

Abstract

This study was done between November 1996 and July 1997 and sought to establish the species composition of terrestrial molluscs in Mt. Kenya National Park. The study also sought to investigate the effect of soil pH, soil moisture, amount of soil calcium, altitude and litter moisture on the abundance and diversity of terrestrial molluscs. Three methods; namely direct searches for fixed lengths of time, direct searches over a defined area and indirect search (litter and soil sieving methods) were used to carry out the study. Data was collected from randomly selected plots located on four different transects. These transects were located on four different sides of the mountain namely north, northwest, east and west. A total of 7479 individuals of molluscs from 15 families comprising of 36 genera were recorded. There were 72 different species of molluscs recorded during this study out of which *Rhachidina* sp., *Tayloria* sp., *Micomaizania* sp. and *Curvella* sp. may become new records for the study area but only if identified to the species level and found to be so. Three species namely *Vitrina baringoensis*, *Lauria desiderata* and *Punctum* sp. were the most abundant with percentage abundance values of 25.7%, 11.5% and 9.2% respectively. Most of the other species had low percentage abundance values. The mollusc species composition of Mt. Kenya National Park was found to resemble that of mountain forests of East Africa but differed slightly with that of lowland forests. In terms of number of species per unit area, Mt. Kenya National Park had fewer species compared with the lowland forests such as Kakamega and Arabuko Sokoke of Kenya. However, like other tropical forests, the mollusc fauna of Mt. Kenya National Park was found to be dominated by small-sized litter-dwelling mollusc species. The diversity and abundance of molluscs was found to be influenced by the amount of soil calcium and soil pH. Soil pH and calcium were also found to be directly correlated and tended to influence each other such that when one increased, the other also increased and vice versa. The soil had low pH values which were attributed to high organic matter content. Litter and soil moisture were found to be positively correlated such that when one increased or decreased, the other one followed the same trend. Both litter and soil moisture were found to be negatively correlated with abundance and diversity of molluscs. Vegetation was found to influence the abundance and diversity of molluscs. Plantation and xeromorphic forests recorded the highest abundance and diversity due to their high levels of soil calcium and pH while Ocotea forests recorded the lowest abundance and diversity levels due to low levels of soil calcium and pH in addition to habitat destruction by man. Diversity was found to negatively correlate with altitude with high altitude sites recording low diversity while low altitude sites recorded high diversity. Aspect was also found to have a significant effect on abundance and diversity. Transects located on similar aspect were found to have a similarity in mollusc species composition, abundance and diversity. In addition, the species composition, abundance and diversity of molluscs were found to differ where aspect differed