

TECTONIC FRAMEWORK OF HIMALAYAN-KARAKORAM OROGENIC SUBDUCTION ZONES IN LADAKH AND EASTERN KARAKORAM

1SINHA, ANSHU K., 2UPADHYAY, RAJEEV AND CHANDRA, RAKESH 1BIRBAL SAHNI INSTITUTE OF PALAEOBOTANY, LUCKNOW, INDIA; 2INSTITUTE OF GEOLOGY, ETH-ZENTRUM, ZURICH, SWITZERLAND; 3DHARAMSHALA DEGREE COLLEGE, HIMACHAL PRADESH, INDIA

THE KARAKORAM TERRANE LIES ALONG A CRITICAL GEOLOGICAL KNOT TO THE NORTH OF HIMALAYAN SUBDUCTION ZONE. THE TWO SUTURE ZONES: INDUS SUTURE AND SHYOK SUTURE HAVE PLAYED MAJOR GEOLOGICAL ROLE AT SUCCESSIVE TIME PERIOD IN MESOZOIC AND CENOZOIC PERIOD, MARKING THE CLOSURE OF TETHYS AND COLLISION OF INDIAN PLATE WITH ASIAN PLATE AND ACCRETION OF DIFFERENT MICROCONTINENTS OR TERRANES. THE GEOLOGICAL HISTORY IN THESE TWO TETHYAN ZONES ARE HAVING INDEPENDENT DEVELOPMENT DEPICTING DIFFERENT GEOLOGIC COLUMN. SUBDUCTION ALONG THE INDUS SUTURE ZONE CONTINUES WHEREAS SHYOK SUTURE EXPERIENCED DIFFERENT MAGMATIC REGIME PLAYING THE ROLE OF STITCHING-PLUTONS. SHYOK SUTURE IS OLDER THAN THE INDUS SUTURE AND ACCRETIONARY PROCESSES IN THE KARAKORAM BEGAN PRIOR TO THE FINAL CLOSURE OF THE INDUS SUTURE. SUBSEQUENTLY, THE COLLISION, SUTURING AND ACCRETION OF INDIAN PLATE ALONG THE INDUS SUTURE (50-66 MA) TOGETHER WITH TECTONIC ACTIVITY OF THE NANGA PARBAT-HARAMOSH RANGE SEPARATED THE KOHISTAN AND LADAKH INTO TWO DIFFERENT MAGMATIC ARC TERRANES. ACTIVITY ALONG KARAKORAM FAULT WITH DEXTRAL OFFSET CONTINUES TILL DATE IN THE SHYOK SUTURE AND ADJOINING KARAKORAM AND EXTENDS FURTHER NORTH-WEST TO PAMIR.