



ISSN: 0976-3376

Available Online at <http://www.journalajst.com>

ASIAN JOURNAL OF
SCIENCE AND TECHNOLOGY

Asian Journal of Science and Technology
Vol. 6, Issue 05, pp. 1472-1473, May, 2015

RESEARCH ARTICLE

DIVERSITY OF AQUATIC HEMIPTERA IN GHAGA BEEL OF NALBARI DISTRICT OF ASSAM, INDIA

¹*Alakesh Barman and ²Dr. Rantu Mani Deka

¹Department of Zoology, Cotton College, Guwahati, India

²Department of Zoology, Barbhag College, Nalbari, India

ARTICLE INFO

Article History:

Received 17th February, 2015

Received in revised form

25th March, 2015

Accepted 07th April, 2015

Published online 31st May, 2015

Key words:

Ghaga Beel,
Aquatic Hemiptera.

ABSTRACT

Ghaga Beel is a freshwater perennial water body of Nalbari district of Assam. Geographically it lies at the intersection of 26° 28' 21.10" N – 26° 28' 25.05" N and 91° 28' 51.84" E – 91° 29' 19.80" E covering an area of about 50 hectares. Study on the aquatic Hemiptera in Ghaga Beel carried out for a period of one year (2013-2014), covering three seasons pre monsoon (March-May), monsoon (July-September), and post monsoon (November- January) seasons. Study revealed 15 species of aquatic Hemiptera belongs to eight orders viz. Gerridae, Belostomatidae, Nepidae, Corixidae, Hydrometridae, Pleidae, Notonectidae and Mesovelidae. Highest number of species were recorded from the order Gerridae with 4 species, Nepidae with 3 species, Belostomatidae and Notonectidae with 2 species, Corixidae, Hydrometridae, Pleidae and Mesovelidae with one species each respectively.

Copyright © 2015 Alakesh Barman and Dr. Rantu Mani Deka. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

The order Hemiptera belong to the Paraneopteran section of Martynov (Tembhare, 2012). Majority of Hemiptera are terrestrial but there are some species adapted to aquatic or semi aquatic life, occur in all type of freshwater habitat. They can be distinguish from other aquatic insects order by presence of piercing and sucking beak like structure of mouth parts and leathery anterior pair of wings at the base and membraneous apically and completely second pair. They are highly predaceous. Some species are as voracious predator of fish, fry and fingerlings (Khan and Ghosh, 2001). Few work on the diversity of aquatic Hemiptera is reported from Assam. Studies on the aquatic Hemiptera in this area were reported by Thirumalai (2002, 2007), Kalita (2008) Hazarika and Goswami (2010) Das and Gupta (2010), Barman and Baruah (2014). Study on the aquatic Hemiptera from this part of Assam not reported. Considering rich diversity of aquatic Hemiptera of Assam and their ecological role in an aquatic ecosystem, present study was undertaken.

MATERIALS AND METHODS

Ghaga Beel is a perennial freshwater wetland is located at Nalbari district, Assam. Geographically it lies at the intersection between 26° 28' 21.10" N – 26° 28' 25.05" N and 91° 28' 51.84" E – 91° 29' 19.80" E covering an area of about

50 hectares. It is about 65 Km away towards east from the Guwahati, the capital of Assam. The study was carried out for a period of one year (2013-2014) covering three seasons pre monsoon (March-May), monsoon (July-September), and post monsoon (November- January) seasons of a year. For sampling the Beel area is arbitrarily divided into five zones namely North zone, South zone, East Zone, West Zone and Central zone. Samples were collected randomly at the above mentioned zone using hand operated nets of varying sizes. Macrophytes associated insects were collected with help of hand operated 'D' framed sweep net of the size of 50 cm length, 25 cm maximum breadth of the 'D' with mesh size of approximately 200µ. Ekaman dredge was used to sample aquatic insect and macrophyte of soft sediments in deep water. The individuals of each species were sorted, counted and noted down. The collected samples preserved in 70% ethanol in glass vial. Insect were identified with the help of a simple dissecting microscope and a compound microscope. Identification and taxonomy following the methodology, Bal & Basu (1994a, 1994b), Epler (2006) Khan and Ghosh (2001), Subramaniam & Sivakrishnan (2007)

RESULTS AND DISCUSSION

A total of 15 species of aquatic Hemiptera were recorded from the wetland. Gerridae record with highest of 4 number of species followed by Nepidae with 3 species, Belostomatidae and Notonectidae with 2 species, Pleidae, Corixidae, Hydrometridae, and Mesovelidae with one species each respectively. During the whole study period it was observed

*Corresponding author: Alakesh Barman

Department of Zoology, Cotton College, Guwahati, India

that highest density of aquatic Hemiptera found during winter season. Lowest density recorded during the monsoon season. In the similar study of aquatic Hemiptera Hazarika and Goswami (2010) recoded 14 species from two pond of Gauhati university. Kalita (2008) recorded 9 species from the Deepor beel. In rain pool and agricultural field of Cachar district Das and Gupta (2010) recorded 12 and 10 species of Aquatic Hemipterans respectively. They found highest density during postmonsoon in agricultural field while in postmonsoon in rain pool. Deep and Rao revealed 8 hemipteran species from pochram lake of Andhra Pradesh. Gupta and Narzary (2013) reported 5 aquatic Hemiptera from anua lake of Cachar. Barman and Baruah revealed 11 hemipteran species from Kapla beel of Barpeta district.

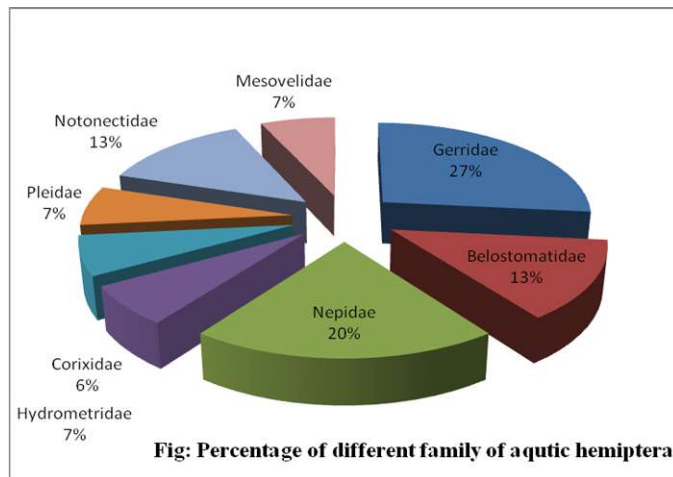


Fig: Percentage of different family of aquatic hemiptera

Table 1. List Aquatic Hemiptera of Ghaga Beel

Family	Genus
Gerridae	<i>Neogerris parvula</i> Stal <i>Gerris gracilicornis</i> Horvath <i>Aquarius adelaidis</i> <i>Limnogonus nitidus</i> Mayr
Belostomatidae	<i>Lethocerus indicus</i> Lepeleier & Serville <i>Diplonychus rusticus</i> Fabricius
Nepidae	<i>Laccotrephes rubber</i> Linnaeus <i>Laccotrephes griseus</i> Guerin <i>Ranatra gracilis</i> Dallas
Corixidae	<i>Micronecta scutellaris scutellaris</i> Stal
Hydrometridae	<i>Hydrometra buleri</i>
Pleidae	<i>Plea liturata</i> Fiebr
Notonectidae	<i>Nychia marshalli</i> Scott <i>Anisops</i> sp.
Mesovelidae	<i>Mesovelia vittigera</i> Horvath

Present study exceed the number of aquatic Hemiptera finding of the most the above studies. This is may due to the presence of large number hydrophyte. As hydrophytes can alter the physical condition of water bodies and increase in the heterogeneity of that habitat. The distribution of this macroinvertebrate community seems to be influenced by habitat preference of the species for food, shelter and protection. During the study it was found that Hemiptera species use these macrophytes for shelter, few use them as

food and few species exploit them as egg laying. Out of the eight families Gerridae composed of 27%, Nepidae composed of 20%, Notonectidae and Belostomatidae composed 13%, Hydrometridae composed of 7% and Corixidae, Hydrometridae, Pleidae and Mesovelidae 6%.

REFERENCES

- Bal, A. & R.C. Basu, 1994a. Insecta: Hemiptera: Mesovelidae, Hydrometridae, Veliidae and Gerridae, pp. 511-534. In: State fauna Series 3 : *Fauna of West Bengal, Part 5*, Zoological Survey of India, Calcutta.
- Bal, A. & R.C. Basu, 1994b. Insecta: Hemiptera: Belostomatidae, Nepidae, Notonectidae and Pleidae, pp. 535-558 In: State fauna Series 3: *Fauna of West Bengal, Part 5*, Zoological Survey of India, Calcutta.
- Barman, A. & Baruah, B.K. 2014. Aquatic Hemiptera of Kapla beel, a fresh water wetland of Barpeta District of Assam, India. Abstract, National seminar on Recent Trends of research in Science and Technology, 29th March, 2014 pp. 143-144.
- Das, K. and Gupta, S. 2010. Aquatic Hemiptera Community of Agricultural Fields and Rain Pools in Cachar District, Assam, North East India, Assam University Journal of Science & Technology: Biological and Environmental Sciences Vol. 5 Number I 123-128, 2010
- Epler, J. H. 2006. Identification Manual For The Aquatic and Semi-Aquatic Heteroptera of Florida, Division of Water Resource Management, Florida Department of Environmental Protection.
- Gupta, S. and Narzary, R. 2013. Aquatic Insect community of Lake, Phulbari anua in cachar, Assam; Journal of Environmental biology, May 201, Vol 34, pp. 591-597.
- Hazarika, R. and Goswami, MM. 2010. Aquatic Hemiptera of Gauhati University, Guwahati, Assam, India. Journal of Threatened Taxa, March 2010 | 2(3): 778-782.
- Kalita, G. 2008. Ecology and Distribution of macroinvertebrate enmeshed fauna in Deepar wetland of Assam, India. Ph.D. Thesis Gauhati University, Guwahati, Assam, India.
- Khan, R.A. and Ghosh, L.K., 2001. Faunal Diversity of Aquatic insects in Freshwater Wetlands of South eastern We4st Bengal, Occasional Paper No. 194, Records of Zoological Survey of India.
- Subramaniam, K. A. and Sivaramakrishnan, K. G. 2007. Aquatic Insects of India-A field guide, Ashoka Trust for Research in Ecology and Environment (ATREE) Small Grants Programme.
- Tembhare, TB. 2012, Modern Entomology, 2nd ed, himalyan publishing house, pp 253
- Thirumalai, G. 2002. A check list of Gerromorpha (Hemiptera) from India. *Records of Zoological Survey of India* 100(1-2): 55-97.
- Thirumalai, G. 2007 *A Synoptic List of Nepomorpha (Hemiptera: Heteroptera) from India* Zoological Survey of India, Kolkata Occasional Paper Number 273
