



The genetics of African trypanosomes

A. TAIT

Wellcome Trust Centre for Molecular Parasitology, Glasgow University, UK

ABSTRACT

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The occurrence of genetic exchange is not only a fundamental property of an organism but its occurrence provides us with methods of analysis that can be used to dissect the basis of important traits. This paper will review the current evidence for a sexual cycle in *Trypanosoma brucei* and illustrate how genetic analysis can be used as a tool to identify genes of relevance to the disease, its treatment and transmission. The role of this process in the generation of diversity in the field will be illustrated by considering populations of the three sub-species of *T. brucei* and how the availability of genome sequence data has been exploited to study whether genetic exchange occurs in the trypanosomes infecting livestock. Finally, the use of population genetics as a methodology to identify genes under selection will be discussed and this will be illustrated as an approach to validating markers for drug resistance with examples from other parasitic protozoa.
