

# THE DEVELOPMENT OF MITE FAUNA ON DUMPS OR HOW NATURE STRUGGLES WITH INDUSTRY

## S u m m a r y

Mites, although tiny themselves, belong to the largest and most impressive lineage of animals, the arthropods. Over 45000 species of mites have been described and perhaps between 0.5 and 1 million currently exist. They are studied by disproportionately few systematists, ecologists, ethologists or evolutionary biologists. Mites are excellent models for addressing questions of more general interest, e.g. the importance of biodiversity, transgenic release, biomonitoring, the evolution of host specificity and virulence, sexual selection or the limits of physiology and morphology. Soil is the habitat of many mites, where their role is invaluable.

The colonization of postindustrial dumps by mites is particularly interesting from the ecological point of view. The author thoroughly investigated 18 different

dumps. The abundance of oribatids exceeded usually several thousand of individuals per m<sup>2</sup> and over 10 species occurred on young dumps (where the exploitation stopped several years ago). After 30 years the abundance (over 20000 per m<sup>2</sup>) and species richness (between 18 to 42 species) were 2–3 times lower than in the neighbouring natural habitats. The colonization of dumps contaminated with heavy metals proceeded at a significantly slower rate. Many pioneer species, characterized by different morphological and ecological features, were described. In the course of investigations 205 oribatid species were identified on dumps (40% of total oribatid fauna in Poland). 32 species were new for the Polish fauna and 43 were recorded for the first time from Upper Silesia.