

GEOLOGY BEYOND NATURE: SYMMETRY CASES IN CULTURE**Ruslan I. Kostov**

University on Mining and Geology

Sofia 1156, Bulgaria

E-mail: rikostov@cserv.mgu.bg

Different structures and elements among some humanitarian sciences in certain cases can be defined 'controlled' by local geological setting. This idea can be confirmed with examples, displaying the role of the geological-mineralogical background on some events and phenomena of culture. In these cases the local geographical and geomorphological peculiarities for a certain region must not be included or considered.

Linguistics (case 1)

Specific features in dialects from historically stable to immigration processes areas coincide to the distribution of local geochemical-geological suites. For example, the specific dialect speech with reduction of vocalics and other changes in morphology and phonetics in the area of the village Shiroka Luka in the central Rhodope Mountains in southern Bulgaria has not been explained compared to neighbour dialects in the same mountainous region (Shiroka Luka..., 1947; Bulgarian Dialect Atlas, 1974). In this area, a narrow stripe is superimposed on a geological map (Geological Map..., 1989). It is obvious that there is a territorial coincidence for both phenomena - in the later case an older Precambrian metamorphic suite has been mapped on the surface. It is well-known that local geochemical-geological peculiarities may cause specific flora and fauna, as endemic diseases. In the reviewed case a complex natural relation on language can be studied.

Archaeology (case 2)

Megalithic sites of predominately dolmen type have been known in Bulgaria only in the Sakar and Strandja regions in the south-east part of the country, a few of them preserved and recorded in the beginning of our century. According to the distribution and number of the dolmens by different scientists, it has been clarified, that the area of their localization coincides mainly to areas of distribution of intrusive rocks of a granite composition with zones of intensive vein quartz mineralizations (Kostov, 1994). Analogies within other countries can be done very carefully. For example, the largest quantity of megalithic sites in England (Welfare and Fairley, 1982, p. 131) can be located above the same area of distribution of the granitoid intrusions in Cornwall.

Ethnography (case 3)

Ethnic groups in places remote to immigration waves in the past are 'influenced' and located on a territory, which is related to certain geological (geotectonic and stratigraphic) units. For example, a comparative review of geological and ethnic maps of the British Isles displays that the Scottish Celtic group has been located in areas of distribution of Precambrian igneous and metamorphic rocks and mainly Lower Paleozoic (Devonian) sediment strata. A similar situation with mainly Lower Paleozoic strata can be scanned in Ireland and Wales (Irish and Welsh Celtic groups), but not in England (excluding the Cornish Celtic group). Thus the contemporary administrative subdivisions coincide approximately to some of the borders of the major geological units. Once again an absence of relation to geomorphological features has to be underlined.

Folklore (case 4)

Fairy-tales concerning specific objects (stones, minerals) have been distinguished as typical from villages in areas of distribution of granite intrusions and their metamorphic rim from both

sides of the Rila and Pirin mountains in south-west Bulgaria, but not in other mountain regions. The hero and the dragon (devil, giant) are in a competition and they squeeze or throw a stone (Bulgarian Folklore Tales, 1994). From the stone (iron, egg, cheese) of the hero water has been squeezed, and from the stone of the dragon - nothing (dust, powder).

Mythology (case 5)

The well developed mythological systems can be described among cultural centres of the past, where rich local resources of ore and non-ore mineral deposits have been found (precious metals and gem minerals) or where intensive trade contacts have existed (Kostov, 1993). In dependance on the use of one main or many gem materials in mythology and applied art, two types of 'mineral cultures' can be distinguished - monochromatic and polychromatic cultures. For example, ancient China can be defined as a monochromatic nephrite ('jade') culture, ancient Summer and Assyria also as monochromatic lazurite cultures, but ancient Egypt - as a polychromatic (each god sharing a single gem stone or metal) culture.

The described examples of coincidence between the area of distribution of the geological (geochemical, mineralogical, petrological, geotectonic, geophysical and related geoscientific) units and culturological patterns gives the opportunity for defining of a cosmogeochemical principle - at constant global (cosmogenetic and geogenetic) factors in historical time some elements of culture can be influenced by geological-mineralogical features. This 'influence' can be explained as a cosmogeochemical symmetry - an impact of nature on culture. If the 'noosphere' in the meaning of Vernadskii (1965) is the mankind as a geological factor in nature, then the cosmogeochemical symmetry will represent the opposite interaction.

References

- Bulgarian Dialect Atlas. III. South-West Bulgaria. Part I. Maps.* (1974) Ed. by S. Stoykov,
Sofia: Publishing House of the Bulgarian Academy of Sciences, maps No. 25, 50, 58, 61,
103, 161, 205, 243, 252, 253, 266, 304 (in Bulgarian).
- Bulgarian Folklore Tales. Catalogue.* (1994) (L.Daskalova-Perkovska, D.Dobreva, I.Kotzeva,
E.Mitzeva) , Sofia: Sofia University Press, 331 pp. (in Bulgarian).
- Geological Map of PR Bulgaria* (1989) Ed. by G. Cheshitov and Il. Kanchev, Sofia: 1:500 000
(in Bulgarian and English).
- Kostov , R.I. (1993) *Mythological Gemmology. The Precious Minerals Throughout the
Centuries.* Sofia: Nauka i Izkustvo, 213 pp. (in Bulgarian).
- Kostov, R.I. (1994) On the geological-mineralogical base of the megalithic culture from
Bulgaria. *Journal of the Bulgarian Academy of Sciences*, 40, No. 3-4 (in Bulgarian).
- Shiroka Luka - a Cultural Centre in the Rhodopes.* (1947) Ed. by D.A.Georgiev, Sofia: p.
102-103, 212-216 (in Bulgarian).
- Vernadskii, V.I. (1965) *The Chemical Structure of the Earth's Biosphere and Its Environment.*
Moscow: Nauka, 374 pp.; 2nd ed., ibid., 1987, 339 pp. (in Russian).
- Welfare, S., and Fairley, J. (1982) *Arthur C. Clarke's Mysterious World.* London:
Fontana - Collins, 320 pp.