

PREFACE

The Earth constitutes a compound and dynamic system, and better and broader knowledge of our planet and the processes that are in progress on it might enable us to better understand our past as well as foresee our future. The research of historic development of the Earth system as a total deep in time distinguishes Geology from any other Natural sciences. However, this research as such requires the inter-relation of all Natural sciences for its comprehension, thus rendering Geology a particularly interactive sector that can and should produce top research at theoretical as well as at applied level. Finally, Geology, just as every other science, has its own objectives and its own methodological tools, which, though, are being currently broadened through inter-scientific approaches – a process that is constantly gaining ground at the international level among the modern research tendencies.

A geologist-geoscientist researches the Earth, the oceans, the atmosphere, but also conducts research beyond that level. He is concerned about the Earth and its future. He/She is currently summoned, apart from the classic geological activities, to provide persuasive answers to the questions that puzzle all the human beings. Why and how does the world climate change? How do the Earth systems function and inter-relate? How should we allocate our industrial waste? How are we supposed to face the energy needs of all the more demanding modern society? How should we cover the needs for water and food?

A geologist of the 21st century accumulates all the historic geological knowledge that has been acquired by the previous generations but also a big selection of research and professional options. He/she is able to:

- Look for life existence on Mars and other planets
- Research the ocean bottom
- Monitor the activities of big volcanoes
- Conduct museum research
- Participate in land and urban planning
- Study ways of environmental pollution control and shape the decision-making for the Earth environment management
- Research and contribute to the reduction of degree of risk for the human life and fortune from natural disasters
- Comprehend and explain why the climate changes
- Provide geological knowledge for the benefit of small and large scale technical projects
- Research the potential natural resources and manage them in environmentally safe way
- Ensure qualitative aquatic resources
- Ensure the surface quality for the needs of agricultural production

However, although a geologist acquires more and more responsible position in the society, the evidence shows that unemployment and underemployment henceforth constitute the basic traits of the particular sector so much in the private as in the public sector, which is not an exclusively Greek phenomenon. Its repercussions have already influenced the international domain for the last 10 years. A lot of academic Geological Departments in Europe and America have limited their activities or have suffered

administrative changes. A considerable number of them have changed their title in an attempt to successfully approach modern tendencies.

In Greece, the three geological departments that function at the Universities of Athens, Thessaloniki and Patras at the high level of modern under and postgraduate study, annually provide roughly 300 graduates with specialised high level training, who are ready to offer the Greek society the best possible services in the domain of Geosciences.

In order to reach its current level, the teaching of Geosciences has followed a long course of time development, the principles that we should seek in the first phase of operation of the Universities of Athens, Thessaloniki and Patras.

In particular, in 1839, in the operation Organization of **National and Kapodistrian University of Athens**, among the other permanently operating departments, there was created a department of Natural History aimed at the scientific subjects of Zoology, Mineralogy, Geology and Botanic. Furthermore, as a mandatory subjects, in compliance with the same year issued decree, there were defined the subjects of Mineralogy and Geology.

In 1932, in accordance with the law requirements, there are founded the fifth department of the School of Physics and Mathematics and the Natural History Department and thus the Faculty grants, among the others, the degree in Natural History and Geography, combining the streams of Biological and Geological sciences.

In 1970, the Department of Natural History and Geography is divided into independent departments of Biology and Geology, granting the corresponding degrees.

In 2004, the Department of Geology is renamed into the Department of Geology and Geoenvironment covering all the subjects of Geosciences related to the Environment.

In 1926, following the foundation of **Aristotelian University of Thessaloniki**, there were founded the Laboratories of Geology, Petrology and Mineralogy and Meteorology that started operating in the academic year of 1928-1929, in the framework of the former School of Physics and Mathematics.

In 1943, there started the operation of Natural History Department, basically aimed at studies in the domain of Geological and Biological Sciences. In the duration of the following 30 years, the Department was further developed as until 1973, when it was split into the Departments of Geology and Biology.

The Department of Geology of the **University of Patras**, the newest one out of the three Departments of Geology of the country, was founded in 1977 in the School of Sciences (the former School of Physics and Mathematics) of the University of Patras and started operating in 1978.

One thing is certain. The rescue of Geological Science is not an exclusively academic matter. It concerns the total of Geological Scientific community at both - local and international level.

What can and what should we do?

It is essential to create a carefully documented, widely supported and certified recording and a corresponding data at both – national and international level - of the sectors where Geology can contribute to the modern society.

The progressive course of Geological science has always had direct relation as much to the material development of the society, as to the mental development that was necessary so that the people should develop effective relations with their environment.

Geology already constitutes an integral part of industrial revolution. Afterwards, the human being acted and is still acting as a geological factor that enters into the rhythm of nature and his/her participation is rendered more and more intense day by day, with either positive or negative repercussions for himself and his natural environment.

The certified recording of the sectors of modern Geological activity, just as the study of Geoenvironment and the development of Biogeosciences, is going to contribute to the penetration of applied Geological science into the social structure and the comprehension and acceptance of possibilities offered to the modern humanity and in particular, to the Greek society.

So that a graduate geologist should be ready to face the challenges of the modern society, he/she is required to have conducted modern and high level studies, thus it is essential that the state should permanently support the geological departments so much with regard to the upgrading of the educational and research personnel as to the upgrading of the material and technical infrastructure.

The on-going concern for the promotion of research and this creative anxiety for the enlightening of one more aspect of truth constitute the motive that is found behind each scientific effort and it is precisely this aspect that is outlined in the framework of the present 11th International Conference of the Geological Society of Greece which is fortunately included in the celebration of the 170 anniversary of the foundation of National and Kapodistrian University of Athens.

Geology and the points at which the geological research “intersects” with the subjects of other scientific domains define the projects presented here that are mainly motivated by the interminable course of science aimed at research and truth, in tandem with the approach of the geological science conclusions concerning the broader public.

The 11th International Geological Conference “Geoenvironment: past-present-tomorrow” of the Geological Society of Greece that is organized by the Faculty of Geology and Geoenvironment of National and Kapodistrian University of Athens and which takes place at the premises of the Faculty of Geology and Geoenvironment from 24th to 26th May, 2007 has attracted the participation of a lot of distinguished scientists from Greece and overseas as well as the young scientists and researchers who have the opportunity to present their studies on the top subjects related to Geoenvironment. There participate more than 500 congress members, 250 reviewers, 500 authors making 151 oral and 41 poster presentations from 22 countries.

The work of the congress is characterized by quality and originality and covers all the subjects of Geosciences. Also, in the framework of the congress, there are organised nine “Round Tables” (*Economic Geology-geochemistry, Technical Geology, Didactics of Geosciences, Geomorphology and Environment, Geological-geomorphological Heritage, Hydrogeology, Paleontology-stratigraphy, Tectonics, Nanogeoesciences.*) that provide the possibility for discussion and insight into the interesting subjects of Geosciences.

The official languages of the congress are Greek and English, while the presentations are published in the English language with extensive summary in the Greek language, providing the Greek Geological community with the possibility of organised and direct access to international geological “sphere of activities”.

The aim of the Conference is the presentation and development of the subjects that are related to the modern Geoenvironmental problems and, in particular, to the improvement and management of knowledge of the past, the recording and study of the activities that affect Geoenvironment as well as the prospects of the basic and applied research in the domain of Geosciences.

However, any progress that has been achieved, should be always found within the frame of maintenance of natural environment and, more generally, the nature. This frame is the vital space of survival of the social human being of our era. The objectively enormous interest that geology presents and the constantly intensified effort aimed at the discovery of raw materials have rendered Geology the domain of vital importance to the mankind. We should not, though, forget what Pindar mentioned: "Even wisdom has to yield to self-interest".

We regard it as our obligation to thank all those who participated in the organisation of this Conference. The members of the organisational committee, the reviewers, the students and the sponsors.

In particularly, we would like to thank the National and Kapodistrian University of Athens and especially the Vice-Rector professor Ioannis Karakostas who included the works of the 11th International Geological Conference of the Geological Society of Greece in the frame of the official celebration of its 170 foundation anniversary.

The University of Athens with references to its historic past, faces the present with the feeling of responsibility and looks into the future with optimism. And that is the future that is indissolubly connected with the future of our planet. The academic family cannot and does not want to remain neutral or indifferent in front of the anxiety of the mankind for the protection of its biotic space.

The 11th International Geological Conference "Geoenvironment: past-present-future" reflects the Greek Geoscientific reality and its international extensions through the institution of National and Kapodistrian University of Athens that henceforth concludes a hundred and seventy years of productive operation and sustainable offer.

The President of the Organizing Committee

Michael D. Dermitzakis
Professor of Geology & Paleontology
f. Vice-Rector of the University of Athens