For the Scientific American.

Obituary of Simeon L. Spofford, Esq.

Simeon L. Spafford, the subject of these remarks, died at Philadelphia on Sunday morning, 28th January. At the time of his death he was the able and efficient superintendent of the Philadelphia, Wilmington, and Baltimore Railroad. The prominent position the deceased has occupied in connection with the railroad interests of our country, renders it proper that something more than a passing notice should be given of his departure from among the living.

Mr. Spafford commenced the study of civil engineering in the office of Samuel M. Felton, Esq., then of Charlestown, Mass., now President of the Philadelphia, Wilmington, and Baltimore Railroad. His early career was distinguished by close application to study, and a disposition to excel in whatever he undertook. With a strong love for the study he was pursuing, it is no matter of surprise that he soon stood at the head of a very large class of young men, associated with him, and having the same profession in view.

After leaving the office of Mr. Felton he was employed in making surveys of and constructing several roads, amongst the most prominent of which may be mentioned the Vermont and Massachusetts, the Troy and Boston, the Alabama and Tennessee, and the Cincinnati, Hamilton, and Dayton. After the opening of this last-named road, he became its chief engineer, a position he occupied with great acceptance until called to occupy the position he held at the time of his death.

Mr. Spafford was the originator of several very useful inventions connected with the speed and safety of railroad traveling which have distinguished him as one of the first mechanics of the times. Amongst these may be mentioned a safety signal for drawbridges, now in use on all the bridges of the road of which he was Superintendent, also a safety switch, a truss for roofs, of great simplicity, cheapness, and strength, and a wooden bridge which dispenses with iron rods for trusses. At the time of his death he was employed in making a model of a bridge on this plan, with a view to constructing one across the Susquehanna at Havre de Grace, at which place the company have recently made the necessary surveys preparatory to erecting a bridge for the use of the road, purposing to dispense with the boat which has long been used at that point for the conveyance of passengers across the river.

Mr. Spafford was a mathematician of no ordinary powers of mind. He never encountered a problem that he did not thoroughly solve, and his services in this capacity were sometimes called into requisition by those who have reaped the reward of his labors, taking honors upon themselves that justly belonged to him.

The several inventions of which he was the originator are sufficient proofs of his mechanical ingenuity. Added to this was a quickness of perception, and a readiness to apply, that rendered his services specially valuable in cases of emergency. This was evinced in the recent destruction of the drawbridge at Grays Ferry across the Schuylkill. It was predicted and even announced that the bridge would be impassible for weeks, but through the ready efforts of Mr. Spafford, only two days elapsed before the trains were running again with their accustomed regularity. It was in this department of mechanism that he may be said to have excelled. In bridge masonry, and in the construction of bridges, he had no superior, and he has left many of these monuments of his mechanical ingenuity on the roads with which he was connected. Mr. Spafford was a useful citizen, a faithful officer, an affectionate husband, a kind father, a warm and sympathizing friend, indulgent even to a fault, and it is believed he had not an enemy in the world.

He was a leading spirit in whatever circle he moved. The common consent of his fellows assigned him the position of a leader, as a just reward due to his merits, without any effort on his part to reach that distinction. He was naturally a man of a modest and retiring disposition, and of strong domestic attachments.

Mr. Spafford was a native of Springfield, Vt., and died at the early age of thirty-five years. His remains have been temporarily deposited in Woodland Cemetery, on the banks of the Schuylkill, preparatory to their final removal to Northfield, Mass., the residence of the friends of his young and bereaved widow. His disease was the typhus fever in its most malignant form, and terminated his useful life after a brief illness of only fourteen days.

Many have lived on earth to the full measure of their "three score and ten," and have even gone down to the grave without leaving a single monument of their usefulness behind them. Not so with the subject of these brief remarks. His was a life of great activity and usefulness, and if "that life is longest which best answers life's great end," then may it in truth be said of our friend, that life's purposes in him were all fulfilled, and that he was ripe for immortality. F.

Notes on Newfoundland.

MESSRS. EDITORS—Probably some of your readers have never read a letter from this desolate shore. Science led me here, and I feel under obligations to send you at least an outline of my researches in this comparatively unknown region.

This Island is called Newfoundland by the Yankees, Newfoundland by Nova Scotians, and Newfoundland by the resident English. Strange ideas people have of it; some think it a barren rock; others a miserable heap of sand, or bar formed at the embouchure of the St. Lawrence valley. One person asserted there was not wood enough on the island to switch a cat; and another of like dimensions thought the great Bank of Newfoundland the *placer* of the codfishers. But circumnavigate the island within sight of its rocky shore, and you would imagine it the Acropolis of the world. Paddle up the river of *Exploits*, and glide down the mountain torrents, the *Humber* and the *Codroy*, dig into its lofty mountains, and traverse its long forests of fir trees, rivalling the pines of Oregon, and you will believe yourself in a continent of untold resources.

The extreme length of Newfoundland, from Cape Race to Cape Norman, is 5½°; breadth from Cape Spear to Cape Anguilla, 6° 51 miles; and circumference about 1000 miles. Its outlines are generally parallel to the strike of the rocks. The hills, valleys, lakes, and bays, run N. E. and S. S. W. There is evidence that the island is rising, corresponding to Greenland, which is sinking. The peninsula of Avalon is of a slate formation; the interior is mostly primitive, and the western part consists of secondary rocks of the carboniferous series. St. John's and Placentia are the principal emporiums. The former city has a fixed population of 10,000; at some seasons there is twice that number. The entrance to the harbor is very narrow but deep; on either side is a fortified hill 800 feet high. The system of trade here is very bad; half a dozen merchants constitute a chamber of commerce, and allow no prices current to be published. On a site overlooking the city and harbor, is being built a splendid cathedral, to cost £80,000. The stone for the pillars and front were transported from Dunleary, Ireland. The hight of the ceiling above the floor is sixty-five feet. The organ, presented by Dr. Mulloch, is the eleventh in size in the world, having fifty stops. Near by is a chalybeate spring, the sp. gr. of which (at 62° F.) is 1·000016. The city is lighted with gas, the materials of which come from Scotland. Seven newspapers are published, but no part of the Island seems to be very literary. For more than two centuries Newfoundland has been the codfish depot of nearly two hemispheres. Great Britain, France, and the United States have over 3000 craft engaged in this piscatory enterprise. The French alone have 250, and the right of fishing and drying nets on the northern and western shores, and in the Gulf of St. Lawrence, not within nine miles from any British coast. They have also as military stations St. Pierre and Minquilon, but no fortifications are allowed, nor more than fifty soldiers. The English erred in ceding to them the western coast, as it is the very best of the ground; but the Americans are fast driving both parties from the field by their superior skill. The French pay annually £2000 for bait. The kinds most in use for catching cod, are squid (cuttle-fish,) lance, herring, and clams. April is the month for seals (common and hooded;) they are caught in nets or knocked on the head. May is the time for herring, June for halibut (Plueronectidæ,) a fat, flat fish, having both eyes on the same side of the head, and the cod, the principal species of which is the Gadus Morrhua; July for salmon and trout; and September for mackerel. As might be supposed, everything smells, tastes, and feels fishy. Nearly all animals from the cow to the hen eat fish. The viscera are made into heaps for manure. Of the mammalia of the Island, some species are quite numerous, while others have scarcely a representative. The Carriboo or American Reindeer (Cervus elaphas) is sometimes found in herds of a thousand. It resembles the elk in form and the ox in size, and feeds on the deer-moss of the barrens; beavers, land otters, foxes of all colors, long-legged black bears, weasels, martens, minks, wolves, hares, small bats, large rats, and wild cats, are frequently met with. The bear here is very shy; but the same animal in Cape Breton, only 65 miles distant, attacks man and beast. Musquitoes, midges, and black flies are wofully plenty; but not a snake, frog, toad, or squirrel can be discovered. St. Patrick has evidently been here. Of birds, we find the sea-eagle, fishing, pigeon, gos, and sparrow hawks, numerous owls, crow, raven, grouse, eider-duck, goose, loon, skerron, cormorant, and curlew. The botany of some sections is very rich in new and rare varieties. In the marshes is a fruit like a strawberry, of a bright yellow when ripe, called bake-apple from its flavor; it makes a delicate preserve. It has been stated by British geologists that no fossils are to be found on the Island but the coniferæ of the coal measures; but I have seen a carboniferous limestone on the shore of this bay full of animal remains. The temperature rarely rises above 79°; in August it averages 54°. February is the coldest and most stormy month, July is the warmest, and withal the most disagreeable, for the flies are intolerable. Winter is the time to travel; for then the impassable "tucking bushes" or spruce hedges are covered with snow, forming vast plains, over which the Indian, with his snow shoes, will walk a hundred miles a day. Thunder and lightning are rare inland. South and south-west winds are the most dangerous, and quite prevalent, so much so that it is not every day that one can get out of this bay into the gulf. Indeed, sometimes vessels are detained six weeks before an easterly wind will clear them. Sandy Point, at the head of St. George's Bay, is a settlement of about a hundred families, mostly French, from Cape Breton. I think it is the best herring ground about the Island; cod are also caught to some extent. Some of the latter will weigh when ready for the market, over a quintal, and one was taken off Cape St. George, which, when dressed, filled a barrel. Halibut have been caught for ballast at the same place. The fish are exported chiefly to Halifax, via Sidney or Pictou, according to the wind. The Red Indians, the aborigines of the Island, were once a very powerful race, but they have been extinct over twenty years. They received their name from the custom of painting themselves with red marl, which abounds along the coast. They were driven out by the present incumbents, the Micmacs or Shannocs, who crossed over from Cape Breton, and resemble in many respects the Esquimaux of Labrador.

Politics seem to be based on religious distinctions. The government is vested in the Governor General, who receives £12,000 per annum, but gives the people very little law. There are only eight or nine constables in the whole Island. The one stationed at this place has jurisdiction over the western half, yet with an Indian guide, traveling is perfectly safe. And although society here is not the most agreeable, if any among your readers are fond ot the novel and the rare, they will make a profitable tour through the wilds of Newfoundland. J. O.

St. George's Bay, 1855.

(For the Scientific American.)

Overhead Stove Pipe in the School Room.

It is common in school-houses, to use considerable overhead pipe from the stove, to increase the means for the radiation of heat. But, in my opinion, heat thrown out, overhead, is of no advantage in making a room comfortable, and does much injury to the health, producing a dull, irritable feeling of the head, successive returns of sick headache, loss of appetite for food, and a gradual decline in strength of body and vigor of mind. The sympathy is such between the head and stomach, that very few persons can be any length of time, where heat is radiated directly upon the head, without the digestive organs being affected, and especially such as are predisposed to a dyspeptic habit. The feet may be kept warm, but the head must be cool, to enjoy health of body and vigor of mind. It is not uncommon for teachers and scholars to complain that their school labors wear upon their health; but it is not the study and teaching that impair it, rather these, properly conducted, in a well regulated room as to heating and ventilation, may become auxiliaries to preserve health.

In my own school room, the long reach of horizontal pipe overhead, I have had taken down and placed a short distance above the floor, extending from the floor to the perpendicular that goes up to the chimney. It has proved to add much to the comfort of the room; the oppressiveness that was before felt from the heated air, is now done away. Every schoolroom should be freed from overhead stove pipe, except what is required to reach vertically to the chimney.

A TEACHER.

Vernon Center, N. Y.

Hydrodynamics.

MESSRS. EDITORS—I do assert that the science of hydrodynamics is not understood, or if it is understood, will you lay before your readers the following interrogatories:

First, what rule is known that will give the upward pressure of a Parker water wheel, of all diameters needed under all falls in use in the United States, with all sizes of issues necessary, so that the wheel and shaft will have no more metal than is absolutely necessary to overcome this lifting force when running at maximum in a horizontal water wheel? Second, experience informs me that the water leaves the issue of a Parker water wheel in a line parallel with a secant, and the course or current of the water is changed into an acute angle of 45°, the circle of the outer side of the column of water being the base, square the radial measurement of the issue, its hypothenuse being the distance the water passes, while the wheel must run the length of the hypothenuse of the inclination of the bucket, (so called) radially, the periphery of the wheel being the base of the inclination of the bucket, when the wheel runs at maximum. The wheel runs one way and the water an opposite direction. How, or in what manner, is this brought to act?

The difference of the two velocities is as 17·76 feet is to 26·54 feet. These velocities are based on the best authority of men of science, by experiments.

These two questions are of great importance, particularly the former. Thirdly, will the same amount of upward pressure be in a wheel of the same dimensions, the vertical motion of the water being formed by a helical sluice, or merely with a cylinder?

An answer by any scientific gentleman is solicited, as the solutions are much needed.

JAMES SLOAN.

Sloans' Mills, Floyds Fork, Shelby Co., Ky., January 1855.

The electric conductibility of platinum is 2½ millions of times as great as that of a solution of the sulphate of copper, while the conducting power is only 0·0025 of the same.