Amphibians constitute an interesting group of organisms that include members of three orders, viz., Caudata or Urodela comprising newts and salamanders, Salientia or Anura containing frogs and toads and Gymnophiona or Apoda, also known as caecilians that include worm like creatures living in the soil in the tropics only.

Anurans which include frogs and toads form the major group of amphibians. Both frogs and toads are widespread in temperate and tropical regions. The frogs are characterised by moist smooth skins, inhabit damp, moist areas and have longer hind limbs that enable them to leap while toads have dry, warty skin, shorter legs and are adapted to drier conditions. Anurans like all other amphibians have a
biphasic life style inhabiting both aquatic and terrestrial conditions. Eggs laid in water hatch into tadpoles that finally undergo metamorphosis into adults which then migrate to the terrestrial habitat.

Ecologically the anurans are an important group because of their biphasic life style, high sensitivity to environmental changes, their position in the food web, being both a prey as well as a predator, and their widespread distribution. However, due to rapid urbanisation, technological development and agricultural practices, this important group of organisms is getting increasingly scarce. Smith (1953) suggested that one of the reasons for this decline was probably the extensive use of anurans in laboratories for morphological, anatomical, and physiological research activities. Cooke (1972, '79) considered that toxic chemicals such as DDT, dieldrin and 2,4 D affected the spawn and tadpoles thereby affecting the population. Simms (1969) suggested that changes in the land use had altered the habitats and affected the amphibian population. Burton (1976) reported that decline of frogs in London area was due to destruction of ponds, pollution and collection of frogs by school children. Over and above, tourism and increased road traffic kills a large number of anurans especially during the breeding season every year resulting in a decline of these animals.

The amphibians of India comprise over 205 species (Dutta, 1997) that includes salamanders, anurans and caecilians. The Indian
fauna is divisible into three groups; viz., those known only from the Northeast, those confined to the Western Ghats and a small group of ubiquitous species spread between these two regions (Inger and Dutta, 1986). The Western Ghats and the North-eastern India have been identified as the hotspots of amphibian biodiversity and are the homes of several endemic and nonendemic species of amphibians. High precipitation, rich diversity of vegetation and the warm tropical climate of the North-eastern region makes it extremely suitable for the amphibians.

Although studies on the amphibians of Northeastern India started fairly early (Boulenger, 1890, '91, 1919, '20; Smith, 1929; Romer, 1949; Roonwal and Kripalani, 1951; Pillai and Yazdani, 1973; Yazdani and Chanda, 1971; Chanda and Talukdar, 1973; Pillai and Chanda, 1973, '76, '77, '79, '81; Sahu & Khare, 1983; Kiyasetuo and Khare, 1986; Chanda and Ghosh, 1988,'89; Chanda, 1994; Bordoloi and Bora, 1999; Choudhury et al., 1999; Dutta et al., 2000; Dey and Gupta, 2000; Deuti et al., 2000; Ao et al., 2001), most of the investigations referred to above deal only with the taxonomy of adults.

Chanda (1994) in his monograph described some 54 species of anurans from North-eastern India, thus confirming the richness of anuran biodiversity of this region. However, the ecology of the larvae and adults have not been investigated so far in great detail. The present study aims to fulfil the existing lacuna in our knowledge of the ecology of anurans in the Barak Valley region of Assam, Northeastern
India. This area comprises three districts, viz., Cachar, Karimganj and Hailakandi in South Assam and is situated between 24°8' N and 25°8' N latitudes and 92°15' E and 93°15' E longitudes. This region abounds in wetlands of various sizes, formed in the flood plains of River Barak and its tributaries, with low hills strewn in between. Besides, there are numerous tanks and ponds of varying sizes, streams, temporary pools and marshes in this pre-dominantly low-lying area. Hence, these myriad freshwater ecosystems offer excellent habitats for the amphibians, thus rendering the ecology of anuran larvae and adults worth investigating.

Anuran ecology has received a great deal of attention in other parts of the world, especially in the temperate region. Several workers have studied interference and competition among tadpoles (Licht, 1967; DeBenedicts, 1974, Steinwascher, 1978). Aspects of larval growth, mortality and survival, life history patterns in different locations and seasons along with embryonic survival patterns have also been studied by several workers, both in India and abroad (Herreid and Kinney, 1966; Calef, 1973; Licht, 1974; Cecil and Just, 1979; Ritke et al., 1990; Riis, 1991, Mohanty-Hejmadi and Dutta, 1979, '80, '88; Gramapurohit et al., 1998). Besides these, the feeding habits and resource partitioning have also been investigated (Jennsen, 1967; Wassersug, 1972; Toft, 1980a, b, '85; McAlpine and Dilworth, 1989; Donnelly, 1991). Frog embryos and larvae are both excellent water quality indicators (Greenhouse, 1976) and biomonitors.
of environmental changes (Beiswenger, 1988) and therefore, have been subjected to ecotoxicological studies (Kaplan and Overpeck, 1964; Sanders, 1970; Cooke, 1972, '79; Lande and Guttman, 1973; Mohanty-Hejmadi and Dutta, 1980, '81, '89; Schuytema et al., 1991, '93, '94, '95; Sampath et al., 1992; Misyura, 1996).

Considering the lack of systematic studies on anuran taxonomy, morphology and ecology from the Barak Valley, the present study was designed with the following objectives:

(i) To make an inventory of the species of anurans found in Barak Valley, to associate the larval stages with the adult by rearing and to make detailed morphometric analysis of the larvae and the adults.

(ii) To investigate the feeding habits of both larvae and adults.

(iii) To investigate various life cycle parameters like duration and growth.

(iv) To determine the effects of stress in the form of toxic chemicals on the survival and growth of larval anurans.