YELLOW SEA TRANSFORM FAULT (YSTF) AND THE DEVELOPEMNT OF KOREAN PENINSULA

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The Yellow Sea Transform Fault (YSTF), the boundary between the Korean Peninsula and the South China Plate was a repeatedly reactivated ancient fault, extant since 1 Ga or more ago. Similarly polycyclic continental collisions along the Qinling-Dabie-Sulu (QDS) suture dispatched the lateral (vectorial) collisional effects eastwardly toward the Korean Peninsula across YSTF, the east end of the QDS belt. The Korean Peninsula, coexisted with YSTF, has been a promontory of the Sino-Korean Plate (SKP) at least since the Rodinia assembly, ca 1 Ga. The Early Paleozoic rift origin of the Okcheon Trough, a major aulacogen developed within the Korean Peninsula of the Sino-Korean Plate is attributed to the transform role of the YSTF. During the Middle Paleozoic, the Yangtze Plate, an inherent component of the South China Plate, collided SKP so mildly and enduringly that SKP had to develop the Late Ordovician-Early Carboniferous 'great hiatus' over the cratonic SKP. Contemporaneously, the clustered aulacogens were formed over an area near the YSTF. It is envisioned that during the middle Paleozoic, the compressed part of the SKP by the eastward-pushing Yangtze Plate formed an extensional upper crust where the aulacogens formed. The Yangtze sea invaded the aulacogens where the clastic sediments of the mixed environment were dominated by the supply from the Yangtze Plate as witnessed by the clastic zircon grains showing the Yangtze-akin isotope dates. The development of both the middle Paleozoic 'great hiatus' and the clustered aulacogens represents the Caledonian tectonic phase though scarcely accompanied deformations or an orogeny. The Carboniferous-Permian metamorphism recorded in the Middle Paleozoic aulacogens represents the Hercynian (Variscan) phase, but without obvious structural deformations. The deepest subduction and the most intensive collision of the Yangtze Plate along the Paleotethyan suture was made in the late Permian-mid-Triassic time, the Indosinian phase. The coeval Songnim Orogeny in Korea was similarly intensive, though it was a derived, secondary, orogeny propagated ultimately from the QDS collision belt. Because of the eastward compression derived then from the QDS collision belt, YSTF was so deformed and considerably pushed eastward that it now occurs as a deformed-dislocated fault zone called the West Marginal Fault of Korean Peninsula (WMF in Fig. 1). The location of the mid-Triassic Korean Peninsula was inserted between the eastwardly compressing marginal Yangtze Plate and the counter balancing Permian-Triassic subduction-metamorphic-accretionary complex of the Japanese Pacific. Such a sandwich tectonics effectively intensified the Indosinian Songnim Orogeny of Korea.

Key words: **Sino-Korean Plate, Korean Peninsula, Yellow Sea Transform Fault, Indosinian Tectonism, Qinling-Dabie-Sulu Suture, Songnim (Songrim) Orogeny, Derived (Secondary) Orogeny.**