

“Museum-isation of artae-factae: A Special Dimension of Contemporary Engineering: Romanian Examples”

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The basic items of this contributed paper are the following:

- The levels of *museum-isation*: the case of technical-technological *vestigiums*.

- The projects necessary for a *museum-ization* of some technical-technological *vestigiums*: ideatical project /*cogitatum*/ ® technical project (in many variants) ® executor unique project which is *de facto* achieved through a specific *mise en oeuvre*; Examples from the Carpathean-Danubean-Pontean

- Space. By these projects the special dimension of the modern engineering is expressed.

- Preconized *muzeum-isations*: *Mina de la Anina* /The anthracite mine from Anina in *Banatul montan*, The *cogitatum* for the *Tara Fagarasului*, The *cogitatum* concerning the foundation of a *Muzeum of History of Modern Technique* in the Sibiu county, The beginning of the *Museul Universitatii Transilvania din Brasov*, The *muzeums* of railways (in Sibiu, in Brasov), *muzeum-isation* of some electrical-plants in *Tara Bârsei*, systematized information useful for the organization of a Permanent exhibition concerning the discoveries, researches, exploitation, extraction, uses (*manu militari*; et al.) of some uranium ores in Romania (*Băița Bihor*, *Ciudanovita* in Banat) in the period cca. 1945–cca.1960 (the Sov-Rom Company; the Romanian state-al Company), A *cogitatum* concerning the foundation of the *Muzeul Văii Jiului* in *Hunedoara* county.

Some conclusions and perspectives.

“Applied and Theoretical Mathematics of Antiquity and Their Mutual Influence”

Galina A. Zverkina (Moscow Transport Engineering University)

The development of theoretical mathematics of antiquity had under itself not only extremely speculative reasonings, but also rich set of practical methods of the resolution of concrete applied tasks. The practical tasks and methods of their resolution were not only source of new theoretical ideas in mathematics, but they also were the terminator of development of the mathematical theories, as the Greek mathematics considered only “ideas” and “images” of objects real-life in environmental three-dimensional space.

Probably, it became the reason of decline of the Greek theoretical mathematics during late antiquity. The followers of the Greek mathematics not having representations about real practical tasks laying in a basis of the mathematical theories of antiquity, on the contrary, easily abstracted from a three-dimensional reality and consequently had an opportunity to generalize the theories of the predecessors. A vivid example of such development by the limited reality of the Greek theory became development of the theory of the diophantine equations in medieval East.

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“Materials Science: The First Publication in Romania on the Metallographic Analysis of Steels (1848)”

Horia Colan (Technical University of Cluj-Napoca)

The first presentation of the metallographic analysis, published 155 years ago, in 1848, is of a great importance for the history of technology. The article appeared in Cyrillic alphabet in the journal “Dunărea” in Galați, was entitled “An easy method for the recognition of good quality of iron [steel], especially the one destined to the fabrication of axes of wagons, carts and other carriages with wheels”. The title of the journal was in the Latin alphabet.

After the definition of the construction steels as iron-carbon alloys with 0,25–0,50 %C, the article continued with the influence of carbon on plasticity and hardness, and the chemical analysis method; it is also presented the metallographic analysis including all its stages: the place selection for the sample drawing, the polishing, etching, and cleaning.

Although rudimentary, the description is very accurate and owing to the naked eye examination of the structure, correct conclusions are drawn on the carbon content in steel. As the carbon content is higher, etching is increasing.

The article was published before Sorby’s works on the microscopic structures of steels (1865), which were published only at the end of the XIXth century. The Osmond, Le Chatelier, and Roberts-Austen studies had to establish, during the same period, that the accentuation of the etching with the carbon content increase is due to the increasing of the perlite quantity. This heterogeneous constituent – a ferrite and perlite mixture – is less resistant to corrosion than the pure ferrite (homogeneous constituent).