

OBSERVATIONS ON FOOD HABITS AND FEEDING BEHAVIOUR IN SOME ACRIDIDAE OF JAMSHORO

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Abstract

The food habits and feeding behaviour of 7 species of Acrididae are studied. The mouthparts of *Dericorys tibialis* (Pallas) of Dericorythinae, *Mioscirtus wagneri rogenhoferi* (Saussure) of Locustinae and *Hetracris adspersa* of Eyprepenemidinae are of forbivorous type while those of *Sphingonotus rubescens rubescens* (walker) of Locustinae. *Eyprepcnemis alacris alacris* (Audinet-Serville) and *Choroedocus robustus* (Audinet-Serville) are of herbivorous type whereas those of *Ochrilidia geniculata* (Bolivar) of Gomphocerinae is of graminivorous type.

Introduction

Food habits and behaviour of the short horned Grasshoppers from various parts of globe have been studied by various workers e.g. Isely (1944-1946), Williams (1954), Chapman (1962), Gangwere (1961-1965-1973), Kaufmann (1965), Anderson (1964), Mulkern (1967) and Chernyakhovsky (1968).

Although the mouthparts of the Acrididae of Sindh have been studied by Wagan (1984), yet no attention has been paid to feeding behaviour. Therefore, in the present work an attempt has been made to study the feeding behaviour of the Acrididae of Jamshoro.

Materials and Methods

Material was collected from Jamshoro campus of University of Sindh, which included the agricultural land as well as the semi rocky area.

The feeding habits were observed in the fields by locating the species and quietly watching their feeding for about 10 minutes. They were then captured and preserved in 70% alcohol in order to study the mouthparts and gut contents.

Mouthparts of several specimens of each species were studied. These were carefully extracted, boiled in 20% KOH, washed with water and preserved in 70% alcohol.

For the study of gut contents, dissections were carried out under stereoscopic dissecting microscope and after making a slit in the fore gut the contents were poured in watch glass for identification. The identification of grasshopper species was made following the key given by Wagan (1985).

Results and Discussion

The results of the feeding records observed are shown in Table 1. A brief account of the feeding behaviour of each species investigated is given below:

Dericorythinae : *Acrididae*

Dericorys tibialis (Pallas)

This species occurs in thick and coarse vegetation of *Seuda fracticase* Moq. When disturbed a given individual tries to hide around the stem, away from the observer, and remains motionless and when disturbed again it leaps on to the adjacent plants and moves quickly towards the bottom of the plants and after prolonged silence it again starts its activity. We recorded 7 feeding observations and all are on *Seuda fracticase*, usually on its foliage. In the light of this fact and with the insect's inclination to perch on that plant it is assumed that the Jamshoro individuals of *D.tibialis* are monophagous. However, laboratory experiments are to be conducted in future in order to confirm its monophagy. Mouthparts are of forbivorous type and the gut content is 100% of dicot material.

Locustinae (-*Oedipodinae*) : *Acrididae*

Mioscirtus wagneri rogenhoferi (Saussure)

This grasshopper has been collected from the thick and coarse vegetation of shrubs. When disturbed it takes short flight, showing yellow coloured wings, then falls on the ground from where it leaps and moves down the bottom of the thick

vegetation. We recorded 10 feeding activities. The mouthparts are of forbivorous type and gut content is 100% of dicot material.

Sphingonotus rubescens rubescens (Walker)

This species is geophils. Its individuals live on open grounds, especially in baren terrians having scattered vegetation of herbs, shrubs and grasses. The hoppers take short flights during which they flash their bluish wings and make loud sound before falling on the ground. No feeding record has been obtained in the field. However, the study based on the mouthparts and gut contents of 10 specimens shows that the mouthparts are of herbivorous type and the gut content consists of 80% of dicot material and the remaining 20% are grasses, small stones and insect remains.

Eyprepocnemidinae : *Acrididae*

Eyprepocnemidinae alacris alacris (Audinet-Serville)

This species occurs in the cultivated fields of maize, as well as in the fields having the mixed vegetation of herbs, shrubs and grasses. When disturbed, a given individual jumps to the bottom of adjacent plant. We observed 6 feeding activities. The mouthparts are of herbivorous type and the gut content consist of 50% dicot material and 50% of grasses.

Choroedocus robustus (Audinet-Serville)

This grasshopper has been collected from the same area as that of above species and behaviour is more or less similar to that of *E.a. alacris*. We observed 5 feeding records. The mouthparts are of herbivorous type but showing a tendency towards forbivorous type, and the gut content is 60% of dicot material and 40% of grasses.

Heteracris adspersa (Redtenbacher)

This species occurs in the thick and coarse vegetation of herbs and shrubs. When disturbed, a given individual leaps to the adjacent plants and hides around the stem and when disturbed again it goes down to the bottom of the vegetation. We recorded 6 feeding observations. Mouthparts are of forbivorous type and the gut content consist of 100% dicot material.

Gomphocerimae : Acrididae
Ochrilidia geniculata (Bolivar)

This grasshopper has been collected from the grasses and the wheat crop. It remains inactive for shorter period and frequently moves by flying and hopping. We observed 9 feeding activities. The mouthparts are of granivorous type, and the gut content comprises 100% of grasses.

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Table 1
 List of feeding records observed, Jamshoro Campus, including Liaquat Medical College, 1986

Feeder 1	Sex 2	Dates 3	Food 4	Parts eaten 5	Locality 6
<i>Dericorys tibialis</i>	M	13-6-86	Seuda fracticase	Leaves Physiology	Near Dept: of
—do—	F	2-10-86	—do—	—do—	—do—
—do—	F	2-10-86	—do—	—do—	—do—
—do—	M	2-10-86	—do—	Stem	—do—
—do—	M	2-10-86	—do—	Leaves	—do—
—do—	F	9-10-86	—do—	—do—	—do—
—do—	F	11-10-86	—do—	—do—	—do—
<i>Mioscirtus wagneri</i>	F	13-6-86	Alhagi maorum	Leaves	Near Dept: of Zoology
—do—	F	13-6-86	—do—	—do—	—do—
—do—	F	2-10-86	Zygophylum simplex	Stem	—do—
—do—	M	2-10-86	Seuda fracticase	Leaves	—do—
—do—	M	2-10-86	—do—	—do—	—do—
—do—	F	2-10-86	—do—	—do—	—do—
—do—	M	2-10-86	Euphorbia Sp.	—do—	—do—
—do—	F	9-10-86	Seuda fracticase	—do—	Near Dept: of Physiology
—do—	M	11-10-86	—do—	—do—	—do—
—do—	F	11-10-86	—do—	—do—	—do—

Feeder 1	Sex 2	Dates 3	Food 4	Parts eaten 5	Locality 6
<i>Eurostoechus bicoloris bicoloris</i>	F	19-7-86	Zea mays	Leaves	Near L.M.C. Colony
—do—	M	19-7-86	—do—	Leaves	—do—
—do—	M	19-7-86	<i>Prosopis glandulosa</i>	—do—	Near Water Tank
—do—	F	19-8-86	—do—	—do—	—do—
—do—	M	25-10-86	Alhagi macrodonum	—do—	—do—
—do—	M	25-10-86	<i>Eriochloa</i> Sp.	Leaves	—do—
<i>Chortobolus robustus</i>	F	11-5-86	Zea mays	Leaves	Near L.M.C. Colony
—do—	F	19-8-86	Alhagi macrodonum	—do—	Near Dept. of Zoology
—do—	M	25-9-86	—do—	—do—	—do—
—do—	M	25-10-86	—do—	—do—	Near Water Tank
—do—	M	25-10-86	<i>Sporobolus</i>	—do—	—do—
<i>Heteracris adspersa</i>	M	13-6-86	Alhagi macrodonum	Leaves	Near Dept. of Zoology
—do—	M	13-6-86	—do—	—do—	Near Water Tank
—do—	M	2-10-86	—do—	—do—	—do—
—do—	F	2-10-86	<i>Seuda fracticase</i>	—do—	Near Sindh Univ. Colony
—do—	M	2-10-86	<i>prosopis glandulosa</i>	—do—	Near Water Tank
—do—	M	2-10-86	<i>Figonia critica</i>	—do—	—do—
<i>Ochrilidia geniculata</i>	M	13-3-86	<i>Triticum</i>	Leaves	Near Sindh Univ. Colony
—do—	F	1-4-86	—do—	—do—	—do—
—do—	F	16-5-86	<i>Elusine</i> Sp.	—do—	—do—
—do—	M	16-5-86	<i>Sporobolus</i>	—do—	—do—
—do—	M	20-10-86	<i>Cynodon dactylon</i>	—do—	—do—
—do—	M	20-10-86	—do—	—do—	—do—
—do—	M	25-7-86	—do—	—do—	—do—
—do—	M	30-10-86	—do—	—do—	—do—
—do—	F	30-10-86	<i>Cymbogon jwarancusa</i>	—do—	—do—

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