

nature 15 February 2001

correspondence

Nature 409, 761 (2001) © Macmillan Publishers Ltd.

Skilled eyes are needed to go on studying the richness for the soil

Sir – Many ecologists are unaware that most of the biodiversity in any terrestrial ecosystem occurs in the soil, so we were delighted to see your recent News Feature ¹. We do not agree, however, with the implication that such studies have been initiated only recently: in fact, the biodiversity and functioning of soil organism communities have been a major research area for soil ecologists for 50 years.

As early as 1950, Kühnelt ² stressed the diversity of soil dwellers. A wave of publications outlining soil organism diversity occurred in the 1970s, including the recognition of the enigma of high species diversity associated with apparent high trophic overlap ³. The importance of soil organisms for plant growth has also been recognized for more than a century. Currently, soil biodiversity is even being seen as a tool for sustainable agriculture ⁴.

Progress in soil ecological research has often been constrained by taxonomic and methodological problems, which are not resolved in some of the studies cited in your News Feature, making it difficult to reach meaningful levels of taxonomic resolution. Experimental manipulations such as removing starfish from a stretch of rocky shore are said to be extremely difficult to apply to soil-dwellers. Yet manipulative studies have been carried

out with soil organisms for many years. These involve many different types of experimental approach including the use of litter-bags with different mesh sizes, partial or complete defaunation using pesticides, transplantation of soils and inoculation of experimental soil units. These experiments achieved in the field during the past 20 years or more, however difficult they are to perform, have been instructive in supplementing laboratory results and providing foundations for the studies cited ¹

The canopy has been called the last biotic frontier of the biosphere ⁵, and perhaps the soil can join it ⁶. Unfortunately, funds for the study of nematodes, mites and other minute soil animals disappear into the ravening maw of molecular biology. If there is no one left who can tell one soil animal from another, however, we will be exploring these frontiers blind.

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