APPLIED ENVIRONMENTAL GEOCHEMISTRY AND HEALTH

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This paper reviews the development of multi-purpose geochemical mapping and the progress of research in applied environmental geochemistry and health at Imperial College over the past forty years. With funding from the research councils, UK government, EU, industry and NGOs , research has provided the basis for postgraduate training in areas ranging from the applications of geochemistry to plant, agricultural livestock and wildlife nutrition, to evaluating contamination from metalliferous mining and smelting, understanding the chemical nature of the urban environment and relationships between geochemistry and human health and disease.

Examples include (1) the influence of molybdenum in marine black shales on the copper nutrition of grazing cattle and sheep,(2) the importance of soil ingestion on trace element intake and metabolism and metal exposure in farm livestock, (3) the impacts of soil contamination from historical metalliferous mining and smelting on agriculture and human exposure to metals, including potential health problems from cadmium at Shipham and from arsenic in Southwest England, (4) the growth of urban geochemistry and the importance of lead in the urban environment, (5) the health impacts due to mercury losses from the informal sector gold mining in Brazil, and (6) health issues relating to fluoride excess and selenium deficiency in China.