properties in the classical way, and we have now decided to make use of the Swiss conical borer as
our main apparatus in these mountain stations, but to modify it to remove some of its disadvan-
tages. We have adapted it both for station and field measurements, and have constructed a more
easily transportable type of rammsonde, which, since it has an enlarged borer point, eliminates
the distorting effect of the friction of snow on the stem.

Our method of making tests and of calculating and graphically recording the penetration
resistance is much the same as with the Swiss conical borer. Apart from the rammsonde tests, our
avalanche stations make regular measurements of the depth and structure of the snow cover,
humidity, temperature and density of the snow, air temperature (using a thermograph), wind
speed and direction, type and quantity of precipitation, duration of sunshine, etc. These data are
all recorded on a form which serves both for determining the immediate avalanche situation and
also as a documentary record for future research (Fig. 4, p. 75).

The avalanche danger is determined by comparing the “Daily Measurement Survey” with
typical data on the structure and penetration resistance of the snow cover in known avalanche
situations. If a distinct similarity is found, the avalanche station at once publishes a warning and
forbids entry to those slopes on which avalanches might occur. If there is only an approximate
similarity, the station measurements are extended and checked by rammsonde tests at safe places
on slopes which might produce avalanches owing to their different meteorological situations such
as higher wind speeds and thicker, softer or harder layers of snow at the dangerous levels.

MS. received 12 November 1955

REFERENCES
1. Vrba, M., and Urbánek, B. Průběh metamorfozy, diagenese a teploty ve sněhové pokrývce [The course of
metamorphosis, diagenesis and temperature in snow cover]. Meteorologické Zprávy [Meteorological News], Ročník
2. Tushinskiy, G. K. Latiny—vozniknoveniya i zashchita ot nibkh [Avalanches—their origin and defence against them].
Moskva, Gosudarstvennye Izdatelstvo Geografichesky Literature, 1949.
3. Tushinskiy, G. K., Guskova, E. I., and Gubareva, V. D. Perekristallizatsiya snega i vozniknoveniya latini [Recrystal-
lization of snow and origin of avalanches]. Moskva, Izdatelstvo Moskovskogo Universiteta, 1953.
4. Oechslin, M. Schneetemperaturen, Schneekriechen und Schneeohasion. Schweizerische Zeitschrift für Forstwesen,
5. Klein, G. J. Canadian survey of physical characteristics of snow-covers. Geografiska Annaler, Arg. 31, Ht. 1–4,
1940, p. 128–24.
6. Vrba, M., and Urbánek, B. Zjistování lavinového nebezpečí [On the determination of avalanche danger]. Meteorolo-
agogické Zprávy [Meteorological News], Ročník 8, Cislo 5, 1955.

REVIEWS

LES APPLICATIONS DE L’EXPLOSION THERMONUCLEAIRE. Camille Rougeron.

Chapter 4: “La climatologie thermonucléaire”, is not without interest for glaciologists as regards
the peaceful uses of nuclear energy. The views expressed seem futuristic only to those who are
behind the times. The hydrogen bomb is a reality; it only needs to be tried in the attack on the
cryosphere instead of the biosphere!

A hydrogen bomb of 20 megatons, as also a superbomb of 60 megatons, could be used to melt
the cryosphere, so to speak, in order to use geothermal energy to ameliorate climates and make
the Volga and the St. Lawrence navigable, as also the Great Lakes. The subterranean explosion of
hydrogen bombs would give craters of enormous dimensions permitting the utilization of this
energy. Artificial gulf streams could be created, which could change regional climates and render
navigable the arctic seas. The author even envisages electric power stations constructed under the
Greenland and Antarctic Ice Sheets.

A. Bauer