

References

- Abbott, L.D., Silver, E.A., Anderson, R.S., Smith, R., Ingles, J., Kling, S., Haig, D., Small, E., Galewsky, J., and Sliter, W. (1997) Measurements of tectonic surface uplift rate in a young collisional mountain belt. *Nature* 385, 501-507.
- Acharyya, S.K., and Sastry, M.V.A. (1979) Stratigraphy of the eastern Himalaya. *Geol. Surv. Ind. Misc. Pub.* 41, 49-67.
- Acharyya, S.K., (1997) Stratigraphy and tectonic history reconstruction of the Indo-Burman-Andaman mobile belt. *Ind. J. Geol.* 69, 211-234.
- Ahmad, T., Thakur, V.C., Islam, R., Khanna, P.P., Mukherjee, P.K. (1998) Geochemistry and geodynamic implications of magmatic rocks from the Trans-Himalayan arc. *Geochem. J.* 32, 383-404.
- Aitchison, J.C., Badengzhu, Davis, A.M., Liu, J., Luo, H., Malpas, J.G., McDermid, I.R., Wu, H., Zhiabrev, S.V., Zhou, M. (2000) Remnants of a Cretaceous intra-oceanic subduction system within the Yarlung-Zangbo suture (southern Tibet). *Earth Planet. Sci. Lett.* 183, 231-244.
- Allegre, C.J., Courtillot, P., Tapponnier, P., and 32 others (1984) Structure and evolution of the Himalaya-Tibet orogenic belt. *Nature* 307, 17-22.
- Alexander, Jr., E., C., Michelson, G.M., and Lanphere, M.A. (1978) MMHb-1: A new ^{40}Ar - ^{39}Ar standard. In *Short papers of the Fourth International Conference on Geochronology, Cosmochronology, and Isotope geology*, ed. Zartman, R.E., U.S. Geol. Surv. Open-File report 78-701, 6-8.
- Arita, K. (1983) Origin of the inverted metamorphism of the lower Himalayas, central Nepal. *Tectonophysics* 95, 43-60.
- Armijo, R., Tapponnier, P., Mercier, J.L., and Han, T. (1986) Quaternary extension in southern Tibet: field observations and tectonic implications. *J. Geophys. Res.* 91, 13803-13807.
- Armijo, R., Tapponnier, P., and Han, T. (1989) Late Cenozoic right-lateral strike-slip faulting in southern Tibet. *J. Geophys. Res.* 94, 2787-838.
- Arnaud, N.O., Ronghua, X., Yuquan, Z. (1991) *C. R. Acad. Sci. Paris* 312, 905.
- Auden, J.B. (1935) Traverses in the Himalaya. *Geol. Surv. Ind. Rec.* 69, 123-167.
- Avouac, J.P., and Tapponnier, P. (1993). Kinematic model of active deformation in Central Asia. *Geophys. Res. Lett.* 20, 895-898.
- Baker, D., M., Lillie, R., J., Yeats, R., S., Johnson, G., D., Yousuf, M., and Zaman, A., S., H., (1988) Development of the Himalayan Frontal Zone, Salt Range, Pakistan. *Geology* 16, 3-7.
- Baksi, A.K., Archibald, D.A., Farrar, E. (1996) Intercalibration of $^{40}\text{Ar}/^{39}\text{Ar}$ dating standards. *Chem. Geol.* 129, 307-324.

References

- Beck, R.A., Burbank, D.W., Sercombe, W.J., Riley, G.W., Bery, J.R., Afzal, J., Khan, A.M., Jurgen, H., Cheema, A., Shafique, N.A., Lawrence, R.D., and Khan, M.A. (1995) Stratigraphic evidence for an early collision between northwest India and Asia. *Nature* 373, 55-58.
- Bilham, R., Larson, K., Freymueller, J., and project Idylhim members. (1997). GPS measurements of present-day convergence across the Nepal Himalaya, *Nature* 386, 61-64.
- Bird P (1978) Initiation of intracontinental subduction in the Himalaya. *J. Geophys. Res.* 83, 4975-4987.
- Bevington, P.R. (1969). Data reduction and error analysis for the physical sciences. *McGraw Hill Co., New York*
- Brereton, N.R. (1970). Corrections for interfering isotopes in the $^{40}\text{Ar}/^{39}\text{Ar}$ dating method *Earth Planet. Sci. Lett.* 8, 427-433.
- Brereton, N.R. (1972). A reappraisal of the $^{40}\text{Ar}/^{39}\text{Ar}$ stepwise degassing technique. *Geophys. J. R. Astron. Soc.* 27, 449-478.
- Brookfield, M.E., and Reynolds, P.H., (1981). Late Cretaceous emplacement of Indus Suture Zone, ophiolitic mélangé and an Eocene-Oligocene magmatic arc on the Northern edge of the Indian plate. *Earth Planet. Sci. Lett.* 55, 157-162
- Brookfield, M.E., and Andrews-Speed, S.P., (1984) Sedimentology, petrography and tectonic significance of the shelf, flysch and molasses clastic deposits across the Indus Suture Zone, Ladakh, NW India. *Sed. Geol.* 40, 249-286.
- Burbank, D.W., Beck, R.A., and Mulder, T., (1997) The Himalayan foreland basin. In *Tectonic evolution of Asia*, (eds A Yin and T.M. Harrison) 149-188.
- Butler, R. (1995) When did India hit Asia? *Nature* 373, 20.
- Chung, S.L., Lo C-C, Lee, T-Y, Zang Y, Xie, Y, et al (1998) Diachronous uplift of the Tibetan plateau starting 40 Myr ago. *Nature* 394, 769-73
- Clift, P.D., Degnan, P.J., Hannigan, R., Blusztajn, J., (2000) Sedimentary and geochemical evolution of Drass forearc basin, Indus suture, Ladakh Himalaya, India. *GSA Bull.* 112, 450-466
- Colchen, M., Mascle, G. and Van Haver, T. (1986) Some aspects of collision tectonics in the Indus Suture Zone, Ladakh. In: *Collision Tectonics* (eds. Coward., M.P., Ries) Special Publication, *Geological Society of London* 19, 173-184.
- Copeland, P., Harrison, T. M., and Le Fort, P. (1990) Age and cooling history of the Manaslu granite: Implications for Himalayan tectonics. *J. Volc. Geotherm. Res.* 44, 33-50
- Copeland, P., Harrison, T. M., Hodges, K.V., Mareurol, P., Le Fort, P., and Pecher, A. (1991) An early Pliocene thermal perturbation of the Main Central Thrust, central Nepal. Implications for Himalayan tectonics, *J. Geophys. Res.* 96, 8475-8500
- Coward, M., P., and Butler, R., H., (1985) Thrust tectonics and the deep structure of the Pakistan Himalaya *Geology* 13, 417-420

References

- Dalhen, F A , and Barr, T.D , (1989) Brittle frictional mountain building 1. Deformation and mechanical energy budget *J.Geophys. Res.* 94, 3906 -3922
- Dalrymple, G.B. and Lanphere, M A (1974) ^{40}Ar - ^{39}Ar age spectra of some undisturbed terrestrial samples. *Geochim.Cosmochim Acta* 38, 715-738
- Dalrymple, G B., Alexander, E C , Jr., Lanphere, M A , and Karker,G P (1981) Irradiation of Samples for $^{40}\text{Ar}/^{39}\text{Ar}$ dating using the Geophysical Survey TRIGA reactor, *U.S.Geol. Surv., Prof Paper* 1176.
- Dallmeyer, R D. and Lecomte, J.P. (1990) $^{40}\text{Ar}/^{39}\text{Ar}$ polyorogenic mineral age record in the northern Mauritanide orogen, West Africa. *Tectonophysics* 177, 81-107.
- Dalrymple, G.B., Izett, L., Snee, L., and Obradovich, J. (1993) $^{40}\text{Ar}/^{39}\text{Ar}$ age spectra and total fusion ages of tektites from Cretaceous-Tertiary rocks in the Beloc Formation, Haiti. *U.S.Geol. Surv. Bull.* 2065, 20.
- Davis, D., Suppe, J, and Dahlen, F.A., (1983) Mechanics of fold and thrust belts and accretionary wedges. *J. Geophys. Res.* 88, 1153-1172.
- De Sigoyer, J., Chavagnac, V., Villa, I.M., Luais, B , Guillot, S , Cosca, M , Mascle, G. (2000) Dating the Indian continental subduction and collisional thickening in the Northwest Himalaya: Multichronology of the Tso Moriri eclogites, *Geology* 28, 487-490.
- Dewey, J F.,and Burk, K C.A. (1973) Tibetan, Variscan and Precambrian basement reactivation products of continental collision. *J.Geology* 81, 683-692
- Dewey. J.F., Cande, S , and Pitman, W.C. (1989) Tectonic evolution of the India/Eurasia collision zone. *Eclogae Geol. Helve.* 82, 717-34.
- Dodson, M.H. (1973) Closure temperature in cooling geochronological and petrological systems. *Contrib. Mineral. Petro.* 40, 259-274.
- England, P , C., and Houseman, G., A., (1986) Finite strain calculations of continental deformation. II: Application to the India-Asia plate collision. *J. Geophys. Res* 91, 3664-36676
- Fleck, R.J., Sutter, J.F., and Elliot, D.H. (1977) Interpretation of discordant ^{40}Ar - ^{39}Ar age-spectra of Mesozoic tholeiites from Antarctica. *Geochim. Cosmochim Acta* 41, 15-32.
- Foland, K.A., Gilbert ,L.A., Serbing, C.A., and Chen, J F. (1986) $^{40}\text{Ar}/^{39}\text{Ar}$ ages for plutons of Monteregean Hills, Quebec: Evidence for a single episode of Cretaceous magmatism *Geol Soc. Am. Bull.* 97, 966-974.
- Frank, W., Ganser, A. and Trommsdorff. V., (1977) Geological observations in the Ladakh area (Himalayas), a preliminary report *Schweiz Mineral Petro. Mitt* 57, 89-113.
- Friedlander, G., Kennedy, J.W , Macias, E S., and Miller, J.M. (1981) Nuclear and Radiochemistry 3rd ed., Wiley, New York.
- Fuchs. G , (1979) On the geology of western Ladakh *Jahrbuch der Geologischen Bundesanstalt Wien* 122, 513-40.
- Fuchs, G , (1982) The geology of the western Zaskar *Jahrbuch der Geologischen Bundesanstalt Wien* 125, 1-50.

References

- Gaetani, M., and Garzanti, E., (1991) Multicyclic history of the Northern Indian continental margin (Northwestern Himalaya) American association of Petroleum Geologists *Bulletin* 75, 1427-46.
- Ganser, A. (1964) Geology of the Himalayas. *J. Willey*. London, U K.
- Garner, E.L., Murphy, T.J., Gramlich, J.W., Paulsen, P.J., and Barnes, I.L. (1975) Absolute isotopic abundance ratios and the atomic weight of a reference sample of potassium. *J. Res. Natl. Bureau Stand* 79A. 713-725.
- Garzanti, E., and Van Haver, T., (1988) The Indus clastics: forearc basin sedimentation in the Ladakh Himalaya (India). *Sed. Geol.* 59, 237-49
- George, M.T., Harris, N. and Butler, R.W.H. (1993) The tectonic implications of contrasting granite magmatism between the Kohistan island arc and the Nanga Parbat-Harmosh massif, Pakistan Himalaya. In: *Himalayan tectonics*, (eds Treloar, P.J., Searle, M.P.) *Geological Society of London Special Publication* 74, 173-191
- Grasty, R.L. and Mitchell, J.G. (1966) Single sample potassium-argon ages using the omegatron *Earth Planet. Sci. Lett.* 1, 121-122
- Gregan, J.T., and Pant, P.C. 1983 Geology and stratigraphy of eastern Karakoram, Ladakh. In *Geology of Indus Suture Zone of Ladakh*, (eds V.C. Thakur and K.K. Sharma) Wadia Institute of Himalayan Geology, Dehradun, 99-106
- Guillot, S., Baratoux, D., Garzanti, E., Marquer, D., de Sigoyer, J., (2000). India/Asia Convergence and Himalayan shortening. *Earth Sci. Frontiers* 15th HKT Abstract Volume, 7 suppl., 417-418.
- Harrison, T.M., Duncan, I., McDougall, I., (1985) Diffusion of ⁴⁰Ar in biotite: temperature, pressure and compositional effects *Geochimica Cosmochimica Acta* 49, 2461-2468
- Harrison, T.M., Copeland, P., Kidd, W.S.F., and Yin, A., (1992) Raising Tibet. *Science* 255, 1663-1670.
- Harrison, T.M., Grove, M., Lovera, O.M., Catlos, E.J., (1998) A model for the origin of Himalayan anatexis and inverted metamorphism. *J. Geophys. Res.* 103, 27017-27032.
- Hayden, H.H. (1907) The geology of the provenance of Tsang in Tibet. *Geol. Surv. Ind. Records* 36, 122-201.
- Hebbert, R., Beaudoin, G., Varfalvy, V., Huot, F., Wang, C.S., and Liu, Z.F. (2000) Yarlung Zangbo ophiolites, Southern Tibet revisited *Earth Science Frontiers* 7 (Suppl.) 124-126
- Heim, A. and Ganser, A. (1939) Central Himalaya-Geological observations of Swiss expedition, 1936 *Societe Helvetique Science Naturelle memoire* 73, 1-245.
- Hodges, K.V., Hubbard, M.S., and Silverberg, D.S., (1988) Metamorphic constraints on the thermal evolution of the central Himalayan orogen. *Royal Society of London Philosophical Transaction A*-326, 257-280
- Hodges, K.V., (1999) Tectonics of the Himalaya and southern Tibet from two perspectives. *GSA bull.* 112, 324-350

References

- Honegger, K., Dietrich, V., Frank, W., Ganser, A., Thoni, M., and Trommsdorff, V. (1982), Magmatism and metamorphism in the Ladakh Himalayas (the Indus-Tsangpo suture zone) *Earth Planet. Sci. Lett.* 60, 253-292
- Houseman, G., and England, P. C., (1986) Finite strain calculation of continental deformation 1. Method and general results for the convergent zones *J. Geophys. Res.*, 91, 3651-63.
- Houseman, G. and England, P. (1993) Crustal thickening versus lateral expulsion in the Indian-Asian continental collision. *J. Geophys. Res.* 98, 12233-12249
- Houseman, G., and England, P. (1996) A lithospheric thickening model for the Indo-Asian collision. In *The tectonic Evolution of Asia*, (eds A Yin, T.M. Harrison) 3-17
- Johnson, G.D., Reynolds, R.G., and Burbank, D.W., (1986) Late Cenozoic tectonics and Sedimentation in the north-western Himalayan foredeep 1. Thrust ramping and associated deformation in the Potwar region. In *Foreland Basins*, ed. P.A. Allen and P. Homewood, *International Association for Sedimentology special publication* 8, 273-291.
- Keleman, P., and Sonnenfeld, M.D., (1983) Stratigraphy, structure, petrology, and local tectonics, central Ladakh, NW Himalaya. *Schweizer Mineralogische and Petrographische Mitteilungen* 63, 267-87.
- Khan, M.A., Jan, M.Q., Windley, B.F., Tarney, J., and Thirlwall, M.F., (1989) The Chilas Mafic-Ultramafic Igneous complex The root of Kohistan island arc in the Himalaya of northern Pakistan, in *Tectonics of the western Himalayas*, (eds. Melinconico, L., L., and Lillie, R.J.) *Geol. Soc. Am. Sp. Pap.* 232, 75-94.
- Kong, X., and Bird, P. (1996) Neotectonics of Asia. thin shell, finite-element models with faults In *The tectonics of Asia*, ed. (A Yin and T M Harrison) 18-35
- Krishnaswami, S., Trivedi, J. R., Sarin, M., Ramesh, R. and Sharma, K. (1992) Strontium isotopes and rubidium in the Ganga-Bramaputra river system: Weathering in the Himalaya, fluxes to the Bay of Bengal and contributions to the evolution of oceanic $^{87}\text{Sr}/^{86}\text{Sr}$. *Earth Planet. Sci. Lett.* 109, 243-253.
- Krol, M. A., Zeitler, P.K., and Copeland, P., (1996) Episodic unroofing of the Kohistan Batholith, Pakistan: Implications from K-feldspar thermochronology. *J. of Geophys. Res.* 101, 28,149-28,164.
- Le Fort, P. (1986) Metamorphism and magmatism during Himalayan Collision. In *Collision tectonics* (eds. Coward, M.,P., and Ries, A.C.) *Geological Society Special Publication* 19, 59-172
- Le Fort, P. (1996) Evolution of the Himalaya. In *The Tectonic Evolution of Asia*, (eds An Yin and T M.Harrison) *Cambridge University Press*, New York 95-106
- Lee, J.K.W. (1995). Multipath diffusion in geochronology *Contrib.Mineral Petrol.* 120, 60-82.
- Lo Ching-Hua., Lee., J.K.W. Onstott T.C. (2000) Argon release mechanisms of biotite in vacuo and the role of short-circuit diffusion and recoil *Chem Geol* 165, 135 -166
- Lombard, O. (1981) 8, rue de river CH-1204, Geneve, Switzerland

References

- Lovera, O M , Grove,M., Harrison, T M. (1989) The $^{40}\text{Ar}/^{39}\text{Ar}$ thermochronometry for slowly cooled samples having a distribution of diffusion domain sizes *J Geophy. Res* 94, 17917-17,935.
- Lovera, O.M., Richter, F.M., and Harrison, T.M. (1991) Diffusion domains determined by ^{39}Ar Released during step heating. *J. Geophy Res* 96, 2057-2069
- Lovera, O M., Heizler, M T., and Harrison T.M., (1993) Argon diffusion domains in K-feldspar, II: Kinetic properties of MH-10, *Contrib. to Mineral. Petrol* 113, 381-393.
- Lydekker, R. (1883) The geology of the Kashmir and Chamba territories and the British district of Khagan. *Geol. Surv. Ind. Mem.* 22, 108-122.
- Lyon-Caen, H., and Molnar, P.,(1985) Gravity anomalies, flexure of the Indian Plate, and the structure, support and evolution of the Himalaya and Ganga Basin. *Tectonics* 4, 513-538.
- Mathur, N.S., and Pant, P C (1983) Early Eocene foraminifera from Singhe La area, Zaskar region, Ladakh Himalaya. In *Geology of Indus Suture Zone of Ladakh*, (eds V C. Thakur and K.K.Sharma) Wadia Institute of Himalayan Geology, Dehardun. 151-156.
- McCaferey, R., and Nalbek, J , (1998) Role of oblique convergence in the active deformation of the Himalayas and southern Tibet plateau. *Geology* 26, 691-94.
- McDougall, I. And Harrison T.M.(1999) Geochronology and Thermochronology by $^{40}\text{Ar}/^{39}\text{Ar}$ method. *Oxford University Press*.
- McIntyre, G.A., Brooks, C., Compston, W., and Turek, A. (1966) The statistical assessment of Rb-Sr isochron. *J. Geophys. Res* 71, 5459-5468.
- Merrihue, C., and Turner, G. (1966) Potassium-argon dating by activation with fast neutrons. *J Geophys. Res.* 71, 2852-2857.
- Misra, K S.(1979) Himalayan transverse faults and folds and their parallelism with subsurface structures of north Indian plains-Discussion *Tectonophysics* 32, 353-386.
- Mitchell, J.G. (1968) The argon-40/argon-39 method for potassium-argon age determination. *Geochim. Cosmochim. Acta* 32, 781-790.
- Molnar, P., (1988) A review of geophysical constraints on the deep structure of the Tibetan Plateau, the Himalaya, and the Karakoram, and their tectonic implications *Phil. Trans. R. Soc Lond.*, A326, pp.33-88.
- Molnar, P, and England, P., (1990) Late Cenozoic uplift of mountain ranges and global climate: chicken or egg? *Nature*, 346, 29-34
- Molnar, P., England, P., Martinod, J. (1993) Mantle dynamics, the uplift of the Tibetan plateau and the Indian monsoon *Rev Geophys.* 31, 357-96.
- Najaman, Y., Pringle, M., Godin, L. and Oliver G. (2001) Dating the oldest continental sediments from the Himalayan foreland basin. *Nature* 410, 194-197.
- Neir, A.O. (1950). A redetermination of the relative abundances of the isotopes of carbon, nitrogen, oxygen, argon and potassium. *Phys Rev* 77, 789-793

References

- Odin, G S , and 35 others, (1982) Interlaboratory standards for dating purposes. In *Numerical dating in Stratigraphy*, Wiley, Chichester, 123-149
- Pande, K., (1999) Present status of K-Ar and ^{40}Ar - ^{39}Ar data from the Himalaya *Gond Res. Group Mem.* 6, pp. 237-244.
- Parrish, R.R., and Tirrul, R (1989) U-Pb age of the Baltoro granite, northwest Himalaya, and implications for zircon inheritance and monazite U-Pb systematics. *Geology* 17, 1076-1079.
- Patriat, P., and Achache, J , (1984) India-Eurasia collision chronology has implications for Crustal shortening and driving mechanism of plates *Nature* 311, 615-621.
- Petterson, M.G , and Windley, B F. (1985) Rb-Sr dating of the Kohistan arc-batholith in the Trans-Himalaya of north Pakistan, and tectonic implications. *Earth and Planetary Science Letters* 74, 45-57.
- Petterson, M G and Windley, B F., (1991) Changing source regions of magmas and crustal growth in the Trans Himalayas: evidence from the chalt volcanics and Kohistan batholith, Kohistan, N. Pakistan *Earth Planet Sci. Lett* 102 326-341
- Pudsey, C.J. (1986) The northern suture, Pakistan: margin of a Cretaceous island arc, *Geol. Mag.* 123, 405-23
- Rai, H., (1982) Geological evidence against the Shyok Palaeo-suture, Ladakh Himalaya, *Nature* 297, 142-145.
- Rai, H , (1983) Geology of the Nubra valley and its significance on the evolution of the Ladakh Himalaya. In *Geology of Indus Suture Zone of Ladakh*, (eds. V C. Thakur and K K.Sharma) Wadia Institute of Himalayan Geology, Dehardun, 79-91.
- Ratschbacher, L., Frisch, W., Lui, G , and Chen, C , (1994) Distributed deformation in Southern and western Tibet during and after the India-Asia collision, *J.Geophys , Res* .99, 19, 817-19945.
- Ravi Shankar, Kumar, G and Saxena, S P., 1989. Stratigraphy and sedimentation in Himalaya: A reappraisal In *Geology and Tectonics of the Himalaya* (Eds. Ravi Shankar et al.) *Geol Surv. Ind. Spl Pub. No.* 26, 1-60.
- Raz, U., and Honneger, K. (1989) Magmatic and tectonic evolution of the Ladakh Block from field studies. *Tectonophysics* 161, 107-118.
- Renne, P.R., Swisher, C.C., Deino, A.L., Karner, D.B., Owens T.L., and DePaolo D.J.(1998) Intercalibration of standards, absolute ages and understanding in ^{40}Ar - ^{39}Ar dating *Chem. Geol.* 145, 117-152.
- Renne, P.R. (2000) K-Ar and ^{40}Ar - ^{39}Ar dating. Quaternary Geochronology Methods and Applications, *AGU reference shelf* 4, 77-98.
- Reuber, I, (1986) Geometry of accretion and oceanic thrusting of the Spongtag ophiolite, Ladakh Himalaya. *Nature* 321, 592-596.

References

- Reynolds, P H , Brookfield, M E , Halifex, G., McNutt , R.H , (1983) The age and nature of Mesozoic-Tertiary magmatism across the Indus Suture Zone, in Kashmir and Ladakh (NW India and Pakistan). *Geol. Rundschau* 72, 981-1004
- Richter, F M , Lovera, O M., Harrison, T M , and Copeland, P., (1991) Tibetan tectonics From $^{40}\text{Ar}/^{39}\text{Ar}$ analysis of a single K-feldspar sample. *Earth and Planet. Sci. Lett* 105, 266-278
- Richter, F.M., Rowley, D.B and DePaolo, D.J. (1992) Sr isotope evolution of seawater: the role of tectonics *Earth Planet. Sci. Lett.* 109, 11-23.
- Roddick, J.C., Cliff, R A., and Rex, D C (1980) The evolution of excess argon in alpine biotite-A $^{40}\text{Ar}/^{39}\text{Ar}$ analysis. *Earth. Planet. Sci. Lett.* 48, 185- 208.
- Rolland, Y., Pecher, A., and Picard., C, (2000) Middle Cretaceous back-arc formation and arc evolution along the Asian margin: Shyok Suture Zone in northern Ladakh (NW Himalaya) *Tectonophysics* 325, 145-173.
- Rowley, D B., (1996) Age of initiation of collision between India and Asia: A review of stratigraphic data. *Earth Planet. Sci. Lett.* 145, 1-13
- Ruddiman, W. F. and Kutzbach, J. E., (1991) Plateau uplift and climate change *Sci. Am* 264, 42-50
- Samson, S D. and Alexander Jr, E.C., (1987) Calibration of the interlaboratory ^{40}Ar - ^{39}Ar dating standard, MMHb-1 *Chemical Geology* 66, 576-591.
- Scharer,U., Copeland, P., Harrison, T.M., Searle, M.P., (1990) Age cooling history and origin of post-collisional leucogranites in the Karakoram batholith: A multi-system isotope study, N. Pakistan, *J. Geol* 98, 233-251.
- Searle, M.P. (1986) Structural evolution and sequence of thrusting in the High Himalyan, Tibetan-Tethys and Indus Suture zones of Zaskar and Ladakh, western Himalaya, *J. Struct. Geol.* 8, 923-36.
- Searle, M.P., Windley, B.F , Coward, M.P., Cooper, D J W., Rex, A.J , Rex, D ,Tingdong, L., Xuchang, X., Jan, M.Q., Thakur V., and Kumar, S. (1987) The closing of Tethys and the tectonics of the Himalayas. *Bull. Geol. Soc. Am.* 98, 335-67.
- Searle, M.P.,(1988) Reply. Structural evolution and sequence of thrusting in the High Himalyan, Tibetan-Tethys and Indus Suture zones of Zaskar and Ladakh, western Himalaya, *J. of Struct. Geol.* 8, 923-36
- Searle, M.P. (1996) Cooling history, erosion, exhumation, kinematics of the Himalaya-Karakoram-Tibet orogenic belt In *The Tectonic Evolution of Asia*, (eds. A. Yin and T.M Harrison) *Cambridge Univ. Press, New York*, 110-137.
- Searle, M., Corfield, R I., Stephenson, B., McCarron, J.(1997) Structure of the North Indian continental margin in the Ladakh-Zaskar Himalayas Implications for the timing of obduction of the Spongtag ophiolite, India-Asia collision and deformation events in the Himalaya. *Geol. Mag.* 134, 297-316
- Searle, M P., Weinberg, R.F , and Dunlap, W.J. (1998) Transpressional tectonics along the Karakoram Fault Zone, northern Ladakh. In *Continental transpression and*

References

- transensional tectonics*, eds. R.E. Holdsworth and R.A. Strachan, Geol. Soc. Lond. Spec. Pub. 135, 107-326.
- Searle, M.P., Khan, M.A., Fraser, J.E., Gough, S.J., Jan M.Q., (1999) The tectonic evolution of the Kohistan-Karakoram collision belt along the Karakoram Highway transect, north Pakistan. *Tectonics* 18, 929-949.
- Sharma, K.K., and Gupta, K.R., (1978) Some observations on the geology of Indus and Shyok valleys between Leh and Panamik, District Ladakh, Jammu and Kashmir, India. *Recent researches in geology* 7, 133-143.
- Sharma, K.K., and Choubey, V., M. (1983) Petrology, geochemistry and geochronology of the southern margin of the Ladakh batholith between Upshi and Chumathang. In: *Geology of the Indus Suture Zone of Ladakh* (eds. Thakur, V.,C., Sharma, K.K.) 41-60.
- Sharma, K.K. (1987) Crustal growth and two-stage India-Eurasia collision in Ladakh. *Tectonophysics* 134, 17-28.
- Sharma, K.K. (1990) Petrology, Geochemistry and Geochronology of the Ladakh Batholith and its role in the evolution of Ladakh magmatic arc. In: *Geology and Geodynamic Evolution of the Himalayan Collision Zone* (Ed. Sharma, K.K.), *Physics and Chemistry of the Earth* 17(2), 173-193.
- Sharma, K.K. (1991) Petrochemistry and Tectonic environment of Dras, Shyok, Khardung and Chushul volcanics of Indus Suture Zone, Ladakh: A comparative study. *Jour. Geol. Soc. Ind.* 133-148.
- Sinha, A.K., and Upadhyay, R. (1993) Mesozoic Neo-Tethyan pre-orogenic deep marine sediments along Indus-Yarlung Suture, Himalaya, *Terra Nova* 5(2), 461-473.
- Srinivasan, N. (1987), Basu, A.R., Kyser, T.K. (1987) Tectonic inferences from oxygen isotopes in volcano-plutonic complexes of the India-Asia collision zone, NW India. *Tectonics* 6, 261-273.
- Snee, L.W., Sutter, J.F., and Kelly, W.C. (1988) Thermochronology of economic mineral deposits: Dating the stages of mineralization at Panasqueira, Portugal, by high-precision ^{40}Ar - ^{39}Ar age spectrum techniques on muscovite. *Econ. Geol.* 83, 335-354.
- Steiger, R.H. and Jager, E. (1977) Subcommittee on geochronology: Convention on the use of Decay constants in geo- and cosmochronology. *Earth Planet. Sci. Lett.* 36, 359-362.
- Stoener, R.W., Schaeffer, O.A., and Katcoff, S. (1965). Half-lives of argon-37, argon-39, and argon-42, *Science* 148, 1325-1328.
- Tahirkheli, R.A.K. and Jan, M.Q. (1979) Geology of Kohistan, Karakoram Highway, northern Pakistan. *Univ. Pesh. Geol. Bull. Spec. Issue* 11, 1-30
- Tapponier, P., Peltzer, G., and Armijo, R. (1975) On the mechanics of the collision between India and Asia. In *Collision Tectonics*, Geol. Soc. Spec. Pub. 19, 115-157.
- Tapponier, P., Peltzer, G., Le Dain, A.Y., Armijo, R., and Cobbold, P., (1982). Propagating extrusion tectonics in Asia: new insights from simple experiments with plasticine. *Geology* 10, 611- 616.

References

- Tapponier, P., Peltzer, G., and Armijo, R., (1986) On the mechanics of the collision between India and Asia. In *collision Tectonics* (eds. M.P. Coward and A.C. Ries.) *Geological Society of London Special Bulletin* 19, 115-1157.
- Thakur, V.C., (1981) Regional framework and geodynamic evolution of the Indus-Tsangpo suture zone in the Ladakh Himalaya *Trans. Roy. Soc. Edin: Earth Sci.*, 72, 89-97.
- Thakur, V.C., and Bagati, T.N. (1983). Indus Formation. an arc- trench gap sediments. In *Geology of Indus Suture Zone of Ladakh*, (eds V.C. Thakur and K.K. Sharma) Wadia Institute of Himalayan Geology, Dehradun, 9-19
- Thakur, V.C., and Bhatt M.I. (1983) Interpretation of Tectonic Environment of Nidar Ophiolite: A Geochemical approach. In: *Geology of Indus Suture Zone of Ladakh* (eds. Sharma, K.K., Thakur, V.C) 21-31
- Thakur, V.C., and Misra, D.K., (1983) Ophiolitic mélanges in the Indus suture zone: lithological descriptions and structural features. In *Geology of Indus Suture Zone of Ladakh*, (eds. V.C. Thakur and K.K. Sharma), Wadia Institute of Himalayan Geology, Dehradun. 79-91.
- Thakur, V.C. and Misra, D.K. (1984) Tectonic framework of the Indus and Shyok suture zones in eastern Ladakh (N-W Himalaya). *Tectonophysics* 101, 207-220.
- Treloar, P.J., Rex, D.C., Guise, P.G., Coward, M.P., Searle, M.P., Windley, B.F., Petterson, M.G., Jan, M.Q., Luff, I.W., (1989) K/Ar and Ar/Ar geochronology of the Himalayan Collision in NW Pakistan: constraints on the timing of suturing, deformation, metamorphism and uplift. *Tectonics* 8, 881-909
- Treloar, P.J., Petterson, M.G., Jan, Q.M., Sullivan M.A., (1996) A re-evaluation of the Stratigraphy and evolution of the Kohistan arc sequence, Pakistan Himalaya: Implication for magmatic and tectonic arc building processes. *J. Geol. Soc. London* 153, 681-693
- Trivedi, J.R., Gopalan, K., and Valdiya, K.S. (1984) Rb-Sr ages of granitic rocks within the lesser Himalayan nappes, Kumaun Himalaya *Jou. Geol. Soc. Ind.* 35, 641-654.
- Turner, G., Miller, J.A., and Gastrey, R.L. (1966) The thermal history of the Bruderheim meteorite *Earth Planet. Sci. Lett.* 12, 19-35.
- Turner, G. (1971a). Argon 40-argon 39 dating: The optimization of irradiation parameters *Earth Planet. Sci. Lett.* 10, 227-234.
- Turner, G. (1971b) $^{40}\text{Ar}/^{39}\text{Ar}$ ages from the lunar maria *Earth Planet. Sci. Lett.* 14, 169-175.
- Upadhyay, R., Sinha, A.K., Chandra, R., and Rai, H. (1999) Tectonic and magmatic evolution of the eastern Karakoram, India. *Geodyn. Acta* 12, 341- 58.
- Valdiya, K.S. (1976) Himalayan transverse faults and folds and their parallelism with subsurface structures of north Indian plains. *Tectonophysics* 32, 353-386
- Valdiya, K.S. (1984) Aspects of Tectonics: Focus on southcentral Asia. *Tata McGrawHill, New Delhi*.
- Valdiya, K.S. (1998) *The Dynamic Himalaya*. University Press, Hyderabad, India

References

- Venkatesan, T.R., Pande, K. and Gopalan, K. (1986) ^{40}Ar - ^{39}Ar dating of Deccan basalts. *Jour. Geol. Soc. India* 27, 102-109
- Venkatesan, T.R., Pande, K., Gopalan, K., (1993) Did Deccan volcanism pre-date the Cretaceous/Tertiary transition? *Earth and Planet. Sci. Lett.* 119, 181-189.
- Venkatesan, T.R., Pande, K., Sharma, K.K., and Chawla, H.S. (1994). Ar-Ar chronology of the Ladakh collision zone, north west Himalaya. (Abst.) *Int. Con. Geochronology, Cosmochronology and Isotope Geology*, Berkeley, 338
- Virdi, N.S. (1987) Northern margin of the Indian Plate-some litho-tectonic constraints. *Tectonophysics* 134, 29-38.
- Wadia, D.N., (1937) The Cretaceous volcanic series of Astor-Deosai, Kashmir and its intrusives. *Geol. Surv. Ind. Records* 72, 151-161
- Weinberg, R.F. and Dunlap, W.J., (2000) Growth and Deformation of the Ladakh Batholith, Northwest Himalayas: Implications for timing of continental collision and origin of calc-alkaline batholith. *J. Geol.* 108, 303-320.
- Wendt, I. and Carl, C. (1991) The statistical distribution of the mean square weighted deviation. *Chem. Geol.* 86, (275-285)
- Wijbrans, J.R. (1985) Geochronology of metamorphic terrains by ^{40}Ar - ^{39}Ar age spectrum method. *Ph.D. diss. Australian National Univ.* Canberra.
- Wittlinger, G., Tapponier, P., Poupinet, G., Mei, J., Danian, S., Herquel, G., Masson, F. (1998). Tomographic evidence for localized shear along the Altyn Tagh fault. *Science* 288, 74-76.
- Wyllie, P.J., (1984) Constraints imposed by experimental petrology on possible and impossible magma sources and products. *Philosophical Transactions of Royal Society of London.* A310, 439-456.
- Yin, A., Harrison, T.M., (2000) Geologic evolution of the Himalayan-Tibetan orogen *Annu. Rev. Earth Planet. Sci.* 28, 211-80.
- York, D. (1966) Least-squares fitting of a straight line. *Can. J. Phys.* 44, 1079-1086.
- York, D. (1969) Least squares fitting of straight line with correlated errors. *Earth Planet. Sci. Lett.* 5, 320-324.
- York, D., Hall, C.M., Yanase, Y., Hanes, J.A., and Kenyon, W.J. (1981) ^{40}Ar - ^{39}Ar dating of terrestrial minerals with a continuous laser. *Geophys. Res. Lett.* 8, 1136-1138.
- Zeitler, P.K., (1985) Cooling history of NW Himalaya, Pakistan. *Tectonics* 4, 127-51.