

THE FIRST ISOLATION OF BUSSUQUARA VIRUS FROM MAN

SIR,—The prototype strain of Bussuquara (BSQ), a group B arbovirus, was isolated from a sentinel monkey in Brazil in 1956 (GOMES and CAUSEY, 1959). This virus was shown to be widespread among *Proechimys* rodents in the same area (SHOPE, 1963). However, no isolations have been reported from human subjects.

Strains closely related to the BSQ virus were repeatedly isolated from different regions in Panama since 1959 from sentinel animals, mosquitoes and rodents (GALINDO et al., 1966; and SRIHONGSE et al., unpublished). The present communication reports a natural infection of BSQ virus in a febrile human resident of Arenosa, a village approximately 30 miles north-west of Panama City, in October 1964.

The patient, an adult male 29 years old, was ill for 4 days with fever, anorexia, restlessness and joint pain without evidence of inflammation. He complained of chills, profuse sweating and continuous frontal headache. Physical examination revealed only dental caries and a functional systolic murmur, in addition to the low-grade fever. No other abnormal signs and symptoms were found. A virus was isolated by inoculation of suckling mice with blood serum obtained on the first day of illness. The isolated virus was studied by standard serological techniques (haemagglutination-inhibition, complement-fixation and neutralization) and was found to be closely related, if not identical, to the Be An 4116 strain of BSQ virus isolated from Brazil.

The patient moved out of the village during the convalescent period and we were unable to locate him until about a year later. Results of serological tests performed at that time showed a significant increase in antibody titre both to Bussuquara virus and, to a lesser extent, certain other group B arboviruses.

To determine the prevalence of BSQ virus infection in man, serum surveys of some 1,715 people living in Arenosa and adjacent villages close to the Gatun Lake region of Central Panama were made. 34% of these individuals exhibited HI antibodies to group B arboviruses, which is a highly cross-reactive group of viruses. At least 20% of these positives showed relatively higher titres to BSQ than to 3 other antigens (Yellow fever, St. Louis encephalitis and Ilheus) included in the tests. Furthermore, neutralization tests were performed with some of the BSQ HI-positive sera. From a total of 383 samples tested, 46% were positive. Therefore, it seems very likely that a number of these people have been infected with BSQ virus.

Although the BSQ virus isolated from this patient represents the only reported laboratory documented human case, the results of our serological surveys indicate that infection with this virus is probably widespread among the human populations in certain areas in the Republic of Panama. If we consider these findings together with those incriminating *Proechimys* and *Sigmodon* rodents as reservoir hosts as well as culicine mosquitoes as potential vectors of BSQ virus in Panama, then we may speculate that BSQ is a medically important virus which could create health hazards to non-immune populations migrating to the endemic areas.

We are, etc.,

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