

Jurassic radiolarian cherts in the Vivari unit (Argolis Peninsula, Greece): Implications for the paleogeography and tectonic evolution of the Pelagonian margin.

*Girault, France E. & Baumgartner, Peter O.

Institut of Geology and Paleontology, University of Lausanne, Switzerland

*Current address: Geological Institute, ETH Zürich, Switzerland –
france.girault@erdw.ethz.ch

The Jurassic of the Argolis Peninsula (Peloponnesus, Greece) is part of the Pelagonian platform which was bordered on its west (Jurassic south) by the Pindos basin, and on its east by the Maliac basin. Late Jurassic radiolarian bearing mudstones, ophiolite turbidites and massflow breccias document a tectonic event that comprises the emplacement of an ophiolitic onto the eastern Pelagonian margin.

In Argolis, upper Triassic to lower Jurassic platform limestones are overlain by pelagic nodular limestones, related to a drowning of the platform due to a marine transgression, and to a regional eutrophication of surface waters. Deep water facies (VU, GU, AU, cf. figure 1) started during the earliest Jurassic on both slopes to the adjacent basins (Pindos and Maliac). In the central Pelagonian Dhidhimi-Trapeziona unit (DTU), neritic sedimentation lasted until the middle Liassic and was succeeded by condensed pelagic limestones. In the northern Pelagonian (Evia), neritic sedimentation occurred until the Oxfordian-Kimmeridgian. On the other hand, in Argolis, a variable hiatus occurs spanning the late Toarcian/Bathonian to Callovian/Kimmeridgian.

A transition from pelagic limestones to radiolarian cherts is observed in the Asklipion unit (AU) in the Bajocian (UAZ3). Elsewhere in Argolis, occurrence of radiolarian cherts generally ranges from Callovian/Oxfordian (UAZ8, AU) in internal units to early Kimmeridgian (UAZ10, GU) in external units. They are associated with detritic formations containing a variable abundance of ophiolitic detritus. In the Vivari unit, radiolarite facies range from the Bajocian/Bathonian (UAZ3-5) to late Kimmeridgian/early Tithonian (UAZ11). The Middle-Late Jurassic detrital section of this external unit is dominated by limestone resediments where ophiolitic detritus is highly dilute or absent.

The Vivari unit with its slightly younger age for the upper Jurassic siliceous and detrital facies clearly indicates a younger age for the Late Jurassic nappe emplacement in this portion of the Pelagonian. Moreover, its sedimentologic characteristics indicate its external position and basinal paleogeography, possibly located on a slope between the Pelagonian platform and the Pindos basin.

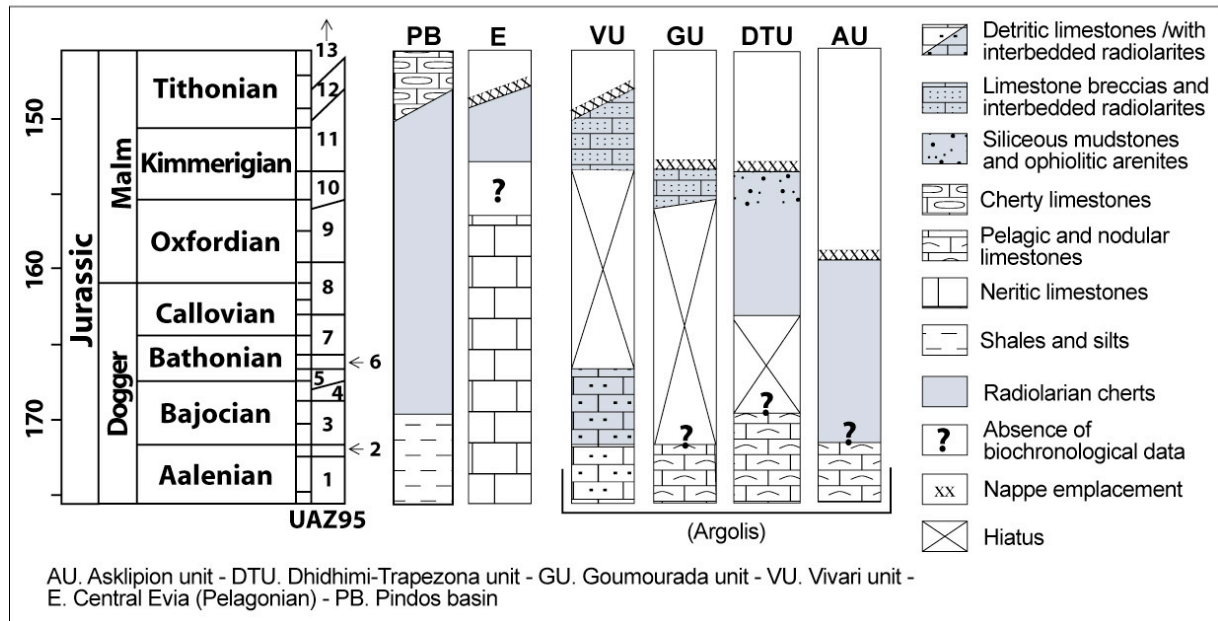


Figure 1: Compilation of stratigraphic sequences of the middle-late Jurassic found on the Pelagonian platform and Pindos basin – Greece.