is identified by the fossils from limestone. Some people think the ophiolite suite belongs to Middle-
Devonian. Some people believed that the ophiolite suite is of Upper Silurian-Lower Devonian, however, we
think that the ophiolite suite is Early Carboniferous in age, namely, Tournaisian-Viséan. In the meantime,
four Radiolarian assemblages have been divided, namely, the *Triazosphaera palimbola*, *Entactinia vulgaris*,
*Belayeva cf. variabilis* and *Archocyrtium sp.* assemblages. The fauna may be correlated with that from the
Early Carboniferous of Germany and North America. Because there is the lack of genus of Albaillillae, the
name of assemblage is different. Based on these analyses, the sequence of Radiolarian-bearing is compared
with that established by Mr. Andreas Braun from Germany. The elements of assemblage zone and
appearance sequences of these elements in the section are quite similar, even though those two assemblage
zones are named by the different Radiolarian. Therefore the age of the assemblage zone is the Early
Carboniferous. In addition, these elements widely disperse in Lower Carboniferous in the North America and
the Southern China.

The wall rock of the four radiolarian assemblages is red purple and thin-bed siliceous rock. It is
concentrated in ferric iron. Eu-hedral form and ana-hedral form grand magnetite can be seen. They represent
a kind of environment of hydrala-thermal cascade. The fossils of Radiolarian fauna are of small and fine thin
shell decoration as well as symbiotic life of Spongespine and Conodonts. The conodont assemblages belong
to Nandan type. Based on these analyses, the environment is suggested to be of low latitude, warm water and
normal salinity. According to the sediments, Radiolarian, symbiotics and petrochemistry, we think that the
ophiolite reflects slow-speed expanding original ocean on the basis of the land-shell with region scale. The
above researches provide the basic information for further study of South Tianshan.

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THE RECORD OF DINOSAUR EXTINCTION IN THE SOUTH-CENTRAL PYRENEES

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The south-central Pyrenees (Spain) provide one of the most complete fossil records of the last 8.5 Ma of the
dinosaur succession. Dinosaur remains such as bones, teeth, footprints, eggs and eggshell fragments are
common in the Upper Cretaceous Aren and lower part of Tremp formations. The Aren Fm consists of shales,
sandstones, and calcarenites deposited in a deltaic and shoreface environment. The laterally equivalent lower
part of the Tremp Fm consists of red beds deposited in a coastal plain environment. These rocks have a
maximum thickness of some 2,500 m and are divided into five depositional sequences that have been mainly
correlated by means of rudist-bearing horizons and chemosтратigraphy, and dated by means of planktonic
foraminifera and magnetostratigraphy from late Campanian to Maastrichtian (Ardévol et al., 2000; Vicens et
al., in press).

Some 147 dinosaur sites have been recognized in these formations: 100 sites contain mainly eggs or
eggshell fragments, 36 contain bones and teeth, and 11 show footprints (López-Martínez, in press). 117 of
these sites belong to the sequence 2 of latest Campanian age, 15 sites are located in the sequence 3 of early-
late Maastrichtian age, and 11 in the latest Maastrichtian sequence 4. Four dinosaur sites are located in the
sequence 5 that contains the K/T boundary is situated below a low delta 13C anomaly at the upper part of
cron c29r, in a 1-3 m interval without fossils (López-Martínez et al., 1998). The study of the fossil content and
distribution of the sites has led to the following conclusions:

1) There is a sudden decrease in dinosaur fossil localities around the Campanian/Maastrichtian boundary
(according Gradstein et al., 1995). In the sequence 2 there is a frequency of 50 sites/Ma, while the sequences
3-4 show only five sites/Ma. This uneven distribution is highly significant (the Chi-square probability is as
low as 2.488). No depositional or taphonomic changes seem to be related to this rapid decrease.

2) There is a gradual change in the taxonomic composition from lower to upper Maastrichtian.
Sauropod-rich assemblages in sequence 2 are replaced by hadrosaur-dominated assemblages in sequence 4.
Titanosaurs, hadrosaurs and theropods are present in the entire succession, however ankylosaurs and the
ornithopod *Rhabdodon* have not yet been found in sequences 4-5.

3) Each sequence shows about 8-10 dinosaur taxa, hence dinosaur diversity does apparently not change
in the succession until their sudden demise at or close to the K/T boundary.

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TABULATE CORALS OF CENTRAL TIMAN (NORTH-EAST EUROPEAN RUSSIA)

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