codeggs from New York to Washington, and said that it was intended to have the steamer Fish Hawk, with its appliances for hatching, sent here, and offered, if this was done, to furnish 100,000,000 eggs per diem for hatching purposes. This could easily be done, in his opinion, as a large cod will strip 9,000,000 good eggs. This method will save the expense of sending out a special steamer to catch fish with ripe eggs, and will save a great waste of both fish and eggs.

Professor C. W. Smiley, of the Smithsonian Institution, read an important paper comparing the statistics gathered by the United States Commission in 1871 and those gathered in 1879 for the census statistics. The total number of pounds catch reported in 1872, with four large points wanting, was 42,350,000 pounds. Making a fair estimate for missing ports, the total catch was 50,000,000 pounds. During the year 1879 the total catch was 68,742,000 pounds, which was probably smaller than in the intervening years. The greatest decline in the catches was shown in returns from the ports of Buffalo and Cleveland, and the greatest increase in the returns at Chicago, where, in 1872, the catch marketed was 7,462,150 pounds, and in 1879, 17,247,570 pounds. As fishermen have more effective apparatus for capture than formerly, and the lakes are more thoroughly and exhaustively fished than before, the slight increase in the catch during the decade virtually means a decrease in the quantity of fish, and that a gradual depopulation is following the introduction of small meshed nets and the use of steamers. In support of this theory Prof. Smiley gave a large number of statistics showing the gradual but certain extermination of the whitefish and salmon trout. This was due in part to the fact that there were enough nets used in Lake Michigan alone to reach, if stretched in a continuous line, from one end of the lake to the other. The whitefish now caught are rarely ever large enough to rate higher than No. 3, and no fish large enough to rate as Nos. 1 and 2 are ever caught. Old fishing places once fairly alive with fish are now exhausted and deserted by the fishermen to superannuated Indians and gulls. Another cause for the disappearance of the fish is the prevalence of quantities of sawdust near the mouths of rivers, which destroys the fish. In Lake Erie, though whitefish and trout have decreased, the quantity of bass, pike, and sisco has increased since alewives were introduced.

The Secretary read a paper by Seth Green on the hatching of sturgeon and striped bass, in which he insisted that the artificial propagation of these fish was necessary to keep them from extermination. The chief enemy to the sturgeon is the eel, which, when the female sturgeon is ripe and ready to deposit her spawn, often enters the vent and remains there until it has stripped her of all her ova. As a remedy against this evil he recommends the placing of the fish in a car, and placing about it a harness of some kind that will prevent the eel from entering her and destroying the spawn. With such apparatus and properly protected waters in which to further breeding, he is of opinion that sturgeon may be successfully propagated. He has succeeded in hatching out in his shad-hatching boxes 155,000 sturgeon fry, which experiment he offered in proof of his claim. The striped bass he thinks can, by the use of racks or slides, be caught in a sufficiently ripe condition for use in artificial propagation in Southern waters.

Mr. Blackford read a letter from S. M. Johnson, of Boston, urging the more strenuous enforcement of the laws against the sale of small lobsters; and a resolution was adopted instructing the officers of the association to forward to Albany a request for an increase of the number of game constables for the purpose.

The Secretary read a paper by Prof. John A. Ryder on oysters, treating particularly of the possibilities and probabilities of the artificial propagation of this toothsome bivalve. The view taken was not hopeful, as the methods employed had failed to keep an embryo oyster alive more than a week. The trouble seems to be that the experimenters are working on an entirely impractical plan, based on an erroneous theory as to the conditions of the problem.

The migration of shad, the recurring failure of the Canadian salmon fisheries, the food value of the sword fish, and kindred topics were among the other subjects discussed.

The officers elected for the ensuing year are: President—George Shepard Page, New York; Vice President—James Benkard, New York; Treasurer—Eugene G. Blackford, New York; Corresponding Secretary—Barnet Phillips, Brooklyn; Recording Secretary—James Annin, Jr., Caledonia, N. Y.; Executive Committee—Fred Mather, New York city; G. Brown Goode, Washington, D. C.; Seth Weeks, Pennsylvania; Benjamin W. West, New York city; T. B. Ferguson, Washington, D. C.; C. B. Evarts, Vermont; and William M. Hudson, Connecticut.

The association adjourned to meet in Boston on the first Wednesday and Thursday of September next, at which time an effort will be made to have Prof. Baird call a meeting of the Fish Commissioners of all the States in the Union to meet in conjunction with the fish culturists.

## LOCOMOTIVES AND MALARIA.

Dr. Wm. S. King, Surgeon United States Army, claims that the frequent movement of railway trains tends to diminish or prevent malarial diseases in localities where all the necessary conditions for the development of malarial effects seem to be present. His theory is that the heated locomotives, by continually passing through the infected districts, rarefy the air, and create a constant atmospheric disturbance by inducing warm upward currents, such currents acting, with the pure air which rushes in from all directions, as agents in the dispersion or annihilation of the miasmatic influence.

Dr. King's theory would appear to be based upon information received in West Philadelphia while selecting a place of residence for his family in a locality adjacent to the Schuylkill River, where, notwithstanding the nearness of low lands, the residents claimed to enjoy immunity from malarial affections.

It is popularly believed that there are many places where the same profession is made by residents and land agents, and yet new-comers are apt to have their confidence in the value of interested testimony severely shaken out of them in the course of a year or two.

Perhaps a more extended observation of railway centers may lead Dr. King to modify his theory. The atmosphere of the lower levels of Jersey City, for example, is agitated by passing trains to a degree perhaps unrivaled in any corresponding area; yet, to speak within bounds, malarial diseases are not unknown on that side of the river; nor do our sanitary authorities report any signal diminution of malarial troubles among the residents of Harlem flats since steam roads were put upon the avenues and locomotives began to stir the air incessantly.

The circumstance that locomotive engineers and firemen are not exempt from ague and other malarial afflictions may not militate against Dr. King's theory, for trainmen do not spend quite all their time on the road; but how would he explain the fact that the extension of malarial diseases, their invasion of new districts, is so apt to be along the lines of railways? Is it because the trains on new roads do not run with sufficient frequency?

## M. Poitevin.

Louis Alphonse Poitevin was born at Conflans, in the department of the Sarthe, in 1819. The earlier portion of his education was obtained at the neighboring town of St. Calais, whence he proceeded to the *Ecole Centrale* in Paris. During his course in this establishment he devoted himself almost entirely to chemistry and mechanical studies, and passed out of the school in 1843 with the diploma of civil engineer. His first official appointment was that of chemist to the *Salines National de l'Est*, in which capacity he introduced many improvements in the manufacture of salt, while his mechanical knowledge enabled him also to introduce new forms of apparatus and machinery, he also made improvements in the processes of manufacture of bleaching powder (hypochlorite of lime), salts of potash, magnesia, as well as sulphuric acid.

When photography came upon the world as a scientific curiosity Poitevin's *penchant* for chemistry led him to experiment in this new direction, and we find him in 1848 publishing the fact that it was possible to produce an electro deposit of copper upon the whites of the daguerreotype image. His experiments in this direction led to the discovery of a method of photo-chemical engraving upon metallic plates coated with silver or gold, for which he received the silver medal of the *Société d'Encouragement des Arts.*

Subsequent to this he turned his attention to the study of the action of light upon bichromated gelatine, in which principle he recognized the possibilities of great achievements. He first applied himself to the production of moulds in relief, and patented, in 1855, his helio-plastic process—a description of which is to be found in our volume for that year. This consisted simply in preparing a film of gelatine of greater or less thickness according to the depth of the relief required, which, after sensitizing by means of potassium bichromate, was exposed to light under a negative. It was subsequently treated with cold water, when the portions unacted on by light swelled up and so formed an image in relief, from which a mould in plaster or other suitable material could be taken.

His next achievement was the fatty ink process, of which he may be said to have been the father. This was based upon his discovery that the surface of the bichromated gelatine film after exposure to light became repellent of water, though it permitted a greasy ink to adhere; and in 1855 or 1856 he established an *atelier* for working this and the photolithographic processes. This venture did not, however, prove a great success, and he was compelled to relinquish it to M. Lemercier, who, with various modern improvements and extensions, still carries on the establishment.

In 1862, having for some time past devoted his attention to the so called carbon process, he published his new method of printing upon paper in pigmented gelatine, and this method no doubt forms the starting point of the now perfected process of carbon printing, or autotype. For this and his labors in connection with photolithography he was awarded the prize offered by the Duc de Luynes. He also published researches in connection with the action of light upon various salts of iron, and devised the first "dusting-on" process, which was based upon the hygroscopic properties of a mixture of tartaric acid and perchloride of iron.

At the Paris Exposition Internationale of 1878, M. Poitevin was named *Callaborateur Universal*, and was adjudged an honorarium of 7,000 francs and a gold medal in recognition of his services in the advancement of photography. This sum was, however, never paid.

For many years past M. Poitevin had retired from active participation in the advancement of photography, though he still retained his interest in that as well as other branches of chemistry and science. Having settled at his native place, Conflans, he preferred to spend his latter days in that leisure which his active life so justly entitled him to; and it was there he passed away, March 4, 1882, mourned by a large circle of affectionate relatives. His death removes from the ranks of photography one of the few remaining historic names.—*Brit. Jour. of Photography.*

## FOODS FOR INFANTS AND INVALIDS.

It may be questioned whether there is any subject which comes more closely home to people of all classes than the character of the food supplies specially provided for infants and invalids. The increasing demand for this class of preparations (due partly to an actual need, but chiefly, we suspect, to the skillful advertising of manufacturers and the liberal margin of profit they offer to the retail trade), has led to a great number and variety of such competitors for public favor. Put up in ornamental boxes, they appear on the counters of every grocer and in the show cases of every apothecary shop; and not unfrequently their actual value is in inverse ratio to the pretentiousness of the package and the price.

As a rule, purchasers are obliged to take the virtue of such articles upon trust, few having the means or the knowledge requisite for an analysis, microscopic or chemical, of the preparations which they are advised to try, perhaps by the family physician, and yet a mistake in this connection may be fatal.

For all young infants, and for adults in many cases of sickness, starch food is injurious: sometimes in being a source of intestinal irritation; sometimes, as in the case of very young children, in furnishing a semblance of aliment without the reality, such children being as unable to digest and assimilate starch as sand. Hence the usual claim with respect to prepared foods of the cereal class is that they are free from or contain very little starch, while they are rich in gluten and other food elements capable of nourishing the sick and the young. To discover how far these claims are well founded, Dr. Ephraim Cutter, of Harvard College and the University of Pennsylvania, has lately made microscopic examinations of something like forty cereal foods, developing facts of the highest importance to physicians and their patients as well as to parents having young children. The results of his investigation appear, with numerous illustrations, in the SUPPLEMENT for this week. The article (which, by courtesy of Dr. E. S. Gaillard, we reprint from the *American Medical Weekly*) is worthy of study by all who are interested in microscopy or in the nourishment of invalids and children.

## A Precocious Picklock.

On April 5 a twelve year old black boy, named Coleman, was brought before the United States Commissioner at Baltimore, Md., charged with robbing the private letter boxes in the city post office.

The locks on these boxes are of a kind supposed to be proof against picking, and the authorities could not believe the little rascal's admission of guilt. So the marshal of police and the assistant postmaster took the little fellow to the post office, where he gave them an exhibition of his skill in opening burglar-proof locks. He had a little strip of wrought iron which he had hammered very thin, and, putting this in the keyhole of a box and giving it one or two slight taps with his finger, open flew the box as if by magic. Box after box he opened in the same way.

Among locksmiths of Baltimore the case has excited, it is said, the widest interest, and the discovery that these locks can be picked may lead to an entire change in them. Government experts are already studying the case. The boy Coleman was sent to jail by the commissioner to await the action of the grand jury on his case.

Now would appear to be a good time for some inventor to bring out an unpickable lock suitable for post office use.

SIR CHARLES WYVILLE THOMSON died on the 12th of March, at the age of fifty-two. He was born at Bonsyde, Linlithgowshire, on the 5th of March, 1830. His exploring expeditions in the Lightning, Porcupine, and Challenger, in which the "depths of the sea" in the Atlantic and around the world were investigated with remarkable success and multitudes of new discoveries, have made his name familiar to the people of all civilized lands. The publications of his last expedition are still in progress. After graduating at the University of Edinburgh, he was appointed, in 1850, Lecturer on Botany in King's College, Aberdeen, and, in 1870, Regius Professor of Natural History in the University of Edinburgh. His so early departure is greatly to be deplored.

## The Tobacco Plug Patent Declared Invalid.

The United States Circuit Court of Kentucky, Judge Baxter presiding, has declared invalid the reissued patent of Miller & Worley, 8,060, January 29, 1878. This patent was for the idea of stamping letters or other marks by pressure into the side of the plug of tobacco. Instead of the usual plain plug, the inventor produced a plug marked with the maker's stamp or other ornamentation. This patent was considered to be of great value; but the court declares it to be invalid on the ground that Miller was not the original and first inventor. The testimony showed that Edward F. Smith invented and worked the same thing in 1875.