

**SECOND BILATERAL HUNGARIAN AND SERBIAN
PARASITOLOGY SOCIETIES MEETING**

October 14, 2016

Venue: Szeged Zoo, Learning Center



During 2011 the Hungarian Society of Parasitologists conducted a survey about education and research in domestic Institutions which have activity in field of Parasitology

The questionnaire contained: name an address of Institution, questions about teaching and researches performed in last 10 years. 40 questionnaires have been sent, 22 have been sent back.

Results: Parasitology was taught as Independent study in 4, and in 3 together with parasites evolution and ecology. Teaching involved different fields of Veterinarian Parasitology (wild and domestic animals, fish, bees), Medical Parasitology (Cases in medical microbiology and infectious diseases, courses in Tropical diseases), and molecular biology, through gradual (16), post gradual (6), facultative subject (6), PhD study (7), seminars (4), and special courses (2).

Language of teaching: Hungarian (19), English (5), German (2), 406 theoretical, 128 practical teaching hours, with theoretical examination in 14 institutions and in 1 both theoretical and practical examination. Students have appropriate teaching material in 19 centers (specialized textbook- 13, lecture notes – 7, and others – 7).

In teaching take part more than 24 teachers (biologists – 11, VD – 8, MD – 5, other faculty – 6 (pharmacists, fishing engineer, agricultural engineer), 20 of them with scientific degree (PhD 15, Academics – 5). In this period 7 PhD, Scientific Student Study - 7, diploma work -13 have been done.

About research: in last 10 years Hungarian Scientific Research Fund – 5, international projects - 5, other domestic projects – 7. In 10 cases with international collaboration. Research results have been published in 10 international journals, 11 Hungarian journals, 5 educational papers, 10 international congresses and 11 domestic congresses.

10 PhD degree have been obtain in questioned period.

During 2011 the Hungarian Society of Parasitologists conducted a survey about education and research in domestic Institutions which have activity in field of Parasitology

The questionnaire contained: name and address of Institution, questions about teaching and researches performed in last 10 years. 40 questionnaires have been sent, 22 have been sent back.

In **Medical field**: 4 Institution send back the questionnaires:

Results: Parasitology was taught as Independent study in 1, and in 3 together with Microbiology. Teaching involved different fields of Medical Parasitology (Cases in medical microbiology and infectious diseases, courses in Tropical diseases), and molecular biology, through gradual (4), post gradual (2), PhD study (1).

Language of teaching: Hungarian (4), English (3), German (2), 34 theoretical, 12 practical teaching hours, with theoretical examination in 4 institutions and in 1 both theoretical and practical examination. Students have appropriate teaching material in 4 centers (specialized textbook- 4).

In teaching take part more than 10 teachers (biologists and MD), all of them with scientific degree (PhD 9, Academics – 4). In this period diploma works have been done in these 4 institution.

About research: in last 10 years were 1 domestic projects with international collaboration. Research results have been published Hungarian journals and domestic congresses. 1 PhD degree have been obtain in questioned period.

Beside of Department of Parasitology, National Center for Epidemiology, BUDAPEST

there are **4 Regional Institute of National Public Health Medical Officer's Service**:

in **Szeged, Miskolc, Pécs and Veszprém**.

They have also parasitological laboratories, but they do only routine laboratory examinations.

In some hospitals microbiological laboratories do some parasitological examinations. Also one private laboratory function, collect material throughout the country and do parasitological examinations.

Unfortunately, I have no got any presentation material from those laboratories.



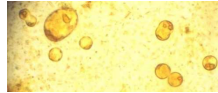
**Department of Clinical
Microbiology
Faculty of Medicine
University of Szeged**
6725 Szeged, Semmelweis str. 6.



Current research: *Blastocystis* sp.

- The aims of our work were:
 - To develop and optimize an effective molecular method for the detection of *Blastocystis* sp. in human stool samples,
 - to compare the effectivity of the molecular techniques with the traditional (microscopical) methods (culturing, examination of native smears),
 - to determine the occurrence of *Blastocystis* sp. in human stool samples in the local region.
- We examined 100 random samples with *Blastocystis*-specific PCR, culturing in Jones' medium and Boeck-Drbohlav-Locke's medium in parallel.
- Results:
 - Out of 100 samples, 31% were positive for *Blastocystis* sp. by the molecular method, until this rate was only 3% with traditional methods.
 - Boeck-Drbohlav-Locke's medium was more effective than Jones' medium for the culturing. (The difference was not significant.)
 - The positivity rate (31%) was similar to that reported from the developing countries.

Current research: *Blastocystis* sp.



- Objectives for the future:
 - to determine the positivity rate in humans with or without symptoms by PCR,
 - to develop and optimize PCR method for the discrimination of different subtypes of *Blastocystis* sp.,
 - to determine the occurrence of different subtypes of this parasite in humans (with or without symptoms).

Study-related publications

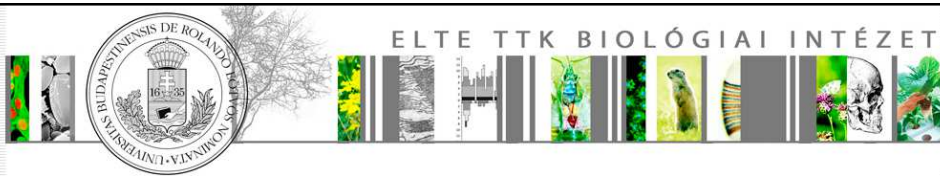
- A, Bálint *et al.* (2014): Do not forget the stool examination! - cutaneous and gastrointestinal manifestations of *Blastocystis* sp. infection. *Parasitol Res* 113 (4), 1585-1590.
- A, Kincses (2015): The epidemiology and laboratory diagnostics of *Blastocystis* sp. at the University of Szeged. Thesis work.

We would like to collaborate:

- in the development of molecular diagnostic methods for the detection of
 - free-living amoebas in CSF and ophthalmological samples,
 - blood and tissue protozoas (*Toxoplasma gondii*, *Plasmodium* sp.)to improve our routine parasitological laboratory diagnostics;
- to examine the connection between emerging parasitic infections and the climate change;
- to follow-up the children born with congenital toxoplasmosis.

Contact person: Ilona Dóczy Csányiné M.Sc, Ph.D

Assistant Professor, Deputy Head of the Institute, Phon+36 62 545402,
e-mail: : doczi.ilona@med.u-szeged.hu.



Biological Institute of the Eötvös Loránd University featuring *parasitology* in education and science

Education

Courses

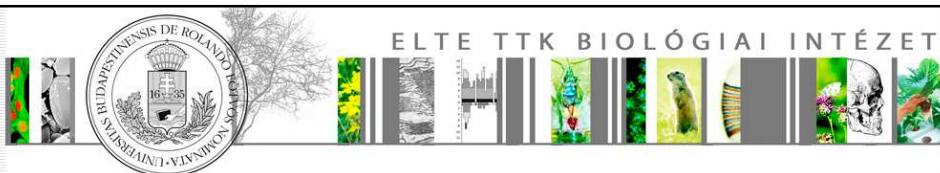
- Eligible course in the MSc curriculum on General Parasitology
- Obligatory course in post-graduate Microbiologist Specialisation curriculum, General Parasitology lectures and practicals

BSc theses

- 1-2 per year (e.g. parasite mediated sexual selection, peptide defence against chytridiomycosis, bats as vector organisms, Mafia-hypothesis in an ectoparasitic insect taxon, amoeba-resistant bacteria, flukes from molluscs and fishes in natural waters of Hungary, Toxoplasma and its hosts, zoonoses in humans caused by *Dirofilaria immitis* and *Dirofilaria repens*)

M.Sc. Theses

- 1-2 per year (e.g. tick parasites in small mammal populations, TIBOLA and behaviour of small mammals,




Research

MSc Theses

- Cryptosporidium* and *Giardia* as water contaminant pathogens in Hungary
- Factors affecting nestling growth in the Collared Flycatcher (*Ficedula albicollis*)

Present research

- Incidence and molecular diversity of *Acanthamoeba* species isolated from public baths in Hungary
- Determinants of distribution and prevalence of avian malaria (*Haemoproteus* and *Plasmodium* spp.) in blue tit populations across Europe: separating host and parasite effects
- Development and directed targeting of antimicrobial compounds to treat leishmaniasis



ELTE TTK BIOLÓGIAI INTÉZET

Contact persons


Prof. Károly Márialigeti, marialigeti.karoly@ttk.elte.hu, <http://bio.elte.hu/>

Prof. János Török, janos.torok@ttk.elte.hu, <http://behavecol.elte.hu>

János Farkas PhD, farkasj@elte.hu

Júlia Katalin Török PhD, torokjul@elte.hu

PRESENTATION OF
DEPARTMENT OF PARASITOLOGY, NATIONAL CENTER
FOR EPIDEMIOLOGY, BUDAPEST, HUNGARY



National Center for
Epidemiology,
Dep. of Parasitology
István Kucsera MD
Albert Flórián út 2-6,
1097 Budapest, Hungary
Tel/Fax: +36 1 476
1233; Cell. +36 30
4309952
e-mail:
[kucsera.istvan@oek.ant
sz.hu](mailto:kucsera.istvan@oek.ant
sz.hu); [ikucsera@gmail.
com](mailto:ikucsera@gmail.
com)

The Department of Pathohistology-Parasitology was established in the year of foundation (1927) of the predecessor institute of today's National Center for Epidemiology (NCE)

In the last decade many sensitive techniques were introduced at the department:

- immuno-chromatography or ELISA to detect parasitic **antigens** (*Giardia intestinalis*, *Entamoeba histolytica*, *Cryptosporidium parvum*, *Plasmodium spp.*),
- WB to detect human **antibodies** in *Toxoplasma gondii*, *Toxocara spp.*, *Echinococcus spp.*, *Trichinella spp.*, *Schistosoma spp.*, *Leishmania spp.*, and *Tenia solium* (cysticercosis) infections
- PCR-based techniques for **DNA detection** (*T. gondii*, *Plasmodium spp.*, *Acanthamoeba spp.*, *G. intestinalis*, *E. histolytica*).

**At present,
there are three divisions functioning at the Department of Parasitology:**

**1. laboratory for direct detection
(microscopy, antigen detection)**



2. serological laboratory

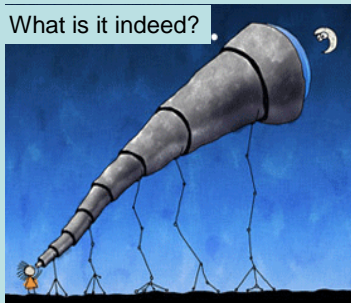


3. laboratories for molecular diagnostics



- Extensive diagnostic activity in the field of human clinical parasitology
- Confirmation/verification of laboratory results
- National Reference Laboratory for Human Parasitic Diseases
- Confirming activity for the human cases of imported parasitoses which are subjected to duty to give notice for an epidemiological interest (e.g. malaria) to the Head Office of the NPHMOS by decree (Ministry of Health, 1998)
- Expert activity in its professional field - by request: macroscopic, microscopic, serological, PCR examinations

What is it indeed?



-Testing, development, and introduction of internationally accepted laboratory methods.

-Inspection of commercially available diagnostics in Hungary.

-Elaboration of methodological directives and laboratory diagnostic protocols for the medical microbiological/human clinical parasitological laboratories of the country in its professional field.

Actually, now we have no any open project or international cooperation project.

Regular presentation and publication of notable results in the field of parasitology at scientific forums, in internationally acknowledged journals, and Hungarian periodicals.

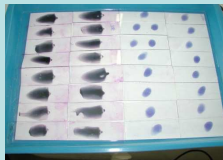
Systematic educational, consultative, and controlling activity by giving courses of lectures and practices for university or PhD students, specialists or specialist candidates, organizing work-meetings about the laboratory diagnosis and epidemiology of human parasitic diseases



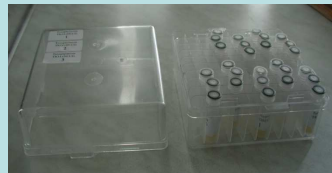
Courses in the last five years: Tropical parasitic diseases, Foodborn and waterborn parasitic diseases, Parasitic diseases transmitted by soil, Zoonotic parasitoses, Classical and modern methods in the clinical parasitology

Support of proficiency testing materials in the field of human clinical parasitology for proficiency test programs organized by the National Center for Epidemiology for the hospital, the university, and the independent laboratories beyond the laboratories of the NPHMOS; evaluation of proficiency test results in its professional field.

Microscopic Parasitology



Toxoplasma gondii serology



Thank you for your attention

