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THE BRITISH SECTION OF THE SOCIETY OF PROTOZOOLOGISTS
AUTUMN MEETING 2001 (Arranged by Harriet Jones)

The Microbiology of Soils

Introduction

The BSSP Committee selected a group of speakers to discuss aspects of the microbiology of soils which relate to the lives of protozoa in this habitat, and which are stimulating current research in this area. Keith Vickerman acted as Chairman for the day of presentations and John Darbyshire gave a short introductory talk.

It is not easy for us to envisage how the physical architecture of soil affects microbial dynamics. Clearly the complex shapes of the three-dimensional spaces within soils must restrict the access into crevices of microorganisms of different shapes and sizes of all taxonomic groups. In addition, the movement of water through, and its retention in, soils of different structure will affect them profoundly. Iain Young (imy@tay.ac.uk) discussed how these features impact upon the lives of protozoa in soil, and upon the interactions between protozoa and bacteria. Since he has presented this work earlier this year in our sister Journal (Protist, 152, 123–126), we have not repeated that report. Most of the other presentations are summarised in the following pages.

To learn about protozoa in soils it is necessary to take samples to discover what species are present and how many there are. Sampling strategies depend on answers to such questions as "How variable is the spatial distribution of protozoa in soils ?" and "What are the best methods of measuring the diversity of protozoa in soils ?". Studies aimed at answering these questions are described by Bryan Griffiths (pp. 371–373) and Flemming Ekelund (pp. 361–362), respectively.

An intensive study of a specific grassland soil described by Susan Brown (pp. 359–360) permitted a description of the structure of the protozoan community and the dispersal of the species across sub-plots of the site. Testate amoebae are characteristic and often valuable indicator species in soils and the value of research on these protozoa in relation to climatic and hydrological change is reviewed by Humphrey Smith (pp. 367–369).

Cogent reasons to pursue such studies are provided by recent researches of Michael Bonkowski (pp. 363–365), examining the interactions between plant roots and the bacteria and protozoa in the rhizosphere. These give support to new, as well as previously proposed, mechanisms by which protozoa may stimulate plant growth. New methodological approaches to the study of the trophic relationships of soil organisms include the use of stable isotopes of carbon, which was discussed at the meeting by Phil Ineson (pi2@york.ac.uk), but is not described here.

These brief reports are included here to stimulate interest in this challenging area of research on this environmentally important aspect of the ecology of protozoa.

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