



CEMI 17



ACTUALITES SUR LES ARBOVIROSES

*Jeudi 15 et Vendredi 16 Mars 2012
Institut Pasteur, Paris*

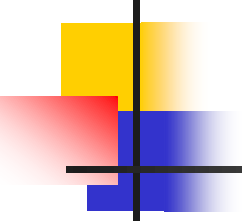
Un réseau mondial: le projet ARBO-ZOONET

Michèle BOULOY



INSTITUT PASTEUR

Les Arbovirus

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- Acronyme de « Arthropod borne virus »
 - Transmission au vertébré par piqûre d'un arthropode hématophage (moustique, tique ou phlébotome...)
 - Cycle de réplication du virus chez l'arthropode
 - Les arbovirus appartiennent à de nombreuses familles de la classification dont les **Flavivirus**, les **Togavirus**, les **Bunyavirus**, les **Orbivirus**...

Examples of large arbovirus outbreaks

West Nile virus infected 9800 people and caused 264 deaths in USA during the 2003 outbreak

Dengue fever, one out of five people in New Delhi, India, became sick during the 1982 outbreak

Chikungunya virus infected 1.3 million people in India in 2005-2006

Ross River virus infected 60000 people in 1979-1980 in the West Pacific (Fidji, Samoa, Cook Islands, New Caledonia)

Dengue virus infected 344 000 people in Cuba Island in 1981

Rift Valley virus infected 200 000 people and caused 600 deaths in Egypt during the 1977 outbreak

Chikungunya virus infected 236 000 people (two out of five people), in Reunion Island during the 2005-2006 outbreak, and caused 181 deaths

Dengue viruses infect > 50 million people per year (1 to 2 million people with severe symptoms), and cause > 20 000 deaths/year

Japanese encephalitis virus infect > 45 000 people per year in Asia and cause > 15 000 deaths/year



Worldwide Distribution of Major Arboviral Encephalitides

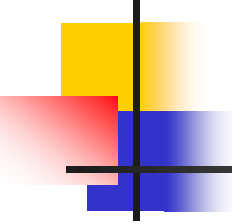


EEE: Eastern equine encephalitis
JE: Japanese encephalitis
LAC: LaCrosse encephalitis
MVE: Murray Valley encephalitis
POW: Powassan encephalitis

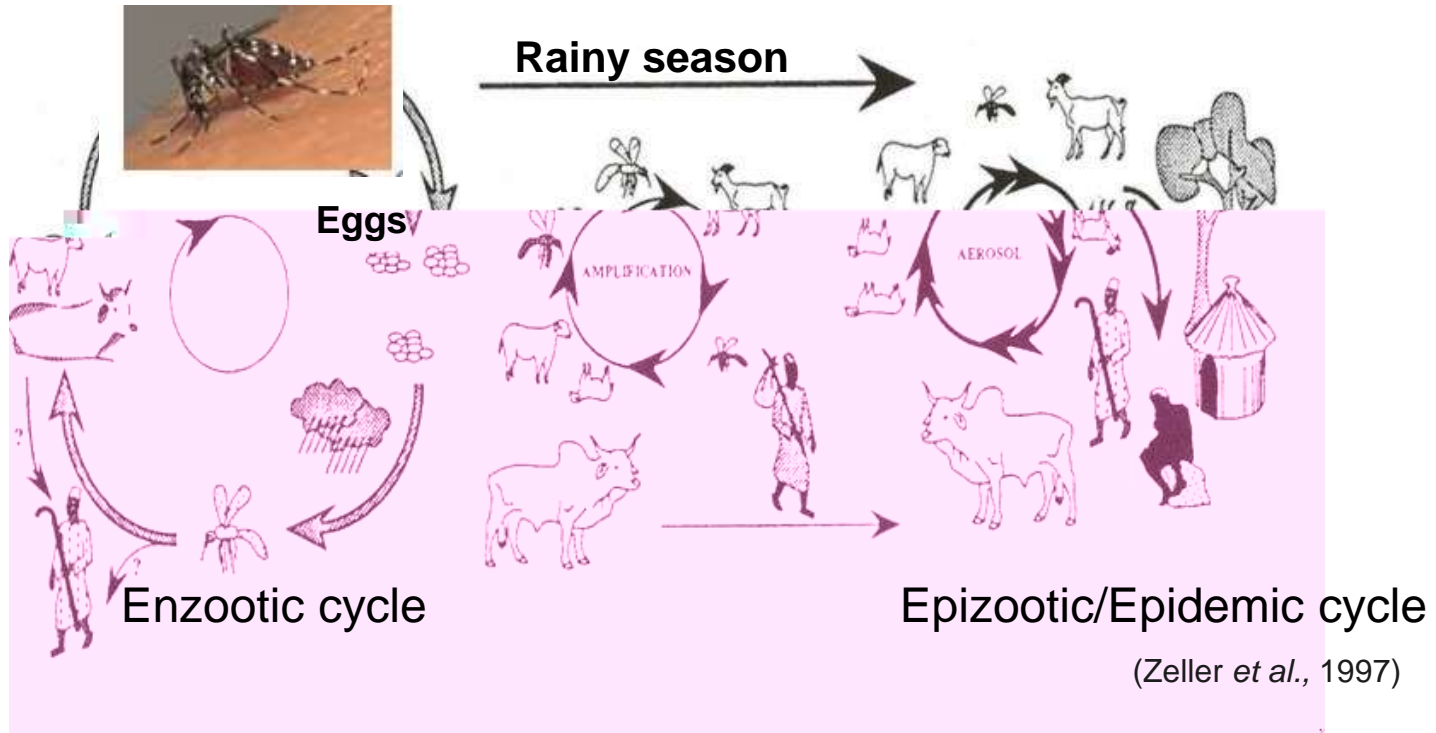
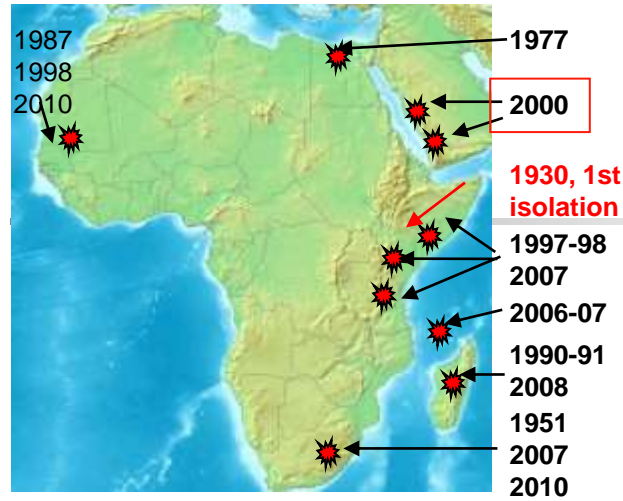
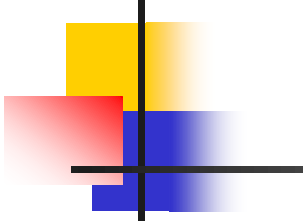
SLE: St. Louis encephalitis
TBE: Tick-borne encephalitis
WEE: Western equine encephalitis
WN: West Nile encephalitis
VEE: Venezuelan equine encephalitis

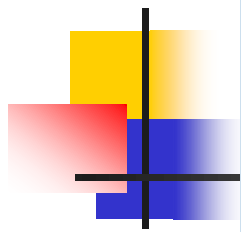
CDC
Centers for Disease Control and Prevention

Des mots clés

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- Développer les système de **surveillance**
 - standardisation au niveau national
 - méthodes prédictives
 - Améliorer les techniques d'analyse des **cycles de transmission**
 - Améliorer les technique de **diagnostic**
 - Evaluer le **contrôle des vecteurs**
 - Evaluer les méthodes pour **prévenir les infections**
 - Développer et évaluer les **vaccins et les antiviraux**

Cycle de la fièvre de la vallée du Rift





1



SEVENTH FRAMEWORK PROGRAMME
Cooperation
Theme 2
Food, Agriculture and Fisheries, and Biotechnology

Grant agreement for: **< Coordination Action >**

Call: Emerging vector borne diseases, in particular:

Project acronym: *ARBO-ZOONET*

Project full title: *International Network for Capacity Building for the Control of Emerging Viral Vector Borne Zoonotic Diseases*

Grant agreement no.: 211757

Date of preparation of Annex I: 02.06.2008

Date of approval of Annex I by Commission:

Anticipated start date of contract: May 1, 2008

Duration of project: ~~36 months~~



Partenaires Arbo-zoonet



No	Institution short	Institution	Name	First Name	Country
1	IP	Institut Pasteur Paris	Bouloy	Michelle	France
2	FZB	Research Center Borstel	Ahmed	Jabbar	Germany
3	DEFRA-VLA	Veterinary Laboratories Agency, Weybridge	Fooks	Tony	United Kingdom
4	CIRAD	Centre de coopération internationale en recherche	Chevalier	Véronique	France
5	UKB	University Bonn, Bonn	Drosten	Christian	Germany
6	SMI	Swedish Institute for Infectious Disease Control	Ali	Mirazimi	Sweden
8	IZSA-M	Istituto Zooprofilattico Sperimentale dell'Abruz	Calistri	Paolo	Italy
9	UL	Institute of Microbiology and Immunology, Med	Avsic-Zupanc	Tatjana	Slovenia
10	NHLS	National Health Laboratory Services, Johannes	Paweska	Janusz	South Africa
11	HPA	Health Protection Agency, Porton Down	Medlock	Joylon	United Kingdom
12	LVRI	Lanzhou Veterinary Research Institute	Yin	Hong	PR China
13	IPI	Pasteur Institute of Iran, Tehran	Sadegh	Chinikar	Iran
15	RKI	Robert Koch Institut, Berlin	Niedrig	Matthias	Germany
16	VAR	Veterinary and Agrochemical Research Centre	De Clercq	Kris	Belgium
17	CVI	Stichting Dienst Landbouwkundig Onderzoek	Moorman	Rob	Netherlands
18	IPD	Institut Pasteur de Dakar	Sall	Amadou	Senegal
19	IHMT-UNL	Universidade Nova de Lisboa, Lisboa	Almeida	A. Paulo G.	Portugal
20	INIA	Instituto Nacional de Investigacion y Tecnologia	Brun	Alejandro	Spain
21	AUT	Aristotle University of Thessaloniki	Papa-Konidari	Anna	Greece
22	ISS	Istituto Superiore di Sanità, Rome	Ruggeri	Franco Maria	Italy
23	UZ	University of Zaragoza	Estrada-Peña	Agustín	Spain
24	USTAN	University Court of the University of St Andrews	Elliott	Richard Michael	United Kingdom
25	MU	Marmara University, Istanbul	Ergonul	Onder	Turkey
27	KAFKAS	Kafkas University	Vatansever	Zati	Turkey
28	FAO	International Atomic Energy Agency, Vienna	Unger	Hermann	Austria

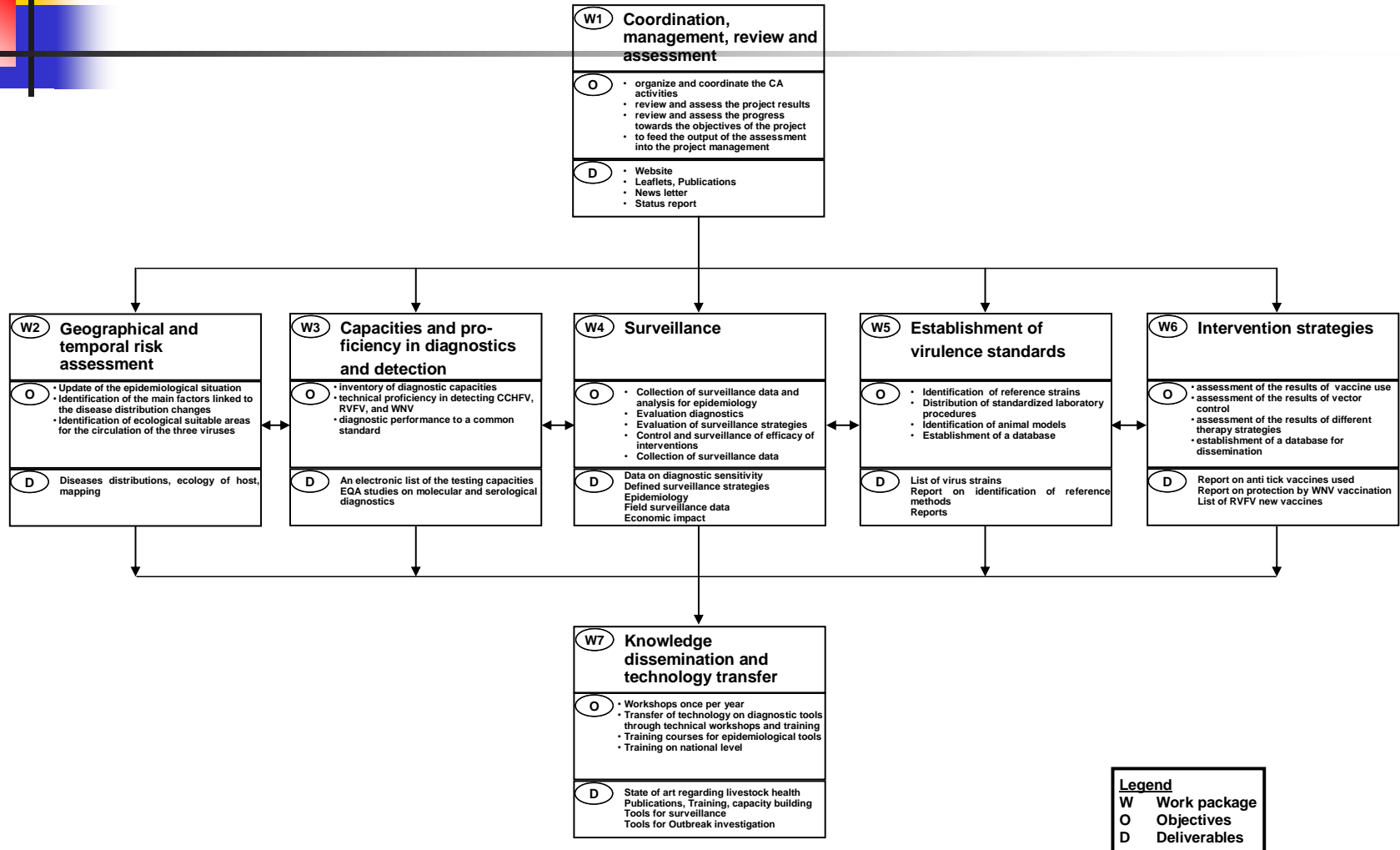


Arbo-zoonet is composed of 7 Workpackages

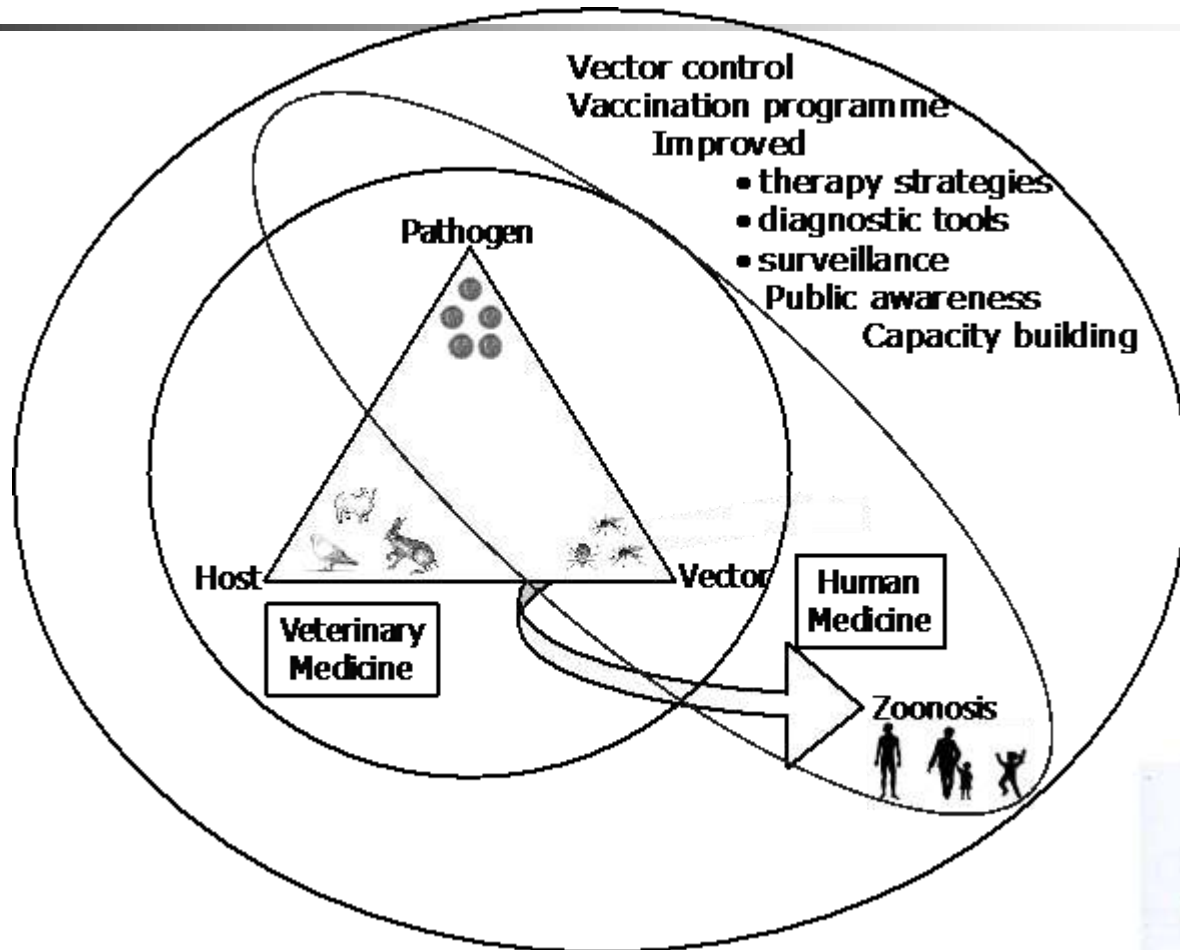
- WP1 Michèle Bouloy (Coordination, management, review and assessment)
- WP2 Veronique Chevalier (Geographical and temporal risk assessment)
- WP3 Christian Drosten (Capacities and Proficiency in Diagnostics and Detection)
- WP4 Zati Vatansever, Paolo Callistri (Surveillance)
- WP5 Noel Tordo, Ali Mirazimi (Establishment of virulence standards)
- WP6 Rob Moormann (Intervention strategies)
- WP7 Jabbar Ahmed (Knowledge dissemination and technology)



interrelationship of Work Packages



Concept of the consortium as a whole



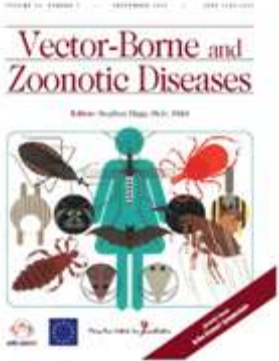


Some deliveries...



EDITORIAL

The contents of this issue are the result of the work of the Editorial Board, which is composed of the following members: ...



West Nile Virus diagnostics workshop: To obtain information and improve knowledge of WND and West Nile Virus (WNV) throughout Europe was one of the workshop objectives.



Field work (collection of ticks) as well as intensive lectures and practical trainings in tick identification took place during the two week workshop on tick identification in Istanbul, Turkey.



Hyalomma marginatum (H m marginatum)

- Symposia:
- Risk of WN, CCHF and RVFV in Europe Montpellier Nov 2009
 - Interventions against RVFV, WN and CCHF where are we ?
 - RVFV vaccines developments, progress and constraints. International meeting (FAO, ENCRAD, EPIZONE, Arbo-zoonet)

Les nouveaux virus émergents

Novel Orthobunyavirus in Cattle, Europe, 2011

Bernd Hoffmann,¹ Matthias Scheuch,¹ Dirk Höper,
Ralf Jungblut, Mark Holsteg, Horst Schirrmeier,
Michael Eschbaumer, Katja V. Goller,
Kerstin Wernike, Melina Fischer,
Angele Breithaupt, Thomas C. Mettenleiter,
and Martin Beer

Schmallenberg



The Ecology, Genetic Diversity, and Phylogeny of Huaiyangshan Virus in China

Yong-Zhen Zhang,^a Dun-Jin Zhou,^b Xin-Cheng Qin,^a Jun-Hua Tian,^b Yanwen Xiong,^a Jian-Bo Wang,^a Xiao-Ping Chen,^a Dong Yong-Wen He,^c Dong Jin,^a Qiangzheng Sun,^a Wen-Ping Guo,^a Wen Wang,^a Bin Yu,^b Juan Li,^a Yong-An Dai,^d Wei Li,^c Jin-Song Guo-Bin Zhang,^a Shaomin Zhang,^a Xiao-Min Chen,^b Yan Wang,^a Ming-Hui Li,^a Xin Lu,^a Changyun Ye,^a Menno D. de Jong,^e Jianguo Xu^a

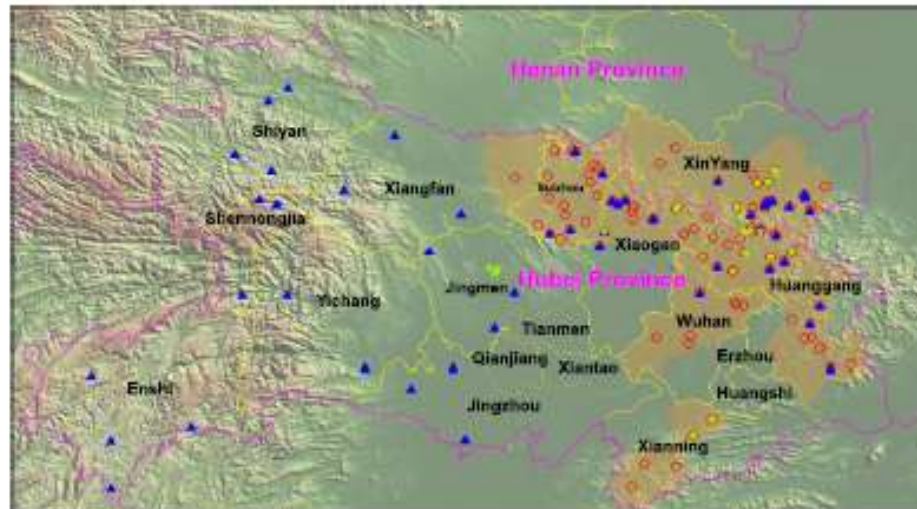
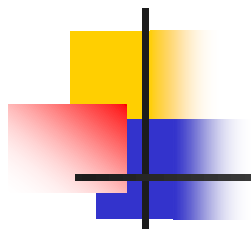


FIG 1 Map showing the locations of tick collection sites in regions of endemicity (orange) and regions of nonendemicity of hemorrhagic fever caused by Huaiyangshan virus (HYSV) in Henan and Hubei provinces. The red circles represent the cases diagnosed in 2009 and 2010. The blue triangles represent the sites in which ticks were collected, and the green five-pointed stars represent the sites in which HYSV RNA-positive ticks were collected.



MERCI!

West Nile Virus Transmission Cycle

