The right-hand side of the barometer carries a pressure scale graduated in millibars; the vernier has a coarse adjustment by sliding and a fine adjustment by rack and pinion operated from the knurled knob seen just beneath the gimbal ring.

The left-hand side of the column carries a movable scale showing heights in feet. This scale is graduated according to the usual convention to be correct for all heights when the air pressure is 1013.2 mb. at the zero height and the air temperature is uniformly 50° F. For convenience of use in landing and in other operations the height scale may be adjusted by means of the knurled knob on the left of the column to place its zero opposite any desired pressure. This height scale is intended as a rough guide when quick readings are called for; for accurate estimates of height it is necessary to use the pressure readings in conjunction with temperature observations.

VARIABILITY OF TEMPERATURE IN VALLEYS AND ON MOUNTAIN TOPS.

By H. FICKER.

[Abstracted from *Meteorologische Zeitschrift*, Aug., 1921, pp. 243-244.]

A study covering five years of record for Munich, Peissenberg, and the Zugspitze,– a plain station, a peak rising abruptly from the plain, and an Alpine peak, respectively, reveals the following values for the daily variability of temperature:

Station.	Altitude.	Variability.				
		Winter.	Spring.	Summer.	Autumn.	Year.
	m.	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*
Munich	526	2.83	2.27	1.94	2.29	2.33
Peissenberg	994	2.84	2.72	2.72	2.32	2.65
Zugspitze	2,964	3.37	2.71	2.14	2.28	2.63

It will be seen that in the annual mean, the Peissenberg shows as great a variability as the Zugspitze, although usually variability increases with altitude. In lower layers the cold stagnant air clinging closely to the surface prevents the breaking through of warm foehn winds and hence the variability is not so great. The anomaly of the Peissenberg maximum in summer is difficult to explain, and it would be necessary to investigate a number of similarly located stations to arrive at the cause. In studying stations lying intermediate in altitude to these, there arise other difficulties in determining a law for the decrease of temperature with altitude on the surface.—*C. L. M.*

TEMPERATURE RÉGIME IN CAVERNS.[1]

By A. ROSCHKOTT.

[Abstract reprinted from *Science Abstracts*, Aug. 31, 1921, §1386, pp. 548-549.]

A critical and historical account of contributions to the above subject. The problem to which attention was first devoted was the observed persistence of ice in some caverns, even during the period when the outside temperature is above the freezing point. Many theories were advanced only to prove untenable. Real progress was not made until Crammer transferred attention to the régime of air temperature in caverns in relation to the form of the cavern (the persistence of ice in some cases then following as a corollary), and an account is given of the main results of his work and of the later mathematical work of Bock. Caverns are of two main types—(1) having only one entrance, (2) having two or more entrances. Further subdivisions of (1) is made according as the cavern (*a*) lies horizontally, (*b*) leads upward, (*c*) leads downward; and of (2), according as the entrances are (*a*) at the same level, (*b*) at different levels. Each type has its own characteristics, (1 *c*) being, for example, the "ice pockets" owing to the ease with which cold air may penetrate them when temperature is lower outside, in contrast with the stability of the cold air within, when the air outside is warm. Little has been written on the subject in meteorological literature, and the author has drawn on other sources. It is pointed out, however, that caverns provide laboratories in which many meteorological problems may be studied, *e. g.*, eddy diffusion, in the absence of radiation complications.—*M. A. G.*

[1] *Meteorologische Zeitschrift*, Feb., 1921, 38: 33-38.

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