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History of Glacier Science

Researching the past of Central Asian glaciers to meet present challenges

Richard Finsterwalder, scan from glass plate of Soviet-German Expedition to the Fedchenko Glacier in 1928
(courtesy to Dr. Christoph Mayer)

The History of Glacier Science project examines the history of glaciers and glaciology in Central Asia. It examines how scientists produced glaciological knowledge through expeditions and on-site research stations The Vanchyakh Glacier on the image above is not only one of the largest glaciers in the world, but also was crucial for Soviet glaciological observations in Central Asia since the 1920s. These observations continue to inform ongoing research on mountain glaciers and effects of climate change today, as the Vanchyakh feeds the Amu Darya, Central Asia's biggest river and main source for irrigated agriculture.

The first scientific observations of the Vanchyakh Glacier resulted from an Imperial Russian expedition in 1878 led by V.F. Oshanin, who named the glacier Fedchenko. A joint Soviet-German expedition first mapped the glacier in 1928 and subsequent Soviet expeditions continued glaciological, hydrological and meteorological research resulting in the building of a hydrometeorological station at the Vanchyakh Glacier (4169 m) in 1933. The station was operational for almost 60 years, but abandoned in 1992 due to the Tajikistani civil war. The establishment of the Vanchyakh station marked an important shift in the modalities of Soviet glaciological observation in the Pamir: from research expeditions to continuous on-site measurements. However, maintenance and provision of the high-altitude Vanchyakh research stations was a huge logistical operation, involving the transport of persons, instruments and supplies first by horses and later by helicopter.

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