HAEMOFLAGELLATES

Medically important Haemoflagellates require two hosts to complete their life cycle

and are therefore called digeneticor heteroxenous. They live in the blood and tissues

.of human and other vertebrate hosts, and in the gut of insect vectors

Haemoflagellates infecting human belong to two genera, in the family, Trypanosomatidae—Trypanosomaand Leishmania. Members of this family have a nucleus, a kinetoplast and a single flagellum. The kinetoplast(sometimes referred to incorrectly as the

micronucleus) consists of a deeply staining parabasal bodyand a adjacent dot-like blepharoplast. The blepharoplast and parabasal body are connected by one or more delicate

fibrils. The flagellumarises from the blepharoplast. The portion of the flagellum which

.(is inside the body of the parasite is called the axonemeor axial filament (Fig. 4.3

Multiplication in vertebrate and in vertebrate hosts is by binary fission. No sexual

.cycle is known

Haemoflagellates exist in two or more of four morphological stages. These were

formerly called the leishmanial, leptomonad, crithidial andtrypanosomal stages.But as

the above names have also been given to different genera within the family, it led

to confusion. The names of the morphological forms have, therefore, been changed

.(as described below (Fig. 4.4

These names are formed by the suffix ‘mastigote’ (derived from the Greek word

Mastix for whip) combined with various prefixes referring to the origin, course and

arrangement of the flagellum in relation to the position of the nucleus, and its point

.of emergence from the cell

i. Amastigote(formerly leishmanial) stage is rounded or ovoid without any external flagellum. The nucleus. kinetoplast and axial filament can be seen. This is the stage in which T. cruziand Leishmania are found intracellularly in vertebrate .hosts

ii. Promastigote(formerly called leptomonad) stage is lanceolate. The kinetoplast is anterior to the nucleus (antenuclear kinetoplast), near the anterior end of the cell