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yellowish. Tegmina and wings byaline, veins pale fuscous. Legs yellowish brown, femora basally more or less piceous. Vertex flat, transverse, foremargin truncate, mediolongitudinally narrowly sulcate and shallowly pitted on each side nearer the base. Head nearly as wide as thorax, frontal cones rounded apically. Pronotum scarcely as wide as vertex, very short. Dorsulum longer than wide, suboval, narrower than the mesonotum, which is transverse. Scutellum small. Tegmen about  $2\frac{3}{4}$  times as long as wide in form like that of *T. koebelei* Kirkaldy and with similar venation, except that the brachial (lower branch of cubital) forks basal of the middle.

♂ largely orange yellow. Head dorsally yellow cinereous with a line down the middle as in the other sex. Cones bright orange. Nota orange brown, rather feebly lined with fuscous and yellow brown. Tegmina and legs as in the ♀, but the veins of the former yellower. Abdomen ferruginous, last tergite deeply excavated apically, wavily reflexed, the reflexed part creamy; genital segment diamond shaped.

Length to apex of abdomen  $2\frac{3}{4}$  mill.; to apex of tegmina folded  $5\frac{1}{8}$  mill.

Hab. Viti, Rewa (III 06. Muir 1 ♂ 2 ♀ ♀).

## 2. *vanuae* sp. nov.

♀ yellowish, abdomen (except genital segment) black. Head dorsally with a very slender black sulcation, ocelli orange red. Pronotum very transverse, obtuse-angularly emarginate posteriorly, very narrowly margined there with black. Dorsulum about as long as mesonotum and scutellum together, scarcely longer than wide. Tegmina in form like *T. vitiensis*, hyaline, veins yellowish fuscous, venation like that of *T. koebelei* but the median (upper branch of cubital) forks close to the apex of the tegmen.

Length  $1\frac{7}{8}$  (to apex of abdomen) and 4 mill. (to apex of tegmina folded.)

Hab: Viti, Rewa, (III 06. Muir, 1 ♀).

## An Extraordinary Leaf-hopper from Mt. Konahuanui, Oahu.

By OTTO H. SWEZEY.

### *Dictyophorodelphax* gen. nov.

This aberrant genus of Delphacidae is erected for a single species discovered on a southern ridge of Mt. Konahuanui, Oahu, February, 1906. The genus is chiefly distinguished from other genera of Delphacidae by the extremely long, narrow, forward prolongation of the head giving it a superficial resemblance to *Scolops*, or some others of the Dictyophorinae. Its position in Delphacidae is determined by the presence of a movable spur at the apex of posterior tibia.

The prolongation of the head is as long as the rest of the insect. It is narrow and tapers gradually to a blunt apex. It has a median carina ventrally; two lateral carinae, the ventral



one terminating about two-thirds the distance from the base, the dorsal one not quite reaching the apex; two carinae on dorsal surface extending full length, a slight short median carina between the eyes. The clypeus has median and lateral carinae corresponding with those of ventral side of prolongation of head. Antenna has second joint cylindrical, longer than first, and well supplied with sense organs. Head narrower than thorax. Pronotum has three carinae, the lateral ones straight, diverging and reaching the posterior margin; carinae of scutellum similar to those of pronotum. Posterior tarsi shorter than their tibiae.

*Dictyophorodelphax mirabilis* sp. nov.

Length from apex of prolongation of head to apex of abdomen 8 mm.; prolongation 4 mm. Testaceous; clypeus and apex of rostrum black; eyes dark brown, very little excavated below; black line on anterior of first segment of antenna, brown spot on cheek below antenna; prolongation of head with the outer two-fifths bent slightly downward, blunt at apex, carinae with black line on edges and hairy along their bases. Pronotum and scutellum brown outside of lateral carinae; abdomen with brown markings on sides of segments. Tegmina pale testaceous, nearly transparent, oblong, not quite reaching the apex of abdomen; veins with scattered dark brown dots, a series of dark brown spots on termen between veins, an elongate spot on costal margin, and also on sutural margin but a short distance from termen, the one on sutural margin the longer and farther from termen; wings absent.

Femora and tibiae lineated with dark brown or black; anterior and intermediate tibiae black-ringed near apex; anterior and intermediate tarsi; brown, black at apex; posterior tarsi brown at apex of first segment, black at apex of last segment. Calcar at apex of posterior tibia about three-fourths length of first segment of tarsus, 7 to 8 teeth, these and the two spines on outer side of tibia at apex of tibiae and at apices of first and second joints of tarsi black-tipped. Anal tube large, style small, included. Ovipositor pale. Pygofers of male truncate, with a large ventral notch; styles broad, laterally compressed, near together, their tips very slender and bent upwards nearly at right angles and curved forward a little, slightly diverging, dark brown.

Two males and two females of this species were swept from



the stunted bushes and ferns, at an elevation of about 2500 feet, along the path on the southern ridge leading up to the summit of Mt. Konahuanui, Oahu. On account of the general sweeping by the insect net, when these were caught, it was impossible to determine their food-plant. It is hoped that at some future time further observations may be made at this same locality and more learned of this remarkable insect.

### Life History and Notes on the Pink-winged Tryxalid (*Atractomorpha crenaticeps* Blanchard).

By OTTO H. SWEZEY.

This grasshopper is a somewhat recent arrival to the Hawaiian Islands. It probably came from Australia, as it occurs there and also in New Guinea. It has been seen in and around Honolulu for several years, and is probably generally spread thruout Oahu; but has not as yet been seen on the other islands of the group. It has not as yet become much of a pest, altho it is strictly a vegetable feeder. It is not, however, a grass feeder particularly, but feeds upon most all kinds of garden plants and weeds, without much particular choice.

This species is dimorphic as regards color, there being a green form and a grey form. This applies to both sexes. Probably the numbers of each form are about equal; but locally sometimes one form is the more numerous and sometimes the other. This dimorphism appears as early as the second instar of the nymph; but is not constant thru the succeeding instars; as there may be several changes before the final molt. This is shown in the following table, which is the record of nymphs that were captured of various ages and reared to maturity:

DIMORPHISM OF NYMPHS.

2nd instar molted		3rd instar molted		4th instar molted		5th instar molted		adult
grey	Oct. 7	grey	Oct. 17	green	Oct. 26	green	Nov. 12	grey male
green	Oct. 22	grey	Nov. 1	green	Nov. 12	green	Nov. 26	grey male
						grey	Nov. 8	grey male
						grey	Dec. 5	grey female
				green	Dec. 8	green	Jan. 2	grey female
		green	Dec. 28	green	Jan. 18	green	Feb. 10	grey female
grey	Nov. 15	grey	Dec. 19	grey	Jan. 19	grey	Feb. 22	grey female