RESULTS OF THE NORWEGIAN SCIENTIFIC EXPEDITION
TO TRISTAN DA CUNHA 1937—1938. No. 43.

HEMIPTERA OF TRISTAN DA CUNHA

BY

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So far as I am aware no Hemipteran has so far been recorded from Tristan da Cunha although some specimens have reached the British Museum (Nat.Hist.) in the various small collections which have been received from time to time over the last twenty-five years. Unfortunately these have either been identified as introduced European species and incorporated into general collection without publication or they have been mislaid. I am glad, therefore, through the kindness of Dr. L. R. Natvig of the University Zoological Museum, Oslo, to have the opportunity of studying the material collected by Dr. Yngvar Hagen of the Norwegian Scientific Expedition to the island during 1937–1938.

The insect fauna of such isolated oceanic islands usually comprises a number of widely distributed species, which have been introduced by the agency of man within relatively recent times, together with a few endemic species which have evolved from species introduced naturally very many years ago. Such species have changed so much through prolonged isolation from their ancestral forms that their relationship is often difficult to determine. Usually such endemic species are readily placed in the widely distributed genera to which the originally introduced species belonged. Occasionally remarkable autocthonous genera occur, such as *Phthirocoris antarcticus* Enderlein from Crozet Is. in the S. Indian Ocean, which represent the modern descendents of species at one time inhabiting primitive land masses formerly covering the area in question.

Judging by the Hemiptera only, no autocthonous species occur in Tristan and all the modern species have been introduced, although in two cases the introduction must have been much earlier than in the others and the country of origin is less certain.

The material (including types) is deposited in the Zoological Museum, Oslo.

Suborder *Heteroptera*.

The Heteroptera material was submitted to Dr. R. L. Usinger for identification during his visit to London in 1948–49 and was named by Dr. Usinger and myself. The list of species remained unpublished and is now recorded for the first time.

Family Miridae.

Calocoris norvegicat (Gmelin)

Tristan da Cunha: (St. 58) «Potato Patches» 3/1 1938, 1 ♀ specimen and a nymph; (St. 103) «Potato Patches» 22 or 23/1 1938, collected by the inhabitants and brought to Dr. Hagen. There are also specimens in the British Museum (Nat.Hist.) collected in December, 1954 by J. Kirby. This is a common and widely distributed Holarctic species and has obviously been introduced from Europe with potatoes or some other vegetable produce.

Family Anthocoridae.

Lyctocoris campestris (Fabricius)

Tristan da Cunha: (St. 116), the Expedition-building 29/3 1938, «A few small insects taken from one of the cases outside the house», 1 ♂ specimen; around the Settlement (St. 35) 1 nymphat skin, before 23/12 1937.

This is a common and widely distributed Holarctic species which has been spread over the World by the agency of man. The above-mentioned specimen may have been introduced by the expedition itself from Norway or may have been introduced to the Island at some earlier date.

Family Cimicidae.

Cimex lectularius (Linnaeus)

Tristan da Cunha: (St. 35), «mainly around the Settlement», 1 ♂ prior to 23/12 1937. This specimen formed part of a collection made by the Rev. Harold Wilde, the island's missionary, over a long period. It was obviously taken in one of the Settlement's houses. As this is the only specimen and bed bugs are mentioned neither in Mrs. Barrow's book (1910), Mrs. Rose Rogers' book (1926) nor in Christopherson's book (1946), it rather looks as though this undersirable insect is not yet established in the Settlement. *C. lectularius* has, of course, been carried by the agency of man, on whom it feeds, from the Mediterranean Region to all parts of the World.

Family Nabidae.

Nabis hageni sp. nov.*

Nightingale Island: (St. 506), «Beach plateau on south side of Island», 1 ♀ paratype, 5/2 1938; (St. 509), «The beach running along the eastern

* Dedicated to Dr. Yngvar Hagen, who collected the insects of the Tristan da Cunha Islands.

side of the Island», 5 Nymphs, 7/2 1938; (St. 516), «The highest summit of the Island», 275–300 metres, 3 Nymphs, 10/2 1938; (St. 535), «Second pond», from *Scirpus* vegetation, 150 metres, 2 Nymphs, 12/2 1938.

Inaccessible Island: (St. 1016), above Blendon Hall, in wood patch (clump of *Phylica* trees), collected from a tussock stem, 1 ♀ paratype, 29/2 1938; (St. 1018), 350–400 metres, amongst plants, 1 ♀ *Holotype*, 20/2 1938; (St. 1037), 400 metres, 1 ♀ paratype, 27/2 1938; (St. 1039), 450 metres, from plants, 1 Nymph, 28/2 1938.

Brachypterous, elongate, abdomen ovate with broad connexivum, anterior lobe of pronotum not especially tumid but distinctly convex; ocelli completely absent; antennae and legs normal for the genus, the hind tibiae not longer than the hind femora; colour (teneral specimens preserved in alcohol), pale stramineous with the following rich brown markings — base of first rostral segment at sides; two short oblique lines in front of ocellar scars and two lines diverging anteriorly from inner ends of the short oblique lines towards antennal tubercles; area between these two lines except at base; a broad lateral line on each side of head from antennal tubercle to posterior margin, paler and ill defined in front of eye but distinct and broad behind the eye; a line down middle of pronotum widest on the convex anterior lobe and becoming evanescent on the anterior collar and posterior lobe; some transverse marbling on anterior lobes on each side of middle line, extending to pale brown lateral band; the basal angles of the scutellum and a broad median line on its basal two thirds narrowing and becoming evanescent on apical third; extreme apex dark brown; dorsum of abdomen with a narrow percurrent median stripe and a broad stripe down each side, inwards of the pale connexivum which shows rather obsolescent pale brown banding at the base of each segment; the broad lateral stripes giving way on seventh segment to two narrow stripes more or less evenly spaced with the median stripe; eighth and ninth segments with the sides brown; ventral side of abdomen with a median percurrent stripe and two broad lateral stripes, dark brown; connexivum pallid with obsolescent transverse bands at bases of segments; Meso and metasterna dark brown; pleura with a dark brown stripe; coxae brown on basal halves; femora with rows of small pale brown transverse stripes but with no annulations; base and apex of first and apex of second antennal segments, very slightly tinted brown. Pronotum and elytra with very fine dark brown puncturation larger and less dense on pronotal collar.

Head rather narrow, longer than wide across eyes (30:25) the latter one half as wide as vertex between eyes (6:12) and twice as long as head behind the eyes (10:5), extending slightly more beyond antenniferous tubercles than from anterior margin of eye to the latter (10:8); relative

lengths of antennal segments 28 : 45 : 30 : 22; relative lengths of rostral segments 10 : 45 : 44 : 11. Pronotum longer than head (38 : 30), posterior margin twice as wide as anterior margin (42 : 20). Scutellum equilateral, slightly concave on disc, transversely wrinkled towards apex. Elytra broad extending to middle of 6th dorsal abdominal segment, about twice as long as pronotum (75 : 38), basal part of costal margin straight thence narrowed to apex as in *N. flavolimbatus* Scholtz; claval suture absent, three longitudinal veins, membrane distinct but very short. Hind wings present but abbreviated. Abdomen twice as wide across apex of segment 6 as head is long (60 : 30), apically rather wide, the 9th dorsal segment very broad at base and suddenly narrowed to 10th. The third valvulae on each side of the ovipositor, which is black, are thickened and very convex with the inner margins hollowed out giving the female genitalia an unusually swollen appearance.

Total length ♀ 8.7 mm. (24 divisions of micrometer eyepiece = 1 mm.). Width across humeral angles 1.75 mm.

Holotype and paratypes in Zoological Museum, Oslo. Paratype in British Museum (Nat. Hist.).

These specimens when first examined by Dr. Usinger and myself in 1949 were tentatively identified as *Nabis flavomarginatus* Scholtz, a common and widely distributed holarctic species which one might have expected to have been introduced into Tristan from Europe. Strangely enough the present species has not been recorded from Tristan but only from the more remote Nightingale and Inaccessible Islands, which suggests that it is not a recently introduced species. Its presence in both these small islands would indicate that it is an indigenous species possibly evolved from a species introduced naturally at a very early date.

Nabis hageni differs from *Nabis flavomarginatus* in the narrower head, less prominent eyes, absence of ocelli, fine puncturation of pronotum and in the colour pattern of the abdomen.

Species of the genus *Nabis* are found commonly on oceanic islands. In Hawaii there are no less than 26 species. In the Marquesas there are four species while the cosmopolitan *Nabis caspiformis* Germar occurs in most of the isolated Pacific Islands. There is a specimen (♂) of another new species in the British Museum collection from Carcass Is. in the Falklands Islands collected in 1954 by R. Banks.

Nabis hageni belongs to the group of species in which the ocelli are absent or obsolete such as *Nabis lusciosus* B. White and its allies in Hawaii and *Nabis longipes* V. Duzee, Marquesas Islands. Although the absence of ocelli is usually connected with brachypterism, brachypterism is not always connected with the absence of ocelli since *Nabis limbatus* Dahlbom, *Nabis lineatus* Dahlbom (Europe) and *Nabis coleoptrata* Kirby (N. America),

all brachypterous species, possess well developed ocelli. The loss of ocelli in the present case is undoubtedly connected with the insular habitat. One must assume that *Nabis hageni* is either a relict of the fauna of an ancient land mass or must have evolved from a fully winged form with distinct ocelli which migrated to the islands at some early date.

Nabis hageni may be distinguished from all the Hawaiian species in which ocelli are absent, in the fine puncturation of the pronotum and elytra and in the length of the latter which are shorter than they are in *N. curtipennis* Blackburn but longer than they are in the other Hawaiian species of the *N. lusciosus* B. White group. It differs from *N. longipes* V. Duzee (Marquesas) in the much shorter legs, aforementioned puncturation and non-annulate antennae. It does not appear to be related to any known species from Africa or S. America. The male remains unknown.

Suborder Homoptera

Superfamily Fulgoroidea

Family Delphacidae*

Delphacodes atlanticus sp. nov.

Colour: Most material preserved in alcohol so that colour is somewhat bleached. Pale sordid stramineous with variable infuscate markings. In the most strongly marked specimens the following regions are brownish: — Frons dark brown, fronto-clypeus and genae (except pallid spot below ocellus) brown or pale brown; all carinae and the vertex stramineous or whitish; a brown spot on pronotum beneath eye and two pale brown spots on each side of the median pronotal carina; a brown stripe on each side of the median carina of mesonotum not reaching apex and a brown lateral spot on each side of mesonotum outside the lateral carina; the membranous region of tegmen between the stramineous veins is very lightly infuscate and sub-hyaline but darker in the males. Abdomen and meso and metapleura infuscate except for pallid posterior margins of segments and connexival margins, legs pale stramineous with a trace of infuscation especially on sides of hind femora; apices of apical tibial spines black; male pygophor infuscate with apical margins pallid; female genital segments pallid the ovipositor itself black. Antennae pale stramineous.

Structure: Head seen from above, that is vertex together with base of frons, equal in width to length in middle or slightly shorter (16:17); base of vertex in front of middle of eyes, not wider then apex; frons viewed

* See China 1957 Entomologists' Monthly Magazine 93: 30–31.

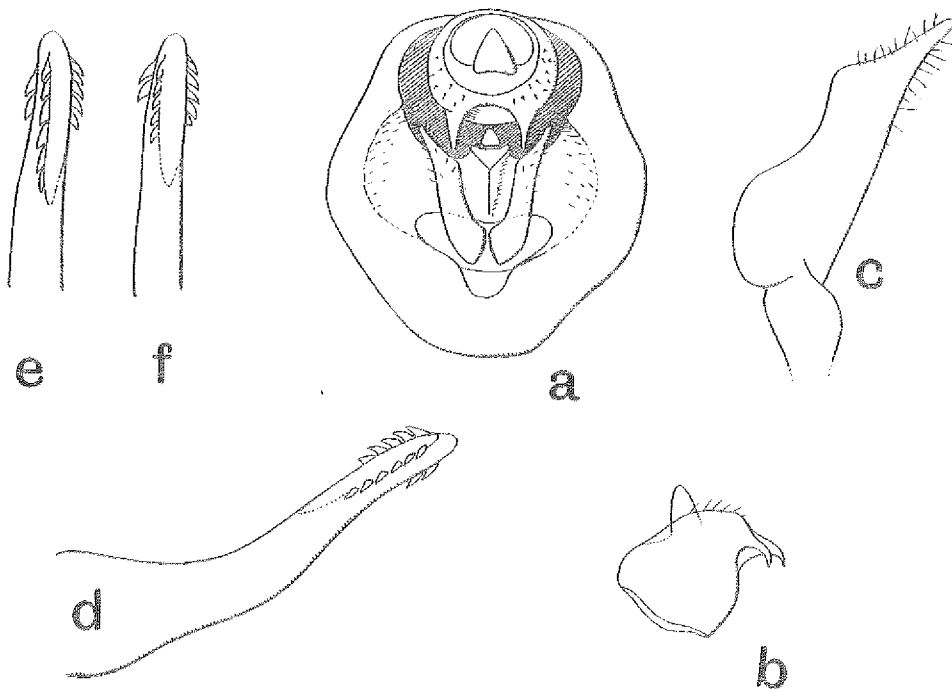

Fig. 1. *Delphacodes atlanticus* sp. nov. a. terminal view of male genitalia; b. lateral view of anal tube (10th segment); c. right hand paramere: d. aedeagus lateral view; e. apex of aedeagus (Nightingale Is.); f. apex of aedeagus (Inaccessible Is.).

antero-ventrally twice as long as broad in middle (40:20), sides distinctly arcuate; second antennal segment more than twice as long as first (19:7), the first very little longer than wide (7:6). Pronotum with lateral carinae strongly divergent, strongly curved, not reaching hind margin. Tegmina variable in length; in brachypterous male and female specimens not extending beyond apex of abdomen with the hind wings obsolescent; in macropterous males and females extending beyond the apex of adbomen by one third their length; forms with tegmina of intermediate length occur. Hind basitarsus longer than second and third joints together (45:30); post-tibial spur rather more than half as long as basitarsus (24:45), thin, tectiform and with teeth on hind margin. Opening of pygophor rather shorter than wide; anal emargination large (Fig. 1a); anal angles prominent but not produced; anal segment large with a pair of short rather slender recurved spines on apical margin directed ventrad and extending to anterior margin of diaphragm (Fig. 1a and b). Penis tubular, wide at base and narrowing towards apex (Fig. 1d), elongate orifice on dorsal side below apex with

5 or 6 teeth on right hand side and 6 teeth on left hand side; 2 large teeth on ventral side of penis opposite the orifice (Fig. 1e and f). Diaphragm with a median ridge terminating apically in a v-shaped area below apex of penis. Parameres thickened at base and narrowed towards apex, the inner side sinuate the outer side more or less straight; apex oblique with outer angle narrowly produced (Fig. 1c). Apex of paramere, anal segment and sides of pygophor mouth, hairy.

Total length: Brachypterous male (Inaccessible Is.) 2.6–3.6 mm.
Brachypterous female (Nightingale Is.) 2.5–3.6 mm.
Macropterous male (Tristan da Cunha) 3.6 mm.
Macropterous female (Inaccessible Is.) 4.3 mm.

Distribution: Tristan da Cunha: Settlement (St. 38) 6 ♀♀, 2 ♂♂ and nymphs, 24/12 1937; Soggy Plain (St. 83) 1 ♀, 14/1 1938; Above the Settlement (St. 28) 3 ♂♂, 1 ♀ 21/12 1937; Mountain plateau towards the north (St. 30) 1 ♂, 21/12 1937; Mountain plateau towards the north (St. 75) 1 specimen with abdomen missing 9/1938.

Nightingale Island; Camp on N. E. Side of Island (Stations 507, 513 and 532) 4 ♀♀, 5–13/2 1938; the beach on eastern side of Island (St. 509) 1 ♀ and 1 nymph 7/12 1938; Highest summit of Island, 275–300 metres (St. 516), 1 ♀ and nymphs 10/2 1938; the plateau to north, tussock area (St. 520) 1 ♀, 13/2 1938; the lowest top of the Island 275 metres, 1 ♂, 1 ♀, 11/2 1938; second pond, *Scirpus* vegetation 150 metres (St. 535) nymphs, 12/2 1938.

Also *1* macropterous ♀ in British Museum (Nat.Hist.) collected by *Mrs. Mary K. Rowan, 9/5 1949.*

Inaccessible Island: Mountain plateau towards west, 600 metres (St. 100) 1 ♀, 18/2 1938; Salt Beach (St. 1001) 3 ♀♀, 20/1 1938; Blendon Hall, upper margin of beach (Stations 1005, 1019, 1022, 1024, 1025 (Type), 1027, 1054), 8 ♀♀, 2 ♂♂ and nymphs, 16, 19, 21, 23/2 1938 and 5/3 1938; above Blendon Hall «Wood Patch», 150 metres (St. 1016) 1 ♀, 20/2 1938; 460 metres above sea level (St. 1037), Nymphs, 27/2 1938; 450 metres above sea level (St. 1039), 1 ♀, 28/2 1938.

This species appears to be widely distributed over the Archipelago and is also common and widely distributed in Gough Is. 250 miles to the south of Tristan da Cunha, having been collected there by the Gough Island Scientific Survey 1955–56. In fact,apart from 4 aphids it is the only species of Hemiptera recorded from Gough Island. It is remarkable that a widely distributed species proves to be endemic in these S. Atlantic Islands. This species may, of course, eventually be found in St. Helena and Ascension Is. but as it is, it differs from all the known species in the structure of the male genitalia. There is a similar isolated *Delphacodes* in

the south Indian Ocean, *D. sancti-pauli* Jeannel described from Saint Paul Is. in 1947 (Mem. Mus. Nat. d'Hist. Nat. *20* fasc. 1, pp. 2–11). In Jeannel's species the teeth on the posterior margin of the male anal tube are flattened, arise contiguously and then diverge; the parameres or styles are obliquely truncate apically without the outer prolongation found in *D. atlanticus*. *D. sancti-pauli* is found on *Spartina arundinacea* Carm., which also occurs on Tristan da Cunha and may well be the food plant of *D. atlanticus* although these Delphacids are not usually host specific and the Tristan species could very well feed on various grasses even on *Scirpus*.

It is difficult to say whether *D. atlanticus* has been derived from some widely distributed species introduced accidentally into the Tristan Archipelago many years ago, or whether it represents a relict of the ancient antarctic continental fauna which must be supposed to have existed in former geological epochs. Its very wide distribution even on remote islets like inaccessible Is. would suggest the latter alternative.

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