

First record of the family Dictyopharidae (Hemiptera, Fulgoromorpha) from Fiji, with the description of a new species of the genus *Anasta* Emeljanov

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Abstract. A new species, *Anasta vitiensis* Emeljanov & Wilson (Dictyopharidae), is described from Fiji (Viti Levu). This is the first record of the family Dictyopharidae in Fiji.

INTRODUCTION

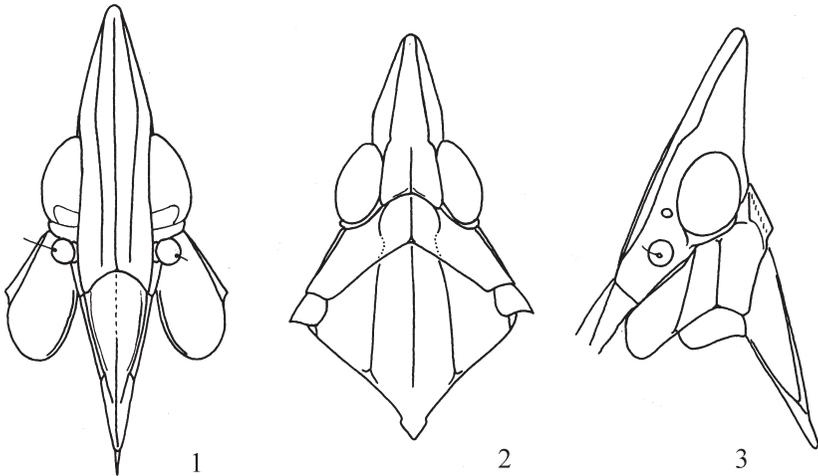
The Auchenorrhyncha fauna of Fiji contains representatives from the majority of families but with some surprising gaps. For example there are no Membracidae (treehoppers). A checklist of the Fiji Auchenorrhyncha has been compiled (Wilson, 2009). At the time of preparation of this list there were no described members of the planthopper (Fulgoromorpha) families Dictyopharidae and Fulgoridae known from the Fiji islands. Fieldwork (by MRW) on Viti Levu in April 2007 produced adults of an unknown dictyopharid species, the first record of the family in Fiji. This species is described in this paper. Since then, samples examined from the NSF-funded terrestrial survey in Fiji have shown that the family Fulgoridae is also present with a single specimen from a Malaise trap (Constant & Wilson, in prep.).

The type specimens of the species described below are deposited in the Bishop Museum, Honolulu, USA (BPBM), National Museum of Wales (Cardiff, UK) (NMWC) and Zoological Institute of the Russian Academy of Sciences (St. Petersburg, Russia) (ZIN).

TAXONOMY

Anasta Emeljanov

Anasta Emeljanov, 2008: 305. Type species *Dictyophara prognatha* Distant, 1906: 352 [Queensland]



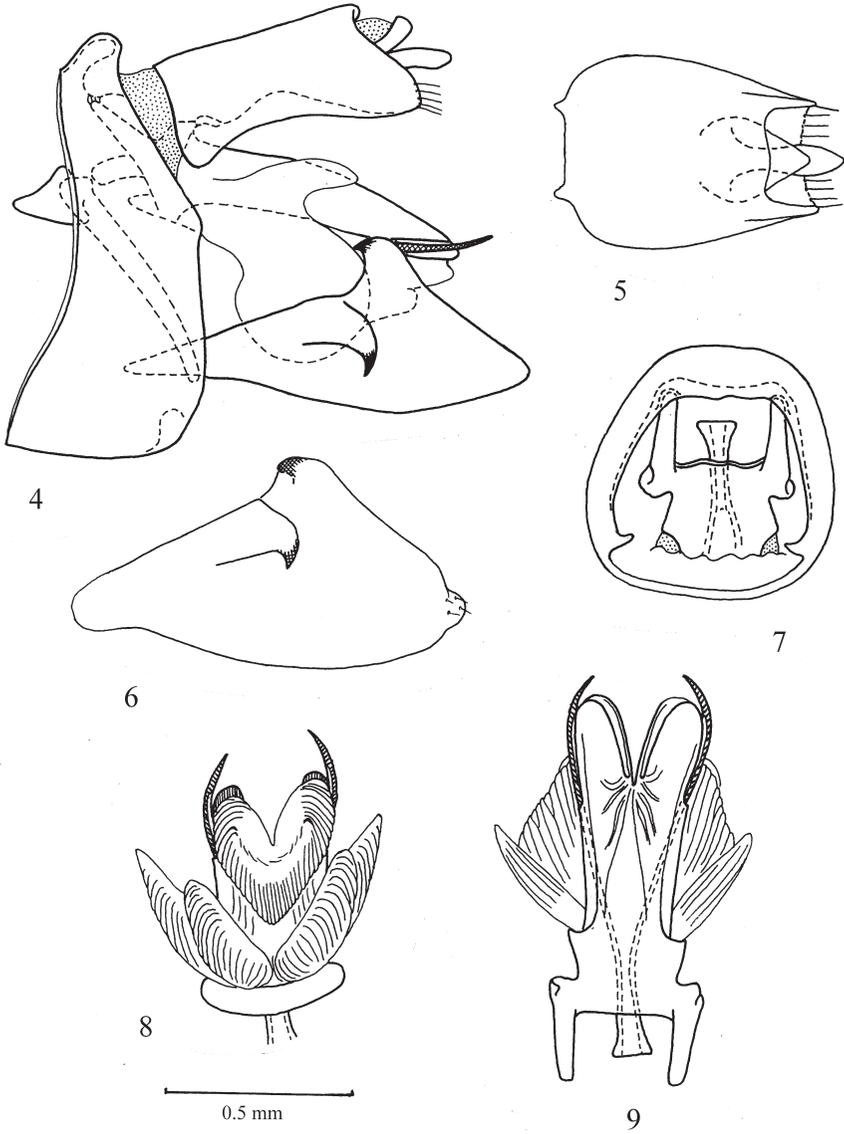
Figures 1–3. *Anasta vitiensis* sp.n. Fore body. 1 – face view (anteroventral), 2 – dorsal view, 3 – lateral view (left).

Anasta vitiensis Emeljanov & Wilson, sp. n.
(Figs. 1–12)

Type material. Holotype ♂, Fiji Islands, Viti Levu, Sigatoka, IV.2007, M.R. Wilson leg. (BPBM). Paratypes: 1♂, 1♀, same data (NMWC); 1♂, 1♀, same data (ZIN).

Description. Cephalic process acutely angulate, pyramidal (Figs. 1–3, 11). Anterior part of coryphe from contraction to apex only twice as long as interocular part of coryphe. Lateral carinae of coryphe weakly converge forward between eyes and up to contraction and run cuneiform to narrow apex after contraction. Coryphe with median carina only in posterior part and weakly concave in lateral view. Metope nearly straight in lateral view except weakly convex apically. Apex of cephalic process narrow rounded in lateral view. Metope from clypeus to anterior margins of eyes parallel-sided and cuneiform apically (Fig. 12). All metopial carinae sharp, intermediate carinae closer to median carina than to lateral ones. Median carina weak apically and invisible at apex. Clypeal margin of metope weakly concave. Metope more than 4 times as long as wide. Pronotum with strong median carina, lateral carinae much more weak; hind margin weakly concave (Fig. 2). Scutellum (Fig. 2) with 3 sharp carinae (lateral carinae weakly turned to median one apically). Pterostigma narrow, with 1–2 transverse veins. Legs of medium length, comparatively thin.

Coloration. Green, anterior part of body yellowish between carinae. (Fig. 10) Head with concolorous carinae and interspaces. Pronotum and scutellum with whitish carinae. Ocelli and antennae green blueish. Fore and hind wings transparent, colourless, majority of veins yellowish excluding green blueish claval veins and some veins of membrane. Legs green blueish except green yellowish hind femora. Apices of hind femora with dark spot anterodorsally. Tibiae with black spot basally and unclear dark spot on posterolateral side.



Figures 4–9. *Anasta vitiensis* sp.n. Male genitalia. 4 – genital block, lateral view (left side), 5 – anal tube, dorsal view, 6 – stylus (left), 7 – pygofer and base of phallosome, articulation, 8–9 – aedeagus; membranous parts semi-inflated: 8 – ventrocaudal view, 9 – dorsal view.

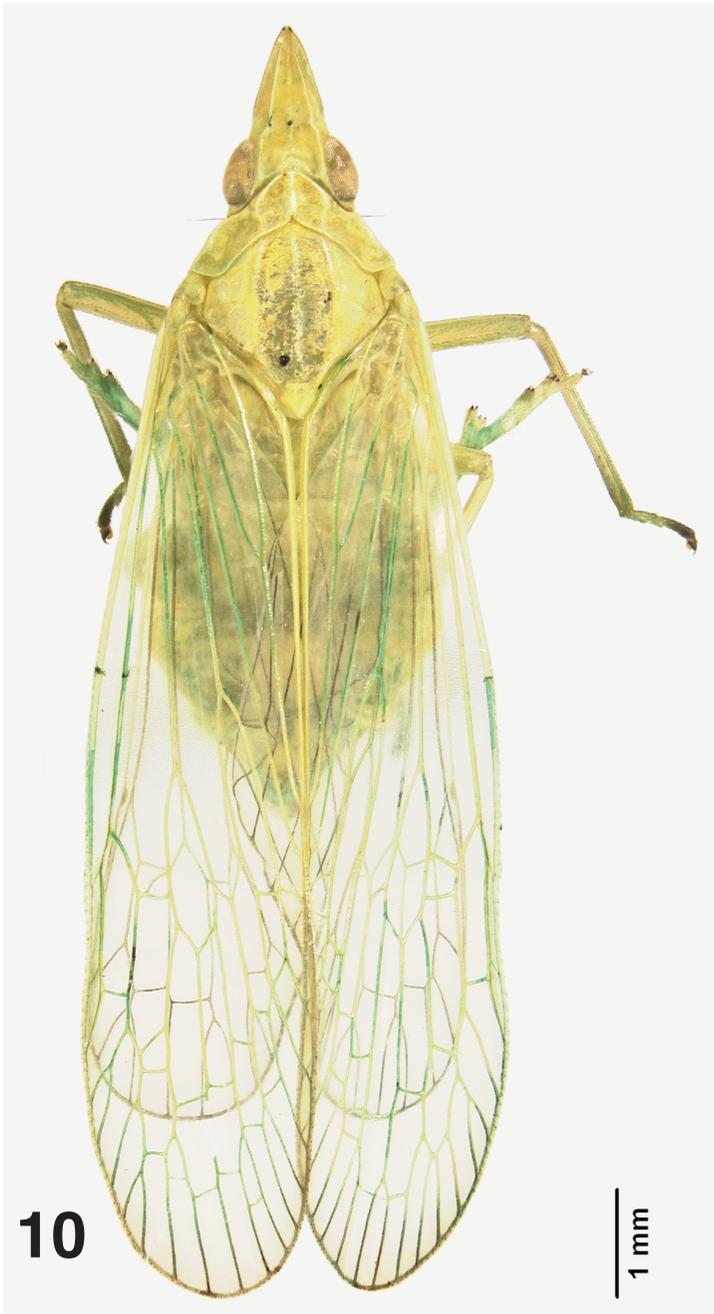


Figure 10. *Anasta vitiensis* sp.n., dorsal view.



Figure 11. *Anasta vitiensis* sp.n., lateral view.



Figure 12. *Anasta vitiensis* sp.n. , view of face

Male genitalia (Figs 4–9). Pygofer slightly compressed, dorsal wall short, ventral wall longer, hind margin of lateral walls weakly obtuse-angularly produced. Anal tube comparatively small, moderately elongate (Fig. 5), with obtuse projections anterobasally directed ventrad. Styli (Fig. 6) rather large, comparatively short and high, with posterodorsal margin slightly oblique, nearly straight; apical end in form of small rounded lobe; lateral tooth lies under upper tooth, apex directed ventrally,

both teeth equidistant from apex and base of free part of stylus. Posterodorsal margin of pygofer with thick edge, lateral ends of the edge serve to articulation with suspensorial apophyses of phallosome. Suspensorium of phallosome in form of pair of apophyses articulated to pygofer border. Anal tube (its ventrobasal margin) having articulation with phallosome between bases of suspensorial apophyses. Phallosome oblong, with entire dorsal wall sclerotized, apex deeply incised medially, apices of paired lobes rounded. Lateral walls of theca also deeply incised, outward of lateral incisions caudally-directed with apical processes of penis exposed, their apices slightly bent mediodorsally. Ventral wall of phallosome membranous and inflatable, with fore and hind parts divided by arcuate transverse furrow; fore (basal) part also divided into right and left halves by median furrow, bearing pair of dorsolateral horns and pair of large ventral sacs; hind part V-shaped, with posterolateral ends situated under apical sclerotized lobe of phallosome; ventral wall forming rounded ledge on both halves. Membranous wall of theca devoid of spicules or denticles.

Diagnosis. *Anasta vitiensis* sp. n. is the third species of the genus *Anasta* Emeljanov and differs from the very similar *A. prognatha* (Walker) and *A. timorina* (Lallemand) in the shorter cephalic process, narrower after contraction coryphe (in *A. prognatha* and *A. timorina* the coryphe is nearly equally wide before and after contraction), and with a gentle ledge of lateral margin of the metope in lateral view (the lateral margin is straight in *A. prognatha* and *A. timorina*). The suspensorium of the phallosome is made as a pair of the apophyses articulated with the pygofer, but not with the anal tube only, and the anal tube is articulated with the base of the phallosome but not with the pygofer. These peculiarities are probably synapomorphies of the tribe Hastini, such a construction being present also in *Hasta* Kirkaldy and *Thanatodictya* Kirkaldy. The male genitalia of other species of *Anasta* have not been dissected and their internal structure remains unknown.

Body length. Males – 11.5–12.4 mm, females – 13.7–13.8 mm.

Comparison. Cephalic process (Figs. 1–3) of *Anasta vitiensis* sp. n. is shorter than the processes of *A. prognatha* Distant and *A. timorina* Lallemand. In *A. prognatha* the anterior part of coryphe from contraction to apex three times is longer than interocular part of coryphe.

DISCUSSION

Members of the planthopper family Dictyopharidae have low distributive capacity across marine barriers and are practically absent on all oceanic Pacific islands and are still not known from New Caledonia which is faunistically rich and situated between Australia and Fiji. One species, *Raivuna graminea* F., is known from some oceanic islands (Western Caroline, Southern Mariana) (Fennah, 1956), which are closer to the Asian region where the species has a wide distribution. Thus the finding of Dictyopharidae on Fiji is very interesting. A new species from Fiji belongs to the Notogean genus *Anasta* Emeljanov, 2008 which is known from Australia (Queensland) and Timor (Emeljanov, 2008). The genus *Anasta* belongs to the tribe Hastini, which has Holantarctic distribution.

ACKNOWLEDGEMENTS

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