(*b*) Lakes of the second order have bottom temperatures practically constant, but undergoing annual fluctuations.

(*c*) Lakes of the third order have bottom temperatures seldom very far from the surface temperatures.

This division into orders corresponds in a general way to the characters of lakes—*i.e.* size, bulk of water, depth—and to the climate of the surrounding country.

In Scotland lakes are sometimes divided into those which are covered with ice in winter, and those which never freeze over, the former being shallow lakes with a high annual range of temperature, and the latter deep lakes with a low annual range of temperature.

Classification by origin.

The most generally adopted method of classification of lakes in the past is one based on their origin, chiefly from the geological point of view :—

1. **Rock-Basins.**—These have been formed in several ways :—

(a) *By slow movements of the earth's crust*, during the formation of mountains ; the Lake of Geneva in Switzerland and the Lake of Annecy in France are due to the subsidence or warping of part of the Alps ; on the other hand, Lakes Stefanie, Rudolf, Albert Nyanza, Tanganyika, Leopold,[1] and Nyasa, in Africa, and the Dead Sea in Syria, are all believed to lie in a great rift or sunken valley.

(b) *By volcanic agencies.*—Crater-lakes formed on the sites of dormant volcanoes may be from a few yards to several miles in width, have generally a circular form, and are often without visible outlet. Excellent examples of such lakes are to be seen in the province of Rome (Italy), and in the central plateau of France, where M. Delebecque found the Lake of Issarlès 329 feet in depth. The most splendid crater-lake is found on the summit of the Cascade Range of Southern Oregon (U.S.A.). This lake is 2000 feet in depth.

(c) *By solution and subsidence due to subterranean channels and caves in limestone rocks.*—When the roofs of great limestone caves or underground lakes fall in, they produce at the surface what are called *limestone sinks*. Lakes similar to these are also found in regions abounding in rock-salt deposits ; the Jura Range offers many such lakes.

(d) *By glacier erosion.*—A. C. Ramsay has shown that innumerable lakes of the northern hemisphere do not lie in fissures produced by underground disturbances, nor in areas of subsidence, nor in synclinal folds of strata, but are the results of glacial erosion. Many flat alluvial plains above gorges in Switzerland, as well as in the Highlands of Scotland, were, without doubt, what Sir Archibald Geikie calls glen-lakes, or true rock-basins, which have been filled up by sand and mud brought into them by their tributary streams.

[1] Also called Rukwa, Hikwa, or Likwa.