lacustrine features of this valley; and the last named geologist first gave what is now generally accepted as the true explanation of the lake’s existence, namely, that it was produced in the closing stage of the Glacial period by the dam of the continental ice-sheet at the time of its final melting away. As the border of the ice-sheet retreated northward along the Red River Valley, drainage from that area could not flow, as now, freely to the north through Lake Winnipeg and into the ocean at Hudson Bay, but was turned by the ice-barrier to the south across the lowest place on the watershed, which was found, as before noted, at Brown’s Valley, on the west boundary of Minnesota.

Detailed exploration of the shore lines and area of this lake was begun by the present writer for the Minnesota Geological Survey in the years 1879 to 1881. In subsequent years I was employed also in tracing the lake shores through North Dakota for the United States Geological Survey, and through southern Manitoba, to the distance of 100 miles north from the international boundary, for the Geological Survey of Canada. For the last named survey, also, Mr. J. B. Tyrrell extended the exploration of the shore lines, more or less completely, about 200 miles farther north, along the Riding and Duck mountains and the Porcupine and Pasquia hills, west of Lakes Manitoba and Winnipegosis, to the Saskatchewan River.

This glacial lake was named by the present writer in the eighth annual report of the Minnesota Geological Survey, for the year 1879, in honor of Louis Agassiz, the first prominent advocate of the theory of the formation of the drift by land ice. Its outflowing river, whose channel is now occupied by Lakes Traverse and Big Stone and Brown’s Valley, was also named by me, in a paper read before the American Association for the Advancement of Science, at its Minneapolis meeting in 1888, as the River Warren, in commemoration of General Warren’s admirable work in the United States Engineering Corps, in publishing maps and reports of the Minnesota and Mississippi River surveys. Descriptions of Lake Agassiz and the River Warren were somewhat fully given in the eighth and eleventh annual reports of the Minnesota Geological Survey, and in the first, second, and fourth volumes of its final report; and more complete descriptions and maps of the whole lake, in Minnesota, North Dakota, and Manitoba, were published in 1895 as Monograph XXV of the United States Geological Survey.

Several successive levels of Lake Agassiz are recorded by distinct and approximately parallel beaches of gravel and sand, due to the gradual lowering of the outlet by the erosion of the channel at Brown’s Valley, and these are named principally from stations on the Breckenridge and Wahpeton line of the Great Northern Railway in their descending order, the Herman, Norcross, Tintah, Campbell, and McCauleyville beaches, because they pass through or near these stations and towns. The highest, or Herman, beach is traced in Minnesota from the northern end of Lake Traverse eastward to Herman, and thence northward, passing a few miles east of Barnesville, through Muskoda, on the Northern Pacific Railway, and around the west and north sides of Maple Lake, which lies in Polk County, about twenty miles east-southeast of Crookston, beyond which it goes eastward to the south side of Red and Rainy lakes. In North Dakota the Herman shore lies about four miles west of Wheatland, on the Northern Pacific Railway, and the same distance west of Larimore on the Pacific line of the Great Northern Railway.

Leveling along the upper beach shows that Lake Agassiz, in its earliest and highest stage, was nearly 200 feet deep above Moorhead and Fargo, a little more than 300 feet deep above Grand Forks and Crookston; about 450 feet above Pembina, St. Vincent, and Emerson; and about 500 and 600 feet, re-