



Contents lists available at ScienceDirect

International Journal for Parasitology

journal homepage: www.elsevier.com/locate/ijpara

Editorial – ICOPA down under

Despite international promulgation of the term, Australians don't usually refer to our own country as "down under". If however you have no idea what we are talking about, let us turn to Wikipedia, which states:

*"The term **Down Under** is a colloquialism referring to New Zealand and Australia. The term comes from the fact that this country is located in the southern hemisphere, below many other countries on the globe."*

Australians live in a land of diversity – climate, topography, culture – and we are perhaps most famous for our biodiversity, typified by the Great Barrier Reef and Daintree Rainforest, but also our parasites, the reason why you are attending ICOPA XII, an international festival of Parasitology held every 4 years. The IJP is an international journal sponsored by the Australian Society for Parasitology, so we wanted to commemorate this Conference with a thematic issue devoted to ICOPA XII and the "diversity" of Parasitology presented at this Conference. Most of the papers were commissioned from our plenary speakers and we greatly appreciate their efforts to have prepared these papers in sufficient time for the opening of the Conference.

The enormous impact of malaria on developing countries is well represented in this issue, at molecular, ultrastructural and epidemiological levels. Drug resistance in *Plasmodium falciparum* is discussed in terms of transporter proteins (review by Lanzer and colleagues) and infectivity of gametocytes to the mosquito host (research articles by Djimde and colleagues). Malaria vaccines, with a focus on the merozoite surface protein complex, is reviewed by Holder et al., while Tilley and colleagues review the ultrastructure of *P. falciparum*-infected erythrocytes revealed using cutting-edge microscopic techniques. Host cell invasion, notably the roles of sialic acid in a range of apicomplexan parasites, is reviewed by Soldati et al.

Continuing the theme of human parasites, Carapetis and colleagues describe the parasitic infections encountered in remote indigenous communities in Australia, emphasising the higher mortality rates of Indigenous Australians compared to Indigenous populations of other developed countries. From Northern Australia we head across the Indian Ocean to Thailand where Sripa et al. describe the search for prognostic markers of cancer caused by the liver fluke, *Opisthorchis viverrini*. Continuing the theme of human helminths, Simon Brooker reviews the global distribution and dis-

ease burden of intestinal nematode infections with a particular focus on the challenges of its estimation, and Marshall Lightowlers describes one of very few recombinant protein-based vaccines for parasites, the TSOL18 vaccine to control *Taenia solium* in pigs and its transmission to humans where it causes neurocysticercosis. Hoerauf, Pfarr and colleagues describe gene expression in filarial nematodes before and after depletion of their *Wolbachia* symbiont hitchhikers, and suggest that the *Wolbachia* heme synthesis pathway is a suitable target for the development of new anti-filarial drugs. And no journal issue on human parasitic infections is complete without an article dealing with polyparasitism, so Yazdanbakhsh, Supali and colleagues remind us that polyparasitism is the rule rather than the exception, and review the effects on the immune response of human co-infections with helminths and protozoa.

Debra Woods from Pfizer provides an industry-based perspective on the challenges and recent advances in drug discovery for anti-parasitics in 21st century veterinary medicine. Continuing the animal theme, Thompson and colleagues review the emerging parasitoses of wildlife with a mostly Australian flavour, and highlight the importance of understanding parasite biodiversity in wildlife in the broader context of the ecosystem, and its implications for conservation and transmission.

If you are attending ICOPA XII, we wish you safe travels and hope that the Conference lives up to your expectations. Although we are surrounded in our daily lives by stunning technological advances (despite the absence of an IJP app for iPhones), we are making little headway in the global control of most parasites, let alone discussing their elimination. As a result, we share our knowledge at parasitology Conferences and in parasitology Journals so that we inform each other and the wider community about the significance of parasites and how we as researchers are addressing a problem that is so much older than we as a species. We hope you enjoy this issue of the IJP.

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