

Introduction and Aims of the Workshop

Wind-blown dust from the Sahara has been observed and reported from ships in the equatorial Atlantic for centuries (Ehrenberg, 1862). This area was known as the 'Dark Sea' because of the remarkable reduction of horizontal visibility. A long geological record of deposition of eolian dust from the Sahara is provided by loess deposits particularly in areas near the northern desert fringes and by eolian strata in marine sediments of the sea bottom in the Atlantic and the Mediterranean.

In recent years, and particularly during the Sahelian drought and famine catastrophe, a question has been raised concerning the quantity, origin and ecological impact of the soil dust which is being blown out of the Sahara and surrounding areas. Which processes are responsible for this transport of dust and what does it mean in terms of the loss of productive soil by wind erosion in Africa, of the pollution of the air and possible impact on climate, and of the supply of nutrients and soil particles to oceans and land areas under the dust trajectories? It is particularly appropriate to address these questions to a group of scientists of different disciplines now, in the year of the United Nations Conference on Desertification, because better knowledge of dryland dust storms and their ecological impact may contribute to more efficient counteraction of desertification.

The workshop on Saharan dust was arranged by the Ecological Research Committee of the Swedish National Science Research Council and funded by the Scientific Committee on Problems of the Environment (SCOPE) and by the Monitoring and Research Assessment Center (MARC) in London, as well as by UNESCO in Paris. The outline of the workshop was suggested during the WMO/UNEP meeting on wet deposition, which was held in Gothenburg in October, 1976. The workshop is also a follow-up of earlier work done by the Secretariat for International Ecology, Sweden (SIES), during 1973-1976.

The workshop in Gothenburg was attended by 26 scientists representing different disciplines in natural sciences, scientists coming from Africa, Europe and North America (cf. list of participants ending Section 1).

As a basis for the discussions during the workshop about 20 lectures were presented by international experts covering the wide variety of interdisciplinary topics which are relevant to the field.

The aim of the workshop was to review the present state of the art and to give recommendations for future research and monitoring concerning mobilization, transport and deposition of air-borne Saharan soil dust and connected ecological implications.

The processes of dust formation and transport, as well as the details of the

ecological impact, primarily in the Saharan area, are indeed very poorly understood. This is partly due to the fact that only in recent years has the possibility of large scale processes induced by man become of general concern, and partly because the Saharan area has, despite many individual efforts, remained a largely unknown area in many respects.

The workshop, therefore, had to start with a critical review of the present state of our knowledge about these problems, and to point out the most important gaps in our knowledge.

At the same time, it had become clear that the problems of impact of Saharan dust production, transport and deposition were in need of considerable clarification, and the discussions during the workshop about these aspects were intended to be another important aim of the workshop.

The lectures and the ensuing discussions of the workshop should identify those areas where research is urgently needed, and follow up with recommendations for measuring and monitoring those variables which may be of key importance for a better understanding of the problem.