



Abundance of microarthropods population in different sites of Midnapore east coast of West Bengal, India

Minisal Kanti Dey^{1*}, Ashis Kumar Hazra²

¹ Senior Environmentalist, PM CR Dey Memorial Society, West Bengal, India

² Zoological Survey of India, New Alipore, Kolkata 700053, India

*Correspondence E-mail: minsalkantidey86@gmail.com, pmcrdeymemorial@gmail.com

Abstract

Soil represents one of the most important reservoirs of biodiversity. Soil fauna is an important reservoir of biodiversity and plays an essential role in several soil ecosystem functions; furthermore it is often used to provide soil quality indicators. An ecological study of microarthropods communities from East Midnapore coast, West Bengal, India was undertaken. Four different biotopes were studied over the course of 30 months. A total 44 species of soil microarthropods were studied in details with regard to seasonal population fluctuation, variation in their community structure, relationship with physiochemical parameters of soil, life cycle pattern and their functional role in the ecosystem.

Keywords: Soil microarthropods; Population fluctuation; Diversity

Introduction

The word soil is derived from the latin word "Solum" means floor. Natural activities like wind, water flow etc. for hundreds and thousands of years upon the rocks initiates the process of disintegration of rocks gradually resulting in very small particles. These particles after mixing up with organic matters of soil support like many soil organisms (Thompson and Troch 1979) Living organisms were reported to have established themselves very early in the process of decomposition of parent materials, which indicates that organic decomposition is also associated with the early stage in the soil formation. The organic content of the soil in the embryonic phase of development has been found to be very low as the vegetation and its associated fauna do not develop in high densities (Newell K.1984). During these initial stages also, the products of organic decomposition occur along with inorganic decomposition resulting into formation of chemical complexes already

formed not easily separable from components of solid however, as both of these decomposition process occur side by side and in combination, the size of soil particles, and the spaces between them, become smaller leading to the increase in water- holding capacity of soil. This together with the increasing amount of plant nutrients and organic materials, allow the soil to support higher plant life, such as grasses and other shrubs as the protective covering through the binding action of the root system and thereby promotes the greater stability of soil structure. These conditions favour the development of rich soil microflora and microfauna (Monleon and Kermit 1996). Microarthropods and microflora constitute two major groups of decomposer organisms of soil litter of any natural or near to natural ecosystem. They are closely associated with each other as in natural ecosystem functioning where the microarthropods feed upon the microflora



Abundance of microarthropods population in different sites of Midnapore east coast of West Bengal, India

Mrinal Kanti Dey ^{1*}, Ashis Kumar Hazra ²

¹ Senior Environmentalist, PM CR Dey Memorial Society, West Bengal, India

² Zoological Survey of India, New Alipore, Kolkata 700053, India

*Correspondence E-mail : mrinalkantidev86@gmail.com; pmcrdevmsociety@gmail.com

Abstract

Soil represents one of the most important reservoirs of biodiversity. Soil fauna is an important reservoir of biodiversity and plays an essential role in several soil ecosystem functions; furthermore it is often used to provide soil quality indicators. An ecological study of microarthropods communities from East Midnapore coast, West Bengal, India was undertaken. Four different biotopes were studied over the course of 30 months. A total 44 species of soil microarthropods were studied in details with regard to seasonal population fluctuation, variation in their community structure, relationship with physiochemical parameters of soil, life cycle pattern and their functional role in the ecosystem.

Keywords: Soil microarthropods; Population fluctuation; Diversity

Introduction

The word soil is derived from the latin word "Solum" means floor. Natural activities like wind, water flow etc. for hundreds and thousands of years upon the rocks initiates the process of disintegration of rocks gradually resulting in very small particles. These particles after mixing up with organic matters of soil support like many soil organisms (Thompson and Troch 1979) Living organisms were reported to have established themselves very early in the process of decomposition of parent materials , which indicates that organic decomposition is also associated with the early stage in the soil formation . The organic content of the soil in the embryonic phase of development has been found to be very low as the vegetation and its associated fauna do not develop in high densities (Newel K.1984). During these initial stages also, the products of organic decomposition occur along with inorganic decomposition resulting into formation of chemical complexes already

formed not easily separable from components of solid however, as both of these decomposition process occur side by side and in combination, the size of soil particles, and the spaces between them, become smaller leading to the increase in water- holding capacity of soil. This together with the increasing amount of plant nutrients and organic materials, allow the soil to support higher plant life, such as grasses and other shrubs as the protective covering through the binding action of the root system and thereby promotes the greater stability of soil structure. These conditions favour the development of rich soil microflora and microfauna (Monleon and Kermit 1996). Microarthropods and microflora constitute two major groups of decomposer organisms of soil litter of any natural or near to natural ecosystem. They are closely associated with each other as in natural ecosystem functioning where the microarthropods feed upon the microflora