

REPORT FROM ARBOVIRUS LABORATORY
INSTITUT PASTEUR AND O.R.S.T.O.M.
B. P. 304
97300 CAVENNE - FRENCH GUIANA

I - ARBOVIRUS ISOLATED IN FRENCH GUIANA.

Human blood specimens were collected from febrile patients with a dengue-like illness.

Mosquitoes and wild vertebrates were caught in the field stations with a view to elucidate the epidemiology of arboviruses in French Guiana.

Following the 1977-1978 outbreak of dengue virus fever, only one strain of dengue I was isolated from a patient.

On the 22 virus strains isolated from mosquitoes collected on human bait, 9 were isolated from Culex (M) portesi and 8 from Wyeomyia occulta.

Two strains were isolated from wild vertebrates : 1 Guama virus from Didelphis marsupialis collected in Cacao village, and 1 Murutucu virus from sentinel mice at Gallion field station.

Table I summarize virus isolations in 1979.

2 - SEROLOGICAL STUDIES.

2.1. HUMAN. Human serum samples were collected from febrile patients in French Guiana, Martinique and Guadeloupe. A number of secondary type responses for flavivirus was observed in paired sera.

Blood samples from 48 asiatic people were investigated for alphavirus and flavivirus antibodies using HI and CF tests.

All sera were negative for alphavirus antibodies. 23 (48 %) have antibodies for at least one of the flavivirus antigen used (Yellow fever, SLE, dengue 1, 2, 3, Ilheus). HI titers were between 1/10 and 1/320 with a mean titer of 1/80. CF mean titer was 1/32.

2.2. WILD VERTEBRATES. Wild vertebrate serum samples were collected mostly from animals caught during a marsupial recapture program in Cabassou Forest in 1978-1979. All animals caught were marked and released after bleeding. Retrapped animals were bled once a month. During exactly one year, 267 marsupials were trapped and 465 blood samples (table 2) were taken and examined for HI antibodies for Pixuna, Tonate, Cabassou, Yellow fever, Saint-Louis encephalitis, Ilheus, Murutucu, Oriboca, Maguari and Bimiti antigens.

Five species of marsupials were studied : Didelphis marsupialis, Philander opossum, Caluromys philander, Marmosa cinerea and Marmosa murina.

Results concerning animals caught only once are summarized in table 3. As we can see, antibody titers are rather low and antibodies against flavivirus are the most frequent.

A curious evolution of HI antibodies was seen in some animals, especially in Philander opossum and Caluromys philander, antibody titers dropping from 1/160 - 1/320 to less than 1/10 within a month.

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	HUMAN		Mosquitoes	Vertebrates	Total
	Cells	Suckling mice			
<u>ALPHAVIRUS</u>					
Tonate (410d)		1	2		3
Ca Ar 16102			1		1
<u>FLAVIVIRUS</u>					
Dengue 1	1				1
<u>BUNYAVIRUS</u>					
1 - Group C					
Murutucu		2		1	3
2 - Bunyamwera group					
Wyeomyia			8		8
3 - Guama group			5	1	6
<u>BUNYAVIRUS-LIKE</u>					
Phlebotomus group					
Itaporanga			1		1
UNIDENTIFIED					
			5		5
TOTAL	1	3	22	2	28


Table 1 - Virus isolation during 1979

SPECIES	Number	Animals caught once		Animals caught more than once		Number of reactions by species	Seroconversion by month												Irregular evolution of antibodies	No Evolution of antibodies
		Sera +	Sera -	Sera +	Sera -		J	F	M	A	M	J	J	A	S	O	N	D		
<u>Caluromys philander</u>	107	27	32	39	9	200	1	1	1	1	3							8	24	
<u>Philander opossum</u>	94	29	29	32	4	169			2	4	2							7	21	
<u>Didelphis marsupialis</u>	54	25	13	10	6	83				1								3	6	
<u>Marmosa murina</u>	9	7	2	0	0	9														
<u>Marmosa cinerea</u>	3	0	2	1	0	4	1											0		
Total	267	88	78	82	19	465	2	1	2	5	4	3						18	51	

Table 2. Serological studies of marsupials (Cabassou Forest)

	<u>Caluromys philander</u>						<u>Philander opossum</u>						<u>Didelphis marsupialis</u>						TOTAL by Antigen	
	10	20	40	80	160	320	/	10	20	40	80	160	320	/	10	20	40	80	160	320
Pixuma	5	2	2				3			2			1	4	3					22
Tonate 410d	2	1	2				2	5	4				1	1	2			1		21
Cabassou 508	7	1	1	1			2	1	1				2	3	2			1		22
Yellow fever	7	2	1	2	1		7	5	1	2	1		5	4	4	1	3	1		41
Saint-Louis Encephalitis	2	7	2	2	1		3	3	3	2			1	8	6			1	1	42
Ilheus	6	5	2				7	5	1	1	1		4	2	3	3			2	42
Murutucu	1	2					1	2					3	1						10
Oriboca	1	1	1				1	3					1	1						9
Maguari		1		1					1							1				4
Bimiti	3	1		1			1		1				1					1		9
TOTAL	34	23	11	7	2		27	24	14	5	2		14	27	22	5	7	4		

Table 3 Titer of antibody for three principals species of marsupialis. Animals caught once.



ARTHROPOD-BORNE VIRUS INFORMATION EXCHANGE

Number 38

March 1980

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