

“GEONOMY” BY E. SZÁDECZKY-KARDOSS: NEW AUXILIARY STUDIES UPDATE THE PIONEERING BOOK IN SPACE AND EARTH SCIENCE EDUCATION IN HUNGARY. Dudich, E. ¹, Poka, T. ¹, Bérczi, Sz. ², ¹Hung. Acad. Sci. Xth. Class. Geonomy Subcommission, H-1111 Budapest, Budaörsi út 45, Hungary, (dudich@axelero.hu) ²Eötvös Univ., Hung. Acad. Sci. Meteoritics and Planetary Science Subcommission, H-1117 Budapest, Pázmány P. s. 1/a. Hungary.

ABSTRACT

E. Szádeczky-Kardoss, Professor of Petrology and Geochemistry of L.Eötvös University, Budapest, Hungary (1903-1984) defined the synoptic and synthesising earth science as geonomy. In his Hungarian-language book of 1974 Szádeczky-Kardoss successfully alloyed planetary science and space research results in earth sciences, with particular attention to the advances in molecular biology and submarine (ocean floor) geology. He took efforts to extend the methods of geology and its disciplines to the whole Universe, and to achieve an integrated, holistic, humanistic world view.

He also emphasized the responsibility of Man, i.e. human society, for the future of the Earth, attributing high priority to education on all levels.

Our multidisciplinary Subcommission of the HAS consisting of geologists, astronomers, physicists and biologists, undertook a review and updating of this almost 30 year old book to serve, among other things, also space and earth science education in Hungary, on the occasion of the 100th anniversary of the author's birth. The resulting volume (in press) bears the title “Geonomy after the Turn of Millennium”.

INTRODUCTION: THE 1974 “GEONOMY”

Looking over the main parts of the 458-page book one can see the main focuses: (A) Basic Phenomena of Geonomy. The Earth and the Planets. (B) The present Global Dynamism of the Earth. (C) The outer Fluid Belts and their Interrelations with the Solid Earth. The Evolution of the Earth and Life. (D) Geonomy and Society.

15 NEW STUDIES TO THE BOOK BY 10 AUTHORS

The idea was to find and point out what is still valid of the concepts presented in the “Geonomy”, what has to be modified, and what has become obsolete. It can be stated that the greatest advances have been achieved in planetary science, but they do not contradict the basic ideas developed by E. Szádeczky-Kardoss.

1.Science historical approach to Geonomy, (E. Póka)

Part (A) Basic Phenomena of Geonomy. The Earth and the Planets.

2.Relations between gravity, tidal, and magnetic phenomena. Polar reversals. (B. Lukács)

3.The chemical model of the origin of the Solar System. Formation of mineral belts in the Solar

system. (Sz. Bérczi)

4.Accretion of the planets in the Solar System: gravitational harming. (E. Illés)

5.The evolution of the smaller bodies in the Solar System on the basis of studies of chondritic meteorites. (Sz. Bérczi)

6.First step to a global stratigraphic knowledge of the solid planets: Lunar stratigraphy. (Sz. Bérczi)

7.Lunar samples from the Apollo missions. (Sz. Bérczi)

8.Comparison of the Earth with other planets in our planetary system. (E. Illés)

Part (B) The present Global Dynamism of the Earth.

9.The system of erosion and sedimentation. (E. Dudich)

10.Interactions at the boundary regions of the geospheres: the clay minerals as the cradles and supporters of life. (T. Póka)

11.Global dynamism and plate tectonics. The basic characteristics of the plate tectonics, the subduction and the sustaining conditions of the mechanism of lithospheric plate motions, (L. Cserepes)

12.The origin of igneous rocks at the accretional and subductional plate margins and in tectonic regions. (Z. Ditrői Puskás)

Part (C) The outer Fluid Belts and their Interrelations with the Solid Earth. The Evolution of the Earth and Life.

13.Connections between sedimentology and paleobiogeography, and their relations with the global dynamism, (M. Kedves)

14.Important ideas of E. Szádeczky-Kardoss concerning the origin of life, (Gy. Szőőr)

15.The Universal Cycle Relation: essentials and importance, (F. Benkő)

Those chapters of the “Geonomy” which are not covered by the 15 papers are presented by means of selected citations and some comments, by the Editor of the volume, E. Dudich. These are hoped to become completed by several more thematic papers in the future.

An abridged English-language version of the volume is envisaged to be compiled and issued by the Subcommission. in the next three years.