route around the Falls near Louisville, which it lost when the ice extended to its southernmost limit. The Falls are evidence of uncompleted work in subsequent erosion along the valley.

It is held by some investigators of the drift, and prominently by Chamberlin, that the retreat, instead of ending along the line of the moraine above described, continued until North America had lost the chief part of its ice-sheet, and that this "First Glacial Epoch" was followed by a second advance, of which moraine B was the terminal moraine. This view is sustained on the ground that the erosion produced during the interval, the intercalation of forest-beds and stratified clays, and the weathering and oxidation of the lower tills would have required a very long period of time. It is, however, an important consideration in favor of the shorter retreat, that the beds eroded were, to a great extent, soft; that the amount of water discharged was very large; and that interstratified sand-beds and forest-beds are such as modern glaciers are now producing. The arguments and facts favoring the theory of two glacial epochs and an interglacial are presented by Chamberlin in his Report on the Geology of Wisconsin; also in the 3d and 7th Reports of the *U. S. Geol. Surv.*, and in later publications, in part of which Leverett is joint author; by G. M. Dawson in his Memoir on Rocky Mountain Geology in the *Trans. Roy. Soc. Canada*, vol. viii., 1890, etc. Upham, Hitchcock, Wright, and others favor the idea of a continuous succession of recessions and halts during the retreat.

In northeastern Iowa, according to McGee, the successive glacial deposits are: (1) the lower till, which is overlaid by stratified sands and clays (called locally gumbo); (2) a forest-bed, with unconformity beneath through erosion and decomposition; (3) an upper till of small extent, from ice that was of short duration; (4) the lœss, which contains some bowlders, and graduates at base into the till. These are supposed to be anterior to what is called by Chamberlin the Second Glacial Epoch. The lœss is stated to have been formed in an ice-bound lake, which he names Lake Hennepin, made by the meeting of two lobes of ice, advancing either side of the Driftless area. The lœss makes a fertile soil, which appears to be evidence that there was abundant vegetation in the waters in which it was deposited, and thus throws doubt over the presence of the ice. The depauperate condition of the shells shows only that the waters were cold; and their great numbers, that conditions of growth were still not very unfavorable.

The great distance of transportation of glacial drift over the Continental Interior in British America, and the remarkable uniformity in the drift deposits over the vast area — "250,000 square miles" — has led to the view that the region was submerged under fresh or salt waters, and that floating ice was the transporter. But the flow over such waters, whether tidal or not, would have been north and south, and not across the area; and there is no evidence of marine conditions. Moreover, if floating ice worked there, it was the agent to the south in the United States; and this is not in accordance with the facts there observed.

Land and freshwater shells and other fossils of the lœss of the Mississippi valley. — From Galena, Ill.: *Succinea avara, S. obliqua, Patula striatella; Vallonia pulchella, Limnophysa humilis, L. desidiosa, Pupa contracta, P. muscorum* (R. E. Call). — From Davenport, Ia.: *Succinea avara, S. obliqua, Helicina occulta, Pupa fallax, Helix striatella.* Also tusk and molars of *Elephas primigenius* (Pratt). — From Muscatine, Ia.: *Helix striatella, H. fulva, H. pulchella, H. lineata, H. Cuperi, Pupa Blandi, P. quarticaria, P. muscorum, P. simplex, Succinea avara, S. obliqua, Helicina occulta, Limnæa humilis, Unio ebenus, U. ligamentinus, U. rectus, Melantho subsolida, Margaritina confragosa.* Also teeth, bones, and antlers of *Cervus Muscatinensis* (Witter, in McGee's *Iowa*).

From Hickman, in Kentucky: *Conulus chersina, Hyalina arborea, Helicina orbiculata, H. profunda, Limnæa (Limnophysa) desidiosa, Mesodon profundus, M. albolabris, Macrocyclis concava, Patula alternata, P. perspectiva, P. solitaria, Stenotrema* (Helix)