Malaria is caused due to the mosquito bite hence the parasite enter into blood through the saliva of the mosquito. The malaria parasite directly infects the red blood cells, therefore to design an automatic detection system, the red blood cells should be segmented from the artifacts and background in a microscopic image. Here in this paper watershed transform is used with the distance transform which separates even the overlapped red blood cells more efficiently, which are useful for the diagnosis of parasite and for the parasitemia too. The result shows improvement in diagnostic accuracy of detection of the parasite in Red Blood Cells and also describing the life cycle stage of the parasite. The accuracy, sensitivity and specificity achieved were as 97.7%, 97.4% and 97.7% respectively.


**Index Terms**

Computer Science  Pattern Recognition

**Keywords**

Watershed, Parasitemia, Texture and Statistic Features.