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# Extinction of Guadalupian Rugose corals - example of biotic response to Kamura event (South Primorye, Russia)

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The rugose coral extinction occurred at the end of Guadalupian about 8 million years before Permian/Triassic Global event. It is considered as reflection to the stress environments formed in the western Palaeo-Pacific via Kamura event (Isozaki et al., 2007). Earlier event at the end of Guadalupian was interpreted as global Midian/Dzulfian event (Kossovaya, Kotlyar, 2000, Kotlyar et al., 2004). It was also reported as the first phase of the Permian -Triassic global extinction of rugose corals (Kossovaya, 1995).
Guadalupian corals were widely distributed in the different terranes situated between Siberian and Sino-Korean platforms in the western Palaeo-Pacific. Three terranes are considered: Laoelin-Grodekovsk, Voznesensk and Sergeevka terranes. They acted separately during Late Palaeozoic and were accreted to the Siberian Platform in Mesozoic. The composition of the corals varies depending on the terrane position. The unremarkable taxonomic difference can be explained by latitude gradient of the terrane disposal.
Progressive replacement of a few assemblages started from the appearance of very scarce solitary Ufimia and Soshkineophyllum. They were found in the lower part of the Chandalaz Fm. and Barabashevka Fm. corresponded to Monodiexodina sutschanica-Metadoliolona lepida fusulinid Zone of the Wordian (Kotlyar et al., 2007). The age of this zone is controversial within Wordian-Capitanian interval. Both coral genera are typical polyprovincial ones. They belong to 'Cyahaxonia fauna' characteristic for deep and temperate water conditions and demonstrate the boreal features within the mixed fauna characteristic for the Northern Transitional Zone (Korlyar et al., 2003).
Following Late Wordian assemblage (age according Jinogondolella aserrata) of abundant solitary corals shows distinctive Perigondwanan invasion (Kossovaya, 2009). Corals were found in the middle part of Chandalaz Fm. and in the upper part of Barabashevka Fm. and contents Ufimia vanganensis Fomichev, U. fomichevi Iljina, Verbeekiella ussurica Fomichev, Basleophyllum indicum (Koker), Timorphyllum maichense Fom. Part of species was originally described by Fomichev, 1953 and several species were later revised by Iljina, 1984. Fauna includes both endemics and species and genera typical for Northern Transitional Zone (including Zhesi Honguer Fm., Inner Mongolia and Daheshen Fm., Central Jilin, Northern China). The third assemblage of abundant massive colonial corals occurred in the upper part of the Chandalaz Fm. which is corresponded to Metadoliolina lepida-Lepidolina kumaensis fusulinid Zone (Kropatcheva in Kotlyar et al., 1989, Kotlyar et al., 2007). Among the colonial forms assigned to Cathaysian type Waagenophyllum, Wentzelella, Wentzelloides, Polythecalis are most abundant. Massive colonies disappear below the upper boundary of Chandalaz Fm. where they are replaced by fasciculate primitive Calophylloides kabakovitchae (Iljina). This change was fixed in the Sen'kina Shapka section, in reef Nakhodka (Belyaeva, 1987; Kotlyar et al., 1987, 2007).
The ecological succession of coral fauna demonstrated in the South Primorye coincides with similar trend in the other regions within Northern Transitional Zone and seems to be the result of two overlapping processes – planula migration along the shallow margin of terranes and their gradual shift to the south within Wordian- Capitanian interval. The gradual ecological evolution abruptly interrupted by Kamura cooling event (Upper Capitanian) (Isozaki et al., 2007).