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THE “REGIONAL STAGE” STORY OF THE CENTRAL PARATETHYS

Abstract: The author demonstrates the necessity of the definition of Regional Stages on an example of an extensive region of the Central Paratethys. (At the same time he considers this to be a temporary solution which should precede the approval of Standard Global Stages for Neogene.) He lines out the historical evolution of this process which is necessary for a solid foundation of a wider regional and interregional correlation and thus also for modern paleogeographic and geodynamic conceptions.

Резюме: Автор на примере региона Центральной Тетиды показывает на необходимость определения региональных степеней. (Одновременно он считает это временным решением которое предшествует определению стандартных глобальных степеней для неогена). Автор описывает историю этого процесса который является необходимым для хорошей региональной и интеррегиональной корреляции и тоже для современных палеогеографических и геодинамических концепций.

Key words: Regional stages, Paratethys.

A part of especially European geologists indicated already in the fifties the incorrectness of interregional stratigraphic correlation of Neogene. The cause were the justified doubts about the usage of classical stratotypes, above all because of their insufficient time continuity in the Mediterranean, Boreal or Atlantic bioprovince. As a result of this the attempts for more real paleogeographic and geodynamic conceptions were not successful.

I pointed out the pressing necessity of a revision of then used stages and stratotypes in my critical paper on the session of Société Géologique de France (Seneš, 1958) and undoubtedly this was an impulse for extensive changes in the content (but as well nomenclature) of Neogene stages and their stratotypes on a scale wider than European.

The necessity of a revision was indicated also by Glaessner (1953), Sigal (1964), Drooger (1964), Davitashvili (1964), Reiss (1966), Demarcq (1967) and most markedly by Cicha (1970).

The generally suggested radical changes affected in the following years mostly the Circummediterranean region. Therefore I think that I am justified in summarizing their hitherto unpublished evolution and realization using an example from the Central Paratethys region.

On the IV Congress of the “Committee on Mediterranean Neogene Stratigraphy” (CMNS) in 1967 in Bologna, the representatives of Czechoslovakia, Austria and U.S.S.R. initialized the foundation of the “Working Group on Paratethys”, and the critical geological public brought about the publication of a catalogue of all stages hitherto used in the Circummediterranean region (“Stratotypes of Mediterranean Neogene Stages” – see Carloni–Marks et al., 1971; Steininger–Nevešskaya, 1975). Only on the territory of Paratethys itself more than hundred “Stages” were in use, however, they of course did not comply with the requirements of chronostratigraphy. Mostly they encompassed only lithologic units or biostratigraphic zones.

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The most important task of CMNS was, and in accordance with the name of this international organization (RCMNS) still is, to form a platform for the solution of fundamental stratigraphic problems of the Circummediterranean Neogene and to define a stable Chronostratigraphic Stage System for this bioprovincially and paleogeographically complicated and most important region.

The greatest difficulties were caused by the fact that the traditionally used stage scales originated, as far as their stratotypes are concerned, in different bioprovinces. (This is well illustrated in a monography of C i c h a, 1970, Tab. 1, p. 20). As a result of this, Neogene stages frequently overlapped in time and they were not possible to correlate. (E.g. Aquitanian and Burdigalian from the Atlantic bioprovince. Helvetian from Western Paratethys, which was used also in the Mediterranean region in a different time concept under the name Elveziano. Similarly, the in the Mediterranean region frequently used Chattian is a stage of boreal origin and the surely not quite adequate, as far as the age is concerned. Bormidiano comes from the Mediterranean region.).

Equally unjustifiable was the circumstance that some so-called traditional stages (as chronostratigraphic = geochronologic terms) were used in partly isolated Circummediterranean regions in different time concepts. (E.g. Tortonian in the Central Paratethys was in the past different from Tortoniano in the Mediterranean region.)

Today it is already almost incomprehensible that terms like Vindobonian, Sarmatian, Pannonian, Levantian and others acquired during their at least last fifty years of incorrect use outside the territory of Paratethys frequently only facial and not age meaning. And on the top of this, there was also the unjustified use of chronostratigraphic units of the Eastern European and Western Asian Neogene in the clearly marine Mediterranean region (e.g. Maeotian or Pontian). These mistakes and their causes were pointed out already by C i c h a in his well-known, before the CMNS Congress in Bologna accepted manuscript from 1967 and his monography (1970).

However, the resolutions of the 5th CMNS Congress in Lyon (1971) and of the 6th Congress in Bratislava (1975) to introduce so-called "Superstages" for the Neogene were also not a way out of this chronostratigraphic chaos. (Originally it was a suggestion of C i c h a (1967) to denote numerically Miocene Superstages as I–IV, later the suggestions of C i t a et al. in Lyon (1975) concerning Cessolian and Perletian and of D r o o g e r – M a r k s (1975) about Girondian, Bubbian, Castellanian and Ardian.) On the 6th Congress of the RCMNS in Bratislava, besides other suggestions (G e l a t i – R o b b a, 1975; C i t a – D e c i m a, 1975), a compromise was achieved, and the following "Superstages" were accepted: *Girondian* for the Lower Miocene, *Cessolian* for the Middle Miocene and *Castellanian* for the Upper Miocene. Pliocene as a whole was named *Rosselian* (see Proc. VIth Congr. RCMNS, II, p. 30, 1976).

Already the historical Congress in Bratislava has shown that these "Superstages" will not apply in the practice. They could not comply with the increased demands of stratigraphy for more detailed correlation and thus also not with more precise definition of the justly demanded new paleogeographic and geodynamic conceptions.

Therefore, only one effective possibility remained for the complicated Circummediterranean region ("List and range of European Stages" – see in C i c h a, 1970) – while respecting as far as possible the traditional historical terms, to introduce in totally different regions (as far as their evolution is concerned) new, as much as possible acceptable, mutually at least approximately correlable "Regional Stages" (± 0.3 m. y.). The realization of this suggestion was inevitable also because there were no (and even in the time of the conclusion of this manuscript there are still not) by the International Commission on Stratigraphy of the IUGS accepted Standard Global Stages for the Neogene.

The suggestion to introduce "Regional Stages" for bioprovincially different or paleogeographically isolated large Neogene regions of the Globe was made already earlier, especially by authors from Paratethys regions (Cicha – Tejkal, 1959; Buday – Cicha – Seneš, 1965; Cicha – Seneš – Tejkal, 1969; Cicha, 1970), since the difficulties were most felt in the Circummediterranean Neogene. The suggestion in its more concrete form met with approval on the International Geological Congress in Montreal (Seneš, 1973) and it was fully accepted also in the "International Stratigraphic Guide" (Hedberg, 1976).

This decision legalised also the way of RCMNS, as well as the work of its Working Group on Paratethys, towards the formation of a stable individual stage scale for the Western-Central Paratethys and Eastern Paratethys. (In the meantime, thanks to the efforts especially of Italian and French authors, a stable time scale has been introduced also in the classical Mediterranean region, which could, considering its tradition, correspond very well to the requirements of the Standard Global Stages.)

The 3rd Symposium of the W. G. on Paratethys in 1970 in Vienna accepted definitively the nomenclature and time span of regional stages for the Western-Central Paratethys (Papp – Steininger – Rögl, 1971; Papp – Cicha et al., 1975). Regional Stages for the region of Eastern Paratethys were accepted on the 7th Symposium in 1974 in Krakow and together with the Mediterranean stage scale they were accepted in 1975 by the 6th Congress of the RCMNS in Bratislava (Proc. VIth Congress RCMNS, II. p. 29, 1976). They are representing today three independent Regional Stage Systems of the Circummediterranean Area and thanks to the precise definitions and description of their general characteristics they can be very well applied. These in all three regions in time linking-up age units are well correlable not only due to modern methods of research, but above all to an exemplary international cooperation of all countries from the Circummediterranean region.

The task of an age correlation of the three stage systems for the Neogene was in the years 1973–1983 further solved by an individual project within the International Geological Correlation Programme – "Stratigraphic Correlation Tethys-Paratethys Neogene" (Seneš, 1985; Steininger – Seneš et al., 1985).

However, to achieve the desired effect in the introduction of new "Regional Stages" in the Central Paratethys, to break the habit of using old names and terms, was a time-consuming process. Undoubtedly it would have not been possible without the publication of the series "Chronostratigraphie und Neostatotypen" by the Slovak Academy of Sciences in Bratislava. The first one was the monography on the stage "M-3 Karpatien" published in 1967. After that, the next one, on the stage "M-1 Eggenburgien", could be published only in the year 1971, after the 3rd Symposium of the working Group on Paratethys. The next volumes followed in a rapid succession: "M-2 Ottangien" in 1973, "M-5 Sarmatien s.s." in 1974, "OM Egerien" in 1975, the last monography published by the SAS in 1978 being a characterization of "M-4 Badenien". The edition undoubtedly acquired an international character. Since the classical development of Upper Miocene in the Central Paratethys region occurs outside Czechoslovakia, the monography "M-6 Pannonien (Malvesien)" was published in 1985 by the Hungarian Academy of Sciences in Budapest. Taking into consideration the typical development of the stage "M-7 Pontien" in the southern regions of the Intracarpethian Depression in Yugoslavia, the elaboration and publication of this monography has been undertaken, with considerable international participation, by the Jugoslavanska Akademia Znanosti i Umjetnosti (Yugoslavian Academy of Arts and Sciences) in Beograd. Editura Academiei Rep. Romania (Academic Publishers of Romania) are preparing in the nearest future the publication of the two remaining monographies of this series on the Pliocene stages "PI-1 Dacien" and "PI-2 Romanien".

This series became, thanks to its complex definitions of the "Regional Stages" of the Central Paratethys, undoubtedly the most complete monographic edition in the world for regional as well as interregional stratigraphy.

This retrospective passages are my way to thank all members of the Working Group on Paratethys from Austria, Czechoslovakia, the Federal Republic of Germany, Hungary, Yugoslavia, Poland, Romania, Switzerland and the U.S.S.R. for their devoted work, which made possible such modernization of Neogene stratigraphy of this extensive territory as well as more precise correlation and paleogeographic conceptions.

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