Paleozoic Succession in Thailand

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The whole sequence of Paleozoic rocks which mainly of marine origin are outcropping outside the Khorat Plateau, both in Shan-Thai and Indochina microcontinents, or cratons. The Cambrian and Ordovician outcrops are closely associated with the Precambrian in the Western Belt, on the Shan-Than cratonic fragment. The total thickness of Cambro-Ordovician sandstone and limestone exceeds 1,600 m.

Silurian-Devonian rocks are differentiated into several facies belts from west to east. Fossiliferous carbonate shelf facies and continental derived clastic shale and snadstone of graptolite-tentaculite facies conformably overly Ordovician limestone and conformably underly Upper Paleozoic rocks outcrop in the lower Peninsula and west of the Western Mountains from Kanchanaburi to Mae Hong Son. East of the Western Mountains, the eastern Gulf, and in the Sukhothai Fold Belt, three facies belts are recognised; from west to east, l, back-arc basin facies consisting of graptolitic black shale and bedded chert and occasional limestone are found at Fang, Lampang, east Kanchanaburi, Rayong, and Yala in the south Peninsula; 2, volcanic arc facies consisting of metavolcanics and metaagglomerate and fine grained tuffs crop out at Chiangrai, Lampang, Tak, Nakhon Sawan in north and western Thailand, at Rayong in the eastern Gulf

and probably at south Narathiwat in the Peninsula; 3, fore-arc, chiefly the arc-trench gap deposits consisting of marble, and bedded cherts occur at Sukhothai and Nakhon Sawan, and Rayong-Chantaburi in the eastern Gulf, and the trench facies consisting of flysch-like low grade metasediments are found at Nan, immediately west of the Pha Som Ultramafic Belt. Silurian-Devonian rocks at Loei which are the oldest Paleozoic outcrops of Indochina Craton on the Thai side consist of shelf sandstone, shale and limestone.

Carboniferous rocks in the Sukhothai Fold Belt consist of varying lithologies and thickness from west to east in the West, the North, the eastern Gulf, and the Peninsula. At places marine shelf sedimentation continued in the west and flysch type sediments in the east, but with local unconformities. In the middle part of the fold belt pronounced unconformities on the Silurian-Devonian rocks are overlain by thick volcanic agglomerates and possibly marine red-beds underlying Lower Permian limestone. Carboniferous volcanic rocks are relatively rarer than in the Silurian-Devonian sequence and are represented by agglomerate and tuffaceous rocks with minor shallow acid to basic intrusive rocks near Phrae. West of the Western Mountains, west of the eastern Gulf and west of the Peninsula passive continental margin sediments continued into Carboniferous period and consisted of shale sandstone and minor chert beds, but local paralic red-beds occur. The mainly Carboniferous to Lower Permian pebbly mudstones occur further to the west. Carboniferous sediments which are fossiliferous in the upper part occur in the environs of Loei and Phetchabun and are thicker from east to west, changing from massive limestones to a more sandy shaly limestone facies.

Permian rocks are dominantly limestones. The limestones are possibly of different ages in the Western Mountains, the Sukhothai Fold Belt and the Loei Fold Belt. The Permian in the Sukhothai Fold Belt contains minor tuffaceous rocks. The Permian sequence in all areas are mainly Lower to Middle Permian. The early Upper Permian rocks, mainly shale, sandstone and thin limestone are found at places in Lampang, in the Sukhothai Fold Belt, and in the Loei Fold Belt at Loei and Phetchabun.

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