Earth and health - building a safer environment

Geology may appear remote from human health. However, rocks are the fundamental building blocks of the Earth’s surface, full of important minerals and chemical elements. Most elements are taken into the human body in air, food and water. Rocks are broken down by weathering processes to form the soils on which crops and animals are raised. Drinking water travels through rocks and soils as part of the water cycle, and much of the dust and some of the gases contained in the atmosphere are of geological origin.

Earth and Health, or “Medical Geology”, is concerned with the relationship between natural geological factors and human and animal health - as well as with improving our understanding of the influence of environmental factors on the geographical distribution of health problems. Medical Geology brings together Earth scientists and medical/public health researchers to address health problems caused or exacerbated by geologic materials (rocks, minerals and water) and processes - such as volcanic eruptions, earthquakes and atmospheric dust.

While the detrimental effects of industrial pollution on human and animal health are by now generally acknowledged, until lately little was known about the way our natural environment can influence our welfare. Although the beneficial effects, for instance, of mineral-rich hot springs were discovered relatively early, the fact that a number of more or less serious conditions and diseases are directly related to the presence or absence of certain natural substances in the soil, drinking water or in the air we breathe, has only been widely appreciated for the last couple of decades.

Even today not many people are aware that areas with a high concentration of granites, such as central Namibia, are subject to natural radiation from the decay of radioactive elements, like thorium and uranium, which are usually contained in this rock type. Similarly people living in desert environments, like the towns of Namibia’s seaboard, are prone to natural silicosis, a condition caused by very fine dust particles penetrating deeply into the lungs. Other natural substances, while being beneficial and even essential to human diet in small doses (e.g. fluorine), may cause a variety of degenerating effects when ingested excessively. For these reasons a constant and effective monitoring of our natural environment is not only desirable but necessary, especially as a growing population continues to make ever bigger demands upon it.

“The right dose differentiates a poison and a remedy” - Paracelsus