

Meeting Report: Stratigraphy of the volcanogenic Cretaceous of the Soviet Far East

Vladivostok, U.S.S.R., 14–17 April 1987

This meeting was sponsored by the Soviet working group of the IGCP Project 245, Nonmarine Cretaceous Correlations, and the Vladivostok Branch of the All-Union Palaeontological Society. Its aims were to assess the available information about, and to develop a framework for future studies of, the Cretaceous Volcanogenic deposits that occur in a broad belt along the Pacific margin. These form a major metallogenic province of some economic importance, and also have a bearing on tectonic problems in the evolution of continental margins.

The Cretaceous sequences on the continent and adjacent islands can be divided into three major units with time-transgressive boundaries: (1) eugeosynclinal volcanomictic flysh-type deposits, cherts and olistostromes, (2) shallow marine and coal-bearing paralic to continental molasse accumulations and (3) terrestrial volcanics. In the Sikhote Alin Ranges the eugeosynclinal phase lasted until the Hauterivian, the paralic deposits of the shelf and coastal plain are of Barremian to Albian ages, and the terrestrial volcanism commenced in the Albian and lasted throughout the Late Cretaceous Epoch, with a major explosive phase during the Turonian or early Senonian.

In the northern Okhotsk-Chukotsk segment, the time-span of terrestrial volcanism appears to have been much shorter but this observation could be misleading because of incorrect age determinations which depend chiefly on plant macrofossils.

More precise dating can be achieved by correlation with shelf deposits to the east of the volcanic belt which stretch in broad arcs from the Anadyr River to Penjin Bay and further south to western Sakhalin. These contain paralic intercalations with abundant plant fossils whose age indications can be substantiated by marine invertebrate records. Notably, a locality recently found on the Lesser Kuril Islands which consists of turbiditic siltstones, has yielded a rich foraminiferal assemblage of transitional uppermost Maastrichtian–lowermost Palaeocene aspect associated with terrestrial plant remains containing both Late Cretaceous and Palaeogene species.

More emphasis must be placed on palynostratigraphic studies, radiometric dating and magnetostratigraphy in order to provide a basis for satisfactory correlation between marine and non-marine strata in this region. Since the volcanogenic deposits extend into China, Japan, Korea and have counterparts on the American side of the Pacific Ocean, it was decided to propose an international working group dedicated to their comprehensive study.

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