

this gas were commented on; and Sir Humphry Davy was quoted to prove that the "seventh heaven" must have an atmosphere of it.

The time passed rapidly with such information; and the Professor, at the close of his lecture, alluded to the want of facilities in this city for thorough scientific culture, and argued his cause with much eloquence. Judging from the frequent manifestations of approval given by the audience, there is no doubt but that it was "seed sown upon good ground." It is certainly extraordinary that, in a city like New York, this reproach should be uttered with truth. "The first battle of Bull Run" said the Professor, "was lost for want of topographical knowledge, or familiarity with the nature of the country; and the second was like unto it, for, as the authorities remarked, it was not probable another battle would ever be fought there."

The conclusion of this course of lectures is sincerely regretted by many, as the interest taken in them by the public was too marked to escape notice.

THE FARMERS' CLUB.

The regular weekly meeting of the Farmers' Club was held at their room at the Cooper Institute, at 1½ P. M., on Tuesday, February 23d; the President, N. C. Ely, in the chair.

FERMENTING WINE.

The President read a letter making some inquiries in relation to fermenting wine.

Col. Haraszthy—"During its fermentation, wine must be excluded from the atmosphere, otherwise it will become sour. We close the fermenting vats perfectly tight, and carry off the gases produced by fermentation by means of a siphon, which terminates under water in another vessel."

CULTIVATING ALMONDS.

Mr. Robinson read a letter asking further information in relation to the cultivation of almonds.

Col. Haraszthy—"I plant the almond pits in the spring, and during the season the trees grow to the height of four or five feet. In the autumn they are budded with good varieties, and the next spring the seedling is cut off above the bud. In three years they begin to appear, and, in California, they have never been troubled with leaf-curl or mildew or anything else. The almond is a hardier tree than the peach. When I was in Wisconsin, I raised almonds there successfully, though we sometimes had the thermometer indicating 30 and 35 degrees below zero."

Mr. Carpenter—"Experience has shown that some varieties of the almond will bear this climate and others will not."

Dr. Trimble—"Is the pulp of the almond good to eat?"

Col. Haraszthy—"It is very poisonous. It is so full of prussic acid that it is a convenient source of supply for that substance."

GRASSHOPPERS IN WINTER.

Mr. Robinson—"I have here a communication saying that a farmer's club has been formed on Long Island, and, at their first meeting, the crop of a crow was presented, and it was found to be full of grasshoppers."

Mr. Carpenter—"I saw the crop, and I think there was a mistake in calling them grasshoppers. I should say they were crickets."

The President—"Will the naturalist of New Jersey please tell us whether grasshoppers live through the winter?"

Dr. Trimble—"I have seen the crop, and should call them grasshoppers not fully developed; they had only the rudiments of wings. In this state they live through the winter. They lie at the roots of the grass, where they are partially protected, and afford a favorite food for crows. One morning, during the cold weather this winter, I found, on the paved walk at my house, a fully formed katydid, frozen as hard as a bone. It was a striking object at the time, as you know the color is a bright, delicate green. I took him into the house and put him into a box, and he soon came to life. I then put him into the greenhouse, but in a few days he disappeared."

After a long discussion on the Wilson Strawberry and other subjects, the Club adjourned.

The Fire Department of Philadelphia has 36 steam fire-engines and 38 hand engines.

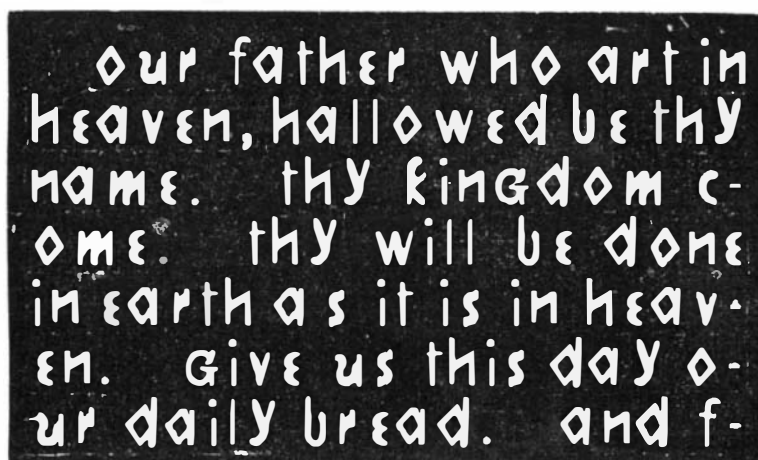
WHAT INVENTION HAS DONE FOR THE BLIND.

Very few of our readers, probably, are aware of the great improvements which have been made, in this country, to ameliorate the condition of "the blind," or the name of the person from whom those improvements have originated; and it affords us pleasure to make even a brief record of some of the facts, and at the same time to pay a well merited tribute to the inventive genius of one of our own countrymen, through whose skill and untiring industry, the blind, in all parts of the world, have been so truly benefited and cheered in their sad life of "perpetual night." It is to the talent and exertions of that well-known inventor, Mr. Stephen P. Ruggles, of Boston, that the blind, in this country and Europe, have received more real and substantial good, in facilities for learning, than from any other source—or all other sources combined.

Mr. Ruggles first turned his attention to devising means for facilitating the education of the blind, as early as the year 1835, at the Perkins Institution, in Boston; and it was esteemed a most fortunate circumstance, that a gentleman of such acknowledged skill and fertility of invention should have determined

to devote his best energies to their instruction. He applied himself with philanthropic ardor and enthusiasm, for several years, to the careful study of all their requirements and capabilities, by constant daily observation amongst the pupils in their hours of study and recreation. The first and most important step, was, of course, to give them books. By the old method, as practiced in Europe and this country, the books were so bulky, so unwieldy and costly, as to be of no practical value. He soon became convinced that he could produce a type of less size, and less height of face, which the blind could read with the greatest facility; providing the raised impression was hard and sharp, and the angles of the type adapted to the touch of the fingers. After many experiments he finally succeeded in reducing the size of the type and the height of its face so as to place books, of comparatively very small dimensions, in the hands of the blind students and pupils. The size of the type now in use, the height of its face, and the peculiar bevel of its face, are all his own invention.

Mr. Ruggles next produced the plates for a book on geometry, on a plan similar to his maps. These works proved very valuable and interesting to the blind—for with these books they could pursue their studies without the assistance from seeing persons which, before this, was necessary.



He next invented and built the first press ever made for printing for the blind. The press was very powerful, giving an impression of about three hundred tons to each sheet printed, yet was so contrived that the blind could do their own printing. After succeeding perfectly in the construction of his type, and as well in the construction of the ponderous press for printing, a new and unexpected difficulty presented itself. There was no paper in the market adapted to this kind of printing or embossing. That which was hard enough would crack and break through when printed; and that which was flexible enough not to crack, would flatten down when pressed upon by the fingers of the pupils while reading. His reduced type required a new kind of paper. The peculiar and definite bevel, and height of the face of the type, and the texture of the paper printed on, were most intimately connected, and it required a long series of experiments, in the manufacture of paper, to get them so harmonized as to work well together. But at last he succeeded in producing the article required.

After getting his new method of making books per-

fect, Mr. Ruggles next invented an entirely new mode of making maps for the blind. His plan was, a raised character, similar to his type; but arranged with such combinations that, at a trifling cost, he could produce a succession of maps of any size. Maps made in this way were never before known, and the Perkins Institution immediately issued, from this plan, an "Atlas" of the United States, and also a "General Atlas." It would, by most persons, be thought impossible that separate type could be so contrived as to admit of their being arranged in such a manner as to produce a map of any country and then to use the same type to make a map of any other country. Yet, all this was perfectly accomplished by this new invention—every piece of type matching its neighbor, with miraculous cunning, while following the crooked lines and angles, or graceful curves of rivers, coasts, islands, &c., with which such works abound.

Mr. Ruggles's next production was a colossal globe, with the land and water, cities and towns, rivers and boundaries, &c., all distinctly marked by raised characters on its surface. This globe is thirteen feet in circumference, handsomely mounted, with a meridian and the signs of the zodiac. Astronomical problems are worked by it, and the blind scholars answer promptly all the usual questions, quite as correctly as scholars, of the same ages, in our high schools.

In the brief space allotted to this article we cannot mention all the improvements which Mr. Ruggles has made for the education of the blind; but the school apparatus, generally, now in use, is his invention. We must especially notice their slates as being very ingeniously contrived, and the constant theme of praise by those scholars who remember the "old slates."

In 1838 Mr. Ruggles went to Philadelphia and established one of his powerful presses for printing for the blind in the Institution in that city; and a year or two later placed another press in the Institution for the Blind in the State of Virginia. The perfect success of his method for reducing the size and expense of books for the blind, inaugurated a new era in the history of this kind of work, and the books were rapidly multiplied and sent all over this country and Europe. To show the effect produced abroad, by the appearance of his improvements, we quote the following from the most reliable sources:—

A French writer, formerly a teacher of the Paris school, writes thus: "The Americans have effected a revolution in the art of printing for the blind."

In a report made by order of the Belgian minister of Public Instruction, on the establishments for the Blind and Deaf, the Abbé Carton, commissioner appointed for the purpose, writes thus: "You will be able to perceive that the American print, while it is sharper and more legible, does not occupy but half the space of that of Paris."

Ramon de la Sagra, an able Spanish writer, after some discussion on this subject, which he critically examined in 1835, remarks: "As to the clearness of the relief, and the perfection of the press-work, the Boston books may be presented as models—it is the