

DAY 2

D. ANALYTICAL TOXICOLOGY: TRACE ELEMENT SPECIATION, DETECTION AND QUANTIFICATION METHODS

•8:30 – 9:15

Medical Geology database

Olle Selinus

•9:15 – 10:00

"Speciation" of trace elements and toxic metal ion species: An overview of arsenic speciation

José A. Centeno

•10:00-10:30 COFFEE BREAK

•10:30-11:15

Analytical methods for the study of trace elements and toxic metal ions in geological and environmental samples

Robert B. Finkelman

•11:15 – 12:00

Analytical methods for the study of metal ions in biological and tissue samples

José A. Centeno

12: 00– 13:00 LUNCH

E. SPECIAL TOPICS ON ENVIRONMENTAL TOXICOLOGY AND HUMAN HEALTH RESEARCH ON METAL ION

•13:00 – 13:45

Current topics on trace elements and toxic metal ion studies: Environmental legislation, management and use of some waste products containing toxic metals

Robert B. Finkelman

•13:45 – 14:30

DNA damage in peripheral blood lymphocytes from individuals chronically exposed to arsenic via drinking water in Emet, Kutahya, Turkey

Seyfullah Dagistanli

•14:30 – 15:00 COFFEE BREAK

•15:00 – 15:45

"Title to be announced"

A. Umran Dogan

•15:45– 17:45 PANEL DISCUSSION-II

Research opportunities and needs on Medical Geology, Environmental Toxicology - Human Health, and Rules - Regulations

U. Dogan (moderator), .O. Selinus,

Y. I. Baris, M. Tuncer, N. Bilir,

N. Oruc, O. I. Ece

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MEDICAL GEOLOGY

SHORT COURSE & PANEL

WITH INTERNATIONAL PARTICIPATION

September, 29-30 2005

Sponsorlar:

Ankara University

Cancer Control Department, Turkish Ministry of Health

U.S. Armed Forces Institute of Pathology (AFIP)

U.S. Geological Survey (USGS)

International Union of Geological Sciences (IUGS)

International Medical Geology Association (IMGA)

Geological Survey of Sweden (SGU)



Place: Ankara University, Yüzüncü Yıl Conference Room

SCOPE AND PURPOSE

Metal ions occur naturally in rocks, soils, gases, and waters in both harmless and harmful forms and concentrations. Natural concentrations can be extraordinarily high and have caused serious health problems. Metals are important in environmental health and on the study of human diseases (pathology) because of their potential toxic effects to one or more organs. Exposure to toxic metal ions may occur via three principle routes: percutaneous absorption, ingestion, or inhalation. Dermal toxicity results from local tissue responses through direct contact of the metal with skin, or alternatively, may represent a manifestation of systemic toxicity following ingestion or inhalation. Allergic contact dermatitis induced by nickel is an example of a local tissue response. The adverse cutaneous reactions resulting from chronic ingestion or inhalation of arsenical compounds exemplify systemic toxicity. A variety of toxic pathology responses in human tissues and organs (i.e., skin, liver, heart, kidney) associated with both acute and chronic exposures to metals are described. The aim of the Seminar is to provide examples where both deficiencies of trace elements as well as toxic exposures of metals may be involved in physiologic changes and the development of human diseases. We discuss the impacts of metal ions and trace elements on human health as illustrated with examples of arsenic poisoning from contaminated water in the Bengal Delta (India and Bangladesh) and Taiwan, as well from coal combustion in southwest China. Studies associated with lung cancer risk in an occupational cohort of chromate production workers are described. An overview of clinical aspects of toxic metal exposures including discussions of essentiality and clinical manifestations are presented.

The Seminars are intended for geologists, ecologists, chemists, biologists, occupational and environmental scientists, medical professionals, toxicologists, epidemiologists, pathologists and any other health, environmental and geo-sciences professional with interest on the effect of toxic metal ion species on environmental and human health. An important aim of the Seminars are to provide the opportunity for forming contacts and networks between professionals working in different areas of the field.

The Short Course Leaders are;

Dr. Robert B. Finkelman, Coal Quality Coordinator, Research Scientist, United States Geological Survey, Reston, VA, USA (rbf@usgs.gov), and
Dr. José A. Centeno, Chief, Biophysical Toxicology Division, United States Armed Forces Institute of Pathology, Washington DC, USA (centeno@afip.osd.mil)
Dr. Olle Selinus, Geological Survey of Sweden (olle.selinus@home.se).

Honoray President: Prof. Dr. Nusret Aras

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Salih Emri, Yeditepe, University
Robert B. Finkelman, IMGA
Nazmi Oruc, Eskisehir Environmental
Protection Association
Semra Sardas, Gazi University
Olle Selinus, IMGA
Murat Tuncer, Chair, Department of Cancer
Control, Ministry of Health of Turkey

DAY 1

• 8:00 – 8:30

Introductory remarks for Medical Geology in Turkey
Murat Tuncer

• 8:30 – 9:00

Welcome remarks

Prof. Dr. Nusret Aras, Rector, Ankara University

• 9:00 – 9:30

International Medical Geology Association

Olle Selinus

• 9:30 – 10:00

Regional Groups Guidelines and Support, International Medical Geology Association

Meral Dogan

• 10:00 – 10:30 COFFEE BREAK

• ENVIRONMENTAL HEALTH: SOURCES OF EXPOSURE AND EFFECTS OF TOXIC METAL ION

10:30-11:15

The diversity of trace elements and toxic metal ions in environmental health and human diseases: Essentiality, toxicity and carcinogenesis

José A. Centeno

• 11:15-12:00

A process-oriented approach to understanding natural and anthropogenic sources, transport and fate of toxic metal ions in the environment

Robert B. Finkelman

• 12:00-13:00 LUNCH

B. ENVIRONMENTAL PATHOLOGY, TOXICOLOGY AND HEALTH EFFECTS

13:00 – 13:45

Considerations for the design of environmental health studies associated with effects of toxic metal: Arsenic as an example

Jose A. Centeno

• 13:45 – 14:30

Biomonitoring techniques for screening genotoxicity in human exposure to arsenic and the role of genetic predisposition

Semra Sardas

• 14:30 – 15:00 COFFEE BREAK

C. ENVIRONMENTAL PATHOLOGY, GEOCHEMICAL STUDIES AND HEALTH EFFECTS

15:00 – 15:45

An introduction and overview to chronic arsenic poisoning: Natural history, toxicology and health effects

Jose A. Centeno

• 15:45 – 16:30

An overview of health impacts of coal and coal use: Arsenicosis and fluorosis

Robert B. Finkelman

• 16:30– 18:30 PANEL DISCUSSION-I

Medical Geology: An emerging discipline in Environmental and Human Health

M. Dogan (moderator), J. A. Centeno,

R. B. Finkelman, S. Sardas,

S. Dagistanli, S. Emri, A. U. Dogan

Kayıt Formu

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