

Zeitschrift: Eclogae Geologicae Helvetiae
Herausgeber: Schweizerische Geologische Gesellschaft
Band: 96 (2003)
Heft: 2

Artikel: Geology of the NW Indian Himalaya
Autor: Steck, Albrecht

Inhaltsverzeichnis

DOI: <https://doi.org/10.5169/seals-169014>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 26.04.2026

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

Contents

1 Introduction	149	3 Elements of the Neo-Tethys ocean crust, island arcs and the Ladakh batholith of the Asian margin	161
2 Pre-Himalayan tectonics, sedimentation and magmatism of the North Indian crust	149	<i>Oceanic crust, Spongtang Klippe, Karzok unit and blueschists of the Indus Suture zone</i>	161
<i>The Lesser Himalaya</i>	149	<i>The Nindam-Dras Formation (Callovian-Cenomanian)</i>	161
The Rampur Formation (Proterozoic)	149	<i>The Ladakh intrusives of the active Asian margin (103 ± 3 – 49 ± 0.8 Ma, U-Pb zircon ages)</i>	161
The Garsha and Berinag Formations (Proterozoic)	150	4 The Himalayan tectonics, metamorphism, magmatism and sedimentation	161
The Shali Formation (early and middle Riphean)	150	<i>The Indus Group (Late Cretaceous-Neogene)</i>	161
The Simla Slates (late Riphean-Vendian)	150	The Khalsi Limestone (Aptian-Albian)	162
The Jaunsar Formation (late Riphean-Vendian)	152	The Miru-Chogdo Flysch (Cenomanian-early Eocene)	162
The Blaini Formation (Vendian)	152	The Gongmarula-Hemis-Nurla Molasse (early Eocene?)	162
The Krol Formation (Vendian)	152	The Basgo Formation (Maastrichtian)	164
The Tal Formation (Early Cambrian)	152	The Nimu Sandstones (Paleocene-Lower Eocene?)	164
The Lower Crystalline nappe	153	The Temesgam Formation (Paleocene-early Eocene?)	164
Conclusions on the stratigraphy of the Lesser Himalaya	153	The Chilling and Butum-Kargil Formations (Mio-Pliocene?)	164
<i>The High Himalaya</i>	153	The tectonics of the sediments of the Indus Group	164
<i>The Gondwanan series</i>	153	The metamorphism of the Indus Group	165
The Haimantas (Riphean?-Early Cambrian)	153	<i>The Himalayan nappes</i>	165
The Lower Haimantas (Riphean?)	153	The Shikar Beh nappe	165
The Middle Haimantas (Vendian?)	154	The N-verging Warwan, Bobang, Bor Zash and Wakha recumbent folds and N-directed Dras nappe	166
The Upper Haimantas (Vendian?-Early Cambrian)	154	The Barrovian metamorphism (M1) of the Shikar Beh nappe stack	166
The Karsha Formation (Middle and Late Cambrian)	154	The North Himalayan nappes	167
The Kurgiakh Formation (Late Cambrian)	154	The eclogitic Tso Morari nappe	167
The Thaple Formation (Ordovician)	155	The high pressure metamorphism (M2) of the Tso Morari nappe	167
The Ordovician magmatism	155	The higher (non eclogitic) units of the North Himalayan nappe stack	167
The Muth Formation (Devonian)	156	The Barrovian metamorphism (M3) of the North Himalayan nappe stack	171
The Lipak Formation (Middle Devonian-Early Carboniferous)	156	Kinematics of the North Himalayan nappes	171
The Early Carboniferous continental basalts	156	The High Himalayan nappe or "Crystalline nappe"	172
The Po Formation (Late Carboniferous)	156	The tectonic units of the Lesser Himalaya	173
The Ganmachidan Formation (Early Permian)	156	The Lower Crystalline nappe	174
The Panjal Traps (Late Carboniferous-Early Permian)	156	The Barrovian metamorphism (M4) of the High and Lesser Himalayan nappes	174
The Yunam granite (Early Permian, 284 ± 1 Ma, U-Pb zircon age) ..	157	The Zanskar Shear Zone, the Miocene leucogranites, the Gianbul dome, the Kanjar shear zone and related retrograde metamorphism (M5)	175
<i>The Neotethyan shelf</i>	157	The history and origin of the metamorphism of the High Himalayan or "Crystalline" nappe	175
The Kuling Formation (Late Permian)	157	<i>The Subhimalaya</i>	176
The Lilang Group (Triassic)	157	The Subathu Formation (Thanetian-Lutetian)	176
The Tamba Kurkur Formation (Scythian-Anisian)	157	The Murree Formation (Oligocene? – Early Miocene)	177
The Hanse Formation (late Ladinian-late Carnian)	157	The Siwaliks or Siwalik Group (Miocene-Present)	178
The Nimaloksa Formation (late Carnian-lower Norian)	157	The Himalayan Frontal Thrust Belt	178
The Alaror Group or Quartzite Formation (Norian)	158	The Neogene and Quaternary Himalayan accretionary wedge and active Himalayan structures	179
The Kioto Formation (late Norian-Liassic-Aalenian)	158	5 Discussion and conclusions on the structural and metamorphic evolution of the Himalayan range and its sedimentary record	181
The Laptal Beds (early Callovian)	158	<i>The age of the continental collision</i>	181
The Middle Jurassic alkaline magmatism	158	<i>The geometry of the N Indian margin before continental collision</i>	181
The Spiti Shales (Oxfordian-early Berriasian)	158	<i>The formation of the Himalayan accretionary wedge</i>	182
The Giumal Sandstones (Early Cretaceous)	158	<i>Estimates of the post collisional shortening in the Himalaya</i>	186
The Chikkim Formation (Cenomanian-Campanian)	158	<i>Doming and NE-verging backfold structures</i>	186
The Kangi La Shale (Late Cretaceous)	158	<i>Conclusion</i>	187
The Stumpa Quartzite (Danian)	158		
The Shinge La Formation (Paleocene)	158		
The Kong Formation (Ilerdian-Ypresian)	159		
Tertiary Olistostrome	159		
The Neotethyan slope	159		
The Lamayuru Formation (Early Permian-Late Cretaceous)	159		
Conclusions on the composition and history of the Pre-Himalayan North Indian continental margin	159		