uplifted structures of latitudinal extension and more southwards the mountains of Crimea and Caucasus formed during the Kimmeridgian and Alpine folding phases. Southwards from these mountains the Paleogene depression of Black Sea has formed, in which the West- and East- Black Sea parts are distinguished. Southern coast of the Black Sea is represented by the mountain massifs of the Pontian Mountains (Pontides) formed during the Alpine folding and with a convex part of the arc directed to south-east. System of Crimean and Caucasus Mountains, taking into consideration their both subairial and submarine occurrence, has an arched shape and with its convex part directed to south-east. It has formed as a result of collision of the Eurasian plate with the plates of the present-day East- and West-Black Sea depressions. The beginning of collision is referred to Triassic (Kimmeridgian folding). During Triassic, Jurassic and Cretaceous a system of depressions, Crimean and Caucasus Mountains, Black Sea depression has been formed. During Jurassic-Cretaceous-Paleogene the process of denudation of the Crimean Mountains took place. At the end of Cretaceous the tectonic movements of the Alpine orogeny recommenced, which is evidenced by the laccoliths in the internal ridge of the Crimean Mountains.

During the Alpine folding cycle as a result of the movement of Arabian and Anatolian plates to south-west their movement has been transferred to the west of the Black Sea plate, which as a wedge along the Teisseyre-Tornquist line is pressed into the body of the Eurasian plate. This movement is observed till the Baltic Sea region. At the present epoch the movement of the Eurasian plate to south-west and its collision with the East-Black Sea plate continues. As a result was formed the Azov Sea depression, Indolo-Kuban depression continues to be formed, Sivash lagoon has been formed. The present-day Sea of Azov is an external part of the foredeep where the molasse deposits are formed. The present-day Black Sea is an intramontane depression.

At the present epoch the movements along the Trans-European tectonic activation zone – the Teisseyre-Tornquist zone have activated. This is confirmed by a number of earthquakes, existence of “hot” points and GPS measurements.

Structure and Miocene evolution of the frontal Polish Carpathians: a synthesis

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The Polish Outer Carpathians comprise several thrust sheets composed mostly of Cretaceous through Paleogene deepwater siliciclastic flysch. The most external units in the nappe pile is built of the Miocene sediments of the Carpathian foredeep basin. The lower plate (i.e. the sub-Carpathian basement) consists of the generally flat-lying Mesozoic to Permian sedimentary rocks, underlain by tilted blocks of Carboniferous, Devonian and Early Palaeozoic strata that rest on top of Precambrian basement. Top of the lower plate is very rugged; the youngest event that has shaped it was significant erosion post-dating Late Cretaceous – Palaeogene inversion of the Carpathian foreland. This widespread erosion resulted in incision of deep valleys generally directed towards S - SE. The morphology of the sub-Carpathian basement top and the distribution of the Badenian foredeep evaporites were two important factors that have influenced the evolution of the Carpathian orogenic front. A new structural model of the orogenic front and its basement has been recently constructed using outcrops, numerous wells and high quality 2D/3D seismic data.

In its western segment (Andrychow – Krakow) the Polish part of the Carpathian wedge is characterised by a flat sole thrust located above mostly undeformed Miocene foredeep sedimentary infill overlying faulted Precambrian to Palaeozoic basement.

Within the tectonic "Gdow embayment" (i.e. tectonic re-entrant), located in the central part of the study area (vicinity of Krakow), thick-skinned structures rooted in the Meso-Paleozoic basement influenced Miocene evolution of the Carpathian front. Miocene compression led to localised inversion of early normal faults, responsible for the formation of small local basin filled by the lower Badenian siliciclastics. Thick-skinned thrust faulting in the pre-Miocene basement was accompanied by thin-skinned back-thrusting and formation of a triangle zone along the Carpathian front within the most external unit built of the Badenian foredeep sediments.

The central-eastern part of the Carpathian front in Poland between Bochnia and Pilzno is dominated by thin-skinned wedge tectonics induced by combined effect of diverse erosional morphology of the pre-Miocene basement and the areal extent of the Badenian foredeep evaporites. Wedging along the Carpathian front produced well-developed triangle zones of the Miocene Zglobice unit, frequently cored by highly deformed salt succession, including world-famous Wieliczka Salt Mine near Krakow.

In its eastern segment, the Carpathian orogenic front is defined by shallow-dipping foreland-verging thrusts overlying undeformed Miocene foredeep deposits. In the vicinity of Rzeszow a system of deep paleovalleys has been described, filled in their axial part by the Badenian evaporites.

Within the easternmost segment of the study area (vicinity of Przemysl) the final stage of evolution of the orogenic front was strongly influenced by the Miocene normal, reverse and strike-slip faulting within the pre-Miocene basement. This complex faulting was caused by Miocene reactivation of the Teisseyre – Tornquist Zone, i.e. crustal-scale boundary between the East European (Precambrian) Craton and the West European (Palaeozoic) Platform.

Radiolarian dating of Lower Cretaceous carbonate gravity-flow deposits from Bohinj area (NW Slovenia): significance for reconstruction of a lost carbonate platform in the Internal Dinarides

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Carbonate gravity-flow deposits at Srednja vas near Bohinj have been studied for radiolarian dating and composition of resedimented limestones. Paleogeographically, the area was part of the Bled Trough, which had a relativelly distal position on the Adriatic continental margin and was rather far from the stable Dinaric Carbonate Platform. The Jurassic to Lower Cretaceous succession of the Bled Trough consists of: Lower Jurassic limestone with echinoderms (Hierlatz facies), Middle and Upper Jurassic bedded radiolarian cherts and shales, Biancone limestone, alternation of marls and shales, and finally siliciclastics with limestone olistoliths and ophiolite debris. This research is focused on the Biancone limestone, an approximately 40 m thick series of well bedded pelagic limestone, which includes intercalations of resedimented carbonates.

The lower part of the studied section consists of radiolarian packstone with chert nodules and layers, and in places contains thin interlayers of marl. Radiolarian assemblages from these beds indicate an Early Cretaceous age (Berriasian – early Valanginian). The age assignment is based on the following species: *Archaeodictyomitra apiarium* (Rüst), *Cinguloturris cylindra* Kemkin & Rudenko, *Dicerosaturnalis dicranacanthos* (Squinabol), *Hiscocapsa pseudouterculus* (Aita), *Mirifusus minor* Baumgartner, *Pantanellium squinaboli* (Tan), *Pseudodictyomitra carpatica* (Lozyniak), *Ristola cretacea* (Baumgartner), and *Tethysetta boesii* (Parona). The upper part consists mainly of carbonate breccias. Microfacies analyses showed angular to subangular shallow-water grainstone lithoclasts, ooid grains, fragments of calcareous algae, miliolid foraminifera and various other skeletal fragments of