

Transeurasian dextral shear along the Tornquist line and kinematics of the East European subplate in the Cenozoic

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Our present view of unity and rigidity of the Eurasian plate in the Cenozoic is far from complete. In fact, the Eurasian plate represented a time-varying kaleidoscope of subplates that moved with different velocities from the Atlantic - Arctic spreading axis. However, Eurasian fragments whose the general southeastward motion was the least restrained in the south by the Gondwanian relics colliding with Eurasia, were accelerated to the maximum.

After northward propagation of the spreading axis in the Paleocene, Siberia and East Europe, which was truncated from West Europe (detained by the Apulia-Eurasia collision) by the Transeurasian dextral shear along the Tornquist line, started their joint movement to the south-east. As an independent subplate, the East European platform separated from Siberia only in the latest Eocene, most likely due to interlock of the Asia movement by Indostan. A presence of free space in the form of the Tethyan relics occurred immediately on the course of the East Europe motion, on the one hand, and local accumulation of the ridge push in Fenno-Scandia due to sphericity of plates, on the other hand, resulted in traction dragging out the East Europe southeastward. This shift was accompanied by sinistral displacement along north-eastern border of East Europe and by neotectonic orogenesis of Urals resulted from oblique collision between the East European subplate and blocks of the zone of dynamic influence of Indostan.

In the Pliocene, the independent movement of East Europe was ceased by collision between Arabia and Eurasia. As a result, the Fenno-Scandian plateau uplifted, and, in its turn, this caused the glaciation in the northwest of the modern European continent.

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