

Population dynamics and vectorial importance of species A and species B of the *Anopheles gambiae* complex

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It has been established during the past decade that two sibling species of the *A. gambiae* complex are vectors of malaria in most parts of tropical Africa (DAVIDSON et al., 1967). These two species, provisionally termed A and B, occur sympatrically over much of their ranges, but each is known to be of vectorial importance in some places where only one or the other species exists (Coz and BRENGUES, 1967).

Using Coluzzi's cytotaxonomic technique for identifying these sibling species (COLUZZI and SABATINI, 1967), we have completed a study in the coastal lowlands of East Africa to evaluate, on an annual basis, the relative proportions of species A and species B in a mixed population of *A. gambiae* sensu lato. Results are presented here in three graphs showing: (i) densities of A and B females indoors, (ii) densities of A and B females outdoors and (iii) the numerical ratios A/B and B/A throughout the year. Climatic data for the locality (Segera: 5°18'S, 38°33'E) are also illustrated.

It was observed that species A predominated numerically over species B during the main rains and throughout the cool dry season, after which species B multiplied in excess of species A during the short rains and the hot dry season. These fluctuations seemed to occur in a regular annual cycle. Among indoor-resting females, an extreme A/B ratio of over 50 was recorded in November. The reciprocal ratio B/A reached 10 to 15 during February-April.

During the period March 1970 to April 1971 totals of 3,169 females of species A and 1,578 of species B were dissected and their salivary glands examined for the presence of malaria infections. In species A the sporozoite-rate was consistently high and averaged 4.2%. Sporozoites were only observed in 0.3% of species B; these infective species B females were all found during the brief period centred in March when species B outnumbered species A.

In a more detailed account of this project (WHITE et al., in press) it has been possible to analyse data concerning feeding-preferences and survival-rates of species A and B females to show that the specific divergence of vectorial efficiency is probably caused by behavioural differences between these two sibling species of the *A. gambiae* complex and not to any intrinsic difference in their susceptibility to malaria infection.

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