

SUMMARY

Ice core, 21.5-meter length, has been recovered on the Gregoriev Ice Cap (41.979° N; 77.916° E; 4625 m a.s.l.) in the Tien Shan, Central Asia in 2001. Temperatures were measured in the borehole and ranged from 0°C at 4 meters depth to -2.5°C at 8 m, and -1.8°C at 21 meters depth. They have increased ~1°C from 1990. Detailed stratigraphic records for the top sections of the 1990 and 2001 cores indicate that 3.8 ± 0.1 m of snow/firn accumulated in the 11 years between field seasons. Mean annual accumulation rate derived from this comparison is 0.35 m in ice equivalent (i.e.) (260 mm w.e.) for the period from 1990 to 2001 and 0.42 m i.e. (320 mm w.e.) for 1963–1990. This regional warming marked in ice-core and borehole temperatures data is consistent with increasing of mean annual surface air temperature and decreasing of annual precipitation at the meteorological station Tien Shan (elevation 3614 m). Equilibrium line altitude at the Gregoriev Ice Cap was in 2001 at 4320 ± 30 m.