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ABSTRACTS

PLENARY SESSION

Alien species of parasites – some questions concerning terminology

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We are considering possibility of adapting terminology proposed for describing the phenomenon of the biological invasion of living organisms (as laid out in three publications: „IUNC guidelines for the prevention of biodiversity loss due to biological invasion", „European Strategy on invasive alien species", „Alien species in the fauna of Poland") to parasite species.

Alien or **non-native species**. The term is also suitable in relation of parasites, however an assessment of how many of parasitic species recorded in Poland are non-native is rather difficult. The first faunistic parasitological explorations in Poland took place at the beginning of the 20th century, but it has been only after the Second World War that they developed at a greater scale. Therefore the years 1945–1950 can be accepted as a point from which the alien provenience of some species can be well documented. The parasites recorded earlier should be treated either as cryptic or native species.

Invasive alien species. We propose three characteristics to define parasites as invasive. The alien parasite species is invasive if: 1. it has an impact on host's health which affects the structure of natural ecosystem or causes considerable economical losses in cultures; 2. it colonizes new hosts; 3. it expulses any native parasite from the host or even from the biotope.

Intentional and **unintentional introduction**. These terms and their definitions seem not suitable for parasite species. Intentional introduction of parasites is applied rather very rarely. Since parasites are transferred to new regions by their hosts and not all cases are related to human activities, we propose to rather use the term: **brought**. For distinguishing the alien species which colonize new regions from those which are brought repeatedly the terms: **established brought** and **casual brought** could be used.

Expansion and **invasion**. While both terms can be used in relation to the parasite species, some comments are necessary. The colonization of new hosts, even at the same area, should be treated as the capturing of new area. The term **expansion** could specify gradual (progressive) enlargement of parasite distribution area connected with the expansion of its host, the term **invasion** – enlargement of distribution (**territorial** or **host invasion**) caused by rapid procreation of parasites, great impact on host health, economical losses and/or expulsion of any native parasite species (the characteristics of invasive species).

Immunity to *Teladorsagia circumcincta* in sheep

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Sheep offer several advantages for the study of parasite infections; in particular both deliberate and natural infections can be studied in detail. Also, large populations with high prevalence of infection, detailed records and deep pedigrees are easy to obtain. The most important nematode of sheep in cool temperate areas is *Teladorsagia circumcincta.* Nearly all grazing sheep are exposed to infection and mean worm burdens in growing lambs can exceed 10,000 in some years. Following both deliberate and natural infection, resistant sheep produce more IgA, eosinophils, IgE and mast cells than susceptible lambs. IgA and eosinophilia are strongly associated with control of worm length and fecundity while IgE and mast cells are associated with reductions in worm establishment and possibly survival. There is considerable variation among animals in the intensity and specificity of the IgA and IgE responses. Both IgA and IgE recognise multiple parasite molecules and many, perhaps most, parasite molecules contribute towards protection. The targets of the IgE response were identified by two dimensional Western blotting and tandem mass spectrometry. Selected molecules were then cloned and sequenced. Phylogenetic comparisons indicated that these molecular targets are not mutating rapidly in response to immune pressure. In this respect, nematodes and potentially other parasites differ from some viruses. Nematodes and hosts are undoubtedly coevolving but the mechanisms do not involve rapid mutation of molecular targets.

Perspectives on the development of travel medicine in Poland

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In recent years, Polish people have been showing more willingness to travel to the tropics. Year in, year out, richer offers from travel agents, wider business contacts as well as private passions and more curiosity for the world, inspire thousands of tourists to visit African countries or the Near- and Far-East. The risk of falling ill during travel to the tropics is not only as a result of the danger associated with transportation, sudden change in climate, change of time zone, local political and social situations, but above all as a result of the actual epidemiological situation in a given region of the world with regard to the prevalence of exotic diseases.

In Poznan, a new project has been launched based on a computerized system concerning travel medicine. The system will make telemedicine technology available for doctors and lab diagnosticians in every location that is remote from reference centers, and also for medical staff, missionaries, charity workers and soldiers who work in developing countries. The system will also include tour operators and travel agencies in whose interest it is to safeguard the health of travelers. The system informs the user that effective prophylaxis for people traveling to tropical countries and sub-tropical zones ought to take three areas into account: anti-malarial prophylaxis, required and recommended vaccinations for international travel as well as the need to obey the principles of tropical hygiene. It is expected that introducing this system in Poland will significantly decrease the morbidity and mortality of tropical diseases therein.