

## **Stages, Substages and/or Chronozones and/or Standard Zones - What is Needed in the Silurian?**

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A new version of the International Stratigraphic Guide lists stage and substage in the conventional hierarchy of formal chronostratigraphic terms. The first has been called the basic unit and one of the smallest units that in prospect may be recognized at a global scale (ISSC Circular No 85, 1992). The same source defines (differently from Hedberg, 1976) chronozone as a formal chronostratigraphic unit of unspecified rank, not part of the above hierarchy. Despite of shortness of the Silurian Period, it seems that stages might be subdivided at a global scale into units of lower rank - substages (preferable) and/or chronozones. Two main difficulties are obvious - tracing a lower rank unit in different provinces and crossing facies boundaries within a sedimentary basin. The latter might be sometimes more troublesome than interbasinal correlation in similar facies.

Standard graptolite zones (Koren, 1984) belong to the category of biostratigraphic zones with all their properties and possibilities (the procedure for establishing remains disputable). Their main idea is a better correlation of different graptolite-bearing rock sequences, but also to be used as a time scale for any kind of correlations (for the Silurian Subcommission map project etc.).

The latter goal is a step toward a chronostratigraphic unit (chronozone or substage). The main problem is here the same - the reliable tracing of zone boundaries through non-graptolite facies. It might be achieved by using different paleontological and non-paleontological tools (s.c. Meien's principle), but the number of standard zones has to be kept low (for graptolite facies another, more detailed set of zones might be used). If the correlation problem is solved, the standard zone can become a chronozone or substage.

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