

## **RECORD OF MID-CRETACEOUS SUBDUCTION IN THE HIMALAYAS: THE SHERGOL-BALTIKAR BLUESCHISTS, LADAKH**

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The Shergol-Baltikar blueschist unit of the Indus Suture Zone in Ladakh is one of only few HP/LT units that occur along the whole Himalayan orogenic belt. It is situated between the Ladakh block, a Cretaceous island arc sequence in the north and the Lamayuru Group, Mid-Jurassic to Santonian sediments and volcanics of the Indian passive margin in the south. This whole nappe stack, initially assembled by southward thrusting, is backthrust to the north. The blueschist unit consists mainly of basic volcanic and pyro-clastic rocks, and some metasedimentary rocks, quartzites, cherts and impure marbles. These rocks are generally only weakly deformed. The foliation, defined by Na-Ca-amphiboles, chlorite and phengite, is overgrown by late lawsonite, indicating that it formed on the burial path. Mineral parageneses allow to constrain metamorphic conditions at about 400-440°C and 10.5-12.5 kbar. Part of the prograde, compressional path is recorded in mineral zonations (garnet, phengite, Na-amphibole, Na-pyroxene) and their order of crystallisation, no retrogression is discernible. Ar/Ar dating of phengite allows to constrain the timing of this blueschist metamorphic event. Well-crystallised phengites (sizes of ca. 0.5 mm) of three blueschist samples gave ages of 113, 118, and 120 Ma, respectively, with no or negligible loss of Ar. More fine-grained phengites gave plateau ages of 112 and 108 Ma, but initial release ages of about 70 to 80 Ma, pointing to a later thermal overprint. These ages thus prove mid-Cretaceous (Aptian) subduction in the Neotethyan domain, at about the time India set out for its journey from Gondwana towards Asia.