

Some observations on bovine malaria associated with developing phases of *Plasmodium bubalis* in Vidarbha region of Maharashtra*

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Abstract

Observations were made on the developing phases of *Plasmodium bubalis* in buffaloes. Parasitic stages were identified as schizonts, young ring forms and trophozoites.

Keywords: Bovine malaria, *Plasmodium bubalis*, Buffalo.

Introduction

In the present communication, observations were made on developing phases of *Plasmodium bubalis* in clinically suspected buffaloes belonging to private owners at Nagpur city.

Materials and Methods

Nine Murrah buffaloes between five to nine years old with a history of fever (103-105°F) for three days, anorexia, dullness, reduced milk yield, loss of body weight, lacrimation, loss of vigour, haemoglobinaemia and haemoglobinuria were examined during July to September, 2001 clinically. Blood smears were prepared, stained by Giemsa stain and examined microscopically.

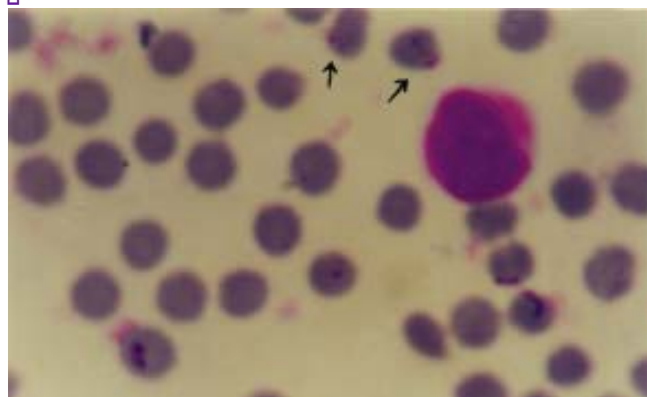


Fig. 1. Ring form of *Plasmodium bubalis* in buffalo (X1000)

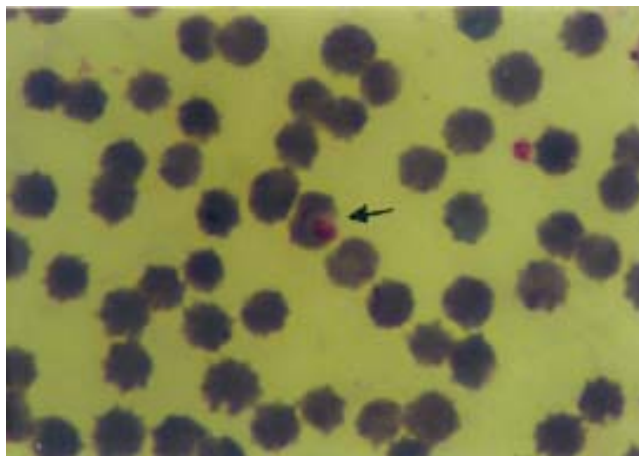


Fig. 2. Developing trophozoites of *Plasmodium bubalis* in buffalo (X 1000)

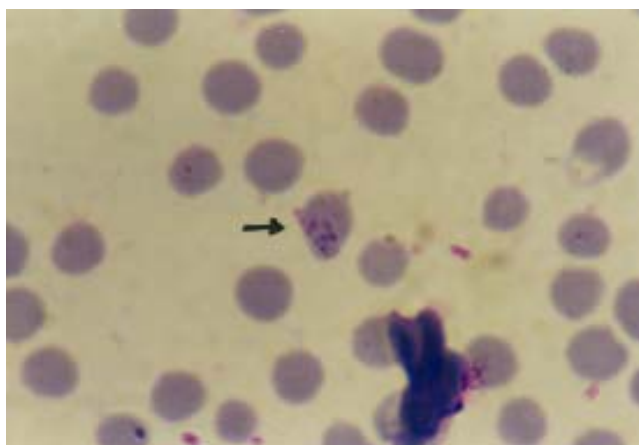


Fig. 3. Fully developed trophozoites of *Plasmodium bubalis* in buffalo (X 1000)

*Part of M.V.Sc. thesis of first author, Maharashtra Animal and Fishery Sciences University, Nagpur, India

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Results and Discussion

Microscopical examination of stained thin blood smears prepared during the height of temperature, revealed erythrocytic schizonts, young ring forms in 1.5 to 2 μm in diameter (Fig. 1) and fully developed trophozoites of 5 to 6 μm in size (Fig. 3). The gametocytes were typically round in shape and confined mostly along the peripheral margin of erythrocytes. A single red blood cell contained only one schizont at its margin (Fig. 1). The developing trophozoite which occupied one fourth of erythrocyte was roughly ellipsoid in shape (Fig. 2), while the fully developed trophozoite was typically elongated, cone shaped and occupied nearly half the space of red blood cell (Fig. 3).

The morphological features and location of developmental stages of the intraerythrocytic parasites were similar to those reported by Richardson and Kendall (1963) and the findings were corroborated with the earlier reports of Shastri *et al.* (1985). In thin blood smears stained with Leishman's stain, the morphology of the ring shaped

schizonts of *Plasmodium* in the periphery of erythrocytes resembled to certain extent those identified as *P. bubalis* by Kolte *et al.* (2002). The other forms of the parasite were different from the earlier observations and could be considered new findings assigned to buffalo malaria from Maharashtra. The transmission of *Plasmodium bubalis* is unknown, however, occurrence of infection during hot and humid months of the year was indicative of involvement of blood sucking flies as possible vector.

References

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