MediLabSecure (WP3) – Newsletter n°25 – February 2021

Dear network members,

At least a newsletter that does not talk about covid!

What's new?

> **A new European project manager has been recruited** to work for WP Entomology in the MediLabSecure project: Lauriane Mariamé is now on board since mid-January in Montpellier, France. She shares an office with Vincent Robert.

Interested in both human and natural sciences, I studied international relations and the functioning of the European Union as well as the relations between Humans and their environments. Then, I worked for a European Think tank and supported the improvement of the quality of industrial and agricultural productions in developing countries at the United Nations Industrial development organisation in Vienna, Austria, before joining IRD.

NEWS FROM MLS.ENTOMO

> **Most, if not all, training previously envisaged on site in 2021 are postponed or cancelled**. We are considering replacing on-site pieces of training with virtual ones trying to use innovative, well-targeted and participative formats of periodic webinars, diffusion of short videos, etc. **Your ideas, wishes and needs would be most welcomed**.

> **Two tools are in development, at a normal rhythm:**
- MosKeyTool-Sahel will help to identify mosquito specimen at species (or complex species) level in 8 Sahelian countries (Capo Verde, Mauritania, Senegal, Gambia, Mali, Burkina, Niger, Chad). This tool, under the umbrella of our colleagues at Institut Pasteur of Dakar, will be available at first in the format of a dichotomous key. We envisage a delivery in French, a language used in most of the area; our EU project officer in Brussels responded positively to this demand.

- PhlebKeyTool will help to identify phlebotomine sandflies in the Mediterranean area and Iran. This tool has been developed by a consortium of specialists of many countries coordinated by the Bulent Alten's lab in Ankara. The achievement of this tool is foreseen in March and a Webinar of presentation will be organized to celebrate this event and to present the tool. More information will be provided very soon on this topic.

Our colleague from Cairo, Samy Abdallah, published very recently a paper on Ixodidae ticks in Egypt.
Hard ticks (Acari: Ixodidae) infesting domestic animals in Egypt: diagnostic characters and taxonomic key to the collected species
M Okely, R Anan, S Gad-Allah, A M Samy
This is a very nice paper with wonderful photos of ticks. We thank Samy Abdallah who kindly shares with us the following paragraph:
"Okely and colleagues assessed the prevalence of diverse tick species infesting domestic animals in seven governorates of Egypt. They identified eleven species under three different genera, including *Amblyomma*, *Hyalomma*, and *Rhipicephalus*. This same study provided detailed diagnostic characters and a taxonomic key separating the diverse collected species. The study also provided detailed descriptions of the genital apertures of five different *Hyalomma* species and looked at the morphological variations of male *H. impeltatum*, and genital apertures of female *H. dromedarii* and *H. excavatum*. Finally, the study reviewed additional details on local geographic distributions, hosts, endemicity status, and disease relationships of the eleven tick species."

List of mosquitoes from Morocco. A rare species (only known from Morocco), *Aedes* (*Ochlerotatus*) *dzeta* Séguy, identified in 1924, has been removed from the list of valid species, because synonymized with *Aedes* (*Ochlerotatus*) *mariae* (Sergent & Sergent, 1903). Interestingly, this synonimising has been done long time ago in 1954, but nobody considered it. According to the Ralph Harbach's website (The Taxonomic Mosquito Inventory), this reduces the world number of valid mosquito species to 3,582 (on Nov 15, 2020). For more info, see http://mosquito-taxonomic-inventory.info/whats-new

NEWS FROM THE REST OF MEDILABSECURE PROJECT

> **Online workshop: SARS-CoV-2 IN ANIMALS: SITUATION UPDATE AND DIAGNOSTICS February, 23 2021 (9 am – CET)**. During this one-day workshop Elisa Perez-Ramirez, Julia Vergara-Alert, Thomas Brunn Rasmussen, Pilar Aguilera, Ana Revilla and Valerie Caro will present: the current state of the SARS-CoV-2 epidemic in animals; animal models for the study of SARS-CoV-2; the situation in mink farm in Danemark; some In-country experiences with SARS-CoV-2; the diagnostics and genome sequencing and molecular epidemiology of SARS-CoV-2 technics. More info soon on **www.medilabsecure.com**

NEWS FROM THE REST OF THE 'MED ENTOMOL' WORLD

> The WIN network (Worldwide Insecticide resistance Network) is publishing **2 free-access video tutorials on testing procedures for resistance monitoring** in adult sandflies. These documents provide technicians, students, operators and academics with necessary knowledge and practical skills to conduct basic resistance tests following standardized WHO methodologies and reporting system. Test protocols described in the videos are not restricted to sandflies and can be readily adapted to other flying insects such as mosquitoes.
To access the video tutorials, see https://win-network.ird.fr/

ENJOY READING

- Flying high: How anopheles mosquitoes recolonize the arid Sahel and impact on malaria transmission
Catherine Bourguoin, Richard Paul
The goal of this paper written by colleagues from Institut Pasteur, Paris, is to explain how certain *Anopheles gambiae*, potential vectors of malaria, are present in arid Sahelian regions very quickly after the end of the dry season. It demonstrates that *Anopheles coluzzii* is not only able to estive in the arid area but also use the aerial updrafts and the winds to migrate on long distances, allowing it to appear within a week in arid area after the first rains. Several other species of *Anopheles gambiae* also uses the wind as a mean to migrate over several hundred kilometres.

Image from lstmed.ac.uk, Liverpool School of Tropical Medecine

- A literature Review of Host Feeding Patterns of Invasive Aedes Mosquitoes in Europe
Sonia Cebrison, José Martinez-de la Puente and Jordi Figuerola
This article extensively review the blood feeding patterns of the four invasive *Aedes* species (*Aedes albopictus*, *Aedes aegypti*, *Aedes japonicus* and *Aedes koreicus*) and concludes that, given their competence for the transmission of emerging arboviruses such as dengue or Chikungunya, they may have an important impact in the transmission of these pathogens in European urban and periurban areas.

- The first molecular and phenotypic characterization of the invasive population of *Aedes albopictus* (Diptera: Culicidae) from the Central Balkans
Nemanja Gojkovic, Jasmina Ludoski, Bosilja Krtinic and Vesna Milankov
The team characterized the invasive population using phenotypic and molecular markers. This shows that the Serbian population of *Aedes albopictus* could be differentiated from the native (Thailand) and invasive (Hawaii and Florida) populations and could be able to establish itself in Central Balkans.

- Insect decline: immediate action is needed
Hervé Jactel, Jean-Luc Imler, Louis Lambrechts, Anna-Bella Failloux, Jean Dominique Lebreton, Yvon LeMaho, Jean-Claude Duplessy, Pascale Cassart and Philippe Grandcolas
This paper draws attention to the species and population of insect reduction and the threats it raises on the services and goods they provide. There is an English and a French version of this paper.

- The Human Biting *Culex pipiens* Bioform *molestus* Detected in Several Areas in Southern Sweden
Verah Nafula Luande, Disa Eklöf, Anders Lindström, Steven Ger Nyanjom, Magnus Evander, Tobias Lilja
This study confirms the detection of *Culex pipiens* form *molestus* in several rural areas, indicating that it may be more widely spread than in urban areas alone, where it has been previously reported.

- *Incursion and establishment of the Old World arbovirus vector Aedes (Fredwardsius) vittatus* (Bigot, 1861) in the Americas
Benedict B. Pagac, Alexandra R. Spring, Jonathan R. Stawicki, Thien L. Dinh, Taylor Lura, Michael D. Kavanaugh, David B.Pecor, Silvia A. Justi, Yvonne-Marie Linton
Aedes vittatus is a very special mosquito species because of its very large distribution in the Old World. This paper reports the new invasion and establishment of the invasive arbovirus vector *Aedes vittatus* in the Americas by integrated and molecular approaches.

If you have any suggestions or information you wish to share, please let us know and send an email to the discussion listmls.entomo-all@listes.ird.fr

Best regards,

Lauriane MARIAME / Project manager
&
Vincent ROBERT / WP3 leader
MediLabSecure project

IRD (Institut de Recherche pour le Développement)
911 Avenue Agropolis / B.P. 64501
34394 Montpellier, FRANCE
tel: 33 (0)4 67 41 63 50

All the previous entomo newsletters are available on the MediLabSecure website.