



Cambridge Society for the Application of Research

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"Life in the Colonies"

Social Insects, and their relevance to human behaviour

Professor Francis Ratneiks
Director, Laboratory of Apiculture and Social Insects
University of Sussex

7.30 p.m., Monday 11th May, 2009
The Wolfson Lecture Theatre, Churchill College, Storey's Way, Cambridge

"Humans and our primate ancestors are social. However, for most of our evolutionary history we lived in small groups. Since the advent of agriculture, some 10,000 years ago, humans have lived in ever larger and more complex societies, progressing eventually to cities, nations, and the nascent worldwide civilization of the present day.

In contrast, insects have been living in societies for as long as 150 million years, and in large complex societies for most of that time.

Can humans, as relative newcomers to social life, learn anything from societies of bees, wasps, ants and termites? Insect and human societies are very different, and it is unlikely that we can benefit by copying features of insect societies directly. Indeed, by human standards an insect society would be excessively totalitarian and unequal. Most individuals in insect societies, the workers, never reproduce and in most species they are also physically different from the reproductive individuals. However, both human and insect societies face common challenges.

It is here that we may be able to learn from insects, by gaining insights into the challenges posed by social life rather than by directly copying insect societies.

Social insects can live in dense colonies without succumbing to epidemic diseases. **Public health**, therefore, is one area in which we may gain insights.

Insect societies are by and large harmonious even though the individuals comprising the society do not have identical interests. **Conflict resolution** is the second area in which we may gain insights.

Finally, insect societies have evolved simple yet robust mechanisms for coordinating the activities of the many individuals in a colony. For example, their transport and communication systems are robust, and not so prone to "crashing", as are many human technological systems. **System organization**, therefore, is a third area in which we may be able to gain insights."

Prof Francis Ratneiks

About the speaker:

Francis Ratnieks grew up in south east England and as a boy spent a lot of time chasing butterflies. He began his Biology B.Sc. at Sussex University in 1971 but dropped out. He then spent 8 years living in Ireland, initially in Kerry where he made jewelry and worked on fishing boats, later enrolling in the University of Ulster where he took a B.Sc. in Ecology and where his enthusiasm for insects resurfaced. From Ulster, by way of Panama, he went to the Department of Entomology at Cornell University. In 1995 he moved to the University of Sheffield. In 2008 he returned to the University of Sussex where he is the UK's only Professor of Apiculture and is director of the Laboratory of Apiculture and Social Insects.

The Organising Secretary adds....

Professor Ratnieks and I have similar backgrounds. We both went to Sussex, and I used to keep bees whilst working for my PhD in Norfolk. My bees were not a success; they stung everything in sight, including the neighbours; but they did produce 48 lbs of delicious honey!

Coffee (but no honey) **should** be available, as usual, in the foyer outside the lecture theatre from ~7.00 p.m. If it is not there, you will have to forage for it; it is exam time, when things like our coffee are inclined to wander. **Good hunting!**

Best Regards

Richard Freeman

Organising Secretary

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