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BOOK REVIEWS

KAHLER, F.: FUSULINIDEN AUS T'IEN-SCHAN UND TIBET MIT GEDANKEN ZUR GESCHICHTE DER FUSULINIDEN-MEERE IM PERM. — Rep. sci. exp. N-W prov. China leadership Sven Hedin. — Sino-Swedish Exped. Public. **52**, — V. Invertebrate Paleontology **4**, — Stockholm, 1974, — 10 + 148 p., 2 photoplates, 1 table, 2 figures.

An old debt is payed off by the author in describing 15 Fusulinid species collected from 7 locations by NORIN, H. during the Sven Hedin-expedition in the year 1931. On the basis of this description the layers including the aforementioned Fusulinids were devided among the Lower and Upper Asselian, Sakmarian and/or Lower-Artinskian horizons of the Early-Permian. This description, made by the co-author of the "*Fossilium* Catalogus" of the Fusulinids, however modern, should be considered as a routine work only, if it was not amalgamated with the comparative analysis of the Fusulinid-based stratigraphical classification of all significant marine sequence in the Permian. The author points out, that the Fusulinid-bearing sequences have disappeared earlier in Japan as compared to South China, inspite of the fact, that the Permian and the Lower Triassic is separated by a hiatus in China too. The Late Permian is composed of beds consisting of evaporitic rocks in the USA, while in the Russian Platform and in the Ural Mountains the layers involved consist partly of evaporitic rocks partly of red beds of continental origin. Uninterrupted sedimentation between the Upper Permian and Lower Triassic is, however, a rather rare phenomenon even in the Paleotethys area and has not yet been proved by fossils suitable for long-distance correlation. Easy to access cases for the uninterrupted Carboniferous-Permian sedimentation are known mainly in Europe.

The author's most important statement is that there was not any close genetic connection between the Middle Permian, SE-Asian type-Fusulinid fauna of the marine sequences of the Paleotethys and those in Texas, because the latter existed in that time already as a paleographical unit, located separately from the Permian of the Paleotethys. Projecting the area characterized by the existence of Fusulinids upon the Pangea of DIETZ—HOLDEN, it can be seen that: *1)* excepting the sea-branches of the Ural-Mountains and Northern Canada, the seas in the Lower and Middle Permian were only the shelf-regions (*i.e.* marginal seas) of the Panthalassa; *2)* the connections of the SE Asian sea to the sea in Western America through Central Asia and Ural Mountains as well as Northern Canada still existing at the beginning of the Permian, ceased to exist later on. It means that the west coasts of the American continents emerged and some faunal elements from SE Asia could get into the epicontinental sea of the Midcontinent only occasionally and through the territory

of the recent British Columbia only. The further regression and the spreading of the hypersaline facies finally resulted in the extinction of the Fusulinids.

As a consequence of the facts listed above *the division of the Permian in Eurasia should be independent of that of the "Midcontinent", and the three parts of the former should be defined on the basis of the appearance and duration of faunal waves of SE Asian character.* According to this the Lower Permian is characterized by assemblages of the Pseudofusulina-Pseudoschwagerina-Misellina-, and the Middle Permian by that of the Cancellina-Neoschwagerina-Lepidolinaline, *while the Upper Permian is marked by the presence of the Palaeofusulina and Codonofusiella genera, which are partly aberrant, but survived the Lower amd Middle Permian genera listed above.* The possibility of correlating the American division to the Eurasian one is created by the appearance of some SE Asian faunal elements in the sequences of the Midcontinent. As a consequence of this, the *Leonardian* together with the Wolfcampian in America would belong to the Lower Permian, the *Word, Capitan* and *Marble Canyon* formations would form the Middle Permian, while the overwhelming majority of the *Ochoan* formation would be pigeon-holed to the Upper Permian. According to the brand-new correlation of profiles in Western Serbia, in Velebit mountains and in the Carnian Alps carried out mainly by V. KOCHANSKY DEVIDÉ, KAHLER' s Lower Permian would comprise the lower part of the *Grödenian* stage (or that of the "Velebit beds" being correlated to the former) besides the *Rattendorfian* and *Trogkofelian* stages. The Middle Permian would contain the bulk of the *Grödenian* beds (or the Neoschwagerina-Yabeina-bearing part of the "Velebit sequence"); while the Upper Permian would be filled by the *Bellerophon-bearing* or *Žažarian* stage (as counterpart of the *Lopingian* in China).

In Hungary, this division is more favourable, as it strongerly accentuates a Late Permian deposition for the limestone and dolomite sequence in Nagyvisnyó (Bükk-Mts., NE-Hungary), as opposed to the Capitan even Word relations sometimes over-emphasized up to now. Thus the acception of KAHLER's ideas seems to be quite justified for the Hungarian geologists.

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