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ABSTRACTS

SESSION III

Rare and imported parasitoses

Different serotypes of dengue virus (DENV) imported to Poland (2008–2012)

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Dengue viruses (DENV) are the most widespread arthropod-borne viruses; they have shown an unexpected geographic expansion, as well as an increase in the number and severity of outbreaks in the last decades. Dengue is endemic in most tropical parts of the world, many of which are popular tourist destinations. Worldwide, 2.5 billion people are living in dengue endemic areas. Dengue virus comprises of four genetically and antigenically distinct serotypes (DENV-1 to DENV-4) and belongs to the Flaviviridae family, genus *Flavivirus.* Dengue viruses are usually transmitted by the bite of an infected mosquito vector, mainly *Ae. aegypti*. *Aedes* mosquitoes are effective vectors, and their global distribution matches that of the dengue viruses. The incubation period in humans ranges from 3 to 12 days, and is most commonly 5 to 7 days. Each year sees an increasing number of Polish travelers to the tropics, and hence to areas of high dengue fever prevalence. The number of imported dengue cases is increasing in Poland.

The aim of our study was to identify the dengue strains imported to Poland. RNA was extracted from blood and sera using a commercial Total RNA kit (A & A Biotechnology). A 579 bp fragment of the NS5 genomic region of mosquito-borne flaviviruses of JEV group was amplified. Reverse transcription-polymerase chain reaction (RT-PCR) was performed using QIAGEN OneStep RT-PCR Kit (Qiagen). Sequencing of PCR products was carried out with ABI Prism Big Dye Terminator v3.1 Cycle Sequencing Kit (Applied Biosystems) and an ABI Prism 310 genetic analyzer (Perkin-Elmer) automated sequencing system. The nucleotide sequence was compared with sequences deposited in the GenBank database using a Basic Local Alignment Search Tool (BLAST).

Forty serologically confirmed sera, were tested using RT-PCR. Nine (22.5%) of them were positive. Sequencing analysis detected two dengue serotypes: DENV-1 – 7 sera from patients from south-eastern Asia and Brasil, and examples of DENV-2 from patients returning from Thailand.

Autochthonous human *Dirofilaria repens* infections in Poland

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Dirofilaria repens Railliet et Henry, 1911 (Nematoda: Onchocercidae) is a subcutaneous parasite of dogs and other carnivorous animals; humans are accidental hosts. The parasite geographic range includes parts of various continents, predominantly the regions with a relatively warm climate. In Europe *D. repens* is the most abundant in the Mediterranean region and Ukraine.

Infection with *D. repens* was diagnosed or confirmed in the MUW and NIP-NIH laboratories between 2007 and 2012 in twenty patients with subcutaneous abnormalities. Parasites were localised in various parts of the body (16), and subconjunctivally (4).

Five of the diagnosed cases were classified as autochthonous. The infection was possibly acquired in the patients' place of residence, i.e. in the Mazovia province (4) and the Greater Poland province (1). None of these patients has ever travelled outside Poland.

From several months to several years prior to the diagnosis, ten out of 20 infected patients travelled to the territories where *D. repens* was endemic: Italy, Greece, Ukraine, South America and South Africa. Therefore it is probable, although impossible to prove, that those patients were infected abroad. In case of the other five patients it was not possible to establish where and when they got infected – it is only known that up to ten years before the diagnosis they had travelled to Hungary and the Czech Republic.

Dog infections reported in central Poland since 2007 and the above-mentioned human autochthonous dirofilariosis cases diagnosed between 2010 and 2012 indicate that *D. repens* infection has become an emerging disease in Poland, as in other European countries.

Monitoring of *D. repens* infections in dogs and mosquitoes is necessary in order to control the epidemiological situation. The increasing number of human dirofilariosis cases indicates that the infection should be considered in differential diagnoses of skin and eye diseases.

The first report of *Caparinia tripilis* among African pygmy hedgehogs (*Atelerix albiventris*) in Poland

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The African pygmy hedgehog, *Atelerix albiventris*, has recently undergone an increase in popularity as an exotic pet but relatively little research has been carried out on their ectoparasitic diseases. This is the first report of *Caparinia tripilis* in a colony of hedgehogs in Poland. *C. tripilis*, belonging to the family Psoroptidae, affects hedgehogs and a few other mammals, causing skin disease. These mites have short mouthparts with blunt chewing chelicerae and the pedicels of adult mites are short and unjointed. The tarsal caruncles are bell-shaped on all legs of males, while they are absent on legs III and IV of females. Three long setae are present on the third pair of legs in both sexes. The life cycle encompasses about three weeks. The mite passes all five stages on the host and feeds on sloughed skin cells and epidermal debris.

In February 2013, dermatitis was recognized in a group of 10 hedgehogs (*Atelerix albiventris*) from an individual husbandry in Lublin. Two of the animals were suckling infants and one female was pregnant. One of the severely affected hedgehogs died of self-trauma and secondary bacterial infections. The symptoms included dermatitis characterized by scale, pruritus, hair and spine loss, as well as encrusted skin lesions. Upon otoscopic and microscopic examination, numerous live mites in the ear canal and skin scraping samples were present. Severely infected animals became feeble and lost weight. Infected hedgehogs were isolated and treated with iodophor shampoo for cats and ivermectin spot on. The pregnant female, infants and their mother were treated with selamectin spot on. Medicines administered at 21-day intervals, were highly efficacious against *Caparinia tripilis*. It has been reported that using ivermectin by hedgehogs may cause an increased risk of certain side effects, but distressing symptoms were not observed during the whole period of treatment. Due to the relatively recent entry of this exotic species in the region of Poland, it is essential to report and study their parasitic species, in order to evaluate if any of these exotic parasites poses a risk for human health or can infect local *Erinaceus europaeus* hedgehogs.

An unusual case of family malaria in patients who travelled to Cameroon

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On February 1, 2013, a 55-year-old man, in an overall average condition, was taken to the Emergency Department of H. Swiecicki Clinical Hospital in Poznan after returning from Cameroon. The patient had been there for two weeks and did not use anti-malarial prophylaxis. He had high fever (39.5°C), headache, muscle pain and general body weakness for the first time on the airplane while returning to the country and reported to the hospital on the 3rd day from the onset of symptoms. A thin and thick blood film examination showed the presence of developing forms of *Plasmodium falciparum* (parasitemia 3%). A series of abnormalities were noted in other laboratory investigations that were carried out. The patient was admitted to the Department of Tropical and Parasitic Diseases, where a targeted anti-malarial treatment was carried out, resulting in a significant improvement in the general condition of the patient and a normalization of the laboratory parameters.

On the seventh day of hospitalization, the patient's wife (aged 51 years), who had accompanied him on the trip, reported to the Emergency Department of the Clinical Hospital in Poznan, complaining of fever (39°C), headache, and general weakness which she noticed while visiting her husband in hospital. She had also not used anti-malarial prophylaxis. Thin and thick blood film examinations were carried out, which showed the presence of developing forms of *Plasmodium ovale* (parasitemia 0.2%). Some abnormalities were also found in the other laboratory tests. The woman was also admitted to the Department of Tropical and Parasitic Diseases. The lack of correlation in the occurrence of clinical symptoms in the woman and the man was due to differences in the incubation period, which is 7–14 days for *P. falciparum* and 10–18 days for *P. ovale*.

There is still a very high risk of malaria for people traveling to tropical and subtropical countries. A family incidence of this disease is extremely rare, but it also shows the importance of the choice and proper use of anti-malarial prophylaxis. Also of great importance is the co-operation of the travel agencies with regard to informing travellers of the risks to life and health in some parts of the world. Furthermore, an effective and quickly performed microscopic investigation for malaria can save the lives and the health of the patients.

Intestinal nematode infection in south-western Poland – Myth or Reality?

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Strongyloides stercoralis (intestinal nematode) is common in the tropical and subtropical countries where the infections affect 5% of the population. In Poland, only cases imported by travelers returning from different climate zones have recently been known. In the Poznan Centre there has been no recorded invasion of native nematodes for decades. Intestinal nematode is a unique parasite because it occurs in a free-living form, irrespective of the parasite cycle. The infection usually occurs through the skin of the feet or buttocks while walking barefoot or sitting on warm sandy beaches. Characteristic linear, spiral thickening of the skin appears at the site of larval penetration. After settlement of the duodenum by the parasite, a number of gastro-intestinal symptoms can develop (abdominal pain, bloody – purulent or bloody – mucous diarrhea alternating with constipation).

Case report. After a telephone consultation, a 36-year-old man from Walbrzych sent to the Diagnostic Parasitological Laboratory, University Hospital in Poznan, a sample of water from the drainage system of his house. The material revealed the presence of hundreds of adult male and female *Strongyloides stercoralis* parasites. Other developmental forms were also present – eggs, rhabditiform and filariform larvae. Owing to the high degree of risk of infection, the man was promptly referred to the Department of Tropical and Parasitic Diseases, University Hospital in Poznan, in order to confirm or exclude strongyloidiasis. Laboratory tests did not reveal eosinophilia; immunodeficiencies were also not detected. Medical history was negative for any chronic disease. Multiple coproscopic examinations and stool cultures by Harada-Mori ruled out *Strongyloides stercoralis* infection in the patient.

Due to the risk of waterborne *Strongyloides stercoralis* infections, screening for developmental forms of parasites should each time be performed in epidemiological investigations of water intake and sewage disposal facilities.

Schistosomosis and its consequences – contemporary medical problems of not only exotic countries

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Schistosomoses are not transmissible parasitic diseases but they can be imported from their endemic regions to various countries of the world, constituting a serious clinical and therapeutic problem. They hold the second position, after malaria, in terms of incidence (200-300 millions new cases per year) and mortality. Factors promoting the spread of the *Schistosoma* sp. invasion in endemic regions (Africa, Arabic Peninsula, the Middle and Far East, several countries of Central and South America) include contamination with the excrement of infected individuals of water reservoirs (channels, river marshes) inhabited by snails (*Biomphalaria* sp., *Bulinus* sp., *Oncomelania* sp., *Tricula aperta*) – the intermediate hosts of *Schistosoma* trematodes.

This work presents a contemporary outline of the pathomechanism, involving changes in the *Schistosoma masoni* invasion, as related to morphological forms and invasion stage. A multiple organ pathology has been presented, involving the cardio-vascular system, liver and the large intestine wall, in the acute and chronic stage of the disease. In the diagnosis of schistosomosis, the significance of an epidemiological diagnosis (a stay in the endemic region), and the choice of clinical tests and rational parasitological methods used in the analysis of faeces, intestinal contents and urine, to detect the *Schistosoma* sp. eggs, have been emphasized. The immunoserological (ELISA, Western-blot) and molecular (PCR) tests have been found to have significant value. Similarly, histopathological tests of liver biopsies (fibrotic process) and the proliferative lesions in the large intestine wall (endoscopy) have been found to be indispensable for evaluation of the pathological process and confirmation of the invasion (*Schistosoma* sp. eggs detection). Modern radiological methods (USG, MR, CT) are helpful in estimating the stage of the pathological process.

A diagnosis of schistosomosis at an early stage of the invasion and the introduction of proper therapy prevents the development of disease and its late sequels.

An evaluation of the influence of environmental factors on the clinical course of malaria in Polish tourists and missionaries staying in the tropics

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The development of communication, the improvement of living standards, the desire to broaden knowledge about the surrounding world are the reasons for the constant increase in the number of Poles travelling to developing countries. There are many factors increasing the travel hazards, among which the length of the stay in the tropical climate, poor sanitary conditions and the lack of professional pre-travel consultation are the significant ones. Among all tropical diseases that are imported to Poland, malaria is the most common cause of fever and flu-like symptoms in all of the travelers.

During the period from January 2001 to October 2012, 47 patients were admitted with an acute episode of malaria to the Department and Clinic of Tropical and Parasitic Diseases in Poznan. The clinical course of malaria in each of the patients was carried out based on the current criteria of the World Health Organisation. Epidemiological studies were based on a standardised questionnaire that consisted of questions covering the nature and reason for the trip, the length and place of stay and other risk factors of malaria, like the lack of chemoprophylaxis and mechanical barriers against mosquitoes, staying in malaria endemic regions in the past and presence of chronic diseases being a cause of decline in the immunity. Of the 47 patients with malaria, 83% were infected with *Plasmodium* spp. during their stay in sub-Saharan Africa, especially in the Cameroon, Ghana and Nigeria. The main reason for travelling was a business trip (51%), mainly to work in missionary centres and humanitarian institutions (28%). Patients from the study group stayed in malaria-endemic countries for a period of one week to 56 years. Only 13% of the patients benefited from professional medical consultation before the trip, and this was the reason for 51% of the patients not using any anti-malarial prophylaxis and not following the rules of tropical hygiene. In the patients from the Poznan Centre, there was a correlation between the severity of the clinical picture of malaria and the lack of pre-travel medical consultation with a tropical medicine specialist, non-application of appropriate pharmacological anti-malarial prophylaxis and embarking on business trips to Equatorial Africa, and long periods of stay exceeding 2 weeks.

Risk of parasitic and infectious tropical diseases in touristic areas of the world with the Mediterranean climate

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The Mediterranean climate belongs to the subtropical zone of the Earth and is characterized by hot and dry summer with the temperature above 20°C and a mild winter season with the temperature exceeding 0°C. Such climate occurs in regions located directly along seas or oceans, usually on their western or southern coasts. It has a large geographical distribution in all continents of the world and is widespread in the Mediterranean Seas areas of the Southern Europe, Near East and Saharan Africa, as well as in the South African Republic, California, south of Crimea, western coasts of Australia and Chile. Convenient geographical location and favourable environmental conditions have made it a very attractive tourist destination for all year round. The majority of tourists are not routinely informed about potential threats to their health and life associated with many parasitic and infectious exotic diseases which are endemic in visited regions.

The aim of this study was to describe selected exotic infections diagnosed in patients returning from the Mediterranean climate areas and hospitalized in the Department of Tropical and Parasitic Diseases in Poznań (Poland). Clinical, parasitological, imaging, biochemical and immunodiagnostic examinations were performed in the Polish travellers coming back from subtropical journeys. Tropical infections contracted in the Mediterranean zone were described. Autochtonous malaria with *P. vivax* has occurred on Greek islands since 2011. Locally introduced cases of *P. ovale* or *P. vivax* airport malaria have been documented in large cities of Spain. Dengue haemorrhagic fever began endemic in Florida in 2009, in Australia in 2010 and on Portuguese Madeira in 2012. During the last years, West Nile virus has significantly increased its geographical distribution and stayed hyperendemic along the Mediterranean and Black Seas and on the Balkan Peninsula. Tourists spending their vacation period on sand beaches have a risk of cutaneous larva migrans syndrome. *S. mansoni* and *S. haematobium* are more frequently observed in missionaries and health care volunteers than in tourists, but are hyperendemic in North Africa and Near East. Visceral leishmaniasis with *L. infantum* is highly prevalent in the south of Europe, but in the last years the cutaneous form of the infection due to *L. major* or *L. tropica* has frequently been diagnosed along the Mediterranean Sea. The south of Europe is known to be endemic for brucellosis. Dirofilariases have begun emerging parasitic infections in the Saharan African countries, as well as outbreaks of avian flu were reported in Egypt in the last year. *E. histolytica* invasion is documented in travellers from the Balkans. Typhoid fever is observed in all subtropical regions. Travellers who return from warm climate areas of the world, including the Mediterranean, with some clinical symptoms like fever, hepatosplenomegaly, headache, abdominal pain, diarrhoea, skin disorders, haematuria, eosinophilia or neurological signs should be obligatorily directed to reference clinical centres of travel medicine with a suspicion of exotic infections.

Clinical picture of schistosomiasis imported to Poland by missionaries and health care volunteers returning from tropical areas

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Infections due to *Schistosoma* spp. are endemically widespread in 76 countries or administrative territories of the world with tropical and subtropical climates. *S. mansoni* infection is currently reported in the Arabian Peninsula, African countries and islands of the Indian Ocean. The highest incidence of the infection is observed in Equatorial Africa, the Nile Valley, Madagascar, and also in Brazil, Surinam and Caribbeans. *S. haematobium* infection dominates in the Middle East, Africa and on many islands of the Indian Ocean frequently visited by tourists (Mauritius, Zanzibar, Pemba, Madagascar). Locally occurring *S. intercalatum* is endemic in 10 western and central African countries, *S. japonicum* occurs in China, Indonesia and the Philippines, and foci of *S. mekongi* are only located in Laos and Cambodia.

The aim of the study was to describe the clinical course and complications of intestinal schistosomiasis in Polish missionaries and humanitarian aid workers who were diagnosed and treated in the Clinic of Tropical and Parasitic Diseases in Poznań (Poland). Clinical, microscopic, imaging, biochemical and serological examinations were performed in the Polish travellers returning from the tropics after a long-term stay in hyperendemic areas. During the last years *Schistosoma* spp. infections have been confirmed in 14 patients aged 28-47 years who worked in mission centres in Africa (mainly in Zambia, Cameroon, Chad, Tanzania, Central African Republic, Madagascar), including two females and 12 males. Parasitological examination of stool samples was positive for eggs of *S. mansoni* in 13 cases, and a very rare *S. intercalatum* invasion was found in one patient from Chad. In all the patients typical risk factors were detected, which included swimming or floundering in fresh water, walking barefoot or in open sandals in slams or rural areas. Clinical examination revealed fever, hepatomegaly, respiratory distress, headache, general weakness, allergic skin rash, cough, dyspnoea, abdominal pain and diarrhoea. Laboratory examinations showed marked or high eosinophilia (700–21300/ml), elevated concentrations of sCD23 (44-268 IU/ml) and of total immunoglobulin E (189–707 IU/ml). In serological evaluation specific IgG antibodies against 8-19, 22-23, 30-33 kDa antigens were found in serum samples using the reference Western blot technique. High effectiveness of anti-parasitic treatment with praziquantel of 60 mg/kg in divided doses has been documented in comparison to a traditional single-dose regimen widely proposed in the tropics. Schistosomiasis acquired in tropical countries manifests itself many months or even years after coming back from endemic areas and can suggest other domestic disorders, therefore epidemiological anamnesis considering types and conditions of tropical journeys is crucial for clinical diagnosis. After returning from warm climate areas, laboratory and clinical examinations for exotic infections are strongly recommended in specialized centres which have a good practical experience in tropical and travel medicine.

Filarial infections imported to Poland by missionaries and tourists returning from the tropics in the long-term experience of the Poznań Centre of Tropical Medicine

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Filariases are sporadically imported to Europe by immigrants, refugees or missionaries living for years in endemic areas. In tourists travelling to tropical regions for short-term journeys the risk of filarial infections is significantly lower. Lymphatic filariasis caused by *W. bancrofti* is distributed throughout hot and humid climates of Equatorial Africa, Asia, Latin America and the Pacific. *B. malayi* infection is reported in South-East Asia and India, whereas *B. timori* is only found on some islands in Indonesia. Loiasis occurs endemically in the tropical forest of West and Central Africa. However, *M. perstans* infection is widespread in many warm climate countries, especially in Sub-Saharan Africa, some regions of Central and South America and in the Caribbean.

The aim of the study was to describe the clinical picture and complications of filarial infections in Polish travellers hospitalized in the Clinic of Tropical and Parasitic Diseases in Poznań (Poland). Clinical, parasitological, imaging, biochemical and immunodiagnostic examinations were performed in Polish missionaries and tourists returning from the tropical and subtropical zones. During the last 10 years, filarial infections have been reported in 11 patients aged 11–86 years (average age 47.2 years) diagnosed in the Department, including 4 females and 7 males. There were 8 missionaries and health care volunteers working in mission centres (72.7%) and 3 tourists travelling for recreational purposes (27.3%). Most patients returned from Africa, mainly from Cameroon, Gabon, South and Central African Republics, Congo and Chad (72.7%), two travellers migrated to Asia (India and China), and one tourist was infected in the Dominican Republic. Clinical evaluation showed lymphadenitis, asymmetric oedema of lower or upper extremities (n=5), advanced elephantiasis (n=1), Calabar swelling (n=1), unilateral conjunctivitis with subconjunctival haemorrhage (n=1), subcutaneous nodule (n=1); in two other cases the infection was subclinical. Parasitological examination of peripheral blood confirmed microfilariae of *M. perstans* (n=3) and in one patient mixed infection with *Loa loa* and *M. perstans*. An adult female of *Loa loa* was removed from conjunctiva in one missionary. In another case histopathological examination of the breast nodule documented a larval form of *D. repens*. In 5 cases without parasitological confirmation the Mazzotti test was positive. Laboratory analysis showed the presence of the *W. bancrofti*-specific AD12 antigen, moderate or high eosinophilia, mostly increasing by night or after administration of anti-parasitic drugs, hipergammaglobulinaemia, elevated concentrations of total immunoglobulin E or sCD23 molecule. Specific therapies with albendazole alone or in combination with prednisone (n=10) or diethylcarbamazine (n=1) were prescribed with a good clinical outcome. Marked eosinophilia in travellers returning from the Mediterranean or tropical areas of the world should always be considered for a differential diagnosis of filariases in reference clinical centres of travel medicine.

Endoparasites of pet reptiles in Poland

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Current population of reptiles kept as exotic pets in Poland is unknown but rising. Observation of veterinary practitioners involved in the treatment of such patients shows that majority of them are lizards (geckos, dragons), turtles and, rarely, snakes. Due to the lack of veterinary control of captive reptiles bred outside the zoo, not only their origin is unknown, but also their health status, including the species of harboured parasites.

The aim of the study was to determine the species of internal parasites invading pet reptiles in Poland. The object of the study were stool samples from 32 bearded dragons (*Pogona viticeps*), two chinese water dragons (*Physignathus cocincinus)*, 17 geckos, 10 turtles, six snakes and four chameleons. Samples were tested by Fülleborns' flotation method with Darlings' solution and by direct smear stained with Lugol's iodine. Observed worm eggs and oocysts were qualified as parasites and pseudo-parasites (parasitic elements from other animal species).

In 48 samples (67.6%) we revealed the presence of parasitic elements. The most frequent parasites in lizards and turtles were the eggs of oxyurids and oocysts of the genus *Isospora*. In the case of one chameleon the presence of *Giardia intestinalis* oocysts was revealed. Among the positive samples obtained from snakes, the oocysts of the genus *Isospora* spp. predominated, and in one case *Oxyuris* eggs were found. As pseudoparasite, *Hymenolepis nana* eggs, most probably derived from the eaten infected rodents, were detected in a stool sample. Exotic reptiles held as pets are heavily infected with internal parasites. Some parasites and pseudoparasites (*Giardia intestinalis, Hymenolepis nana*) are a potential risk of infection for pet owners. Parasitological monitoring of reptiles housed by private owners and in pet shops is highly recommended, as well as parasitological examination of food animals for predatory reptiles, which should improve the safety of captive reptiles and their breeders.

Case of *ancylostomiasis* in traveller coming from endemic areas

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The increasing frequency of travel to tropical parts of the world for tourism exposes travellers to an invasion by various pathogens not known in temperate climates. Travellers' diarrhoea is one of the most common problems of travellers with a prevalence of between 20 and 50%. The causative agents are primarily bacterial (up to 50% or more), viral, parasitic and sometimes biological toxins. Hookworm disease, caused by *Ancylostoma duodenale* and *Necator americanus*, is one of the most prevalent human parasitic diseases. Human infection occurs when the filariform larva penetrates the skin. A high risk factor for hookworm infection is walking barefoot on sandy soil. *Ancylostoma* infection can also be acquired by humans orally. The intestinal form is common among the tourists and diarrhoea is the most frequent manifestation.

The clinical-epidemiological characteristics of a patient with ancylostomiasis is presented. A 23-year-old female patient was admitted to Department of Infectious Diseases, Hepatology and Acquired Immune Deficiencies, Wroclaw Medical University complaining of diarrhoea within three weeks after returning from endemic countries. She was five months in southeast Asia (Burma, Laos, Thailand, Cambodia) and two weeks in the Balkans. Diarrhoea appeared two weeks after returning to Poland. A blood test showed the presence of high levels of eosinophilia (43%). Examination of stools by the formalin-acetate method revealed eggs of *Ancylostoma* spp. and after three days, rhabditiform larvae. The patient was cured with oral albendazole.

North American form of *Psorospermium* in invasive spiny-cheek crayfish *Orconectes limosus* from selected lakes of north-eastern Poland

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Psorospermium has been included in a group called the DRIPs (*Dermocystdium*, *Rosette agent*, *Ichthyophonus*, *Psorospermium*) clade named Mesomycetozoa. Differential spore morphotypes of *Psorospermium* in freshwater crayfish from various families (Astacidae, Parastacidae and Cambaridae) in North America, Europe and Australia were described. Additionally, preferences of this parasite for host's tissue and defense response were characterized in literature.

The occurrence of differential spore forms of *Psorospermium* in invasive North American spiny-cheek crayfish *Orconectes limosus* (Rafinesque, 1817) belonging to the family Cambaridae (Crustacea, Decapoda) was examined in this work. The infection extensity, preference of the parasite for particular organs and morphometric features of spores in crayfish from different habitats were compared. The spores have been measured and classified on the basis of their length, width and shape. The averages of the measurement have been analyzed statistically. The material was collected from nine lakes located in north-eastern part of Poland: Dgał Wielki, Harsz, Łabap, Kisajno, Dargin, Staw Płociczno, Wojnowo, Hańcza and Pobłędzie. Total, 153 individuals of crayfish were examined. *Psorospermium* has been noticed in crayfish from all the lakes. Most frequently, the parasite has occurred under shell membrane and mandible muscles. Rarely, it has been noticed to occur in gills. Only one form – "short curved American" – was presented in the examined material. There have been some significant differences observed in average measurements taken from some lakes. Defense reaction in spiny-cheek crayfish to *Psorospermium* infection has been weak and rarely noticed. No European types of spore were found in North American crayfish *Orconectes limosus* in north-eastern Poland lakes.