

Birds as arboviruses' hosts in Brazilian Amazonia¹.

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12423 samples of birds' sera or viscera, representing 40 families, 193 genera and 304 species, were collected in 18 localities in Brazilian Amazonia. 70 strains of 14 distinct types of arboviruses were isolated and 1743 sera were found with antibodies against at least one arbovirus type. Formicariidae family furnished most strains (1,20 %) and positive sera (30,21 %). The most prevalent arboviruses in birds were Oropouche (3,86 %), Western Equine Encephalitis (3,06 %), Saint Louis Encephalitis (2,80 %), Turlock (1,31 %), Itaporanga (1,00 %), Tacaiuma (0,73 %), Mayaro (0,49 %) and Eastern Equine Encephalitis (0,48 %). Arboviruses were classified according to the preferred vegetation types and strates of their birds' hosts.

The ecological distribution of the arboviruses seems to localize along a continuum from 0-15 m levels in terra firme forest (Rocio, Utinga, Kwatta, Gamboa and Icoaraci), intermediate levels of the same forest and secondary growth areas (Oropouche, Turlock, Itaporanga, Guaroa, Trinitati, Caraparu, Jurona, Una, Encefalite de Saint Louis and Encefalite equina do oeste), canopy of the forest and secondary growth vegetation (Cacipacore, Mayaro, Ilheus, Candiru and Tacaiuma), the latter vegetation type and inundated forest, and finally extremely versatile viruses like Eastern Equine Encephalitis which were encountered in birds from every vegetation types and levels (fig. 1).

The important role of birds in the sylvatic cycles of viruses Jurona, Itaporanga, Mayaro, Oropouche, Belem, Pixuna, Una and Tacaiuma is confirmed. Bird sera positive for Rocio virus is the first indication of the presence of this agent in the amazonian region. Birds are as yet the only known hosts for the viruses Cacipacore, Candiru and Pacora-like.

The ecological niche concept is discussed in relation with ecology of arboviruses. The adopted definition is that of a hyperdimensioned volume, of which each dimension represents one ecological variable. One of the most limiting factors in the evolution of arboviruses' cycles may be the group-reacting antibodies produced by the vertebrate host and resulting in the impossibility for the same individual to be viremic for more than one virus type in the same serological group, at least during some time. However, more studies are needed to quantify the relative importance of numerous vectors, and determine the width and superposition of the niches of neotropical arboviruses.

¹Work done with financial funds from Fundação Nacional de Saúde (Ministry of Health), CNPq, ORSTOM.

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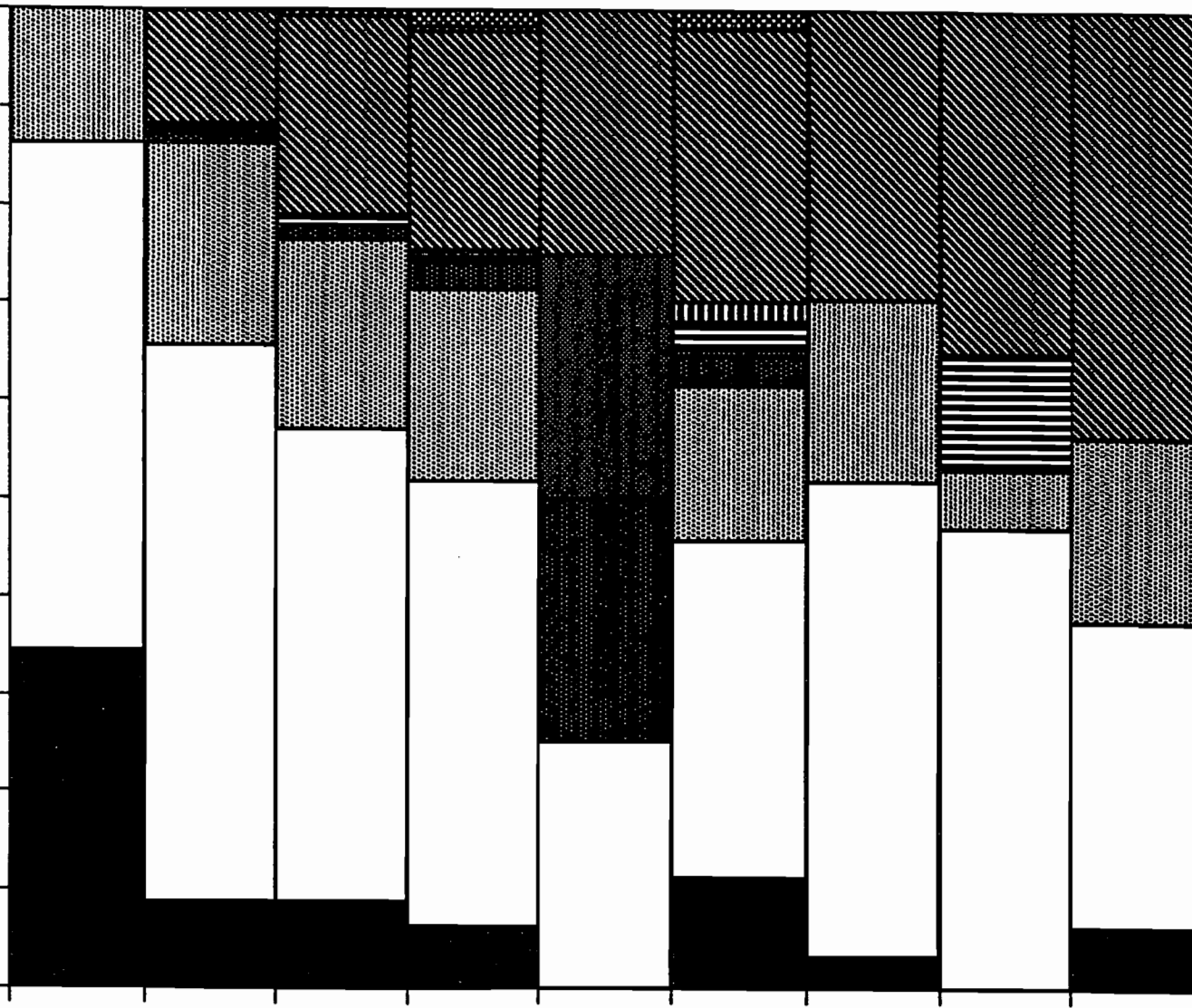
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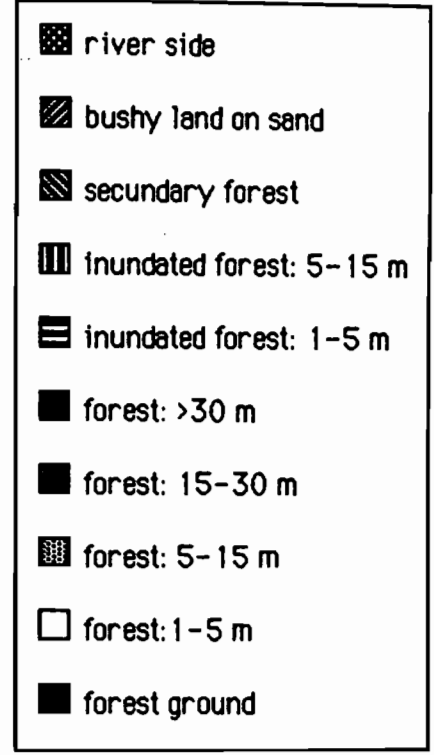
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ARTHROPOD-BORNE VIRUS INFORMATION EXCHANGE

December, 1991

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