

Underground environment in some caves and salt mines with therapeutic properties and their role in speleotherapy or medical tourism purposes

Simionca Yu.^{1,2}

¹ *Permanent Commission on Speleotherapy (PCS) / Commission permanente de spéléothérapie (CPS) of the UIS (member ICSU & UNESCO)*

² *National Institute of Rehabilitation, Physical Medicine and Balneoclimatology (Bucharest, Romania)*

Background. Some caves due to air purity and the presence of a fine aerosol equipped with mineral microparticles as well as galleries of some salt mines with curative properties are used for speleotherapeutic purposes in both complementary medicine and also the classic one.

Results

In 1949, Dr. Karl H. Spannagel, after several years of climatological, microclimatic observations, as well as medical investigations on patients with respiratory diseases, he found the therapeutic efficacy of the karst environment in the «Klutert» cave. In the years 1950–60 the therapy in the underground environment of the karst and salt caves in Germany began to be officially recognized as a method of treatment of chronic

respiratory pathologies (Yang B., G. Schubert 1962. In 1964, Prof. Dr. Mieczyslaw Skulimowski, after preliminary medical studies, mentioned the presence of the therapeutic effect of the underground salt mine environment from Wieliczka (Poland) and promoted the opening of the «underground therapy» section called the «underground allergy sanatorium» for patients, proposing that the method be called «subteraneootherapy» (M. Skulimowski, 1968). Afterwards, multidisciplinary studies, the treatment and recovery centers have been launched in karst caves, salt and other mines in Austria, Czech Republic, Slovakia, Ukraine, Romania, Belarus, Russia, Armenia, Tajikistan, Italy, Iran and other countries.

It has been found, that the speleotherapeutic effect largely depends on the action mechanism of the natural

curative factors from the underground salt mine galleries or cave environment, which is dependent on different geophysical, microclimatic and sanitary parameters, on the basis of which the specific methodology treatment of different diseases is elaborated. Indications and contraindications, cure methodologies in the galleries of salt mines and karst caves were developed.

Conclusion

Data analysis allows mentioning the presence of a different set of the underground karst cave or salt mines parameters, which justifies the existence of a different mechanism

of curative action on the patient with chronic respiratory diseases and other pathologies.

Similarly, not all salt mines have the same set of microclimatic parameters, with the expected curative effect being different.

So, for underground sections useable in medical treatment or medical tourism are necessary specific medical indications and contraindications and also methodologies of procedures and cure in the respectively underground environment, based on multidisciplinary environmental, bio-medical and obvious clinical studies performed to patients with different pathologies.