

the zone as well as the subzone level, with exception for the Upper *asymmetricus*-Zone which seems to be missing. However, distribution patterns are markedly uneven or discontinuous and ranges of some important species are reduced by later appearance or partly postponed with regard to the zonal scheme. Moreover, mature specimens are usually broken whereas complete specimens are often only juvenile forms.

On the other hand all the sections in this area are continuous with minor submarine erosional gaps truncating less than few cm of sediment, which are negligible in respect to the thickness of any subzone.

It is therefore assumed that this kind of reworking preserving the original stratigraphic polarity took place by repeated, frequent resuspension of a thin layer of unconsolidated sandy-silty carbonate material through the distal part of the shelf to the adjacent basin.

Perm-Conodonten in Slowenien (NW Jugoslawien).

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In den letzten Jahren wurden folgende fossilführende Oberkarbon- und Permschichten Sloweniens auch nach Conodonten untersucht: 1. die mergeligen Kalke mit gesteinsbildenden *Rugosofusulina alpina antiqua* (oberes Oberkarbon), 2. die unterpermischen Pseudoschwagerinenkalke mit der zahlreichen *Schwagerina carniolica*, 3. die Neoschwagerinenkalke mit gesteinsbildenden Neoschwagerinen, 4. die tiefsten Oberperm-Mergelkalke mit *Palaeofusulina nana* und einer reichen Brachiopodenfauna (*Lino-productus*, *Leptodus*, *Chonetes*, u. a.), 5. die Oberpermkalke mit sehr häufigen Brachiopoden der Gattung *Tyloplecta* und 6. die oberpermischen Bellerophon-führenden Kalke. Alle diese Kalke erwiesen sich conodontenleer. Andererseits lieferten die Kalkeinschaltungen in den unterpermischen Argilliten westlich von Solčava in den Ostkarawanken eine gut erhaltene Conodontenfauna. Das Plattformelement ist durch zahlreiche *Gondolella slovenica* n. sp. vertreten; die ramiformen Elemente stellen enantiognathiforme, hindeodelliforme, ozarkodiniforme, ? pollognathiforme und prioniodiniforme Elemente und ein hibbardelliformes Element dar. Als Plattformelement kommt auch *Anchignathodus minutus* vor.

Ein hohes unterpermisches Alter der ganzen Schichtfolge, bestehend überwiegend aus dunkelgrauen Klastiten und charakteristischen verschieden farbigen Kalkeinschaltungen beweisen auch die hochentwickelten Pseudofusulinen, höchstwahrscheinlich *P. rakoveci*. Aus diesem Abschnitt des Unterperms sind bisher in Jugoslawien und in Südeuropa noch keine Conodonten bekannt.

Early Ordovician Fused Conodont Clusters from the Western United States.

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Excellently preserved fused clusters of conodonts from the Lower Ordovician in Nevada add new knowledge about the form, function, and taxonomy of these apparatuses. Clusters of euconodonts as well as protoconodonts were found, but occurrences of the latter are much more common. Several lines of evidence point to the conclusion that the fusion, by phosphate mineral(s), was diagenetic (probably very early post-mortem) rather than biologic. Fusion of externally secreted euconodont elements was necessarily post-secretion. Internal and external phosphate crusts vary in thickness from specimen to specimen and fusion may be between adjacent external crusts rather than between adjacent elements *s e n s u s t r i c t o*. These and other protoconodont clusters are from continental slope/rise sediments rich in diagenetic phosphate. One of the specimens is a partial apparatus of „*Prooneotodus*“ *tenuis* (MÜLLER) in the „parallel reversed“ orientation. Interfingering of individual elements in this cluster occurred before fusion, indicating that the elements were laterally discrete during life. Fused clusters of *Oneotodus* sp., *Proconodontus notchpeakensis* MILLER, and *Cordylodus lindstromi* DRUCE and JONES are the oldest known clusters of euconodonts. *C. lindstromi* is represented by three elements of the nominate form species that are juxtaposed laterally and form a nested series of straight, curved, and strongly curved bars. The basal plates are preserved and also are fused laterally. Remnants of probably three other oppositely tapering elements indicate that this partial apparatus was situated, and probably operated, in opposition to another one. The cluster also shows that bar curvature and exter-

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