Insects are highly specialized group of invertebrates belonging to the largest animal phyla, the Arthropoda. The arthropods are bilaterally symmetrical animals with their bodies divided into a number of rings or segments and covered by an exoskeleton made up of a substance called chitin, with joined appendages provided with independently movable muscles and inserted into special pockets of the exoskeleton.

Ecdysis or moulting is a phenomenon characteristic of all arthropods whereby the cuticle is shed at regular intervals in order to accommodate the growing tissues. Insects are the most diverse species of animals living on earth. The origin of insects dates back to about 350 million years, presumably in the lower Devonian. Insects are widely distributed from the equator to the poles. Insects can be found in all habitats, swamps, jungles, deserts, even in pools of crude petroleum also. They are the most adaptable form of lives. Most species of insects are directly important to humans and the environment, such as-some insects species are predators or parasitoids on other harmful pests, some are pollinators, decomposers and some produces the valuable products such as honey or silk.

Insects are pests when they reduce the quality or quantity of food, feed forage or fiber during production, damage commodities during harvesting, processing, marketing, storing or transmit diseases to man or animals, damage plants including crops. Insects cause widespread damage to agricultural and forest products during storage and distribution.

The insect pest damages crop leads the loss in economic status in agriculture. For getting better yield of rice it is imperative to strengthen pest-scouting system by
using either pesticide or insecticide. The indiscriminate use of pesticides has leads the wide spread contamination of our environment. One of the special approaches besides the application of insecticides and pesticides is Integrated Pest Management approach. But in some cases, these are not applicable or found not suitable too. So, people used to depend on the traditional knowledge based practices for the management of this pest one way and other way to keep the agro-ecosystem non-toxic which may be considered as a sustainable pest management practice.

Biological control in IPM is the use of living organisms, parasites, predators or pathogens to maintain pest population below economically damaging levels and may be either natural or applied.

Order orthoptera belong to the class insecta comprise medium to large sized, active, mostly terrestrial insects and include grasshoppers, locusts, crickets, mole crickets etc. The members of acrididae family are often destructive to crops and vegetation. The rice grasshopper is a sporadic pest of paddy distributed all over India. The nymphs and adults generally feed on grasses over the bunds of rice fields, before attacking the crops. Among grasshoppers, *Oxya hyla hyla*, *Oxya velox*, *Oxya nitidula*, *Oxya fuscovittata*, *Chrotogonus trachypterus trachypterus* and *Aiolopus tamulus* are possess more economic significance.

As *Oxya hyla hyla* (Orthoptera: Acrididae) is one of the serious pest of rice which cause economic damage to rice crops in north- east India in general and Barak valley of Assam in particular (Das and Ray, 2013). Keeping this point in mind the present study was undertaken on the ecology, seasonal dynamics, life cycle and management of the pest species by both modern and traditional methods in Cachar District under Barak Valley of Assam, north- east India.
Chapter I provides an overview of paddy, damages caused by *O. hyla hyla*, distribution of the pest, description of study sites and objective of the study. Chapter II covered with the review of literature. Chapter III discuss about the population dynamics of the pest species in the three study sites during crop season, host preference, alternative host preference by the pest, extent of damage caused by the insect pest and diurnal study of the pest. Morphometry, morphometrical variations in different seasons and biology of the pest species are discussed in Chapter IV. Chapter V deals with management of pest using conventional pesticides, bio-pesticides, microbial agents and botanical pesticides. Traditional knowledge regarding the management of the pest practiced by farmers are described in Chapter VI. Chapter VII is deals with the general discussion. References are incorporated in the Chapter VIII.