### OIE Collaborating Centres Reports Activities

**Activities in 2016**

This report has been submitted: 2017-01-23 17:03:31

<table>
<thead>
<tr>
<th><strong>Title of collaborating centre:</strong></th>
<th>Surveillance, Control of Animal Protozoan Diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address of Collaborating Centre:</strong></td>
<td>Obihiro University of Agriculture and Veterinary Medicine Nishi 2-13, Inada-cho Obihiro, Hokkaido 080-8555 JAPAN</td>
</tr>
<tr>
<td><strong>Tel.:</strong></td>
<td>+81-155 49 5641</td>
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<td><strong>Fax:</strong></td>
<td>+81-155 49 5643</td>
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<tr>
<td><strong>E-mail address:</strong></td>
<td><a href="mailto:igarcpmi@obihiro.ac.jp">igarcpmi@obihiro.ac.jp</a></td>
</tr>
<tr>
<td><strong>Website:</strong></td>
<td><a href="http://www.obihiro.ac.jp/~protozoa/index.html">http://www.obihiro.ac.jp/~protozoa/index.html</a></td>
</tr>
<tr>
<td><strong>Name of Director of Institute (Responsible Official):</strong></td>
<td>Prof. Xuenan XUAN</td>
</tr>
<tr>
<td><strong>Name (including Title and Position) of Head of the Collaborating Centre (formally OIE Contact Point):</strong></td>
<td>Prof. Ikuo IGARASHI, DVM, PhD</td>
</tr>
<tr>
<td><strong>Name of writer:</strong></td>
<td>Prof. Ikuo IGARASHI, DVM, PhD</td>
</tr>
</tbody>
</table>
ToR: To provide services to the OIE, in particular within the region, in the designated specialty, in support of the implementation of OIE policies and, where required, seek for collaboration with OIE Reference Laboratories

ToR: To identify and maintain existing expertise, in particular within its region

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by the OIE

<table>
<thead>
<tr>
<th>Title of activity</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey of bovine babesiosis and theileriosis</td>
<td>A total of 329, 196, 814 and 301 bovine blood samples from Thailand, Turkey, Sri Lanka and Egypt, respectively, were analyzed for detection of Babesia spp and Theileria spp by PCR or ELISA.</td>
</tr>
<tr>
<td>Survey of canine babesiosis and anaplasmosis</td>
<td>A total of 186 canine blood samples from Thailand were analyzed for detection of Babesia spp and Anaplasma spp by PCR.</td>
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<tr>
<td>Survey of canine toxoplasmosis</td>
<td>A total of 2039 canine serum samples from Turkey, 304 blood and brain samples of chickens, 111 sheep, 94 goat and 146 donkey blood samples from Egypt, respectively, were analyzed for detection of antibodies to Toxoplasma gondii by ELISA.</td>
</tr>
<tr>
<td>Survey of neosporosis</td>
<td>A total of 2039 canine serum samples from Turkey and 301 bovine blood samples from southern Egypt, respectively, were analyzed for detection of antibodies to Neospora caninum by ELISA.</td>
</tr>
<tr>
<td>Survey of Cryptosporidium parvum:</td>
<td>A total of 301 bovine blood samples from southern Egypt were analyzed for detection of specific antibodies by ELISA.</td>
</tr>
<tr>
<td>Survey of Trypanosoma evansi:</td>
<td>A total of 301 bovine blood samples from southern Egypt were analyzed for detection of specific antibodies by ELISA.</td>
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</tbody>
</table>

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the surveillance and control of animal diseases, food safety or animal welfare

<table>
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<tbody>
<tr>
<td>Capacity build for researchers of protozoan disease</td>
<td>Fourteen postdoctoral fellows, 6 researchers, 26 graduate students, 19 undergraduate students had research training for advances and techniques.</td>
</tr>
</tbody>
</table>
### Proposal title

| Development of ICT for protozoan diseases | Establishment of novel pen-side serological tests for toxoplasmosis, babesiosis and trypanosomiasis | Surveillance and control of animal diseases |
| Development of LAMP for protozoan diseases | Establishment of novel pen-side molecular tests for toxoplasmosis, babesiosis and trypanosomiasis | Surveillance and control of animal diseases |

### ToR: To establish and maintain a network with other OIE Collaborating Centres designated for the same specialty, and should the need arise, with Collaborating Centres in other disciplines

### ToR: To carry out and/or coordinate scientific and technical studies in collaboration with other centres, laboratories or organisations

3. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

<table>
<thead>
<tr>
<th>Name of OIE CC/RL/other organisation(s)</th>
<th>Location</th>
<th>Region of networking Centre</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institut of Tropical Medicine</td>
<td>Antwerp, Belgium</td>
<td>Africa, Americas, Asia and Pacific, Europe, Middle East</td>
<td>Evaluation of LAMP and ICT for trypanosomiasis</td>
</tr>
<tr>
<td>Canadian Food Inspection Agency</td>
<td>Canada</td>
<td>Africa, Americas, Asia and Pacific, Europe, Middle East</td>
<td>Supply and development of diagnosis for equine piroplasmosis</td>
</tr>
</tbody>
</table>

4. Did your Collaborating Centre maintain a network with other OIE Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

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<thead>
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<th>Location</th>
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<th>Purpose</th>
</tr>
</thead>
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OIE Collaborating Centres Reports Activities, 2016
ToR: To place expert consultants at the disposal of the OIE.

5. Did your Collaborating Centre place expert consultants at the disposal of the OIE?

No

ToR: To provide, within the designated specialty, scientific and technical training to personnel from OIE Member Countries

6. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by the OIE, to personnel from OIE Member Countries?

Yes
a) Technical visits: 1
b) Seminars: 1
c) Hands-on training courses: 2
d) Internships (>1 month): 0

<table>
<thead>
<tr>
<th>Type of technical training provided (a, b, c or d)</th>
<th>Content</th>
<th>Country of origin of the expert(s) provided with training</th>
<th>No. participants from the corresponding country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic methods</td>
<td>Development of molecular diagnostic for trypanosomiasis</td>
<td>Japan</td>
<td>2</td>
</tr>
<tr>
<td>Diagnostic methods</td>
<td>Development of molecular diagnostic for babesiosis</td>
<td>Japan</td>
<td>1</td>
</tr>
</tbody>
</table>

ToR: To organise and participate in scientific meetings and other activities on behalf of the OIE

7. Did your Collaborating Centre organise or participate in the organisation of scientific meetings on behalf of the OIE?

No
ToR: To collect, process, analyse, publish and disseminate data and information relevant to the designated specialty

8. Publication and dissemination of any information within the remit of the mandate given by the OIE that may be useful to Member Countries of the OIE

a) Articles published in peer-reviewed journals: 79
1. Serological Survey and Factors Associated with Toxoplasma gondii Infection in Domestic Goats in Myanmar.

2. Emergence of multi-acaricide resistant Rhipicephalus ticks and its implication on chemical tick control in Uganda.


7. The epidemiological survey for atovaquone resistant related gene of Babesia gibsoni in Japan. Iguchi Aiko, Soma Takehisa, Suzuki Hiroshi, Xuanan Xuan., Journal of Veterinary Medical Science. Jan 26, 2016 Registered articles: 8,425


27. RBC Invasion and invasion-inhibition assays using free merozoites isolated after cold treatment of Babesia bovis in vitro culture.[Takahiro Ishizaki, Thillaiampilam Sivakumar, Kyoko Hayashida, Bumdureun Tuvshintulga, Ikuo Igarashi, Naoaki Yokoyama., Experimental Parasitology. Volume 166, July 2016, Pages 10-15


60. Toxoplasma gondii Infection in Mice Impairs Long-Term Fear Memory Consolidation Through Dysfunction of the Cortex and Amygdala. Fumiaki Ihara, Maki Nishimura, Yoshikage Muroi, Motamed Elsayed Mahmoud, Naoaki Yokoyama, Kisaburo Nagamune and Yoshifumi Nishikawa., Infection and Immunity. October 2016 vol. 84 no. 10 2861-2870


63. Enzyme-linked immunosorbent assays using recombinant TgSAG2 and NcSAG1 to detect Toxoplasma gondii and Neospora caninum-specific antibodies in domestic animals in Turkey. Mo Zhou, Shinuo Cao, Ferda Sevinc, Mutlu Sevinc, Onur Ceylan, Mingming Liu, Guanbo Wang, Paul Franck Adjou Moumouni, Charoonluk Jirapattharasate, Hiroshi Suzuki, Yoshifumi Nishikawa, Xuenan Xuan, Journal of Veterinary Medical Science. 2016 Aug 15. [Epub ahead of print]


68. A PCR-based survey of animal African trypanosomosis and selected piroplasm parasites of cattle and goats in Zambia. Simon Peter Musinguzi, Keisuke Suganuma, Masahito Asada, Dusit Laohasinnarong, Thillaiampalam Sivakumar, Naoko Yokoyama, Boniface Namangala, Chihiro Sugimoto, Yasuhiko Suzuki, Xuenan Xuan, Norobu Inoue, Journal of Veterinary Medical Science. ONLINE ISSN: 1347-7439 PRINT ISSN: 0916-7250 (As of September 13, 2016) Registered articles: 8,841


70. Peroxiredoxin 3 promotes IL-12 production from macrophages and partially protects mice against infection with Toxoplasma gondii. Ragab M. Fereig, Yoshifumi Nishikawa, Parasitology International. Volume 65, Issue 6, Part A, December 2016, Pages 741-748


76. Molecular detection and genetic characterization of Babesia, Theileria and Anaplasma amongst apparently healthy sheep and goats in the central region of Turkey. Mo Zhou, Shinuo Cao, Ferda Sevci, Mutlu Sevci, Onur Ceylan, Sepil Ekici, Charoonthuk Jirapattharasate, Paul Franck Adjou Moumouni, Mingming Liu, Guanbo Wang, Aiko Iguchi, Patrick Vudriko, Hiroshi Suzuki, Xuenan Xuan, Ticks and Tick-borne Diseases. Available online 16 November 2016


b) International conferences: 7


5. Rizk MA, El-Sayed SA, AbouLaila M, Tuvshintulga B, Yokoyama N, Igarashi I. Large-scale drug screening against Babesia divergens parasite using a fluorescence-based high-throughput screening assay. American Society of Tropical Medicine and Hygiene 65th Annual Meeting, November 13-17, Atlanta, Georgia, USA.


c) National conferences: 11
1. Tserendorj Munkhjargal, Naoaki Yokoyama, and Ikuo Igarashi. Proflin is a common antigen among Babesia parasites and its immunogenicity and protective properties against human babesiosis. The 85th of Annual Meeting of Japanese Society of Parasitology, March 20, 2016, Miyazaki,


6. Ehab Mossaad, Bashir Salim, Keisuke Suganuma, Musinguzi Simon Peter, Mohammed Adam Hassan, Elgailani Elamin, Galal-ElDin Elazhary, Amel Bakhiet, Rawan Satti, Xuenan Xuan, Noboru Inoue. Epidemiology of Trypanosoma evansi and Trypanosoma vivax in dromedary camels in East Nile and West Nile areas in the Sudan.
The 159th Meeting of Japanese Society of Veterinary Science, Fijusawa, September 6-8, 2016.


d) Other

(Provide website address or link to appropriate information): 0