

New radiolarian zonation of the Upper Albian – Santonian of the Tethyan regions of Eurasia

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A new detailed radiolarian zonation is proposed for the Upper Albian-Santonian of the Tethyan regions of Eurasia (Crimea, Caucasus, Turkey, Cyprus, Serbia) (BRAGINA, 2016): 1) The upper Albian *Crolanium triangulare* Zone, 2) the lower Cenomanian *Patellula spica* Zone, 3) the middle Cenomanian *Pseudoaulophacus lenticulatus* Zone, 4) the upper Cenomanian *Triactoma parva* Zone, 5) the lowermost Turonian *Acanthocircus tympanum* Zone, 6) the *Patellula selbukhraensis* Zone of the upper part of the lower Turonian, 7) the *Phaseliforma turovi* Zone (middle Turonian), 8) the *Actinomma* (?) *belbekense* Zone (upper part of the middle Turonian–upper Turonian), 9) the lower Coniacian *Alievium praegallowayi* Zone, 10) the upper Coniacian *Cyprodictyomitra longa* Zone, 11) the lower Santonian *Theocampe urna* Zone, 12) the middle-upper Santonian *Crucella robusta* Zone, and 13) the uppermost Santonian *Afens perapediensis* Zone.

The most important sections are in the Crimea, where radiolarians are present in the interval from the upper Albian to the lower part of the Coniacian inclusive and in the upper Santonian. Radiolarians are found together with planktonic foraminifers, occasionally inoceramids and ammonoids, and also nannofossils. Therefore, zones 1–8 were established in the Crimea sections, characterized by limestones and marls with intercalations cherts. Zones 9–13 were established in the sections of Cyprus (Mangaleni), comprising by umbers (ferro-manganese deep-water sediments) and radiolarian cherts. Sections from Cyprus show the most complete succession of radiolarian assemblages in the upper Turonian–uppermost Santonian interval, which facilitates substantiation of the stratigraphic subdivision of the more problematic Coniacian–middle Santonian interval. The exceptional preservation, abundance, and diversity of radiolarians from the Turonian–Santonian beds of Cyprus are noteworthy. Zones 1–9 and 13 were calibrated by planktonic foraminifers in the Crimean sections. Zones 10–12 have not yet precise biostratigraphic calibration and their stratigraphic position was determined tentatively. The proposed zones are traced over a large territory, encompassing the Crimea, Greater Caucasus, Serbia, Turkey, Italy, Spain, Cyprus, Bavaria, Poland, and part of the North Atlantic. The biostratigraphic subdivisions are correlated with bioevents in the schemes proposed previously for the Tethys and Pacific (PESSAGNO, 1976; SANFILIPPO & RIEDEL, 1985; O'DOHERTY, 1994; BRAGINA, 2004).

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