

A New Fijian Diathetes Injurious to Pandanus (Coleoptera: Curculionidae)

BY ELWOOD C. ZIMMERMAN

Bernice P. Bishop Museum

(Presented at the meeting of November 3, 1938)

During the Henry G. Lapham Fijian Expedition recently sent out by Bishop Museum, I found a series of a new species of *Diathetes* that may be an important pest of *Pandanus* trees. The importance of *Pandanus* to the culture of the native peoples of tropical Oceania is well known to anyone familiar with the region. At least in eastern Oceania the leaves form the most important source of material for plaited goods available to the natives; they are used for house thatch in many islands; the fruits are eaten by some people; the fibers of the aerial roots are used for cordage, and the wood itself is used in various ways. In some islands probably one of the most important sources of monetary income is the sale of *Pandanus* mats and other plaited goods.

The specimens described in this paper were taken from a recently felled *Pandanus*. It seemed quite evident to me that the beetle attacked a growing, apparently healthy tree. Unfortunately, I had neither time nor opportunity to make a careful survey of the problem or to examine a series of trees. I was attracted to the infestation by one of the weevils walking about on the tree, and, upon chopping open the trunk and limbs, I found their entire hearts destroyed by the larvae which had reduced the substance to a mass of frass. Isolated larvae were also found in the solid wood in various parts of the tree. Whether or not the tree was cut down by a Fijian who was acquainted with the damage done by the weevil I do not know, but it is most unusual to see a *Pandanus* tree destroyed rather than used in some way.

The genus *Diathetes* Pascoe, 1874, now has 23 species. These have an interesting distribution in Oceania. Most of the species are found in New Guinea and others are recorded from the Moluccas, Cape York Peninsula of Australia, Bismarks, New Hebrides, New Caledonia, Samoa and now Fiji. None are known from the Solomons, but species surely occur there. This almost continuous distribution is quite like certain other genera of weevils, and is, I believe, of particular zoogeographical significance.

The paper is illustrated by Miss Margaret Poor, Assistant Entomologist at Bishop Museum.

Diathetes pandanae new species (figs. 1 and 2).

Color black throughout; derm shiny in some lights, dull in others; disk of the pronotum less coarsely reticulate than elsewhere and therefore quite shiny, especially near the base; dorsal reticulation elsewhere, when clean, usually giving prismatic reflections that produce a slight iridescent cast in certain lights.

Head moderately shiny; comparatively densely punctate, the punctures small, rounded, distinct, usually separated by more than their diameters, those near the base coarser, each normally containing a minute, hardly discernible seta; eyes with a shallow groove around their posterior margins, the distance between them very slightly greater than the breadth of the apex of the scape; with a small ovate interocular fovea that is about half as long as the breadth of the interocular area and has its base just below the narrowest part of the interocular area. *Rostrum* evenly arcuate, parallel-sided from the base to the insertion of the antennae, there conspicuously narrowed, more sharply in the female, thence subcylindrical to



FIG. 1.—*Diathetes pandanae* Zimmerman, adult.

the apex which at most is just perceptibly dilated; finely and moderately densely punctate behind the antennae in the female, thence shiny and extremely minutely punctate, appearing impunctate, to the apex, the puncturation coarser and continued to the apical third in the male, the punctures containing minute, hardly discernible setae; without dorsal or lateral costae or striae in either sex; apex oblique at the sides, almost straightly truncate, but very slightly concave in the middle; mandibles with the tooth above the ventral tooth largest and surrounded on its outer side by a groove. *Antennae* with the scape slightly, but distinctly, longer than the funicle including the club, coarsely reticulate, with a few scattered, shallow punctures; funicle with the first segment, measured along its inner edge, as long as two plus three, only slightly broader than two, two one-tenth shorter than three plus four which are equal, five-eighths as long as broad, five and six successively more transverse; club as broad as long, asymmetrical, as long as the preceding four segments together, the basal glabrous segment as long as the preceding three segments together, with a single whorl of setae near the middle. *Prothorax* as broad as long, broadest across the base, narrowing anteriorly with a gradual curve, but very shallowly, just perceptibly concave behind the middle, the outline slightly interrupted just

before the subapical constriction which is sharply angulate and deep, the groove of the constriction not continued entirely across the disk, but interrupting the longitudinal dorsal outline when viewed from the side; the apical part tubulate, as broad at the lateral edge as the antennal club, the apical margin just perceptibly concave at the apex; basal half of the medial part of the disk containing an irregular, more shiny area; apical half of

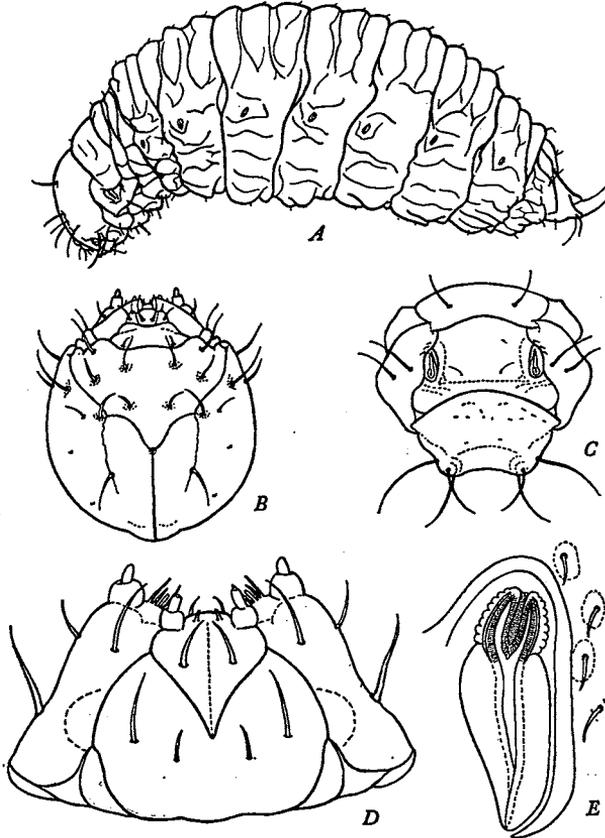


FIG. 2.—*Diathetes pandanae* Zimmerman, larva. A, side view; B, dorsal view of head; C, caudal view; D, ventral view of labium and maxillae; E, right thoracic spiracle.

the dorsum with a vague, shiny, less punctate median line that sometimes appears slightly raised; punctures small, those in the shiny areas minute, those on the sides of the disk larger, becoming progressively larger laterally and very coarse on the pleural areas, dorsal punctures separated by about two to five times their breadths; the scutellar lobe well developed. *Scutellum* distinctly longer than broad, occasionally twice as long as broad. *Elytra* shaped as illustrated; broadest across the posterior parts of the humeri and there four-fifths as broad as long; striae one to six reaching, or almost reaching the basal margin, seven and eight ending on the humerus, nine and ten not reaching the base, two bent slightly inward toward one at

the base, one and two, three and eight, four and seven, five and six, nine and ten joined at their apices, the first five well impressed throughout, six, seven and eight usually not, or indistinctly impressed between the punctures, at least within the basal half, the punctures in these striae larger than those in the distal striae where they are only slightly broader than the striae, ninth stria bent downward, or conspicuously angulate, above the fore margin of the metacoxa, indistinctly punctate except at the apex; intervals slightly convex, minutely but rather coarsely reticulate, each with one or two irregular rows of minute punctures bearing hardly discernible setae, the first interval narrower than the second. *Legs* with the femora rather strongly clavate, the hind pair rather conspicuously subangulate in the distal third below, rather evenly punctate throughout, the punctures round, shallow, well separated, with short setae scattered along the ventral edge in the female, with long, dense, hairlike, amber setae in the male; tibiae with the outer apical angle not produced, striae coarsely punctate, ventral edge with an impunctate, very elongate, triangular median area bounded on either edge with a row of very dense, stiff, short, erect, amber setae, the inner row on the two hind pairs and the outer row on the fore pair most distinct and conspicuously developed, ending at the apices in two long slender fascicles; coxae without tufts of hair; third hind tarsal segment slightly broader than long. *Sternum* with the prosternum densely and coarsely punctate, prosternal epimera and mesosternum finely punctate, mesosternal episterna shiny, closely set with large punctures, mesosternal epimera dull, coarsely punctate; metasternum broadly concave below, more so in the male, the concave part shiny and finely punctate in the male, bare in the female, but conspicuously setose in the male, with a slightly posteriorly oblique stria on either side beginning at about the middle and ending at a point more than halfway from the middle to the posterior margin, the distance between the anterior ends of the striae half as great as the breadth of the intercoxal process of the venter, the area between the inner edges of the coxae and the episterna dull and for the most part coarsely punctate, metasternal episterna dull, coarsely and densely punctate. *Venter* shiny down the middle, dull on the sides, the first ventrite concave between and behind the coxae in both sexes, finely, remotely punctate and bare in the concave area in the female, coarsely, densely punctate and conspicuously setose in the male, the other ventrites finely punctate in the middle, coarsely and more densely punctate on the sides. *Pygidium* very coarsely and densely punctate, the punctures bearing coarse setae, bounded by a raised, densely setose rim, as long from the elytral suture to the apex as broad at the elytra, the distal margin very slightly convex, almost truncate, half as broad at the apex as the base in the female, more than half as broad in the male, slightly more convex in the male than in the female. Length: 11-13 mm.; breadth: 5.5-6.0 mm.

Fiji: Vanua Mbalavu, Lau Province. Holotype male, allotype female, Bishop Museum numbers 1150 and 1150a, seven paratypes, one immature specimen and two larvae collected by me from the trunk and limbs of a *Pandanus* tree on the seashore near the south boundary of Loma Loma, August 8, 1938.

The only other species of *Diathetes* in the eastern Pacific are *D. buxtoni* Marshall and *D. lyriger* Marshall (Insects of Samoa, vol. IV, fasc. 5, pp. 316-319, 1931). *D. pandanae* can easily be distinguished from both of the Samoan species because it is entirely black, whereas *D. buxtoni* has brown elytra, and *D. lyriger* is black and testaceous.

The mature larva is 20 mm. long and 9 mm. high. The drawings showing the diagnostic details are self-explanatory.