Chapter V

GLACIAL LAKE AGGASSIZ

It may be difficult for people today to believe that great glaciers once moved down from the north and that these great sheets of ice moved across the length of Minnesota and extended down into Iowa; that the great lobes of ice sheet as they planed off the surface of the land left great deposits of soil and rocks which formed terminal and lateral moraines which held back the water as the ice melted. The enormity of the ice sheet and the volume of water produced from the melting ice challenges the imagination as geologists unfold the history to us.

Mute evidence that a great ice sheet did move over Minnesota can still be seen today in the planed-off outcroppings of the original granite near Clementson, Minnesota, and the bald granite ridges in southern Ontario, Canada. Other cumulative evidence of the action of the ice sheet lobe in this area can be seen in the terminal and lateral moraines of the southern counties of the Red River Valley and the definite shore lines of the receding glacial lake which are apparent on both the Dakota and Minnesota sides of the Red River Valley.

A famed geologist, Warren Upham, did pioneer work in tracing the shore lines of the great glacial lake for the Minnesota Geological Survey and the United States Geologic Survey. The name Lake Agassiz was given this prehistoric glacial lake by Warren Upham in 1879 in the Eight Annual Report of the Minnesota Geological Survey. According to Upham, the first true explanation of the lakes’ existence was presented by a geologist professor of the university in 1872. Upham reports, “While the retreating ice sheet served as a dam to prevent water from the melting ice to flow northward, the overflow did go south through the Lake Traverse and Big Stone Lake area, through Brown’s Valley to cut out the channel of what is now known as the Minnesota River Valley.” This glacial river, which carved out the Minnesota River Valley, was named River Warren by Upham. Another famed geologist, who collaborated with and followed up the work of Warren Upham, was J. E. Todd. Todd, in Chapter V of the 1896-1898 Report of the Minnesota Geological Survey, Volume 4, gives an excellent report on the geologic history of Normand Polk counties.

In discussing the history of the glacial Lake Agassiz, Todd reports, “The area was probably under the sea as late as the Fort Pierre epoch of the Cretaceous. It is not unlikely that the Silurian rocks also may be encountered by deep borings. After the retreat of the sea in the Tertiary period, the drainage was very likely toward the north and east as at present. Toward the end of the Tertiary, the drainage toward the north very likely became less abrupt because of the continental elevations toward the north and east. So far as is yet known, no buried channels of the streams