

work of Mesozoic and Cænozoic time; but the whole length of that gorge, even up to the present site of the Falls—only about six miles—is far too little work for such a river as the Niagara to have performed in the million or more years which we allow for that time. I will, therefore, now make the statement that only a part of the water which came into the basin of Lake Erie (a mere river then) found its outlet by St. David's. There seems to have been, at one time, an outlet through the Cuyahoga River, whose bed at Cleveland is two hundred feet below its present bed, and perhaps for many ages, the whole stream was carried off in that direction to the Ohio. There seems to have been also, at some time, an outlet to the basin of Lake Ontario, from the mouth of Grand River of Canada. Possibly the drainage passed through one or the other of these channels during most of Mesozoic and Cænozoic time.

The recession of the Falls of St. Anthony has been studied by Professor N. H. Winchell. This, he maintains, is also a post-glacial erosion as far as Fort Snelling. From the study of old documents he ascertains that the rate of recession from 1680 to 1856 was about 5.15 feet a year. As the whole distance is eight miles, the time required is 8,202 years.

A thorough scientific survey of the Mississippi, by authority of the general government, was concluded some years ago by Messrs. Humphreys and Abbot. They calculated that 5,000 years had been required for the accumulation of the Mississippi Delta. This assumes, of course, uniformity in the rate of deposition, while it was probably more rapid during the rainy Champlain period; but, on the other hand, the interval expressed reaches from the *close* of the glacial reign, not from its "*acme*" as in the calculation on the Falls of St. Anthony.

Similarly the age of the Nile delta has been set down at 6,350 years.

A very ingenious calculation of the length of post-glacial time has been based by Dr. E. Andrews on the rate of bluff-erosion and terrace formation near Chicago. North of Chicago