

ice dams have been frequently thrown along lines beyond which the beaches have subsequently been traced. Thus Prof. Claypole* made ice dams in Ontario where open water, bounded by beaches, was afterwards found to prevail. At Adams Centre, Prof. Gilbert drew an ice dam for the Ontario basin, beyond which, however, the writer found that the old shore line extended, and this was later confirmed by Prof. Gilbert. Mr. Leverett made an ice dam at Cleveland, beyond which the writer has been informed by two observers that the beach extends, and Prof. Gilbert and Mr. Leverett described another glacial dam near Crittenden, N. Y., beyond which the beaches have been discovered by Prof. Fairchild. Another diagnosis of the glacial lakes is the occurrence of gravel floors over low divides, which are regarded as the outlets of them, and upon this feature alone many such lakes have been named. But the advocates of these glacial outlets have not explained how the terraces (at hundreds of feet above the drainage) upon the southern side of them are indistinguishable in character from those upon the northern side.† If these supposed outlets be evidence per se of glacial dams then the most perfect which the writer has ever seen may be found within 16° of the equator, at an altitude of less than 800 feet, suggesting that the Mexican gulf had a glacial dam, discharging into the Pacific ocean across the isthmus of Tehuantepec—a suggestion which no one would seriously consider. The writer has also presented the hydrostatic objections‡ to the impossible long continuance of some of the supposed dams, the location of which demands their drainage across ice itself, which would soon be penetrated by the warmer waters so as to reduce their level. By straightening out the deformation recorded in the deserted shore-lines, some of the beaches are shown to have undoubtedly been formed at sea-level.§ While recent surveys report the discovery of additional glacial lakes, or the splitting up of those

*Report of the meeting Am. Assoc. Adv. Sci. Science, Sept., 1895. p. 222.

†Channels over divides not evidence per se of glacial dams. J. W. Spencer. Bull. Geol. Soc. Am., vol. III, 1891, p. 491.

‡Post-Pliocene continental subsidence versus ice-dams, by J. W. Spencer. Bull. Geol. Soc. Am., vol. II, pp. 465-476, 1890.

§The Iroquois Beach, etc., cited before; and, Deformation of the Iroquois Beach, cited elsewhere.