Arboviruses in Serra Norte, Carajás region, Pará, Brazil

AMÉLIA P. A. TRAVASSOS DA ROSA[1], JORGE F. S. TRAVASSOS DA ROSA[1], JEAN-PIERRE HERVÉ[2], PEDRO F. C. VASCONCELOS[1], NICOLAS DÉGALLIER[3], SUELI G. RODRIGUES[1]

[1]*Instituto Evandro Chagas, Belém, PA 66065, Brasil,* [2]*ORSTOM, BP 1386, Dakar, Senegal and* [3]*ORSTOM, Belém, PA 66065, Brasil*

This report outlines studies carried out from 1982 to 1987 in Serra Norte, Carajás region, Pará State, to ascertain the existence of known or new arbovirus types in the area, especially those of medical interest, and to gather information about their natural patterns of activity. These studies have included both serological tests and attempts to isolate viruses from haematophagous insects, wild animals and man. A total of 184,884 haematophagous insects were collected and blood and tissue samples were obtained from 1,726 wild vertebrates caught in the area. Attempts to isolate viruses in suckling mice yielded 21 strains, including 15 different serological types, of which 7 have been shown to constitute new types, so far found only in the Brazilian Amazonian region, and two of them have already been confirmed to be new types to the world. Serological studies performed on 2,680 sera (1,380 humans and 1,300 wild animals) against selected arboviruses pointed out the circulation of several of these agents in the investigated area. The Carajás region therefore, maintains established ecosystems which are rich in arbovirus fauna, and exploration of these natural niches must be done carefully and rationally to avoid breaking out the current foci of infestation maintained in the forest. Further studies are necessary to obtain a better understanding of these agents in this region and of the threats that they may pose to the health of humans and livestock.

Este relato descreve estudos efetuados no período de 1982 a 1987, em Serra Norte, região dos Carajás, Estado do Pará, para averiguar a existência de conhecidos ou novos tipos de arbovírus na área, especialmente, aqueles de interesse médico, e colher informações acerca de seus padrões naturais de atividades. Esses estudos incluíram testes sorológicos e tentativas para isolamento de vírus a partir de insetos hematófagos, animais silvestres e humanos. Um total de 184.884 insetos hematófagos foram coletados. Sangue e vísceras foram obtidos de 1.726 vertebrados silvestres capturados na área. As tentativas para isolar vírus novos, encontrados somente na Amazônia Brasileira, e dois deles já foram confirmados ser em tipos novos para o mundo. Estudos sorológicos executados em 2.680 soros (1.380 humanos e 1.300 animais silvestres) contra arbovírus selecionados indicaram a circulação de diversos desses agentes na área investigada. A região dos Carajás, por conseguinte, mantém ecossistemas estabelecidos que são ricos em arbovírus. Assim, a exploração desses nichos naturais deve ser feita cuidadosa e racionalmente para evitar a rutura do focos correntes de infestação mantidos na floresta. Estudos ulteriores são necessários para obter um melhor

uapebas) have been shown to constitute new types, so far found only in the Brazilian Amazonian region, and two of them (Carajás and Marabá) have already been confirmed to

Amazon region, were found in 5.7% of the individuals. A low prevalence of antibodies to some other arboviruses was also found: Guaroa (GRO) 1.8%; Caraparu (CAR) 0.9%; Itaporanga (ITP) 0.8%; Tacaiuma (TCM) 0.5% and West-

Reoviridae, genus *Orbivirus*, represent viruses so far isolated only in Central and South America and they have been associated with phlebotomine sandflies in nature. Between 1960 and 1980, a total of 178 CGL serogroup viruses

The TUR virus is an agent which typically circulates in a bird-*Culex*-bird cycle. In Brazilian Amazonia, it has been isolated sporadically from at least 11 different species of birds as well as from mosquitoes (17).

The finding that 4.6% of wild birds had antibodies to the ORO virus confirms that these animals, and in particular those belonging to the family Formicariidae, are naturally infected by this agent, which indicates that they may be important hosts.

pality of Marabá, Pará State, rising to a maximum height of 780 m above sea level

4. Cunha OR, FP Nascimento, TCS Ávila-Pires 1985 Os répteis da área de Carajás, Pará, Brasil (Testudines e Squamata). *In Contribuição do Museu Paraense Emílio Goeldi ao Projeto Carajás*. Publicações avulsas nº 40
5. Pinheiro FP, APA Travassos da Rosa, JFS Travassos da Rosa, AC Linhares 1982 Viroses, p 11. *In Health in Carajás*, ANPES, S Paulo
6. Venous blood samples were drawn using 20 mL vacutainer tubes and allowed to clot at room temperature. The serum was then maintained at -20ºC. In the case of febrile patients, between 0.5 and 1 mL