图书基本信息

书名：<<中国冰川气候与环境变化研究文集>>

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内容概要

These collectanea include 59 articles of my English works from 1964 to 2007. The first article, Pro fessor Zhu Kezhen Opening up a Path for Research on Climatic Change in China , was writ-ten in Prof. Zhu- s honour in his twenty-year Yahrzeit, to commemorate his contribution as a dis-tinguished leader to the development of Chinese science and education in the 20th century. With passion, democracy and innovative spirit, he promoted scientific researches and higher educationsin China, and hence enjoyed a high prestige among Chinese intellectuals. His research fieldsranged from meteorology and geography to natural science history, in particular , historical climat-ic change, on which he had written eight articles. His last and most prominent paper, entitled Preliminary Study on Climatic Change during Last Five Thous and Years /n China , opened up the path for research on climate change and induced many scientists thereafter to engage in this field.

书籍目录

章节摘录

Abstract-The Karakoram Highway linking two countries, China and Pakistan, passes through the terminus of the well-known Batura Glacier in the northwest of the Karakoram Mountains.The advance and recession of the glacier and the migration of the melt water channel have a great influence upon the high way.From 1974 to 1975, by using terrestrial stereophotogrammetry, the Glacier Investigation Group of China succeeded in making a survey of the drainage area of the Batura Glacier and drawing a1：50 000 topographic map.The Batura Muztagh, the highest peak in the area, is 7795 m a.s.l.Running from WNW to ESE, the Batura Glacier is 59.2 km long and has an area of 285 km2.The snowline there ranges from 4 700 to 5 300 m a.s.l.The firnarea （144 km2） is a bit larger than the ablation area （141 km2）.During the period of Neoglaciation, the glacier advanced to a place 2.5km down ward from the present-day glacial terminus.Two hundred years ago and during the period of1885-1925 the glacier advanced twice to the bed of the Hunza River.From the thirties to the sixties of the present century, the glacier receded and the large ice cliff on the main flow line withdrew to a place 800 m away from the Hunza River.But in 1975, the position of ice cliff advanced 100 m, as compared with that in 1966.The ice surface near it rose obviously, 15 m on the average.We carefully measured the ice velocity, ablation and thickness within the limits of 20 km in the lower reaches of the glacier.The maximum ice velocity was 517.5 m a-l.At Profiles III and IX there appeared an anomalous phenomenon： Namely, the ice velocity in the lower reaches was higher than that in the up perones.At the ice cliff of the glacial terminus it remained 30-40 m a-l.By using a gravimeter, we found that the maximum ice thickness was 432 m, and the mean one at Profile II near the glacial terminus was 85 m.By setting up stakes, we found that the maximum ablation rate of the exposed ice was18.41 m a-l.But the ice surface was covered with thick debris, and the mean ablation rate decreased to 4.84 ma-l.All melt water flowed into subglacial channels and drained out from ice caverns at the glacial terminus.The maximum volume of discharge was 417 m3 s-i （on August 18, 1975）, and the minimum, 1.4 m3 s-i （in March 1975）.The drainage ice caverns were for years below the ice cliff, but migrated suddenly to the southern side of the glacier in the summer of 1973.Our measurement showed that the glacier's ice input at Profile III was greater than its ablation rate, resulting in its continuous advance.But, from Profile III upward to Profile XI the situation was reversed, resulting in adeficit state.According to our forecast, the glacier will keep on advancing 180-240 m until it reachesa place about 300 m away from the highway.Starting from the 1990s, the glacier will once again be onthe decline.The new meltwater channels formed in 1973 will remain stable for a considerable period, maybe up to the beginning of the next century. ……

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