

THE CHEMICAL COMPOSITION OF LAKE WATERS

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COMPARATIVELY few of the world's lake waters have been submitted to chemical examination. As a rule, only the more highly saline and abnormal waters are analysed for the interest of the thing. Analyses of ordinary waters are seldom undertaken except to test their potability, or with reference to their industrial application; but nearly all potability analyses, and many industrial analyses, are incomplete and of little use to the limnologist. On the whole, however, a fair number of full analyses of lake and river waters have by now been accumulated. Sufficient data being thus at hand, it may here be expedient to review briefly what is known, from the chemical standpoint, about the waters of inland lakes.

In discussing the chemistry of lacustrine waters we have to distinguish sharply between two types of lakes, viz. those which discharge into an outflow, and those which form the terminus of a catchment area. The vast majority of lakes belong to the former type; they are filled with continuously renewed water, and act, as it were, as temporary reservoirs of the system of rivers flowing into them. As regards chemical composition, the water of such a lake will represent an average, or rather an integral, of the waters of its affluents; the additional matter brought into solution from the bed and sides of the lake itself is of vanishing importance, because the area of land acted upon is small (as compared with river conditions) in proportion to the bulk of water, and because there is little or no mechanical erosion in a lake, except within the sphere of wave-action around the shore-line. There is thus no difference in principle between lake water and river water, provided the lake be not a terminus. Ultimately the water of a given lake will depend, for its chemical composition, on the nature of the country traversed by the rivers which feed it.

At all points of its course, a river receives contributions of