cold springs may be regarded as probably deriving their supply from cold or snow-covered mountains. Certain exceptional cases, however, occur, where, owing to the subsidence of the cold winter air into caverns (*glacières*), ice is formed which is not wholly melted even though the summer temperature of the caves may be above freezing-point. Water issuing from these ice-caves is of course cold.[80] On the other hand, springs whose temperature is higher than the mean temperature of the places at which they emerge must have been warmed by the internal heat of the earth. These are termed *Thermal Springs*.[81] The hottest springs are found in volcanic districts (see p. 402). But even at a great distance from any active volcano, springs rise with a temperature of 120° Fahr. (which is that of the Bath springs) or even more. These have probably ascended from a great depth. If we could assume a progressive increase of 1° Fahr. of subterranean heat for every 60 feet of descent, the water at 120°, issuing at a locality whose ordinary temperature is 50°, should have been down at least 4200 feet below the surface. But from what has been already stated (p. 95) regarding the irregular stratification of temperature within the earth's crust, such estimates of the probable depth of the sources of springs are not quite reliable. The source

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[80] A remarkable example of a glacière is that of Dobschau, in Hungary, of which an account, with a series of interesting drawings, was published in 1874 by Dr. J. A. Krenner, keeper of the national museum in Buda-Pesth. See also Murchison, Keyserling and De Verneuil, "Geology of Russia." Thury, Biblioth. Univ. Geneva, 1861. Browne, "Ice-Caves in France and Switzerland," 1865. Fifty-six of these caves are known in the Alps, some in the Jura, and many elsewhere.

[81] Studer points out that some springs which are thermal in high latitudes or at great elevations would be termed cold springs near the equator, and, consequently, that springs having a lower temperature than that of the inter-tropical zone, that is from C. 0° to 30° (Fahr. 32°–84°), should be called "relative," those which surpass that limit (C. 30°–100°) "absolute," and he gives a series illustrative of each group: "Physikalische Geographie," ii. (1847), p. 49. For volcanic thermal springs see ante, p. 402, and postea, p. 617.