

TIME IN THE GENERAL STRATIGRAPHICAL SCALE OF THE 21ST CENTURY: PHYSICAL OR GEOLOGICAL TIME?

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Until about the 60th of the XXth century stratigraphical scales have been constructed exclusively with the accordance of historico-geological stages, that is they reflected a geological time. Physical time (chronometry) was beyond the general stratigraphical scale. This scale reflected our always imperfect knowledge about the past of the Earth. That is why the scales represented a scheme of classification with substantial characteristics, and as such, could not have been quite stable. The procedure of shifting the boundaries always led to the change in their hierarchy, and this reflected normal achievements in our knowledge. General stratigraphic scale of substantial characteristics became slowly but radically to be changing after the origination of the chronostratigraphy, which was based upon physical time (Newton's time). This time is in no way related to material objects and processes. It was the immanent character of physical time, its independence from geological processes and our views on them, that tempted our stratigraphers to consider them as an objective foundation (common denominator), which would help at last to finish with the instability of stratigraphical scales. Such an approach has been realised by using the GSSP methodics. It is interesting to note that at first stages of the development of chronostratigraphy there were discussed extreme variants to turn immediately to using physical time: to reject traditional scales by means of assessing rocks and events solely by years. An intermediate variant prevailed: a scale with traditional subdivisions and hierarchy remained but the procedure of fixing boundary points in concrete sections was introduced. In essence, the latter means the transition from the classification scale to linear scale of physical time. Hierarchy of subdivisions gradually turns into an atavism inherited from the traditional past. It is paradoxical that such a velvet revolution in stratigraphy was began at the time when even representatives of the exact sciences understood the necessity to introduce a historical aspect of time into their science: an internal (system) time of I. Prigogin. In future there await us a modernization of the general stratigraphical scale based on geological time.