

The Oligocene flora from the Uricani coalfield, Petrosani Basin, Romania

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The Petrosani Basin is a typical Oligocene – Miocene intramontaneous basin located in the South Carpathians. It has a SW–NE orientation and is 48-km long; its width is varying between 10 and 2 km, and it overlays the Danubian and Getic basements. The Oligocene sequences are filling the basin, with a thickness ranging between 300 and 500 m. They consist of clays, marls, bituminous shales, microconglomerates and limestones, including 22 coal beds.

One essential feature of the Petrosani Basin is the occurrence of thick coal seams and the remains of a rich, 28 million years old ecosystem. The studied material was collected from Uricani coal mine, from the „Lower Productive Horizon”, Chattian in age (Upper Oligocene), and from Uricani coal waste dumps. The Lower Productive Horizon, also described as the Dalja–Uricani Formation, includes several coal seams and crops out in several areas (Buia et al., 2014). Collecting fossil plants from underground mining horizons represents a unique method for detailed understanding of coal bearing formations in a three-dimensional approach (Popa, 2011).

Although the plant remains are represented by a large number of species, most specimens belong to the Family Lauraceae. The fossil flora is very well preserved, some of the leaves preserving their cuticles. The fossil plants from Uricani coal mine, Petro?ani Basin, are described, illustrated and discussed based on leaf impressions. The associated macroflora of Uricani coal mine comprises various leaf species of *Daphnogene*, *Laurophyllum*, *Ocotea*, *Smilax* and *Alnus*. Most of the studied woody plants are mesophytic, like Lauraceae (narrow-leaved *Daphnogene*, *Laurophyllum*), but the affinities of the plant remains from Uricani coalfield have not been clarified yet. Nonetheless, the taxonomic composition of the studied flora from Uricani coalfield points to a semi-tropical climate. The overall character of the depositional conditions of Petrosani Basin fit best to a flatland with surrounding uplands, within a typical intramontaneous depression.

The fossil flora of the Petrosani Basin was first cited by Stur (1863). Pop (1975) contributed with a study on the geology of the Uricani mining field, with special emphasis on coalbeds. A paleobotanical overview of the plant remains from Petrosani Basin related to coal deposits was also published by Givulescu (1996).

This paper refers to the Oligocene fossil flora of Uricani coalfield, as a part of the Petrosani Basin and to the reconstruction of its paleoenvironment.

References:

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