

**The Inventor of the Steam Plow.**

The death is announced of the Rev. William Fiskien, Presbyterian minister at Stamfordham, Northumberland, who was a septuagenarian, and had labored for thirty-seven years a few miles from Wylam, on the banks of the Tyne, where George Stephenson was born. Mr. Fiskien, who was a native of Perthshire, while engaged in his religious labors, diligently pursued mechanics, in which his brothers, Thomas and David—of whom Thomas is a survivor—were equally proficient. Mr. Fiskien was one of the two inventors of the steam plow, the other being his brother Thomas. Several years ago an important trial came off at Westminster upon the merits of the invention. The parties were the Messrs.

Fiskien and the Messrs. Fowler, the eminent implement makers at Leeds, and the finding of the jury was that the Presbyterian minister at Stamfordham and the schoolmaster at Stockton-upon-Tees were the original discoverers.

It is somewhat singular that the appliance which perfected the plan of the brothers, who had been working together at the steam plow, suggested itself to each of them independently and almost simultaneously. The late Mr. William Chartres, of Newcastle-upon-Tyne, the solicitor employed by the Fiskens, used to tell how the two brothers wrote to him on the same day about the final discovery, but that he received William's letter first.

Mr. Fiskien also invented a potato-sowing machine, an apparatus for heating churches, and the "steam tackle," which has helped to render the steam plow of so much practical use. Mr. Fiskien was much respected in Northumberland, in every part of which he was well known, both as an inventor and as an earnest minister of religion. His funeral was largely attended.

**The First Steam Fire Engine.**

A correspondent calls our attention to an article quoted in the *SCIENTIFIC AMERICAN* of January 26, page 49, from the *Chicago Herald*, under the above caption, in which the writer describes a visit to Mr. Greenwood's shop in Chicago in 1864, to see the new steam fire engine. Our correspondent thinks the article conveys the impression that this was the first steam fire engine made in the United States, which is incorrect, as he remembers to have seen steam fire engines on exhibition in the Crystal Palace, New York, in 1858.

Our correspondent is right; steam fire engines were shown at the Crystal Palace exhibition, and prior to that time trials of them had been made in this city. One of the early plans for a steam fire engine was illustrated in the *SCIENTIFIC AMERICAN*, Oct. 25, 1851.

We believe the first steam fire engine ever tried in this country was in New York. This was in 1842. It was a steamer built by the Matteawan Company for and on behalf of the insurance companies of this city, and was maintained by them for some time, doing good service at several fires whenever it was permitted to be used. But the firemen of New York were jealous of the new comer; they wrought themselves up to a bitter opposition; for if allowed to work it would distance all competitors, render hand engines of no account, and the occupation of "Mose" and the b'hoys would be gone. The insurance companies became satisfied that with hostility on the part of the firemen their losses would be increased rather than diminished, and the steamer was withdrawn.

**"Floating" Oysters.**

This is a term known among oyster packers as describing a way of making these bivalves look large and fat, although a close inspection will show that oysters so treated lack solidity and firmness, and are rather fluffy and bloated. The oysters are transferred from their native beds to tanks with different and a larger proportion of fresh water, and the operation became known as "floating" because, at first, the oysters were transferred from the vessels bringing them in to floats, which were towed to localities having the desired change of water, and there submerged. Oysters treated in this way are not only likely to lose their delicate flavor, but sometimes acquire a taste that is anything but desirable, which must have been the case in at least one instance in Chicago, where a dealer advertised that he did not sell "kerosene oil oysters."

**Special Treatment for Different Woods.**

The *Northwestern Lumberman* predicts that a portion of the furniture manufacturers will discover that their reputation is on the wane unless they treat more carefully the cheap woods used by them. Different woods require different treatment. . . . No one acquainted with the warping and shrinking qualities of wood, provided he had any desire to build up a lasting business, would place a wide piece of bastard sawed elm, with no material support back of it, in a piece of furniture, and this is being done every day. Maple and beech are used as injudiciously. The men who do it seem to think that such lumber will stand heat and change of temperature as well as walnut, which is a

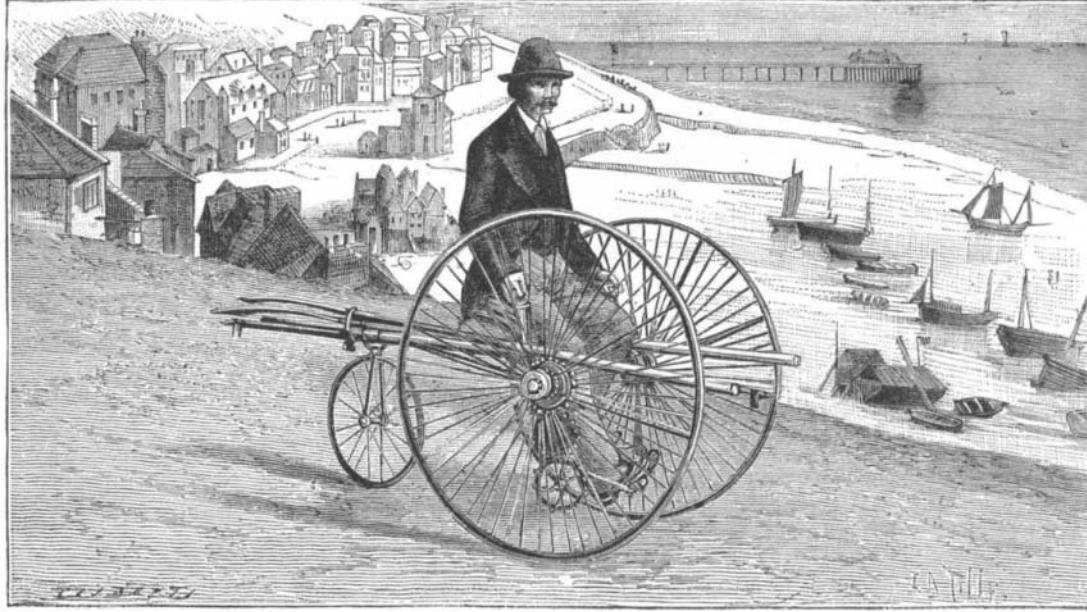


Fig. 1.—TERRY'S BOAT TRICYCLE.

mistake unless it is properly sawed and seasoned, and then used in pieces of proper size. By and by the seasoning of wood by artificial means will become a science. It is constantly being proved that it will come to this. There are plenty of wood workers who talk long and loud about the "natural" process, and throw cold water on all others. In these days of discovery they might as well say that people should go naked because they were born so. The natural process has failed miserably, so far as it prepares certain kinds of lumber for certain purposes. The *Lumberman* is confident that in the near future elm, maple, beech, gum, and the other cheap woods will be used in high grade furniture, with no fear that they will perceptibly warp or shrink.

**Professor Klinkerfues.**

Professor Ernest Frederick William Klinkerfues, the German astronomer, shot himself in the observatory at Göttingen on the 28th ult. He was in his fifty-seventh year, having been born in Hofgeismar, March 29, 1827. He studied at the Polytechnic School at Cassel, and was employed as an engineer in the construction of the Main-Weser Railroad.



Fig. 2.—THE SAME CONVERTED INTO A BOAT.

He afterward devoted himself to the study of astronomy, and in 1851 was appointed assistant astronomer to Gauss at Göttingen, and succeeded him as Director of the Observatory, a position which he held to the time of his death. Professor Klinkerfues was the inventor of several astronomical instruments, principal among them being a new hygrometer for practical observations in meteorology. He was also the discoverer of several comets. He published a number of valuable articles in the review of the Scientific Society of Göttingen, and was the author of a work entitled "Theoretical Astronomy," published in 1872, and "The Theory of the Bilfilar Hygrometer," 1875.

**TERRY'S AQUATIC TRICYCLE.**

The accompanying engraving shows a novel tricycle invented by a Mr. Terry, of England, and capable of being converted into a boat.

When used on terra firma the apparatus is like an ordinary two wheeled velocipede with steering wheel behind (Fig. 1). The operation of converting it into a boat is very simple, and takes but half an hour.

The two large wheels are made in two parts, which are fastened together by bolts. Two sections, placed parallel with each other at a distance of a meter, are used to form a space for the rower to occupy. The other two sections, fixed vertically, and external to the first, serve to give length and to make a boat with rounded ends. Two steel tubes, which connect the small wheel with the body of the tricycle, serve to fix the two parallel sections at their upper parts and to hold them at a distance. A wooden rod which is of no use in locomotion on land, being passed beneath and in the center of the sections, keeps them in place and answers as a keel. The frame of the boat is completed by a cord, which, starting from the extremity of the upper part of one of the vertical sections, connects the extremities of all the rest with each other, and serves as a support for a tarred canvas that covers the whole boat with the exception of the central space reserved for the oarsman.

All mounted, the apparatus forms a decked canoe 3.6 meters in length, 1.2 in breadth, and 0.6 in depth, that is to say, combining all the conditions necessary for proper buoyancy, even at

sea (Fig. 2). The buoyancy is, moreover, increased by two air bags of 20 liters capacity each, which are attached to the two sides at the upper part of the open space. Mr. Terry started from London on his velocipede, Wednesday, July 25, at seven o'clock in the morning, and at 8 o'clock at night entered Canterbury after a journey of 58 miles. On the afternoon of the next day he was at Dover, a distance of fifteen miles only from the last named town. Friday he rested, and the next day, at nine o'clock in the morning, he left Dover in his tricycle converted into a boat. But three hours after his start the sea became rough, and it was not till five o'clock on Sunday morning that he touched land at Andreselles, a small village situated near Cape Gris-Nez. Having reckoned upon crossing the Channel in six or seven hours, he started without provisions; but, fortunately, Saturday evening he spoke a fishing boat from Boulogne, whose captain gave him cheer and pointed out the direction that he should take in order to land without danger.

The custom house officers, thinking they had a new sort of a smuggler to deal with, took him to Boulogne, where everything might be explained. Converting his boat into a tricycle he went from thence to Saint-Pierre-les-Calais, to the house of Mr. Maxton, a manufacturer of that town, to whom he had been recommended, and where he arrived Tuesday morning. Thursday, August 2, he started for Paris, and reached it after a journey of five days by the following route: Ardes, Saint-Omer, Bethune, Saint-Pol, Doullens, Amiens, Montdidier, Clermont, Chantilly, and Saint-Denis. Distance, 290 kilometers. Mr. Terry, the inventor of this vehicle, is 29 years of age and has served for several years in the English navy.—*La Nature*.

**Gas in Philadelphia.**

Notwithstanding some abuses in the past in the public management of its own gas works by the city of Philadelphia, the report of the Trustees of the Gas Trust of that city for 1883, makes a very favorable exhibit. The price of gas was reduced, the city lighting was done free, except the

cost of \$7.35 per lamp for maintenance, the whole plant was greatly enlarged and improved—the mileage of gas mains now reaching 748 miles—and the wages of employes were increased, but the works made a net profit to the city during the year of \$332,127. The accumulated profits from this source now amount to \$4,871,085. The price of gas in Philadelphia is \$2.15 per thousand feet against \$2.25 per thousand in New York city. The Philadelphia people are supposed to get twice as much light from the same quantity of gas as the New Yorkers receive.

No wonder the stocks of our city gas companies command a high premium.

**Feline Presence.**

I must give a fact which was communicated to me many years ago by an old physician, of which the good old man assured me he was an eye witness. In his house were two cats, each with a litter of kittens but a few days old. One of the cats was very young, it was her first litter, and the old cat was her mother. It was noticed that the younger cat did not seem well. Each one had her litter by herself, although both were in the same room. As the old cat lay suckling her own litter the young cat came to her mother and made a low mewing, then went to her own litter. The old cat followed her and immediately began removing the grand-kittens, adding them to her own. The truth was, she had adopted them, and seemingly at the request of their mother, for not many minutes more had elapsed before they were orphaned by their mother's death.—*S. Lockwood, Amer. Naturalist.*

**PERIOPHTHALMUS.**

In the swamps and brackish waters lying not far from the sea, in the torrid zone, especially in Western and Eastern Africa and in some of the islands of the Indian Sea, is found a species of fish called periopthalmus, which on account of the peculiar formation of their gills are able to live longer out of the water than other fish, and pass the greater part of the day in the wet mud. This fish is about fifteen centimeters long, of many changing colors and markings, but it has generally a light brown ground marked with silver and brown spots. A black band edged with white runs through the length of the upper half of the second dorsal fin; the other fins are also marked with spots and dots.

If any fish deserves the name of "tree climber" it is the periopthalmus, for its pectoral fins are constructed so that it is able to climb; they are rather feet than fins, and are used only as feet. These fish lie upon the mud, run along the shore like lizards, and rush upon their prey with such rapidity that they seldom fail in capturing it. If they are pursued they move swiftly over the mud, bore into it, and conceal themselves.

Pechuel-Loesche says that he has seen this strange fish only within the brackish water at the mouth of rivers or their branches, and never in the very salt lagoons. He has observed them at the mouth of the Kuilu on the coast of Loango. At low tide and in pleasant weather they may be seen by dozens, upon the flat, bare shore, generally on the brink in the shade of the mango trees. They avoid dry ground and ground grown over with grass and weeds. If they are not frightened they jump with a slight curving and stretching of the body, supporting themselves by their tail and fins. With short springs forward they make their way through the mud, leaving behind them a perceptible track, or they lie comfortably scattered upon the soft mud; then one attempts to leap, as if from excess of spirits, and sometimes a number of them jump about as if playing or chasing one another. It happens sometimes that a fish will suddenly spring from the ground upon a mango root, firmly clasping it with its fins. When frightened it will drop from the root. They can remain out of the water for hours.

They are moderately shy, and at the approach of any person raise themselves to an erect position by means of their fins. If one remains motionless and surprises them by coughing, whistling, or knocking, they will bend down and escape with quick leaps into the deep water, when they instantly disappear. These leaps are about twice or three times the length of the body. The native boys often shoot them with arrows, and lightly wounded fish will jump about a table in a lively manner. Their food consists of crawfish and insects.—*From Brehm's Animal Life.*

**Effect of Gas on the Voice.**

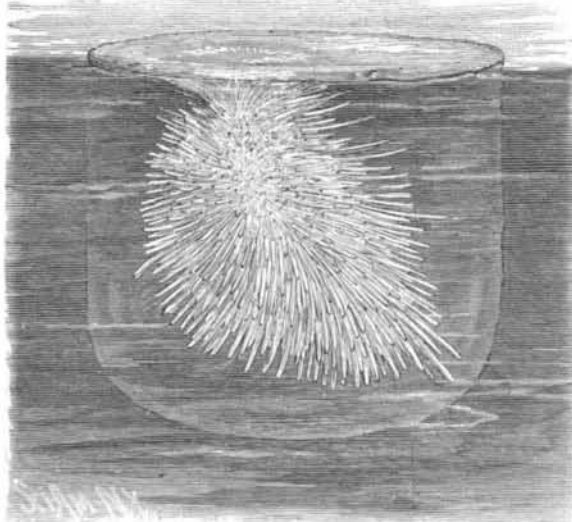
Our English exchanges inform us that Dr. Moffat delivered a lecture lately in Glasgow on voice training by chemical means. Dr. Moffat maintained that the presence of peroxide of hydrogen in the air and dew of Italy had some connection with the beauty of the Italian vocal tone. A series of illustrations by people taken from the audience, who inhaled a chemical compound made to represent Italian air, were largely satisfactory—a full, clear, rich, mellow tone being produced by one application. Several gentlemen present gave their favorable opinion of the new idea. Dr. Moffat's own illustrations were quite unique. Taking what was originally a voice of power and resonance, but destitute of intonation, he showed by chemical means this could become a tenor of great range. Some twenty notes, ranging from the lower to the higher register, were sung without any effort by the possessor of a voice of this character.

**OIL OF WINTERGREEN AS AN ANTISEPTIC.**—This oil, methyl salicylate, is obtained by the distillation of *Guaiheria procumbens*. It is here pronounced more efficacious than phenol, though it has the disadvantage of being more costly.

**A CURIOUS CASE OF FREEZING.**

Many of our readers will no doubt have had their attention called to the curious shapes which ice assumes under different conditions of freezing. Our engraving represents a form to which our attention was drawn a short while ago. It seems that a small cylindrical mustard bottle, partly filled with water, had accidentally been left out in the cold. In the morning it presented the appearance shown—in the center an oval nucleus of snow-ice from which thread-like air bubbles radiated in every direction. The experiment was repeated with different shaped vessels, and the same peculiarity was manifested in those with sloping sides.

The explanation of the phenomenon must be sought for

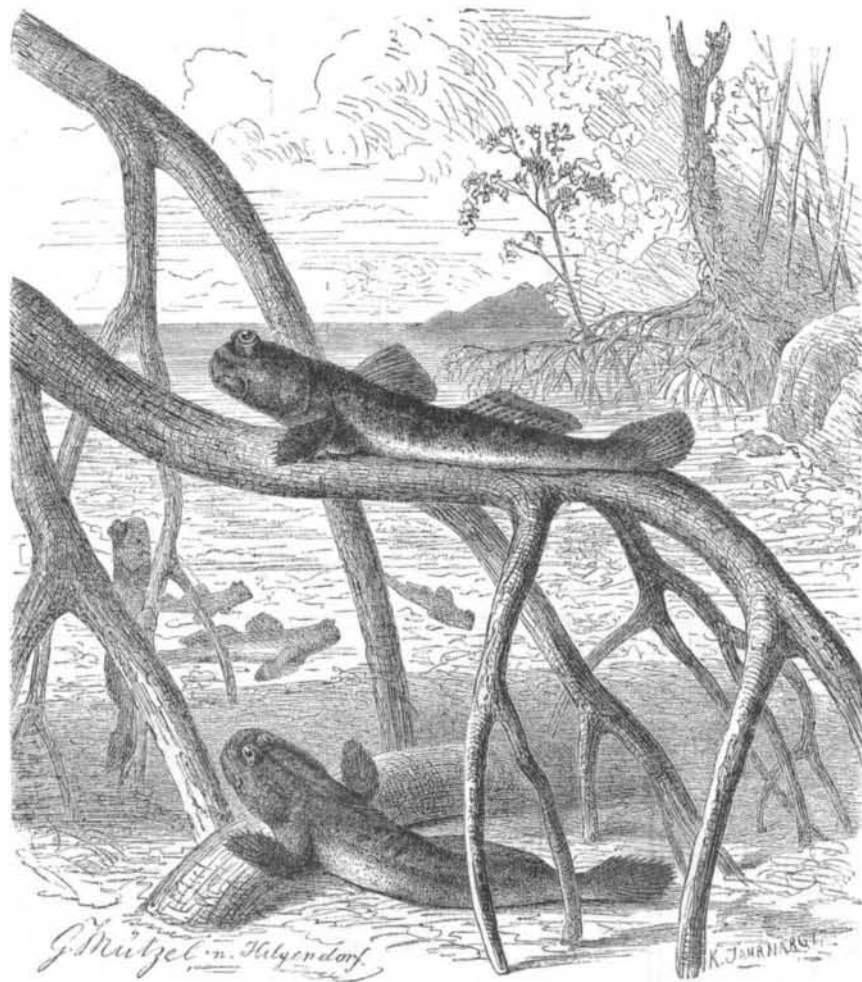


**A CURIOUS CASE OF FREEZING**

in the fact that ice is first formed on the outside surfaces of the water, thus imprisoning the air, which is separated from the water by the freezing of the ice. This air, as the freezing progresses, is forced toward the center, and since ice forms by shooting out crystals, the air is imprisoned between them, and presents the appearance shown. A specimen which had been thoroughly boiled to remove the air was frozen, but showed only very slight indications of this peculiar formation.

**Amazons of the Insect World.**

A lecture upon ants was recently delivered at Cooper Institute, this city, by the Rev. J. G. Wood. The geographical area of this wonderful creature is circumscribed; it is strictly a child of the South. In the tropics it is found



**PERIOPHTHALMUS, OR LAND FISH.**

in its full glory, but as it approaches the temperate zone it diminishes in size and interest until a point is reached where it disappears. Ants, bees, wasps, and hornets, which all belong to the same order of hymenoptera, may be divided into two grand sections—the solitary and the social. All that need be said of the former is that a male and a female pair off and make a rude nest with a few cells. All the interest and all the intellect may be said to be centered in the socials. "Here we have a queen, males or drones, and a multitude of smaller unwinged insects rightly called work-

ers, which were once thought to be neuters in sex, but which are now known to be females whose growth has been arrested. They in fact resemble girls whose growth should be stopped at twelve years of age, and who should satisfy themselves with being housewives and nurses, without ever arriving at the dignity of motherhood. There can be no mistake about their sex, because they can sting and bite, and it is a certain fact that all wasps, hornets, bees, ants, and mosquitoes that either sting or bite are female. The male can do neither. The females do all the work and all the mischief, and show all the ingenuity. The males, in many cases, cannot even feed themselves.

"Among the workers there is an immense division of labor, which is not interchangeable. There are two great divisions, the warriors, or Amazons, and the civilians; and the former have become so accustomed to a purely warlike life of rapine and adventure that they cannot even feed themselves. Among some ants the workers are not of the same race, but are slaves captured by the Amazons, and it is a most singular fact that though they fight most stubbornly for their liberty, yet when once within the nest of their captors they become the tenderest of nurses and servants, feeding their mistresses, storing the eggs, looking after the grubs, tearing open their cocoons, storing up the honey dew, milking the ant cows, which are the green aphides that feed on the roses, and taking charge of the whole administration of the colony in the most disinterested and intelligent manner. They are never guarded, but though far more intellectual than their conquerors they never attempt to escape."

**The Young of the Lobster.**

The early life-history of the lobster is most interesting. The eggs are, upon extrusion, found attached to the "swimmarets" of the abdomen (the so-called tail of the lobster), and constitutes what is generally known as the "berry." A single female lobster will have from 20,000 to 30,000 eggs—as nearly as possible the same as the female salmon. Attached in this "berry" form, the eggs remain for some three or four months, and then the young are hatched. "No nutritive or other than a purely mechanical relationship subsists all this time between the parent and its egg-clusters, the passing of its small brush-like claws among them to rid them of any extraneously derived substances, and the occasional fanning motion of its swimmarets to increase the stream of oxygenated water through and among the eggs, representing the sum total of attention they receive." The young animals that issue from the eggs of the lobster are distinct in every way from the adult. If, on the contrary, they were like their parents, they would at once sink to the bottom of the water in the immediate neighborhood of their birthplace, and the area of their distribution would be extremely limited. Nature here, however, as in the case

of the great majority of marine invertebrate animals, has provided her offspring with special facilities for becoming distributed to long distances, their bodies being so lightly constructed that their specific gravity scarcely exceeds that of the fluid medium they inhabit, while they are additionally provided with long feather like locomotive organs, with which they swim at or near the surface of the water. As such essentially free-swimming animals, they now spend the entire first month or six weeks of their existence, in which time, it is scarcely necessary to state, they may be carried by the tides and currents many miles away from their places of birth. During this interval, however, the little lobsters by no means retain their primitive shape; their delicate skin, the rudiment of the future shell, is constantly getting too tight for them, and is thrown off to give place to a larger and looser one that differs each time in many structural points from its predecessor.—*Fisheries of the World.*

**Effects of Rum on Pigs.**

Mr. W. Mattieu Williams once witnessed a display of drunkenness among three hundred pigs, which had been given a barrel of spoiled elderberry wine all at once with their swill. "Their behavior," he says, "was intensely human, exhibiting all the usual manifestations of jolly good-fellowship, including that advanced stage where a group were rolling over each other and grunting affectionately in tones that were very distinctly impressive of swearing good-fellowship all around. Their reeling and staggering, and the expression of their features, all indicated that

alcohol had the same effect on pigs as on men; that under its influence both stood precisely on the same zoological level."

**Prompt Cure of Ringworm.**

R. W. Taylor, M.D., in the *Journal of Cutaneous Diseases*, reports the best results from the use of a paint composed of a tincture of myrrh and four grains to the ounce of bichloride of mercury. Other skin affections are cured by the application of this remedy.