same scale. The holotype illustration was drawn by hand under a LEICA DM750 camera and then scanned and redrawn.

The holotype and paratype specimens are deposited in the Mealybugs Museum, Department of Plant Protection, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia (MMUB). In the Material examined, the holotype data is marked as it is written on the slide label, with “/” used to indicate line breaks on the slide labels.

RESULTS

Taxonomic hierarchy

Class Insecta Linnaeus, 1758

Order Hemiptera Linnaeus, 1758

Suborder Sternorrhyncha Amyot et Audinet-Serville, 1843

Family Pseudococcidae Heymons, 1915

Genus *Planococcus* Ferris, 1950

Type species: *Dorthesia citri* Risso, 1813 by original designation.

Generic diagnosis (adapted from Williams, 2004). Body of adult female with broadly oval, 1.65–4.20 mm long, and 0.90–2.89 mm wide. Antennae each with 7 or 8 segments. Cerarii present, numbering 18 pairs each bearing 2 conical setae or some paired flagellate setae, sometimes 1 or 2 of head cerarii each with 3–5 setae; auxiliary setae absent, except for anal lobe cerarii. Body setae flagellate or short and stiff, sometimes knobbed at apex or almost lanceolate, conical. Legs well developed, hind coxa legs with translucent pores present and usually with some on hind tibia. Circulus present or absent. Ventral surfaces of each anal lobes with long apical seta present at apex, anal lobe bar and bar seta. Cisanal setae either longer or shorter than anal ring setae. Multilocular disc pores rarely present on dorsum, always present on venter of abdomen. Anterior and posterior pairs of ostioles present. Oral collar tubular ducts situated on venter, always on abdomen and sometimes on head and thorax; often with indistinct rings when present on dorsum (sometimes termed modified oral collar tubular ducts). Discoidal pores present, sometimes larger than trilocular pores.

***Planococcus bengkuluensis* Zarkani & Kaydan, sp. nov.** (Figs 1–2)

<https://zoobank.org/urn:lsid:zoobank.org:act:CE232D90-D702-4A3A-AEC4-AF41B546539C>

Material examined. Holotype. Adult female, left label: AZ1504, 12.v.2023, INDONESIA, Sumatra, Bengkulu, *Coffea robusta*, 102°36'32.8"E, 3°36'26.8"S, 630 m a.s.l.; right label: *Planococcus bengkuluensis* Zarkani & Kaydan **n.sp.**, coll. A. Zarkani, det. M.B. Kaydan. The holotype specimen is ringed with red ink on the coverslip. **Paratypes.** 3 ♀♀ (AZ1505), same data as holotype; 3 ♀♀, AZ1506, INDONESIA, Sumatra, Bengkulu on coffee berries, *Coffea robusta* Lindl. ex De Will. (Rubiaceae), 102°36'32.8"E, 3°36'26.8"S, 12.v.2023, coll. A. Zarkani; 3 ♀♀, AZ1507, Sumatra, Bengkulu on coffee, *C. robusta*, 102°33'22.9"E, 3°40'56.0"S, 13.v.2023, coll. A. Zarkani; 3 ♀♀, AZ1508, Sumatra, Bengkulu on coffee, *C. robusta*, 102°21'24.4"E, 3°43'36.0"S, 18.v.2023, coll. A. Zarkani. All deposited at MMUB

Etymology. The name is based on the province name and the Latin suffix '-ensis', meaning 'from that place'.

Diagnosis. *Planococcus bengkuluensis* **sp.nov.** is closely related to *P. bagmaticus* Williams in having multilocular disc pores on dorsum and translucent pores present on hind coxa and hind tibia. However, *P. bengkuluensis* can be distinguished from *P. bagmaticus* in having (character states for *P. bagmaticus* given in parentheses): (i) dorsal multilocular disc pores present sparsely distributed on central abdominal segments IV–VI only (sparsely distributed on thorax and abdomen); (ii) dorsal oral collar tubular ducts present on dorsum at central abdominal segments IV–VI (present in small marginal groups on abdominal segments VI and VII only); (iii) translucent pores present abundantly on anterior and posterior surfaces of hind coxa as well as on posterior surface of hind tibia about 60–152 pores (a few); (iv) ventral multilocular disc pores distributed in abdominal segments III–VIII only (sparsely distributed on thorax and abdomen); (v) ventral oral collar tubular ducts present entirely on margin of head, thorax and abdomen (ventral oral collar tubular ducts present on abdominal margins and prothorax only). The new species is also similar to *P. epulus* De Lotto described from Kenya in terms of having dorsal multilocular disc pores. However, *P. epulus* possesses dorsal transverse rows of oral collar tubular ducts, whereas in *P. bengkuluensis*, any dorsal ducts are restricted to small lateral groups on abdominal segments IV–VI.

Description. — **Holotype** ♀ (Fig. 1) and 6 **paratypes** ♀♀ (Slide-mounted). Body broadly oval, membranous, the largest specimen 2.60 mm long and 1.93 mm wide. Anal lobes moderately developed, each ventral surface with apical seta 230–250 µm long, bar seta about 35 µm long, and short anal lobe bar present forwards from bar seta. Antennae each 403–413 µm long, with 8 segments. Legs well developed, slender; hind trochanter + femur 310–320 µm long, hind tibia + tarsus 270–290 µm long; claw stout, about 30 µm long. Ratio of lengths of hind tibia + tarsus to hind trochanter + femur 1:1.10–1.15. Ratio of length of hind tibia to tarsus 1.89–2.00. Translucent pores present abundantly about 90–152 pores on anterior and posterior surfaces of hind coxa and about 60–110 pores on posterior surface of hind tibia. Labium 3 segmented, 180–190 µm long, about similar length as clypeolabral shield. Circulus oval, 110–120 µm wide; intersegmental line not apparent. Ostioles well developed, with inner edges of lips sclerotized, each posterior lip with 4–5 setae and many trilocular pores about 15–30, each anterior

lip with 5–6 setae and about 16–35 trilocular pores. Anal ring about 75 µm in diameter, bearing 6 setae, each seta 138–158 µm long. Cerarii numbering 18 pairs. Anal lobe cerarii each containing 2 conical setae, each 25 µm long and 5 µm wide at base, 2 or 3 auxiliary setae and a small group of trilocular pores, all situated on a membranous to lightly sclerotized area. Anterior cerarii each containing 2 shorter conical setae and a small group of trilocular pores. Cerarii on head and thorax each bearing slender setae resembling dorsal setae.

Dorsum. Derm membranous. With 18 pairs of cerarii around body margin, each cerarius with an enlarged conical setae set up in 2 rows and 2–3 auxiliary setae. Dorsal setae conical, thinner than most cerarian setae, each 5–7.5 µm long, median setae 10–15 µm long, scattered throughout dorsum. Trilocular pores, each 2.5–3.8 µm in diameter, scattered. Multilocular disc pores present each about 7.5 µm in diameter, sparsely distributed on central abdominal segments IV–VI only in no regular arrangement as well as oral collar tubular ducts. Multilocular disc pores distributed as follows (mean numbers): IV: 4, V: 6, VI: 10.

Venter. Ventral surface of body with normal flagellate setae present. Multilocular disc pores distributed in more or less double rows at posterior edges of abdominal segments III–VIII only, some pores reaching margins; others present posterior to vulva. Trilocular pores present, evenly distributed. Discoidal pores minute, sparsely present. A small type, each about same diameter as a trilocular pore or narrower, present mainly across middle of abdominal segments III–VIII and margin of head, thorax and abdomen. A large type, only present in across middle or sometime in the margin of abdominal segments III–VIII. Setae flagellate, each 52.5–57.5 µm long, longest setae located medially on head. Apical setae on anal lobes short, each 125.0–127.5 µm long. Multilocular disc pores, each 6.25–7.5 µm in diameter, present on abdominal segments, distributed as follows (mean numbers): III: 24, IV: 9, V: 12, VI: 20, VII: 10, and VIII: 6. Trilocular pores, each 2.5 µm across, scattered throughout venter. Oral collar tubular ducts with two types: large type each 10.0 µm long, 3.8 µm wide, present on each marginal abdominal segments III–VIII; small type each 5.0 µm long, 1.3–2.5 µm wide, present entirely from margin of head, thorax and abdomen.

Appearance (Fig. 2). Unmounted live specimens - Adult females produce a powdery white wax covering the dorsal surface of their bodies. The body is reddish with long waxy tassels. The colony commonly symbioses with ants.

Other. Detail characters (more than 40) of *P. bengkuluensis* **sp.nov.** in comparison with closely related species are presented in Table 1.

Host plants. *Coffea robusta* Lindl. ex De Will. (Rubiaceae) (Fig. 2).

Distribution. Indonesia (Sumatra, Bengkulu Province).

Key to adult female *Planococcus* found in southern Asia (adapted from Williams 2004).

- 1 Multilocular disc pores present on dorsum. 2
- Multilocular disc pores absent from dorsum. 3
- 2 Dorsal multilocular disc pores distributed on submedial abdominal segments IV–VI; and ventral multilocular disc pores distributed in abdominal segments III–VIII only. Dorsal oral collar tubular ducts present sparsely distributed on submedial abdominal segments IV–VI. Ventral oral collar tubular ducts present on margins of head, thorax and abdomen. Translucent pores present abundantly on anterior and posterior surfaces of hind coxa as well as on posterior surface of hind tibia, about 60–152 pores. *bengkuluensis* Zarkani & Kaydan **sp. nov.**
- Dorsal and ventral multilocular disc pores present sparsely distributed on thorax and abdomen. Dorsal oral collar tubular ducts present in small marginal groups on abdominal segments VI and VII. Ventral oral collar tubular ducts present on abdominal margins and pro-thorax only. Translucent pores present a few on anterior and posterior surfaces of hind coxa as well as on posterior surface of hind tibia. *bagmaticus* Williams, 2004

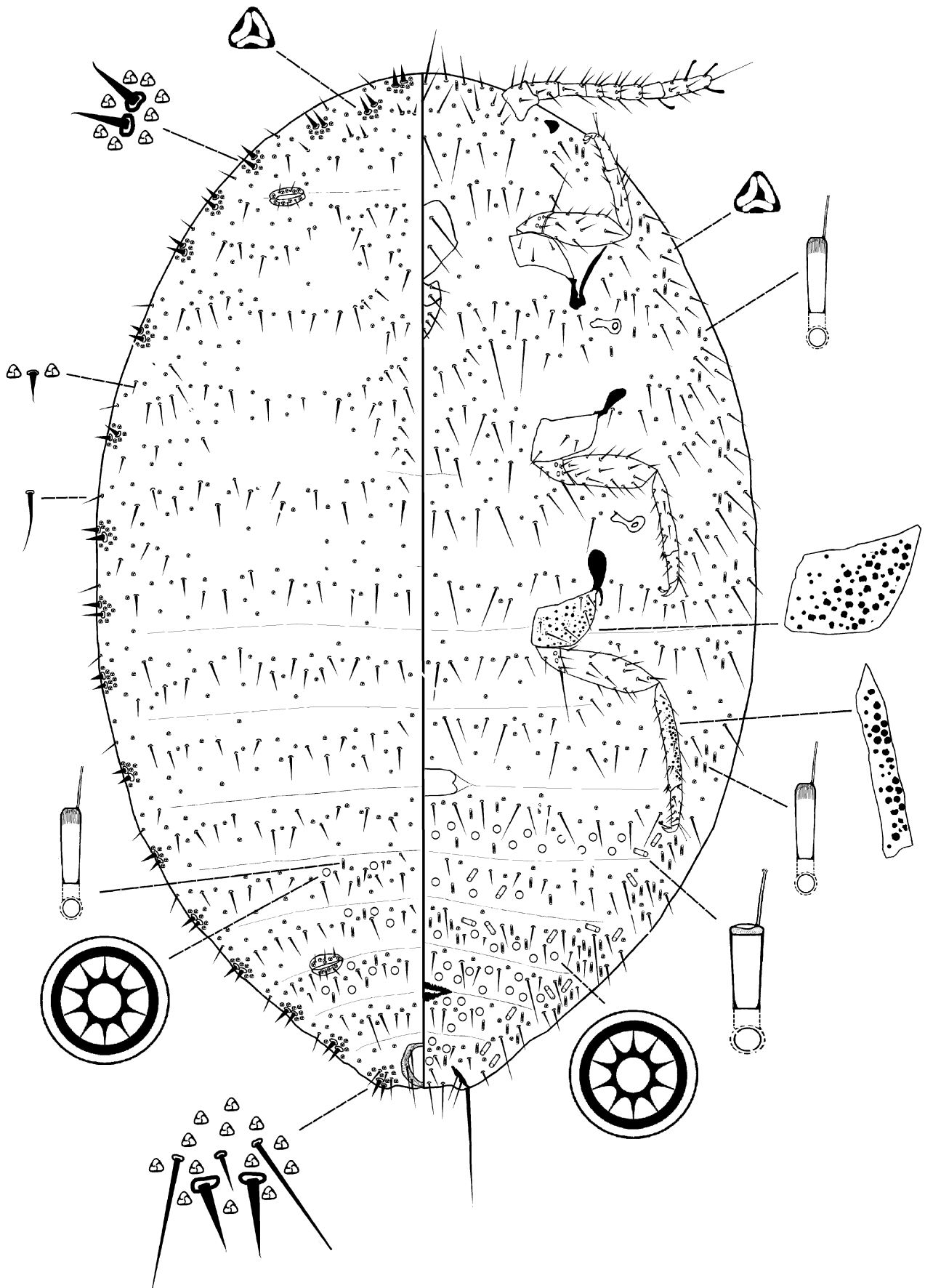


Figure 1. A female of *Planococcus bengkuluensis* Zarkani & Kaydan sp.n., holotype.



Figure 2. Nymphs and adults of *Planococcus bengkuluensis* Zarkani & Kaydan **sp. nov.** feeding on coffee berries, *Coffea robusta* Lindl. ex De Will. (Rubiaceae).

- | | | |
|---|---|---|
| 3 | Ventral oral collar tubular ducts absent entirely from head and thorax. | 4 |
| – | Ventral oral collar tubular ducts present at least on thorax, even if only a few present medially, often present on margins. | 7 |
| 4 | Dorsal setae knobbed at apex. Ventral multilocular disc pores absent from abdominal segment V. | 5 |
| – | Dorsal setae not knobbed at apex. Ventral multilocular disc pores present on abdominal segment V. | 6 |

- 5 Circulus absent. Discoidal pores on medial area of dorsum, larger than trilocular pores. Cisanal setae slightly longer than anal ring setae. *philippinensis* Ezzat & McConnell, 1956
- Circulus present. Discoidal pores on medial area of dorsum smaller than trilocular pores. Cisanal setae slightly shorter than anal ring setae. *dendrobii* Ezzat & McConnell, 1956
- 6 Dorsum of each anal lobe with heavily sclerotized area occupying most of lobe. Ventral oral collar tubular ducts present single on margins of abdominal segment VI. *bambusifolii* (Takahashi, 1951)
- Dorsum of each anal lobe either membranous or at most with small weakly sclerotized area. Ventral oral collar tubular ducts on margins of abdominal segment VI present in groups. *dischidia* (Takahashi, 1951)
- 7 Some head cerarii, in addition to ocular pair, each with more than 2 conical setae, or some cerarii on head, thorax or anterior abdominal segments, with paired long, flagellate setae; sometimes cerarii each with 1 conical seta and 1 long flagellate seta. 8
- All head and thoracic cerarii, each with 2 conical setae, except for ocular pair (C₃) occasionally each with 3 setae. Sometimes conical setae flagellate at tips only. 10
- 8 All cerarii with conical setae. Multilocular disc pores present on venter of thorax. Dorsal setae short, at most 20 µm long. *japonicus* Cox, 1989
- One or more cerarii containing 1 or 2 long, flagellate setae. Multilocular disc pores absent from venter of thorax. Dorsal setae at least 60 µm long. 9
- 9 Multilocular disc pores present on margins or submarginal areas of abdominal segments. Some cerarii on anterior abdominal segments and thorax without conical setae, containing long flagellate setae only. *mimosae* Williams, 2004
- Multilocular disc pores usually absent from margin and submargin of abdominal segments (occasionally 1 or 2 present). If any cerarii present with both conical setae replaced by long flagellate setae, these are on the head. *lilacinus* (Cockerell, 1905) in part
- 10 Multilocular disc pores present on margins of abdominal segments even if only 1 or 2 present on each segment. 11
- Multilocular disc pores absent from margins of abdominal segments entirely except for an occasional pore. 15
- 11 Dorsal oral collar tubular ducts present in groups of 2–5 next to some abdominal cerarii. Dorsal setae usually with swollen bases. Multilocular disc pores on ventral margins of abdominal segments sparse.. *kraunhia* (Kuwana, 1902)
- Dorsal oral collar tubular ducts if present in dorsum, located singly next to some abdominal cerarii. Dorsal setae normal, not with noticeable swollen bases. Multilocular disc pores on ventral margins of abdominal segments usually fairly numerous and conspicuous. 12
- 12 Venter of head with 0–4 oral collar tubular ducts. Longest dorsal seta on medial area of abdominal segments VI or VII 25–50 µm long. Medial ventral area of abdominal segment VII often with single row of multilocular disc pores. Cerarian setae on head and thorax sometimes with flagellate tips. Translucent pores sometimes present on hind femora. Venter of abdominal segments II and III each usually with 1 or 2 marginal multilocular disc pores. *ficus* (Signoret, 1875)
- Venter of head with 0–35 oral collar tubular ducts. Longest dorsal seta on medial area of abdominal segments VI or VII 13–35 µm long. Medial ventral area of abdominal segment VII with single or double row of multilocular disc pores. Cerarian setae on head and thorax always conical. Translucent pores never present on hind femora. Venter of abdominal segments II and III without marginal multilocular disc pores. 13
- 13 Venter of head with 14–35 oral collar tubular ducts and/or thorax with total of 7–30 ducts near eighth pair of cerarii (C₈). Ventral ducts on head and next to 8th pair of cerarii totalling 15–50. *citri* (Risso, 1813) in part
- Venter of head with 0–13 oral collar tubular ducts. Thorax with total of 0–6 ducts next to eighth pair of cerarii (C₈). Ventral ducts on head and next to C₈ totaling 0–18. 14

- 14 Ratio of lengths of hind tibia + tarsus to trochanter + femur 1.10–1.13. Multilocular disc pores on posterior edges of abdominal segments IV–VII forming more or less single rows. *citri* (Risso, 1813) in part
- Ratio of lengths of hind tibia + tarsus to trochanter + femur 1.04–1.18. Multilocular disc pores on posterior edges of abdominal segments IV–VII usually present in double rows. . *minor* (Maskell, 1897)
- 15 Most dorsal setae long and flagellate, longest seta on abdominal segment VI or VII 50–115 µm long, with or without trilocular pores associated with setal collars. 16
- All dorsal setae short, stiff or conical, often with 1 or more trilocular pores next to setal collars. 18
- 16 Legs long and slender, ratio of lengths of hind tibia + tarsus to hind trochanter + femur 1.06–1.07. Many long dorsal setae present, with trilocular pores associated with setal collars. . *sulawesi* Cox, 1989
- Legs stout and noticeably short, ratio of lengths of hind tibia + tarsus to hind trochanter + femur 0.77–0.97. Dorsal setae without trilocular pores associated with setal collars. 17
- 17 Multilocular disc pores on venter present as far forward as abdominal segment IV. At least 1 ventral oral collar tubular duct usually present beneath each postocular cerarius (C₄). (Note: occasional specimens may possess 3 conical setae in some abdominal cerarii). ... *lilacinus* (Cockerell, 1905) in part
- Multilocular disc pores present on venter only as far forward as abdominal segment VI. Oral collar tubular ducts on venter absent from beneath each postocular cerarius (C₄). *tiomanensis* Williams, 2004
- 18 Most dorsal setae conical, many as large as cerarian setae; often with trilocular pores next to setal collars. 19
- Most dorsal setae short, slender but stiff, normally narrower than cerarian setae except for occasional seta; trilocular pores either present or absent next to setal collars. 20
- 19 Dorsal setae about same size as cerarian setae, mostly with flagellate tips; some dorsal setae on thorax and midline of abdomen present in conspicuous pairs. *litchi* Cox
- Dorsal setae each usually shorter than a cerarian seta, without flagellate tips; mostly single but occasionally up to 4 conspicuous pairs present. *angkorensis* (Takahashi, 1942)
- 20 Ventral oral collar tubular ducts present in considerable numbers in a marginal zone on head, thorax and abdomen. *bendovi* Williams, 2004
- Ventral oral collar tubular ducts absent from margins of head and thorax; represented by single ducts only near abdominal margins. *nilgircus* Williams, 2004

Table 1. Morphological characterizations of *Planococcus bengkuluensis* Zarkani & Kaydan **sp. nov.** (Hemiptera: Pseudococcidae) based on holotype specimen compared with the closely related species, described by Williams (2004). Symbol (-) means no information available.

Character descriptions	Parameters	<i>Planococcus bagmaticus</i> Williams (µm)	<i>Planococcus bengkuluensis</i> Zarkani & Kaydan sp. nov. (µm)		
			Range	Average	St. Dev
Body	length	1670	2550–2600	2575	35.4
	width	950	1870–1930	1900	42.4
Eyes	width	-	30	30.0	0.0
Antennae	segments	8	8	8.0	0.0
	Length	310–330	403–413	407.5	7.1
- Fleshy seta each	Length	-	23–25	23.8	1.8
- Apical segment	Length	-	90–93	91.3	1.8
	width	-	28	28	0.0
- Apical setae	Length	-	40–43	41.3	1.8
Clypeolabral shield	Length	140–150	190–200	195.0	7.1
	width	-	185–190	187.5	3.5
Labium	Length	140–150	180–190	185.0	7.1
	width	-	70	70.0	0.0

Character descriptions	Parameters	<i>Planococcus bagmaticus</i> Williams (µm)	<i>Planococcus bengkuluensis</i> Zarkani & Kaydan sp. nov. (µm)		
			Range	Average	St. Dev
Anterior spiracles	length	-	70-73	71.3	1.8
	width	-	40	40.0	0.0
Posterior spiracles	length	-	73-75	73.8	1.8
	width	-	40	40.0	0.0
Anterior ostiole					
- Lip setae	number	0-2	9-11	10.0	1.4
- Trilocular pores		few	15-32	23.5	12.0
Posterior ostiole					
- Lip setae	number	2-3	7-12	10	3.5
- Trilocular pores		few	16-21	18.5	3.5
Coxa	length	-	165-210	187.5	31.8
Trochanter	length	-	95-100	97.5	3.5
Femur	length	-	170-210	190.0	28.3
	width	-	80-90	85.0	7.1
Tibia	length	-	130-180	155.0	35.4
Tarsus	length	-	80-90	85.0	7.1
Claw	length	30	25-30	27.5	3.5
Tarsal digitules	length	-	30-40	35.0	7.1
Claw digitules	length	-	25-33	28.8	5.3
Circulus	width	45-50	110-120	115.0	7.1
Anal lobe					
- Apical seta	length	150-180	230-250	240	14.1
- bar seta	length	35	35	35.0	0.0
Anal ring	width	75	75	75.0	0.0
	length	-	80-90	85.0	7.1
	number	6	6	6.0	0.0
	length	125-150	138-158	147.5	14.1
Anal ring setae	length	-	25	25.0	0.0
	number	-	2	2.0	0.0
Ventral flagellate setae	length	-	53-58	71.3	1.8
Hair-like auxiliary setae	length	-	45-48	46.3	1.8
Trilocular pores	diameter	-	2.5	2.5	0.0
Ventral flagellate setae	length	-	70-73	71.3	1.8
Multilocular disc pores	diameter	-	6.25-7.5	6.9	0.9
Oral collar tubular (large type)	length	-	10	10.0	0.0
	width	-	3.8	3.8	0.0
Oral collar tubular (small type)	length	-	5	5.0	0.0
	wide	-	1.3-2.5	1.9	0.8
Anal lobes cerarii setae	seta	2	2	2.0	0.0
	length	15	25	25.0	0.0
	width	5	5	5.0	0.0
Auxiliary setae	number	2-3	2-3	3	0.7
Claw	length	30	30	30.0	0.0
Hind trochanter + femur	length	210-220	310-320	315.0	7.1
Hind tibia + tarsus	length	240-250	270-290	280.0	14.1
Ratio length hind tibia to tarsus	ratio	1.66-2.0	1.89-2.0	1.9	0.1
Ratio hind tibia + tarsus and trochanter + femur	ratio	1.09-1.14	1.10-1.15	1.1	0.0
Translucent pores					
- Hind coxa	number	-	90-152	121.0	43.8
- Hind tibia	number	-	60-110	85.0	35.4

DISCUSSION

In general, some specimens of *Planococcus* are difficult to identify. It is still not clear whether the modified oral collar tubular ducts on the dorsum are sometimes the same as oral rim tubular ducts. Lit (1997) has moved *P. morrisoni* Ezzat & McConnel to *Paracoccus* because of the presence of oral rim

ducts, thereby creating a junior homonym and the species is now known as *Paracoccus interceptus* Lit. Moreover, *P. cajani* Mukherjee & Mukhopadhyay, 1999 is not recognizable from the description and is omitted from the key to species. With this new species, the species number of *Planococcus* increased 50 species worldwide which of 19 species are recognized from southern Asia and 9 species are recorded in Indonesia. Based on the distribution pattern of *P. bengkuluensis* found at almost all observation points, it is predicted that the species could probably be found on the same host plants widely over Sumatra island. After *P. bagmaticus* in southern Asia and *P. epulus* in Kenya are the only species of *Planococcus* possessing dorsal multilocular disc pores, *P. bengkuluensis* is the following species.

AUTHOR'S CONTRIBUTION

The authors confirm their contribution in the paper as follows:: A.Z: Sample collection, slide preparations, scientific drawing, morphological identification. A.F: Sample collection, Slide preparations. D.A: Insect rearing, data supervision. M.B.K: Morphological identification, data analysis. All authors read and approved the final version of the manuscript.

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AVAILABILITY OF DATA AND MATERIAL

The specimens listed in this study are deposited in the Mealybugs Museum, Department of Plant Protection, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia (MMUB) and are available from the curator, upon request.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

CONSENT FOR PUBLICATION

Not applicable.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this paper.

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یک گونه جدید از جنس *Planococcus* Ferris (Hemiptera: Coccoomorpha Pseudococcidae) از اندونزی

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چکیده: جنس *Planococcus* Ferris (Hemiptera: Coccoomorpha, Pseudococcidae)، یکی از آرایه‌های شپشک‌های آردآلود با ۴۹ گونه در سراسر جهان است. بسیاری از گونه‌های جنس *Planococcus* به عنوان آفات مهم محصولات کشاورزی شناخته شده‌اند. بررسی‌هایی اخیر طی سال ۲۰۲۳ در باغات قهوه استان بنگکولو، واقع در سوماترای-اندونزی انجام شد. یک گونه جدید به نام *Planococcus bengkuluensis* Zarkani & Kaydan **sp. nov.** از روی گیاه قهوه، *Coffea robusta* Lindl. ex De Will. (خانواده Rubiaceae) شناسایی، توصیف و تصویربرداری شد. گونه شپشک آردآلود جدید دارای منافذ دیسکی چندگانه و تعداد محدودی منافذ لوله‌ای گردنی دهانی در سطح پشتی بدن می‌باشد. این گونه یکی دیگر از گونه‌های *Planococcus* واجد منافذ دیسک چندگانه در سطح پشتی بدن محسوب می‌شود. یک کلید شناسایی برای گونه‌های شناخته شده جنس *Planococcus* جنوب آسیا نیز ارائه شد.

واژگان کلیدی: گیاه میزبان، کلید شناسایی، حشرات آفت، شپشک آردآلود، جنوب‌شرق آسیا