

open outlet, but the waters escape by an underground passage and reappear above Vallorbes, whence they flow to the Lake of Neuchatel.

Lakes of Joux and Brenet together cover an area of $3\frac{1}{2}$ square miles, and lie at an elevation of 3307 feet above sea-level. The maximum depth is 112 feet, and the mean depth 59 feet.

Many small lakes in the Jura Mountains occupy troughs formed by downfolded strata, and the Lake of Joux is marked at its north-east end by a strong cross fault.¹

Lake of Neuchatel (or Neuenburger See) lies at an elevation of 1417 feet above sea-level, and covers an area of about 85 square miles. Its greatest depth is 505 feet, its mean depth 210 feet, and it is estimated to contain about 500,500 million cubic feet of water. It occupies a synclinal valley, as do also the Lakes of Brenet and Morat. It is surrounded by marshes, which used to cover about 50,000 acres, but a good deal of that area has now been drained. At one time the Lake of Neuchatel formed a single sheet of water with the Lake of Biemme, and extended from Orbe on the west to Soleure on the east. Guyot considers the Lake of Neuchatel the result of local depression.²

Lake of Biemme (or Bieler See) lies at an elevation of 1417 feet above sea-level, and covers an area of 17 square miles. It has a maximum depth of 249 feet, a mean depth of 92 feet, and its volume is estimated at about 43,800 million cubic feet.

Lake of Morat (or Murten See) lies about 1427 feet above sea-level, and covers an area of $10\frac{1}{2}$ square miles. Its maximum depth is 157 feet, its mean depth 72 feet, and it is estimated to contain about 21,200 million cubic feet of water. It drains into the Lake of Neuchatel by the River Broye.

The River Suhr drains the Lake of Sempach, and joins the Aar below Aarau. The valley it occupies is out of all proportion to the size of the present river, which has excavated its channel entirely in glacial deposits. Hence this valley and others of a similar description are attributed by Kaufmann³ and Gremaud⁴ entirely to glacial action. The glacier which came down the valley of the Suhr is supposed by Kaufmann to have been obstructed by the hill of Wohlen, and the pressure of the ice caused by this obstacle may account for the depression now occupied by the Lake of Sempach, which is dammed by the moraine.

Lake of Sempach lies about 1663 feet above sea-level, and covers an area of $5\frac{1}{2}$ square miles. It has a maximum depth of 285 feet,

¹ See Sheet XI., Swiss Geol. Commission.

² *Mém. Soc. Sci. Nat. Neuchâtel*, t. iii., No. 6, 1845.

³ *Beitr. z. geol. K. d. Schw.*, xi., 1872.

⁴ Gremaud, "Quelques données sur les vallées primitives et les vallées d'érosion dans le canton de Fribourg," *Bull. Soc. Fribourgeoise Sci. Nat.*, Ann. v.-viii. p. 25, 1888.