

A New Port for London.

This new means of communication has been obtained by the Southeastern Railway Company, acquiring the line of the Hundred of Hoo Railway Company, who obtained their act two years ago. The new line leaves the North Kent system about three miles below Gravesend, and reaches the banks of the Medway at Port Victoria, as the new port has been called, a point nearly opposite to Queenborough in the deep-water channel of the river. The advantages claimed for the new line and the docks which it is intended shall form part of the completed scheme, are that it shall at once give facilities for loading and unloading the largest seagoing vessels, in any state of the tide, at a point within fifty minutes by rail of London, and without any of the delays which necessarily result from navigating the tortuous and crowded waterway of the Thames between Gravesend and the docks; with the additional prospect when the new pier is built of having the means of accommodating, for loading and unloading purposes, vessels in twenty-seven feet of water at low water in ordinary spring tides. The pier, which has already been completed, is four hundred and fifty feet in length by fifty feet wide, and has, close in, a depth of twenty-two feet at low water. The main pier, which will be commenced immediately, will be built in the stream about one hundred yards distant from the present structure, and will have a length of six hundred feet and a width of sixty feet. The trains will run directly on to the pier over lines laid on cylinders and latticed girders, and will discharge passengers and cargo directly into the vessels moored alongside. By this means much of the inconvenience to passengers and delay in the transit of merchandise, now existing not only in the port of London but elsewhere, will be avoided, and it is expected that the commercial advantages afforded by ocean steamers of the largest tonnage combined with rapid railway communication between London and all parts of the world will be attained. The company have secured some five hundred acres of ground in the neighborhood of the port, on which it is intended to construct docks capable of accommodating the largest ships afloat, and which will be further utilized in such other ways as may be necessary for the success of the undertaking. One great advantage of the scheme will be that, the railway now having communication with Woolwich Arsenal, a heavy train of military stores can be discharged on shipboard within a few hours of quitting Her Majesty's storehouses. The line and the existing pier have been constructed by Mr. Francis Brady, engineer of the South Eastern Company, under whose superintendence the entire works will be completed.

Alone.

The London *Lancet* relates a distressing case of suicide of a boy ten years old, who had been shut up in his bedroom as a punishment. The editor comments adversely on leaving children or young persons and the weakly or troubled in mind alone:

"The solitary state is abhorrent to the nature and mind of man. Whether the brain be immature in its development or morbid in its state, it is wrong in a scientific sense—that is, opposed to the laws and teachings of physiological science—to leave it alone. The possibility—we will even concede the probability—of a subsidence of excitement is not a sufficient set-off against the dangers of a self-destructive intellectual activity. The mind always works to its own injury when it works alone. Reflection, introspection, and self-examination are essentially abnormal processes. The proper action of mind is on the outer world, or on such conceptions of fact and object as may be readily corrected by present observation or experience. Abstract processes of thought are never safe for the young or the weakly and troubled in mind. Healthy activity, so far as these two conditions of mind are concerned, is directly relative. It is not good for man to be alone in any sense. We would therefore again protest against the recourse to solitary confinement as a punishment for children, and against 'seclusion' in any form for the unsound of mind. The two methods of treatment stand on the same footing, and they are both equally bad."

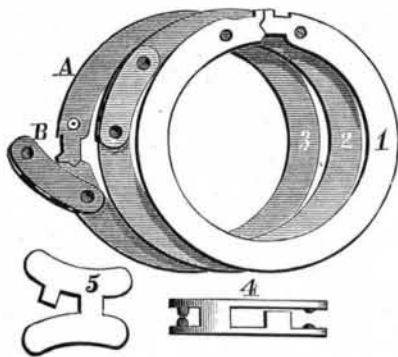
Hailstorms and Forests.

The Geneva correspondent of the London *Times* writes, under date September 1: "Hailstorms, as is well known, often play sad havoc in Switzerland as well as in other parts of Europe. They generally last only a few minutes, but in that time the crops of a whole district may be destroyed, trees stripped of their fruit and leaves, and even potatoes in the ground hacked to pieces. Birds are sometimes killed by the hundred, and a grape-vine touched by a hailstone is ruined for ever. Seven years ago there was a hailstorm in this canton, which in less than five minutes did damage estimated at a million of francs. In some districts there are mutual hail insurance societies, as in other countries there are mutual fire insurance societies. In these circumstances everything relating to the phenomena and causes of these visitations is studied with great interest, and papers on the subject read at the late meeting of the association of Swiss Geographical Societies, held this week at Geneva, by Herren Beaumont and Riniker, of Aargau, are attracting considerable attention in scientific circles. The utility of forests as a safeguard against avalanches and a hinderance to *tourments* and snow-drifts has often been pointed out, but it has never before been suggested that forests are a preservation against hailstorms. Such, however, is the opinion of Herr Riniker, who is chief forester of Canton Aargau. He says that

where there are forests there are no hailstorms, and in support of this theory he adduces a remarkable fact, for the accuracy of which he and many others can personally vouch. In the south of Aargau there is a little chain of mountains known as the Lindenberg. The Lindenberg are about twenty kilometers long, of an average height, above sea level, of some eight hundred feet, and completely covered with wood. About twenty years ago, the forest was divided in two places by wide gaps, with the consequence that the valleys at the foot of the mountains were soon afterward visited with frequent hailstorms. The hail-charged clouds were seen to traverse the gaps. In 1868 the wider of the open spaces were closed by a plantation of firs, and since 1871 no hailstorm has crossed the forest. In explanation of this phenomenon Herr Riniker suggests that, as hailclouds are saturated with positive electricity, and trees conduct from the earth negative electricity, the meeting of the two currents develops sufficient heat to prevent the complete congelation of the clouds and even to thaw the hailstones contained in them—for the clouds of this description pass very near the earth—and so convert the frozen particles into rain. If further observation should confirm the accuracy of Herr Riniker's conclusions in this regard, the importance of forests in countries where hailstorms are frequent will be greatly increased."

NEW KEY RING.

A novel and convenient key ring has recently been patented by Mr. Bryant H. Melendy, of Battle Creek, Mich. The ring, A, is made of steel or other suitable spring metal, the body being flat, and stamped out in the shape shown in Fig. 1 in the accompanying engraving, the ring being separated at the top, and having holes near each of its ends. The form of the ends permits the ring to be opened side-



MELENDY'S KEY RING.

wise, but prevents its opening edgewise. The clasp, B, of the ring is stamped out in the shape shown at Fig. 5, and when its sides are bent over the clasp is as shown in Fig. 4, the projections at the ends of the clasp fitting into the holes in the ends of the ring, the sides of the clasp springing sufficiently to allow the projections to pass into the holes. At Fig. 2 the ring is shown with clasp closed, and at Fig. 3 with the clasp opened.

White Water off the Maine Coast.

A curious belt of whitish water is reported off the coast of Maine. The white streak is about 30 miles in width, and extends from Monhegan in a northeasterly direction, 65 to 70 miles. The line of demarcation between the blue water and the white streak is plainly marked and as regular as a wall. The white water is semi-transparent, and mackerel seen beneath the surface have a reddish appearance. Fishermen say that mackerel passing from blue to white water are peculiarly affected by the change, becoming wild and rushing madly to and fro. They do not come to the surface, but their movements can be plainly seen under water. No explanation is given of the phenomena. Captain Stephen J. Martin, a veteran fisherman and an employe of the United States Fish Commission, says the same condition of things existed at about the same place in 1849, and that a similar phenomenon occurred on the southeastern part of Georges Bank in 1851, when from aloft sword fish could be seen sporting beneath the surface a quarter of a mile distant from the vessel.

The Ear Drum Ruptured by Diving.

Dr. H. A. Wilson, aural surgeon to St. Mary's Hospital, Philadelphia, reports two cases of rupture of the drum of the ear caused by diving. In both cases the hearing was seriously impaired, but the wound healed in the course of ten or fifteen days. Dr. Wilson says:

The mechanism of the rupture is not difficult of explanation. The water, forcibly impinging upon the column of air in the external auditory meatus, suddenly increased its pressure upon the membrane, while the normal pressure upon the inside remained unchanged. The eustachian tube permitted the air to escape from the middle ear, and thus it will be seen that there was no resistance given to the internal column of air. The internal force of resistance being suddenly exceeded by the external impinging force, the rupture ensued. To prevent rupture when diving, it is necessary that the pressure upon the membrana from without should be compensated for by an equal resisting pressure from within. To accomplish this, a full inspiration should be taken prior to diving; the mouth kept shut; and,

to prevent the escape of air by the nose, the posterior nares should be closed by elevating the soft palate. This is done almost involuntarily, and retains the inhaled air in the lungs, buccal and aural cavities, its compression being produced by the contractions of the chest and cheek muscles. The act of swallowing will force sufficient air through the eustachian tube into the middle ear to resist the pressure from without.

Holding the nose is not essential to the closure above referred to, but is a crude method of accomplishing the same result, and is resorted to by those who either have not sufficient control over the palatine muscles, or who do so through fear of swallowing the water.

Bathers should be careful to guard against accidents of this nature, which Dr. Wilson believes to be more common than is suspected.

After a rupture of the drum-head, if the parts do not unite, there will be left a permanent opening, and the inconvenience caused by air whistling through it is not the only thing to be dreaded. The delicate structure of the middle ear being directly exposed to the action and changes of the atmosphere, serious inflammatory changes are apt to take place, and purulent discharges and permanent impairment of hearing result.

The eye being exquisitely sensitive to the slightest touch takes cognizance of the presence of the most minute irritant, and prompts the patient to seek immediate relief. The absence of this sensibility in the ear is very frequently the cause of neglect to attend to it when injuries of this organ take place.

American Institute Fair.

The prevalence of heavy rain during the week preceding the opening of the American Institute Fair, September 27, prevented the installation of many of the promised exhibits; yet, in spite of the general state of unreadiness throughout the hall, there were abundant indications that the exhibition would prove one of the best. The exhibition will be open daily for ten weeks, from 8 A.M. to 10 P.M.

There will be a floral and horticultural exhibition from the 11th to the 14th of October, and on November 8 an exhibition of chrysanthemums.

Pneumonia an Infectious Disease.

That acute, lobar, croupous pneumonia is considered by some an infectious fever, with evident tendency to the lungs, or as now better expressed, a zymotic disease, caused by the inhalation of bacilli, which accumulate mostly in a lower lobe of one lung, we have often had occasion to note. The proofs of this statement accumulate daily.

Dr. Köhnhorn found that the disease had become endemic in one of the barracks at Wisel. Occasionally it broke out as a local epidemic. The regiment stationed there had suffered frequently from the disease. Not a year passed without many falling a victim to pneumonia. The regiment was then placed in other quarters, and no further case happened in this regiment. The barracks were torn down, the soil disinfected most thoroughly, as also all the building material. Since the regiment has been camping in these rebuilt barracks not a solitary case of pneumonia has made its appearance.—*Medical and Surgical Reporter*.

Ashbel Welch.

Ashbel Welch, President of the American Society of Engineers, died at his home at Lambertville, N. J., September 25, in his 71st year. Mr. Welch was born in Madison County, New York. His first employment as civil engineer, at the age of eighteen, was on the Lehigh Canal. He soon became prominent as a railway and canal constructor. For many years he was identified with the New Jersey Railroad system, and for fifteen years was president of the United New Jersey Railroad and Canal Company. From 1840 to 1845, he was engaged with Captain R. F. Stockton in the experiments which resulted in the building of the war steamer Princeton, the first screw steamer built in this country, and the pioneer naval vessel of the class.

At the time of his death, Mr. Welch was consulting engineer of the New York, West Shore, and Buffalo Railroad, now under construction.

Snow in Melbourne.

The first recorded snowfall in Melbourne occurred July 26. There are traditions of snow during the first decade of Victorian history, but the meteorological records of the colony do not confirm them. The late snowfall extended over the whole southeastern portion of the colony, and on the higher lands was quite heavy. At Kiandra, near the source of the Snowy River, the ground was covered with twenty inches of snow.

A Long Ditch.

The Colorado Coal and Iron Company are preparing to open an irrigating ditch from a point on the Arkansas River, $3\frac{1}{2}$ miles below Cañon City, across the tableland in a southeasterly direction to the St. Charles River, a distance of 76 miles. The ditch is to be 30 feet wide, carrying 5 feet of water.

A Great Northern Railroad train, with an 8-foot single driver outside cylinder engine, lately ran from Leeds to London, 186½ miles, in exactly 3 hours—62 miles an hour.