Chapter 5: Taxonomic position and External morphology of Indian flying fox

5.1. Classification:

Kingdom – Animalia

Phylum – Chordata

Subphylum – Vertebrata

Super class – Tetrapoda

Class – Mammalia

Subclass – Theria

Infraclass – Eutheria

Order – Chiroptera

Suborder – Megachiroptera

Family – Pteropodidae

Subfamily – Pteropinae

Genus – Pteropus

Species – Pteropus giganteus (Brunn.)

Type species: Vespertilio gigantea Brunnich, 1782

Type locality: Bengal, India.

The Indian flying fox locally known as Pholkhowa Borbaduli (Frugivorous; big bat) in Assamese, Borobadur in Bengali and Samgadar in Hindi.
5.2. **External morphology:**

Indian flying foxes (*Pteropus giganteus*) are known to be the largest fruit eating bat species of Assam. They are flying mammals with paired thoracic mammae and the body is generally covered with soft brown hair.

But variation in hair colour in the body of the bat is observed as follows: Crown of the head is chestnut brown which is relatively darker around the eyes and the mouth, neck and shoulders, golden yellow and the rest of the body, viz; the colour of the belly are found to be most variable ranging from pale to deep orange or rusty brown. There was a clear line of demarcation on the mantle and the dark hairs of the dorsum of each specimen of Indian flying foxes which could be seen even in the new born babies of the *P. giganteus* (Figure 4a).

Bats are called flying foxes in which the head is like that of a fox with long snout and large eyes (Figure 4bii). Head also bears two well developed nostrils. The ears have large pointed pinnas which are black in colour and virtually hairless (Figure 4bi). Bats obtain major part of their information through the ears. Fore arms are modified as wings. Each wing is a fold of membranous skin called ‘**Patagium**’ supported by long digits of the forearm and extending from the shoulder to the upper margin of the arm and passing back to the hind legs. The wings or patagium are black in colour (Figure 4a, 4bi and 4bii). Bats are the only mammal that truly flies by flapping their wings as in birds. The average forearm length of adult male and females were recorded as 163.0mm (145-175 mm) and 154.0 mm (140-170 mm) respectively.
Fig 4a: Dorsal view of *P. giganteus*

Fig 4bii: Ventral view of *P. giganteus*
The thumb is separate like the foot from the patagium and has two phalanges which are armed with claws (Figure 4bi). The hind legs are relatively short and weak bearing five digits with well developed robust claws (Figure 4bi). On account of peculiar development of arm and patagium and weak legs bats cannot walk actively but they can climb and crawl. But the peculiar behaviour is seen during rest when the animal is suspended upside down, hanging its head downwards. Young (1971) reported that during resting period; the tendons provide a catch mechanism so that no muscular effort is needed and that is why a large fruit bat can be seen remain in suspended position if shot while hanging.

Indian flying foxes are wholly fruit eater and have flattened grinding teeth, the dental formula being i2/2; c1/1; p3/3; m2/3. The skull of flying foxes retains many primitive features and resembles that of an insectivore and the chief skeletal modification there in bat is great elongation of the arms and specially of its more distal bones.

In the present study, average wingspan of the species was recorded at 1.23 meter (4.05 feet). Average weight of male and female specimens of *P. giganteus* collected from the study areas had been recorded at 625gm and 568 gm respectively.