

plates can entirely overcome without a sacrifice of other good qualities.

The great point in favor of collodion is that it seems to lend itself peculiarly well to the production of color-sensitive plates, and this, coupled with the uniformity of the material that can by proper means be secured and the clearness with which it works, leads me to anticipate that it will eventually rival gelatine for fine, delicate work, and I believe it will come to be highly favored in astronomical work and spectrographic work.

Washington, D.C., June 10.

GLACIAL PHENOMENA IN NORTH-EASTERN NEW YORK.

BY D. S. KELLOGG.

CLINTON COUNTY, the very north-eastern county of New York, offers an interesting field for studying glacial phenomena. The rock striæ generally are nearly north and south, though in one place at least they are almost east and west. In many places the outcropping ledges are oval mounds with their longest diameters in the general direction of the supposed motion of the glacier.

There is an abundance of marine shells everywhere in the lower lands. These may be near the present surface and turned over by the plow in such quantities as to make the fields white, or they may be found from 5 to 10 feet under ground. A stratum 2 inches thick underlies much of Plattsburgh village at a depth of 5 or more feet. These are *Saxicava arctica* and *Macoma greenlandica*. Others undoubtedly are present in this county. The highest I have yet found are 346 feet above tide-water.

In Beekmantown ends a tortuous kame, over 50 feet high, which has been traced and mapped north into Chazy, 6 miles. Much of this is laid down upon clay of the former lake-bottom.

The lower slopes of Rand Hill and of Dannemora Mountain are covered with deposits of till, which wells of 50 feet do not go through. I have been over much of this surface for a distance of 20 miles north and south and of 6 miles east and west. There are scores of kame-like ridges from 5 to 70 feet high, generally running north and south, but sometimes in all directions. These ridges form a large number of swamps, varying in size from half a square mile down to a few rods. The bowlders and cobble-stones in these deposits are largely of sandstone, which crops out in immense surfaces in the northern part of the county, and probably lies underneath much of this till. At Cadyville in the Saranac valley, 10 miles from Lake Champlain, the glacier moved across the old valley, making by its deposits a dam 2 miles wide and upwards of 100 feet high. This dam made a lake 8 or 10 miles long, 2 miles wide, and in places 100 feet deep. This lake has been entirely emptied out. The Saranac River has not only cut a channel through this till dam, but has also made a gorge 60 or more feet deep in the sandstone that underlay the lower half-mile of the dam. Probably the old buried channel is not far distant. What was once the bottom of a portion of this lake is now known as the "seven-mile run" in the Saranac River.

The Lake Champlain of the closing glacial period reached up to the lower border of this glacial dam, 500 feet higher than the present lake and 600 feet above the sea. When at its highest level a plateau was formed that extended 2 miles or more out in the lake. After a time the lowering of the lake by the erosion of its outlet left this plateau uncovered.

Then a second was formed, perhaps 250 feet lower than the first, spreading out several miles. A third lowering formed a third plateau, on which much of Plattsburgh village now stands, and which makes "The Plains," south. This third plateau in general is from 50 to 75 feet above the present lake, and, like the other two, is composed mostly of sand. Nearly all the time while these plateaus were forming, the outlet of Champlain was south into the Hudson.

A dam of 60 feet now in the Richelieu would throw the Champlain water into the Hudson, unless there is a lower valley out from the Missisquoi Bay. By erosion of the valley from Whitehall to Fort Edward the lake was lowered until the ice had retreated enough to allow the Richelieu to be made. I have not studied the conditions between South Bay and the Hudson. For a time this may have been one of the southern outlets of Champlain. The Champlain Canal at Fort Edward receives its water from a feeder which taps the Hudson at Glen's Falls. This water from the Hudson flows north now from Fort Edward in the canal, and empties into Lake Champlain.

Did the pre-glacial upper Hudson flow through into the old river bed which is now Lake Champlain and thence into the St. Lawrence valley?

Plattsburgh, New York, June 13.

NOTES AND NEWS.

IN a circular, "American Reports upon Anatomical Nomenclature," issued last winter by Professor Wilder, as Secretary of the Committee of the Association of American Anatomists, in the third paragraph of the third page, the Chairman of the Committee of the Anatomische Gesellschaft should be Professor A. von Kölliker, and the chairman of the American division (appointed in 1891 by the American Association for the Advancement of Science) of the International Committee on Biological Nomenclature should be Professor G. L. Goodale. Professor Wilder desires to express his regret for the errors, due in the one case to his own misapprehension and in the other to a clerical mistake.

—Professor Bardeleben has recently delivered an address in Berlin on the modern bullet (*British Medical Journal*, May 21). The modern rifle sends a bullet with a narrow cylindrical form and pointed apex, which at a distance of 1,000 metres has the power to pass through several human bodies or to disable two horses. Its line of flight differs but slightly from the line of sight. It has an inner core of lead enclosed in a casing of steel which prevents the lead from becoming deformed and spreading at the point of contact. This change is of much interest for military surgery. The bullet is lighter than any of the lead bullets, but is sent with a greater velocity. On account of its velocity and its small surface of contact, it merely punches out a hole causing very little commotion of the neighboring parts. It is more likely to cause fatal hæmorrhage than the old bullet. If the new bullet wounds at all it will have sufficient power to pass through any part of the body. Colonel Boonen-Rivera, in his report on the civil war in Chili, the only war in which Mannlicher rifles have been used, says that the number of dead on the battlefield was four times larger than that of the wounded. The effect of these bullets on bone has been made the subject of a series of experiments. Up to a distance of 400 metres the bone is invariably shattered, and at greater distances either clean perforations or oblique fractures result. In the next war the ratio of recoveries of those who can be removed still living from the field will be larger than formerly. The new projectile is by no means so humane as it is sometimes called, since within similar periods of time and under equal conditions it kills and wounds more men than the old bullet. But the wounds which it causes, if they are not of a directly fatal nature, open to the surgeon, as a general rule, a far more promising field for exercising his skill and activity than those which were caused by the old bullet.