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SOME LYGAEID BUGS (HEMIPTERA: LYGAEIDAE) OF TANDOJAM

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I.A.M collected the material I.K diagnosed species F.N.K designed the project R.A.S grammatically checked the manuscript M.U.B complied the results Z.H.D prepared habitus images.

Key words:
Seed bugs, milkweed bugs or ground bugs, Tandojam

ABSTRACT

For present studies specimens, of Lygaeidae were collected from various localities of Tandojam. Further examination and identification was carried out at Insect Systematic Laboratory, Department of Entomology, Sindh Agriculture University Tandojam. In present study total 196 specimens of Family Lygaeidae Schilling, 1829 were collected from Tandojam. During the course of identification the material revealed the occurrence of 09 species under 3 subfamilies. Subfamily Lygaeinae Schilling, 1829 was discovered with the record of 7 species including; *Spilostethus hospes* (Fabricius, 1794), *Spilostethus pandurus militaris* (Fabricius, 1775), *Spilostethus simla* (Distant, 1909), *Graptostethus servus* (Fabricius, 1787), *Oxycarenus hyalinipennis* (Costa, 1843), *Karachicoris* sp. and *Cosmopleurus fulvipes* (Dallas, 1852). Subfamily Orsillinae Stål, 1872 with one species record; *Nysius* sp. and lastly subfamily Geocorinae Dahblom, 1851 was discovered with *Geocoris ochropterus* (Fieber, 1844).

1. INTRODUCTION

Members of the family Lygaeidae belong to the order Hemiptera and suborder Heteroptera. They are commonly known as seed bugs, milkweed bugs or ground bugs. Common seed bug as it shows to be seed feeder is not necessary, they have wide range of host plants. Heteropterans are successful creatures with 40,000 species worldwide, Lygaeidae among them are recognized as important, as many of them are important pests of crops [1,2], several species are renown as laboratory animals as several experiment are conducted due to their easy rearing [3], with special reference to the physiology [3,4]. Variety of information on biology of Lygaeidae is available in scattered literature.

The size of Lygaeidae range from 1 to 12 millimeter [5], several species have colour patterns cryptically [6], the body shape of these bugs is oval and slender, some of the subfamilies have peculiar shape of seed on which they feed upon including; Pachygronthinae and Cyminae [6].

They are recognized by 4 segmented antennae and 4 segmented beak. They can be distinguished from coreidae by number of veins on their forewings, as they have five or less, whereas, coreids have six or more. From mirids they can be distinguished by lacking cuneus. Due to their polyphyletic nature of family they are very difficult to identify.

They have mouthparts with piercing and sucking with tube like proboscis. Their rostrum consists of 4 segments with needle like maxillae, mandibles and labium, two canal in rostrum, one with delivery of saliva and other for uptaking of food material [7].

Family Lygaeidae being one of the important pests of agricultural crops are not well studied in our native agroecosystem, hence, viewing on its importance present studies are designed to undertake to have better understanding of available diversity of

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Lygaeidae in Tandojam, which can further be expended. The outcome of present studies will help growers and the other people involved in the field of agriculture to understand their role as major or minor pest.

2. MATERIALS AND METHODS

2.1 *Place of work*: For present studies, specimens of Lygaeidae were collected from various localities of Tandojam. Further examination and identification was carried out at Insect Systematic Laboratory, Department of Entomology, Sindh Agriculture University Tandojam.

2.2 *Method of collection:* Collection was made through sweep net, pooter and on light trap from various localities of Tandojam.

2.3 *Methods of Killing and preservation*: Specimens were killed in a jar containing potassium cyanide and mounted through entomological pins. Specimens were labeled containing the information of locality and date of collection, the name of the collector, and the host tree and are pinned beneath the specimen.

2.4 *Method of imaging*: For habitus (adult) images the high pixel camera was used, and for the images of genitalia; 350 k pixel, USB camera fitted on microscopes a) Labomed CSM2 (20X and 40X), b) Kyowa Medilux 20 was used.

2.5 *Methods of identification:* To identify the specimen up to the species level, keys for the region were collected from various publications.

2.6 *Method of preparing Checklist:* Checklist was prepared from previous literature and further was updated with collection.

3. RESULTS

In present study, total 196 specimens of Family Lygaeidae Schilling, 1829 were collected from Tandojam, during the course of identification the material revealed the occurrence of various 09 species under 3 subfamilies. Subfamily Lygaeinae Schilling, 1829 was discovered with the record of 7 species including; *Spilostethus hospes* (Fabricius, 1794), *Spilostethus pandurus* militaris (Fabricius, 1775), *Spilostethus simla* (Distant, 1909), *Graptostethus servus* (Fabricius, 1787), *Oxycarenus hyalinipennis* (Costa, 1843), *Karachicoris* sp. and *Cosmopleurus fulvipes* (Dallas, 1852). Subfamily Orsillinae Stål, 1872 with one species record; *Nysius* sp. and lastly subfamily Geocorinae Dahblom, 1851 was discovered with *Geocoris ochropterus* (Fieber, 1844).

Checklist of Lygaeidae of Tandojam

Order: Hemiptera Linnaeus, 1758
Suborder: Heteroptera Latreille, 1810
Infraorder: Pentatomorpha Leston, Pendergrast & Southwood, 1954
Superfamily: Lygaeoidea Schilling, 1829
Family: Lygaeidae Schilling, 1829

Subfamily: Lygaeinae Schilling, 1829
Spilostethus hospes (Fabricius, 1794)
Spilostethus pandurusmilitaris (Fabricius, 1775)
Spilostethus simla (Distant, 1909)
Graptostethus servus (Fabricius, 1787)
Oxycarenus hyalinipennis (Costa, 1843)
Karachicoris sp.
Cosmopleurus fulvipes (Dallas, 1852)

Subfamily: Orsillinae Stål, 1872
Nysius sp.

Subfamily: Geocorinae Dahblom, 1851
Geocoris ochropterus (Fieber, 1844)

4. DISCUSSION

Several workers conducted work on identification of lygaeidae from various parts of Pakistan, but from Tandojam this is the first attempt, to enrich our knowledge on diversity of insect as the part of our agroecosystem.

The study revealed the most populated subfamily Lygaeinae Schilling, 1829 with the record of 7 species, among them 3 species including; *Spilostethus hospes* (Fabricius, 1794), *Spilostethus pandurus militaris* (Fabricius, 1775), *Spilostethus simla* (Distant, 1909) are very widely distributed in Indopak Subcontinent. *Spilostethus pandurus* (Scop.) prefers to feed on the leaves of the plant Calotropis procera, they obtain glycosides from plant and use it

during defense [8]. *Karachicoris* sp. is recorded here, having type species *Karachicoris seidenstueckeri* Stys, by original monotypy.

Genus *Nysius* is recorded here sometimes referred as false chinch bugs and about 100 species are described under the genus. One predatory species of the genus *Geocoris* commonly called as big eyed bug with its peculiar characteristics, they are considered as the voracious feeders of small insects including whiteflies. *Oxycarenus hyalinipennis* (Costa) is very common in Tandojam on cotton crop, the big population cause serious damage to the crop and it is widespread species in Old World tropics, generally it is Neotropical, Oriental and Palaearctic species in distribution. They have wide range of host plants but breeding is restricted on Malvales [9].

5. CONCLUSION

Present study revealed the occurrence of 9 different species of lygaeidae in our ecosystem.

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Fig 1. Study area

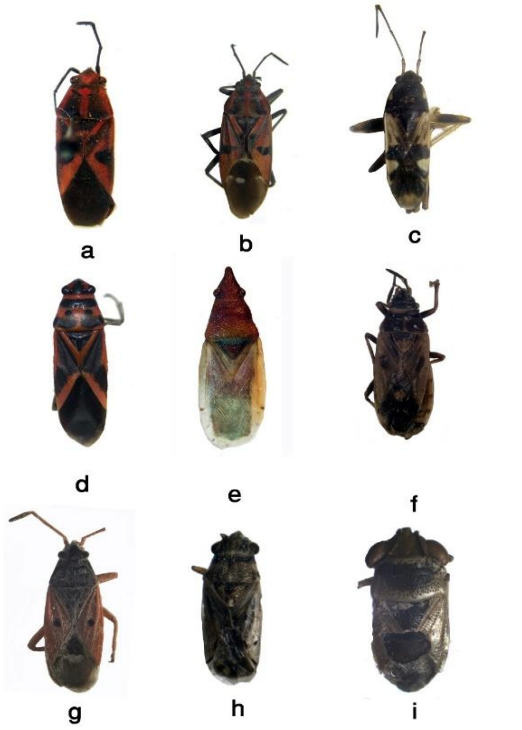

Fig 2: a-k; a) *Spilostethus hospes;* **b)** *Spilostethus pandurus militaris;* **c)***Spilostethus simla;* **d)** *Graptostethus servus;* **e)** *Oxycarenus hyalinipennis;* **f)** *Karachicoris* sp; **g)** *Cosmopleurus fulvipes;* **h)** *Nysius* sp; **i)** *Geocoris ochropterus*.