(Seslavinsky 1979, Fujita and Newberry 1982, Parfenov 1984, Zonenshain et al. 1990). New data have shown that SAZ suture includes the Paleozoic and Middle–Earlest Late Jurassic ophiolite (Bondarenko et al. 1998, Sokolov et al. 2000). The SAZ inner structure traditionally interprated as a mainly subvertical fold-sheet high-deformed zone with width of 15–20 km (Natalin 1984, Parfenov 1984). According to our data this structure style is secondary quality and produced by secondary dextral wrench faults. The primary structure of the SAZ characterized by high-amlitude synform and antiform deformed nappes of north vergent. The different age ophiolite, Late Jurassic accretionary melange, Late Jurassic to Early Cretaceous volcani-terrigenous sequences, Late Jurassic supposedly island arc volcanic sequences, and metamorphic rocks construct the allochthonous slices. The autochthone is composed by high-deformed Triassic turbidite sequences of Chukotka margin and volcanic rocks of Late Jurassic Kul'polney island arc. The Kul'polney island arc sequences probably stratigrafically overlap the Triassic turbidite. The suprasubduction volcanics formed along the Asia margin (Alazeya–Oloy superterrane) of Anyui ocean during Late Paleozoic, Late Triassic and Late Jurassic to Early Cretaceous age. There are two main tectonic events recognised at the SAZ:

(1) Pre Late Triassic accretionary deformations along the southern margin of Anyui ocean;

(2) Earliest Lower Cretaceous collisional deformations as a result of Asia and Chukotka microcontinent collision. We suppose that oceanic spreading at the Canada basin and cownterclockwise rotation of the Chukotka-Arctic Alaska block was the reason of the Anyui ocean closing. The SAZ and Angayucham ophiolite suture zones probably mark the Paleozoic to Mesozoic Proto Arctic ocean (Anyui–Angayucham ocean). This ocean probably was connected with Ural ocean in Paleozoic time. The large scale sinistral strike slip fault zone must be limiting this ocean from the western side (modern coordinate) during Canada basin opening in Late Mesozoic. Proto Arctic ocean was limited from the Pacific during all time of it's existing by convergent margin system.

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Large-scale strata overturning generated by a two-order thrust propagation fold in front of a high-amplitude dome at the wedge–foredeep interface. A comparison between the Montagne Noire (southern French Hercynian belt) and the Alpine Southern Pyrenees

J.C. SOULA, S. BRUSSET, G. BESSIERE, P. DEBAT & J. DERAMOND

Laboratoire Dynamique des bassins sedimentaires, Universite Paul Sabatier, Toulouse, France

Upside-down series are scarsely observed within developing foreland basins and usually restricted to small areas in front of thrust propagation folds near the wedge-foredeep boundary. The Montagne Noire, which is a 15 kilometres wide dome situated at the apex of the wedge of the South European Variscides, has long been known for showing on its southern flank unusually widespread upside-down series. These upside-down series are related to fold and thrust structures that emplaced in the developing foreland basin and have, in general, been interpreted as the lower limb of a refolded large-scale recumbent fold postdated by thrust faults. This interpretation, however, fails to explain the controls of sedimentation by the emplacing thrust sheets as recognized by the sedimentological studies.

We propose here another interpretation aimed at being compatible with both the geometry of the large-scale structures in the orogenic wedge and the tectonics-sedimentation relationships in the foreland basin. The model is derived from the CAS model established in the South Central Alpine Pyrenees (Deramond et al., 1995, Geological Society Special Publication, 71, 193–219) and involves a large-scale thrust-propagation fold that controlled the sedimentation during the development of the foredeep. The progradation of the deposits and the individualization of the depositional sequences recognized in the basin is attributed to the overstep propagation of second-order thrusts and related folds. The essential differences between the Montagne Noire and the Southern Pyrenees are that, in the Montagne Noire, the second-order thrust-propagation folds are larger and more accentuated and the upside-down series crop out over much wider areas. The large-scale strata overturning characterizing the Montagne Noire is thought to have been a result of an over-rise of the dome just behind. This over-rise allowed a much larger top-to-south rotation of the thrusts and related folds during the progression and deepening of the foreland basin so that the dip of the faults decreased and was locally inverted. In addition, post-contractional collapse was responsible for later large-scale flattening and local gravitational sliding. This model may explain why, in the Montagne Noire, the northernmore fold and thrust units are transported farther into the foreland basin and why parts of the northern platform are found as very large (n km^2) olistostroms overriding the other tectono-sedimentary units. In the Montagne Noire, the uplift of the dome is attributed to a diapiric rise of anatectic gneisses into a previous antiformal stack. The presence of such a high-amplitude syn-contractional dome at the wedge-foredeep boundary is thought necessary to large-scale strata overturning, even though processes other than diapirism may contribute to its development. A comparison with the type-model of foreland basin systems (DeCelles and Giles, 1996, Basin Research, 8, 105–123, fig. 1C) shows that the dome of the Montagne Noire is equivalent to the frontal "triangle zone" that marks the boundary between the wedge-top and foredeep depozones with the difference that two-order thrust-propagation folds and related large-scale strata overturning occurred in the Montagne Noire instead of backthrusting in the "triangle zone". This process may be thus stated as one of the possible modes of propagation of the wedge within the foreland basin and could be privileged where a high amplitude dome forms in front of the wedge.

Tectonization of the basement in the western part of Moravosilesian region (Bohemian Massif)

P. ŠPAČEK, R. MELICHAR & J. KALVODA

Dept. of Geology and Palaeontology, Masaryk University, Brno, Czech Republic, vajgl@sci.muni.cz

During the Variscan orogeny the Moravosilesian region represented a promontory of Laurussia involved in an oblique collision with Moldanubian group of terranes. Two domains of the basement with contrasting tectonic evolution can be distinguished representing different tectonothermal history in the western and eastern part.

In the western (collisional) domain, which comprises the footwall units of the Thaya and the Svratka Tectonic Windows, the following tectonostratigraphic sequence is developed (from the bottom to the top):

1. Cadomian basement granitoids with metamorphosed host-rocks;
2. Palaeozoic siliciclastics and platform carbonates;
3. Nappes of MT–HT/LP–HP metamorphic rocks with Variscan cooling ages.

The granitoids of the basement unit are strongly penetratively strained and in the Thaya Window their metamorphism reached the garnet zone (Höck 1995). Quartz of the granitoids and siliciclastic sediments was deformed ductily by rotation and migration recrystallization. The growth of muscovite and isotope geothermometry (S. Ulrich, oral. comm.) indicate that the maximum temperature in the siliciclastics was not lower than 300 °C. In the carbonates, low-stress coarse-grained mylonites predominate over the contrasting relic high-stress mylonites and unstrained limestones.

Stretching lineations with asymmetric structures indicate top-to-the-N (Svratka Window) or top-to-the-NE (Thaya Window) sense of shear (Schulmann et al. 1991, Fritz and Neubauer 1995).

In the eastern (foreland) domain with the Brno batholith, different lithotectonic sequence is developed (from the bottom to the top):

1. Cadomian basement granitoids with metamorphosed host-rocks;
2. Palaeozoic siliciclastics, platform carbonates and basinal volcano-sedimentary facies;
3. Viséan flysch sediments.

Deformation of the basement granitoids is non-penetrative, localized in largely spaced narrow LT mylonite zones. Quartz of the granitoids and siliciclastic sediments has suffered only slight brittle deformation. No trace of muscovite growth has been observed and thermometric data (illite crystallinity, vitrinite reflectance, CAI) indicate that the maximum temperatures reached in the sediments did not exceed 250 °C. In the Palaeozoic sedimentary cover, tectonic juxtapositioning of the platform facies and basinal facies has been proved (Bábek 1997).