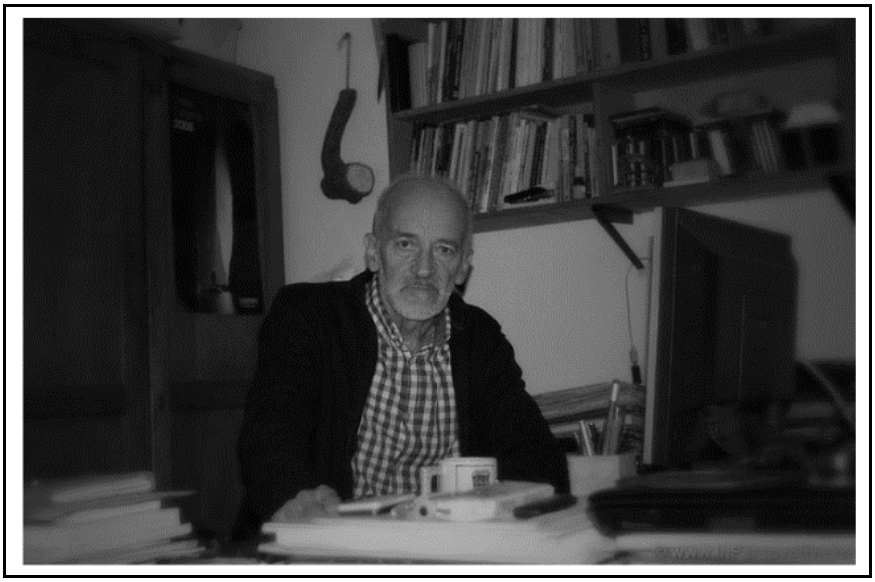
*IN MEMORIAM*

# DR. IOAN POVARĂ
# SEPTEMBER 8, 1943 – JUNE 14, 2022



When invested with responsibility by their peers, there are people who understands to strive at the cost of forfeiting their personal comfort, not to disappoint the trust of their colleagues and higher authority peers in different domains of activity.

The "Emile Racovitza" Institute of Speleology is the blossoming of the seed planted in 1920 at the young Romanian University of Cluj by Emile Racovitza, the founder of Biospeleology – a visionary Romanian who carried out courageous research in Antarctica and caves, from the end of the 19th into the first decades of the 20th centuries.

It will always be worth remembering the emeritus scientist Constantin Motaş, who in 1956 reorganized the Institute of Speleology, in the memory of its founder, Emile Racovitza. Until 2002, Professor Traian Orghidan and Dr. Constantin

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Rădulescu, corresponding member of the Romanian Academy, maintained the spirit and the ideals of E. Racovitza and C. Motaş.

How could Dr. Ioan Povară put aside his own comfort for the next twenty years without assuming full responsibility and ensuring, from the position of Director of the Institute of Speleology, the fulfillment of its mission, masterfully defined by its founder and continued by the above mentioned illustrious directors?

Ioan Povară was born and raised in Mediaş, Sibiu County, where, as a pupil of the "Ştefan Ludwig Roth" high school, he was attracted to astronomy, to the study of rocks, to the refreshing mountain landscapes, but certainly not to caves. His interest in caves came only at the end of the high school years when a visit at the Scărişoara Ice Cave led to his desire to know more about the mysterious underground universe. Between 1960 and 1965, he was a student in the Geography-Biology Section (Geography Faculty) at the University of Bucharest. After graduating, he was employed for five years (1966–1971) as a geographer at the Orşova Geographic Research Station of the University of Bucharest, where his interest in the subterranean domain materialized in the discovery, exploration, and mapping of numerous caves from the Danube Gorges, Cerna Valley, and Banatului Mountains.

Beginning with September 1971, he became a researcher at the "Emile Racovitza" Institute of Speleology of the Romanian Academy, rising through all promotion stages, up to that of Scientific Researcher I. He led the "Emile Racovitza" Institute of Speleology as Deputy Scientific Director (1998–2002), then as Delegate Director and Interim Director (2002–2004), while from May 2004 until May 2022 as the General Director. He was also one of the most loved professors of the Faculty of Geography (University of Bucharest), where he held courses and supervised bachelor's and master's theses in Karstology, Geomorphology, and Topography. He demonstrated the same gifted didactic activities within the Faculty of Geography at the "Spiru Haret" University where he held courses of Karst Geography, Environmental Geography, and Hydrogeology, while serving as Vice Dean (1997–2000) and Dean (2000–2004).

In 1997, he defended his doctoral dissertation *Physical-geographical study of the Cerna hydrographic basin with a special regard on karstic hydrology* at the Faculty of Geography within the University of Bucharest. Later, an updated version of his Ph.D. thesis was published under the title *Cerna Valley. Morphology, hydrology, thermomineral waters* and received the "Gheorghe Munteanu-Murgoci" Award of the Romanian Academy in 2012.

Dr. Ioan Povară was a member of the Commission for the Protection of Natural Monuments of the Romanian Academy, President of the Scientific Council of the Domogled-Valea Cernei National Park Administration, member of the scientific councils of the Piatra Craiului, Munţii Semenic-Cheile Nerei, and Nordul Gorjului de Vest National Parks, adviser, then full member in the Intergovernmental Cerna Commission and also a member of the Speleological Patrimony Commission

within the Ministry of Environment and Forestry. For many years, he was also an active member of the Romanian Hydrogeologists Association.

He had a rich editorial activity, serving as a member in the Editorial Board, Co-editor and, then the Editor-in-Chief of the *Theoretical and Applied Karstology*, member in the editorial boards of the *Travaux de l'Institut de Spéologie "Emile Racovitza"* and *Revista de Geomorfologie*, as well as Deputy Redactor in Chief for the *Annals of Spiru Haret University, Geography* series.

During his activity of promoting speleology, Dr. Ioan Povară showed special organizational skills, co-organizing as many as 12 international symposia on *Theoretical and Applied Karstology* (1984–1996), as well as several other workshops and an international symposium within the Research Contract No. 0339720/5 with the Freiburg University.

With a wide-ranging scholarly background, animated by the desire of knowledge in science and to promote the values of speleology, Dr. Ioan Povară distinguished himself, both in Romania and abroad, within researches and publications in numerous subdomains within speleology: *Morphology of the karstic terrains* (Retezatul Calcaros, Mehedinţi, Cernei, Pădurea Craiului, Metaliferi Mountains and Southern Dobrogea); *Hydrology* and *Karstic Hydrology* (Danube Gorges, Retezatul Calcaros, Vâlcan, Mehedinţi, Cernei, Pâdurea Craiului, Metaliferi Mountains, Southern Dobrogea, etc.); *Use of hydrological tracers for the study of the parameters of subterranean flow* (Mehenţi Plateau, Mehedinţi and Vâlcan Mountains, Eastern Carpathians); *Tightness of the reservoir lakes and detection of exfiltration from dams*; *Protection of nature and karst environment*; *Studies and projects for the touristic planning of some caves* (Topolniţa, Peştera din Valea Fundata, Comarnic caves and Peştera Urşilor from Chişcău, etc.).

In his life-long study of the subterranean environment, alone or in a team with other specialists, Dr. Ioan Povară enjoyed the respect and affection of those around him and also the appreciation due to his scientific, original ideas and results. In our memory, he will remain forever as an example of professionalism and a man of honor.

His original scientific contributions include: description of the gelifraction process in the subterranean karstic environment (in collaboration with Dr. Gabriel Diaconu); development of the experimental methodology for multiple traces in drillings; defining a method for the detection of the components of the mixture of cold karstic waters with thermomineral waters in thermomineral karstic aquifers by the analysis of sets or families of curves (in collaboration with the speleologist and alpinist Alexandru Bulgăr); development of the decimal system for the Romania's cave catalogue (in collaboration with Marcian Bleahu); hydrogeology of several karstic regions of Romania (hydrographic basin of Cerna, Western Jiu, Mehedinţi, Padurea Craiului and Metaliferi Mountains, Southern Dobrogea, etc.).

He published over 80 papers in ISI-ranked journals or journals included in international databases, ten books in Romania and abroad, two university textbooks,

28 chapters in several monographs, encyclopedias, or atlases. He coordinated over 40 research contracts and was a participant in other 15 research contracts.

After a life devoted to speleological research, Dr. Ioan Povară left to rest a little, but with the feeling of the fulfilled duty that his journey through this world was not in vain as he left behind lasting achievements that will be appreciated by future generations.

## CHECK-LIST OF IOAN POVARĂ PAPERS


Schmidt N., **Povară I**., 1968 – Aspecte ale reliefului calcaros din Cazanele Mari. *Comunicări de geografie*, **VI**: 157–168, Bucureşti

**Povară I**., Schmidt N., Glăvan V., 1969 – Cheile Corcoaia. *Natura*, **10**: 40–58.

**Povară I**., Schmidt, N., Petcu A., 1970 – Observations morphospéologiques effectuées dans la zone située entre Oravița et Ciclova Montană. *Livre du centenaire Emile Racovitza*, Ed. Academiei, Bucureşti, p. 621–626.

**Povară I**., Schmidt N., Scheusan I., 1971 – Peştera Mare de la Şoronişte. *Ocrotirea Naturii*, **15(2)**: 175–179.

Trufaş V., **Povară I**., 1971 – Observaţii asupra nivelurilor şi temperaturilor apelor subterane din Defileul Dunării. *Hidrotehnica*, **16(7)**: 147–153.

Schmidt N., Glăvan V., **Povară I**., 1972 – Procese actuale din Defileul Dunarii. *Atlasul complex al Porţilor de Fier*, Ed. Academiei, Bucureşti, p. 26 (hartă), 141 (text).

Schmidt N., Glăvan V., **Povară I**., 1972 – Morfostructura şi morfolitologia. *Atlasul complex al Porţilor de Fier,* Ed. Academiei, Bucureşti, p. 24 (hartă), 140 (text).

**Povară I.,** Diaconu G., Goran C., 1972 – Observations préliminaires sur les grottes influencées par les eaux thermominerales de la zone Băile Herculane. *Trav. Inst. Spéol. "E. Racovitza"*, **XI**: 355–365.

**Povară I.,** 1973 – Contributions à la connaissance des sources thermominérales de Băile Herculane. *Trav. Inst. Spéol. "E. Racovitza"*, **XII**: 337–348.

**Povară I**., Goran C., Lascu C., Jibotean M., 1973 – Observations préliminaires dans le Grotte de Rătei. *Livre de cinquantenaire de l'Institut de Spéologie "E. Racovitza".* Ed. Academiei, Bucureşti, p. 633–644.

**Povară I**., Diaconu G., 1974 – Déroulement du processus de gélifraction dans le milieu souterrain. *Trav. Inst. Spéol. "E. Racovitza"*, **XIII**: 139–146.

**Povară I**., Chiriac D., Petcu A., 1975 – Valea Cernei (Banat). Turism actual şi în perspectivă. *Lucr. **II** Col. Naţional de Geografia turismului*, Bucureşti, pp. 275–283.

**Povară I**., 1976 – Note sur la provenance des eaux de la résurgence "Izvorul Cernei" (Carpates Meridionales- Roumanie). *Trav. Inst. Spéol. "E. Racovitza"*, **XV**: 207–216.

**Povară I**., 1977 – Lungime şi denivelare în peşteri. *Bul. Inf.*, CCSS, Buc., **1**: 38–46.

**Povară I**., 1978 – Topografie speologică (partea I-a). *Bul. Inf*., CCSS, Bucureşti, **2**: 104–122.

**Povară I**., Diaconu, G., 1978 – Propuneri de valorificare pentru turism a unor obiective carstice din zona Porţile de Fier. *Studii de turism.* A cincea sesiune de comunicări – noiembrie 1977 – vol. 2, Turism montan, Bucureşti: 247–256.

**Povară I**., Lascu C., 1978 – Note sur la circulation souterraine de l'eau par le graben de Cerna (Carpates Meridionales- Roumanie). *Trav. Inst. Spéol. "E. Racovitza"*, **XVII**: 193–197.

Bulgăr Al., **Povară I**., 1978 – Separation of karstic thermal spring discharge components as based on the analysis of discharge and temperature variations mesured at exurgence. *Trav. Inst. Spéol. "E. Racovitza"*, **XVII**: 209–214.

**Povară I**., 1979 – Redactarea planurilor cavităţilor subterane. *Bul. Inf.*, CCSS, Bucureşti, **3**: 124–128.

**Povară I.**, 1980 – Sur la circulation souterraine de l'eaux dans les calcaires du bassin de Cerna. *Trav. Inst. Spéol. "E. Racovitza"*, **XIX**: 237–241.

**Povară I.**, Lascu C., 1980 – Note sur les émergences karstiques "Şapte Izvoare Reci" (Valée de la Cerna). *Trav. Inst. Spéol. "E. Racovitza"*, **XIX**: 247–251.

**Povară I.,** Cosma R., Lascu C., Bulgăreanu V.A., 1982 – Un cas particulier de karst dans les dépots de sel (Slănic Prahova, Roumanie). *Trav. Inst. Spéol. "E. Racovitza"*, **XXI**: 87–93.

**Povară I.**, Marin C., 1984 – Hercule thermomineral spring. Hydrogeological and hydrochemical considerations. *Theor. Appl. Karstology*, **1**: 183–194.

**Povară I.**, 1992 – New data on the Hercule thermal aquifer, obtained by temperature measurements (Băile Herculane, Romania). *Theor. Appl. Karstology*, **5**: 127–138.

Mitrofan H., **Povară I.**, 1992 – Delineation of a thermal water carrying karstic conduit by means of thermometric measurements in the Băile Herculane area (Romania). *Theor. Appl. Karstology*, **5**: 139–145.

Diaconu G., **Povară I.**, 1992 – Drainages souterraines karstiques dans la zone de la Valée de Balea Monts Vîlcan, Roumanie). *Theor. Appl. Karstology*, **5**: 109–114.

**Povară I.**, Horoi, V., 1993 – Morpho-hydrographic and hydrogeologic observations in the limestone area from the south-eastern Metaliferi Mountains (Romania). *Theor. Appl. Karstology*, **6**: 181–188.

**Povară I.**, 1993 – Considérations hydrogéologiques sur les Monts Mehedinţi, Roumanie. I. Partie méridionale. *Trav. Inst. Spéol. "E. Racovitza"*, **XXXII**: 215–227.

**Povară I.**, 1994 – Features of the piezometric surface relief in the Sarmatian limestones of the Black Sea Coast at Mangalia (Romania). *Theor. Appl. Karstology*, **7**: 127–132.

Rotaru A., Bulgăr Al., **Povară I.**, 1995 – L'étude hydrodynamique du système karstique de Motru Sec-Baia de Aramă. *Theor. Appl. Karstology*, **8**: 145–156.

Mitrofan H., Mafteiu M., **Povară I.**, Mitruţiu M., 1995 – Electrometric investigations on the supply channels of Hercules spring (Romania). *Theor. Appl. Karstology*, **8**: 129–136.

Rotaru A., Bulgăr Al., **Povară I.**, 1995 – L'étude hydrodynamique du système karstique de Motru Sec-Baia de Aramă. *Theor. Appl. Karstology*, **8**: 145–156.

**Povară I.**, Horoi V., Marin C., Nicolescu T., Baciu M., 1997 – Investigations on the covered saline karst in Slănic Prahova area (Romania). *Theor. Appl. Karstology*, **10**: 167–175.

**Povară I.**, 1998 – Probleme de terminologie carstică. *Anal. Univ. Spiru Haret, Geografie*, **1**: 149–156, Ed. Univ. Spiru Haret, Bucureşti.

**Povară I.**, 1998 – Date inedite despre Peştera de la Lacul Dracului. *Analele Univ. Spiru Haret, Geografie*, **1**: 175–179.

**Povară I**. 1998 – Asupra condiţiilor de geneză a unei surse de apă plată oligominerală în sisteme carstice. Izvorul Domogled – studiu de caz. *Comunicări de geografie*. Ed. Univ. din Bucureşti, p. 327–334.

**Povară I.**, Mitrofan H., 1998 – Chemical geothermometry data concerning the origin of thermal water in Baile Herculane Spa (Romania). *Proceedings International Symposium on Karst Water Resources*, Teheran (Iran), July 1998, p.1–8/107.

Stănoiu I., **Povară I.**, 1998 – Tectonic and stratigraphic control of the carbonate rocks hydrogeology in the Mehedinţi Plateau – Mehedinţi Mountains area (Romania), pp. 16–18, *XVI$^{th}$ Theoretical and Applied Karstology*, Băile Herculane, 15–19 mai, 1998.

**Povară I.**, 1998 – The Cerna Valley and Băile Herculane spa. *Proceedings of the Carpatho-Balkanic Conference of Geomorphology*, Băile Herculane, 11–17 octombrie 1998, pp. 4–12.

Carbonnel J.P., Decu V., Olive GPH., **Povară I.**, Gheorghiu, V., 1999 – Premiere datation par $^{14}$C du remplissage de guano d'une grotte des Carpates Méridionales: Peştera lui Adam (Roumanie). *Trav. l'Institut Spéologie "Emile Racovitza"*, **XXXV**: 143–152.

**Povară I.**, 1999 – Aspecte morfologice induse de litologie şi structura geologică în bazinul Cernei. *An. Univ. Spiru Haret- Geografie*, **2**: 146–152, Bucureşti.

**Povară I.**, 1999 – Drenaje subterane în zona Cerna – Jiul de Vest. Sistemul carstic Izvorul Cernei.

*Comunicări de Geografie*, Ed. Univ. Bucureşti, **3**: 235–246.

Mitrofan H., **Povară I.**, 2000 – Methods for assessing the hydrogeological disarray associated to a reservoir dam built in a geologically complicated area. În Fragile territory- *Research and Application on hydrogeological Disarray in the World (Pre-print), X Congresso Nationale dei Geologi*, Italia Roma, 7–10 Decembrie 2000, p. 33–38.

**Povară I.**, Marin C., Nicolescu T., 2000 – Evolution of Main Physical and Chemical Properties of the Groundwater from Băile Herculane area (Romania). *Proceedings of the joint meeting of Friends of Karst, Theoretical and Applied Karstology and IGCP 448*, p. 101–103.

Stănoiu I., **Povară I.**, 2000 – Tectonic and stratigraphic control on the Hydrology of the carbonate rocks in the Mehedinti Plateau area – Mehedinti Mountains (Romania). *Proceedings of the joint meeting of Friends of Karst, Theoretical and Applied Karstology and IGCP 448*, Cluj-Napoca, p. 124–128.

Stănoiu I., **Povară I.**, 2001 – Controlul structural şi litofacial asupra hipsografiei şi hipsometriei Carpaţilor Meridionali. *Cercetări de geografie*, Ed. Univ. Buc., Fac. de Geografie, București, p. 327–343.

Conovici M., **Povară I.**, 2001 – Aspecte ale reliefului vulcanocarstic din Yemen. *An. Univ. "Spiru Haret", Geografie*, Bucuresti, **3**: 87–91.

Rușdea E., **Povară I.**, Konold W., Reif A., 2001 – Identification of Ecological, Economical and Social Potentials for Sustainable Land-Use and Regional Development in Eastern Europe: Case Study in Apuseni Mountains, Romania. *Bul. Univ. Şt. Agr., Med. Veter., Cluj-Napoca*, Agricultură, **55–56**: 58–62.

Stănoiu I., **Povară I.**, 2002 – Morfografia – criteriu de delimitare si clasificare a Carpatilor Apuseni. *Analele Universităţii "Spiru Haret",Geografie*, **4**: 67–73, București.

**Povară I.**, Bănică S., 2002 – Experiment multitrasor în depozitele loessoide din Platoul Smârdan (Galaţi). *An. Univ. Spiru Haret, Geografie*, **4**: 141–150, București.

Marin C., **Povară I.**, 2003 – Poluarea apelor carstice din zona Gheţari – Poiana Călineasa cu specii anorganice ale azotului. *Comunicări de Geografie,* Univ., **7**: 203–209, București.

**Povară I.**, Marin C., Onofrei I., Bănică S., 2003 – Experiment multitrasor în depozite loessoide. Platoul Smârdan, Galaţi. *An. Univ. Spiru Haret, Geografie*, **5**: 97–104, București.

**Povară I.**, 2004 – Asupra unor proprietăţi conductivimetrice ale apelor subterane carstice din zona Mangalia. *Analele Univ. «Spiru Haret», seria Geografie*, **7**: 87–93.

Stănoiu I., **Povară I.**, 2005 – Sistemele şi aliniamentele morfografice principale – criteriu de clasificare geomorfologică a Carpaţilor Orientali. *Comunicări de geografie*, **9**: 153–158, București.

Mitrofan H., **Povară I.**, Mafteiu M., 2008 – Geoelectrical investigations by means of resistivity methods in karst areas in Romania, *Environmental Geology*, **55(2)**: 405–413.

**Povară I.**, Simion G., Marin C., 2008 – Thermo-mineral waters from the Cerna Valley Basin (Romania). *Studia UBB*, Geologia, **53(2)**: 41–54.

Onac B.P., Sumrall J., Tămaş T., **Povară I.**, Kearns J., Dârmiceanu V., Vereş D., Lascu C., 2009 – The relationship between cave minerals and $H_2S$-rich termal waters along the Cerna Valley (SW Romania), *Acta Carsologica*, **38(1)**: 27–41.

Marin C., **Povară I.**, 2009 – Accomplishments and further prospects in the geological sequestration of $CO_2$ *Energetica*, **55(11)**: 444–452.

Onac B.P., Sumrall J., Tămaş T., Cizmaş C., Dârmiceanu, V., **Povară, I.**, Nicoliță L, 2009 – Mineralogical and stable isotope investigations of minerals from caves on Cerna Valley (Romania). *Proc. 15th Int. Congr. Speleol. Kerrville, Texas*, **vol. 1**: 318–323.

Marin C., Moldovan O.T., Tudorache A., **Povară I.**, Rajka G., 2010 – Assessing the contents of arsenic and of some heavy metals in surface flows and in the hyporheic zone of the Arieş stream catchment area, Romania. *Carpathian Journal of Earth and Environmental Sciences*, **5(1)**: 13–24.

Marin C., **Povară I.**, Tudorache A., Rajka G., Terente M., 2010 – The transfer of certain contaminants by means of surface and underground water-flows in the catchment area of Arieș stream, Romania. *Travaux de l'Institut de Spéologie "Emile Racovitza"*, **49**:113–133.

**Povară I.**, Ponta G., 2011 – Geology and hydrogeology of the Jiul de Vest-Cernișoara Basins. *Carbonates and Evaporites*, **25(2)**: 117–126.

Moldovan O.T., Levei E., Marin C., Banciu M., Banciu L.H., Pavelescu C., Brad T., Cîmpean M., Meleg I., Iepure S., **Povară I.**, 2011 – Spatial distribution patterns of the hyporheic invertebrate communities in a polluted river in Romania. *Hydrobiologia*, **669**: 63–82.

Conovici M., **Povară I.**, Orăşeanu I., Marin C., 2013 – Geological and ydrogeological features of Cerna Valley (Arşasca-Iuta area, SW Romania). *Carpathian Journal of Earth and Environmental Sciences*, **8(3)**: 219–230.

Ponta G., **Povară I.**, Isverceanu E.G., Onac B.P., Marin C., Tudorache A., 2013 – Geology and dynamics of underground waters in Cerna Valley/Băile Herculane (Romania). *Carbonates and Evaporites*, **28(1–2)**: 31–39.

Pușcaș C.M., Onac, B.P. Effenberger H.S., **Povară I.**, 2013 **–** Tamarugite-bearing paragenesis formed by sulphate acid alteration in Diana Cave, Romania. *European Journal of Mineralogy*, **25**: 479–486.

Onac, B.P., Effenberger H.S, Wynn J.G., **Povară I.**, 2013 – Rapidcreekite in the sulfuric acid weathering environment of Diana Cave, Romania. *American Mineralogist*, **98**: 1302–1309.

**Povară I.**, Conovici M, 2013 – Tectono-karst depressions in the central – western area of the Mehedinți Mountains (SW Romania). *Travaux de L'Institut de Speologie "Emile Racovitza"*, **52**: 37–49.

**Povară I.**, Conovici M., Munteanu C.-M., Marin C., Ioniță E.D., 2015 – Karst systems within the Southern Carpathians (Romania). *Carpathian Journal of Earth and Environmental Sciences*, **10(2)**: 5–17.

Mitrofan H., Marin C., **Povară I.**, 2015 – Possible conduit-matrix water exchange signatures outlined at a karst spring. *Groundwater*, **53(S1)**: 113–122.

Mitrofan H., Marin C., **Povară I.**, Onac B.P, 2016 **–** Hercules and Diana hypogene caves (Herculane Spa, Romania): Dissimilar chemical evolutions experienced by their present-day thermal water discharges, *National Cave and Karst Research Institute Symposium 6. DEEPKARST: Origins, Resources, and Management of Hypogene Karst*, Carlsbad, New Mexico, U.S.A., 11–14 April 2016, p. 145–150.

Mitrofan H., Marin C., **Povară I.**, Ioniță D.E., Tudorache A., Vișan M., 2018 – Better constraining silica-enthalpy mixing models in a setting of two separate (karst and non-karst) dilution regimes. *Hydrogeology Journal*, DOI: 10.1007/s10040-018-1846-7.

Marin C., Mitrofan H., **Povară I.**, Ioniță D.E., 2018 – Compelling hydrochemical evidence about limestone attack caused by the $H_2S$-induced acidity of the thermal brine that supplies Hercules karst spring. *Biospeleology and Theoretical and Applied Karstology Symposium*, Băile Herculane, 27–30 septembrie 2018, Book of Abstracts, p. 85–86, Editura Academiei Române, ISBN 9789732729649

Mitrofan H., Marin C., Chitea F., Cadicheanu N., **Povară I.**, Tudorache A., Anghelache M.A., 2021 – Multi-kilometre long pathway of geofluids migration: Clues concerning an ophiolite serpentinization setting possibly responsible for the inferred abiotic provenance of methane in thermal water outflows of the South-West Carpathians (Romania). *Terra Nova*, **33(1)**: 56–73.

**CHAPTERS IN MONOGRAPHS, ENCICLOPEDIAS, ATLASES**

Gutt W., **Povară I.**, 1986 – Materiale şi tehnici speciale în speologie, 106–204. In Gutt W. *Echipament, metode şi tehnici speciale în speologie*, Ed. FRTA, 240 p, Bucureşti.

**Povară I.**, Gutt W., 1987 – Sisteme de tracţiune, 110–162. In: *Gutt W. Accidente şi tehnici de salvare în speologie*, Ed. FRTA, 232 p. Bucureşti.

**Povară I.**, Gutt W., 1987 – Folosirea sistemelor de tracţiune. p. 163–214. In: *Gutt W. Accidente şi tehnici de salvare în speologie*, Ed. FRTA, 232 p. Bucureşti.

Meyer V.B., Rochow M., **Povară I.**, Mitrofan H., 2000 – Antarctica. In: *Encyclopaedia Biospeologica* (Juberthie C., Decu V., Eds.), **3**: 2227–2236, Ed: Fabbro, Franţa.

Geoffroy J., **Povară I.**, 2000 – Papouasie Nouvelle Guinée, In: *Encyclopaedia Biospeologica* (Juberthie C., Decu V., Eds.), **3**: 2133–2146, Ed: Fabbro, Franţa.

Juberthie C., Decu V., **Povară I.**, 2000 – Jordanie, In: *Encyclopaedia Biospeologica* (Juberthie C., Decu V., Eds.), **3**: 1867–1869, Ed. Fabbro, Franţa.

Juberthie C., Decu V., **Povară I.**, 2000 – Saudi Arabia, In*: Encyclopaedia Biospeologica* (Juberthie C., Decu V., Eds.), **3**: 1973–1977, Ed. Fabbro, Franţa.

Juberthie C., Decu V., **Povară I.**, 2000 – Iran, In: *Encyclopaedia Biospeologica* (Juberthie C., Decu V., Eds.), **3**: 1829–1838, Ed. Fabbro, Franţa.

Juberthie C., Decu V., **Povară I.**, 2000 – Oman, In: *Encyclopaedia Biospeologica* (Juberthie C., Decu V., Eds.), **3**: 1949–1955, Ed. Fabbro, Franţa.

**Povară I.**, Conovici M., 2000 – Yemen, In: *Encyclopaedia Biospeologica* (Juberthie, C., Decu V., Eds.), 3: 2039–2045, Ed. Fabbro, Franţa.

**Povară I.**, 2001 – Thermal Springs in Băile Herculane (Romania), 210–217. In: *LaMoreaux, P.E., Tanner, J.T. (Eds.) Springs and Bottled Waters of the World*, Springer-Verlag, Berlin, Heidelberg, New York, ISBN: 3-540-61841-4.

**Povară I.**, 2005 - Relief und Digitales Geländemodell (DGM). Relief, p. 43-44. În: «*Perspektiven für cine traditionelle Kulturlandschaft in Osteuropa – Ergebnisse eines inter – und transdisziplinären, partizipativen Forschungsprojektes im Apuseni–Gebirge in Rumänien*» (Ruşdea, E., Reif, A., Povară, I., Konold, W., Eds.), *Culterra*, **34**, 423 pp., Ed. Freiburg Universität, Freiburg, ISBN: 3-933390-21-4; ISSN:1435-8506.

**Povară I.**, Perşoiu A., 2005 – Naturschutzgebiete, 235–237. In: «*Perspektiven für cine traditionelle Kulturlandschaft in Osteuropa – Ergebnisse eines inter – und transdisziplinären, partizipativen Forschungsprojektes im Apuseni–Gebirge in Rumänien*» (Ruşdea E., Reif A., Povară I., Konold W., Eds.). *Culterra*, **34**, 423 pp., Ed. Freiburg Universität, Freiburg, ISBN:3-933390-21-4; ISSN:1435-8506.

Marin C., **Povară I.**, 2005 – *Schadstoffbelastung und transfer der Gewesser, 229–234.* In: «*Perspektiven für cine traditionelle Kulturlandschaft in Osteuropa – Ergebnisse eines inter – und transdisziplinären, partizipativen Forschungsprojektes im Apuseni–Gebirge in Rumänien*» (Ruşdea E., Reif A., Povară I., Konold W., Eds.). *Culterra*, **34**, 423 pp., Ed. Freiburg Universität, Freiburg**,** ISBN:3-933390-21-4; ISSN:1435-8506.

Ruşdea E., **Povară I.**, 2005 - Projektstruktur Aufbau der Projektarbeit, 13–16. In: «Perspektiven für cine traditionelle Kulturlandschaft in Osteuropa – Ergebnisse eines inter- und transdisziplinären, partizipativen Forschungsprojektes im Apuseni–Gebirge in Rumänien» (Ruşdea E., Reif A., Povară I., Konold W., Eds.). *Culterra*, **34**, 423 pp., Ed. Freiburg Universität, Freiburg, ISBN:3-933390-21-4; ISSN:1435-8506.

Ruşdea E., **Povară I.**, 2005 – Analysen und Strategien zur nachhaltigen Entwicklung im Motzenland. Naturale Rahmenbedingungen. Lage und Grentzen, 37–39. In: «*Perspektiven für cine traditionelle Kulturlandschaft in Osteuropa – Ergebnisse eines inter – und transdisziplinären, partizipativen Forschungsprojektes im Apuseni–Gebirge in Rumänien*» (Ruşdea E., Reif A., Povară I., Konold W., Eds.). *Culterra*, **34**, 423 pp. Ed. Freiburg Universität, Freiburg, ISBN: 3-933390-21-4; ISSN: 1435-8506.

**Povară I.**, Simion G., Marin C., 2010 – Thermo-mineral waters from the Cerna Valley Basin, 363–386. In: "*Karst Hydrogeology of Romania*" (Orăşeanu I., Iurkiewicz A., Eds.), Belvedere Publishing House, Oradea, ISBN 978-606-92444-0-1.

Bandrabur G., **Povară I.**, Bandrabur R., 2010 – Mehedinţi Mountains and Mehedinti Plateau. In: *Karst Hidrogeology of Romania* (Oraseanu I., Iurkiewicz A., Eds.), Belvedere Publishing House, Oradea, 77–94. ISBN 978-606-92444-0-1.

**Povară I.**, 2018 – Institute of Speleology: World's First Research Unit Dedicated to Karst and Cave Studies, In: *Cave and Karst Systems of Romania* (Ponta G.M.L., Onac B.P., Eds.), *Springer International Publishing*, Cham, p. 5–9, ISBN 978-3-319-90745-1.

**Povară I.**, Ponta G.M.L, 2018 – Retezat Mountains: Jiul de Vest–Cernisoara Basins. In: *Cave and Karst Systems of Romania* (Ponta G.M.L., Onac B.P., Eds.), *Springer International Publishing*, Cham, p. 131–142, ISBN 978-3-319-90745-1

**Povară I.**, Drăgușin V., Mirea I., 2018 – Mehedinţi Mountains, Cioaca cu Brebenei and Cloşani Caves, In: *Cave and Karst Systems of Romania* (Ponta G.M.L., Onac B.P., Eds.), *Springer International Publishing*, Cham, p. 149–156, ISBN 978-3-319-90745-1.

**Povară I.**, Lascu C., 2018 – Mehedinti Plateau: The Zăton-Bulba Karst System. In: *Cave and Karst Systems of Romania* (Ponta G.M.L., Onac B.P., Eds.), *Springer International Publishing*, Cham, 175–182, ISBN 978-3-319-90745-1.

Goran C, **Povară I.**, 2018 – Mehedinti Plateau. Epuran Topolnița Karst System. In: *Cave and Karst Systems of Romania* (Ponta G.M.L., Onac B.P., Eds.), *Springer International Publishing*, Cham, 183–202. ISBN 978-3-319-90745-1.

**Povară I.**, Mitrofan H., Onac B.P., Marin C., Nițu E., Ioniță D., Tudorache A., Vișan M., 2018 – Cernei Mountains. Caves conveying geothermal fluids at Băile Herculane. In: *Cave and Karst Systems of Romania* (Ponta G.M.L., Onac B.P., Eds.), *Springer International Publishing*, Cham, 213–226, ISBN 978-3-319-90745-1

**Povară I.**, 2018 – Domanului Mountains: Comarnic Cave (Peștera de la Cantonul Comarnic, Peștera din Ogașul Ponicovei). In: *Cave and Karst Systems of Romania* (Ponta G.M.L., Onac B.P. Eds.), *Springer International Publishing*, Cham, 249–256, ISBN 978-3-319-90745-1.

**Povară, I.**, 2010 – Cerna-Jiu Trench. In: *Karst Hydrogeology of Romania* (Oraseanu I., Iurkiewicz A., Eds.), Belvedere Publishing House, Oradea, 65–76, ISBN 978-606-92444-0-1.

**PUBLISHED BOOKS**

Bleahu M., Decu V., Negrea St., Pleşa C., **Povară I.**, Viehmann I., 1976 – *Peşteri din România.* Ed. Ştiinţifică şi Enciclopedică, Bucureşti, 416 p.

Bleahu M., **Povară I.**, 1976 – *Catalogul peşterilor din România*. CNEFS, Bucureşti, 53 p.

Decu V., Diaconu G., **Povară I.**, 1978 – *Peştera Cloşani*. Ed. Sport-Turism, Bucureşti, 128 p.

**Povară I.**, Gutt W., Zakarias A., 1981 – *Peştera Epuran*. Ed. Sport-Turism, Bucureşti, 132 p.

**Povară I.**, 1984 – Elemente de speologie ştiinţifică (**1**): *Topografie şi cartografie speologică*, Ed. CCSS, 46 p.

**Povară I.**, Goran, C., Gutt, W., 1990 – *Speologia – ghid practic*. Ed. Sport-Turism, Bucureşti, 238 p. ISBN: 973-41-0131-5.

**Povară I.**, 2006 – Hidrogeologie. *Ed. Fundaţei România de Mâine*, Bucureşti, 140 p., ISBN: 973-725-604-2.

**Povară I.**, 2007 – Geografia mediului. Poluarea şi protecţia mediului înconjurator. *Ed. Fundaţei România de Mâine*, Bucureşti, 304 p., ISBN: 978-973-725-887-8

**Povară I.**, 2012 – Valea Cernei. Morfologie, Hidrologie, Ape termominerale. *Editura AGIR*, Bucureşti, 304 p., ISBN 978-973-720-444-8.

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