The distance which separates the purely scientific from the practical success is so wide, however, and the way is so beset with obstacles, that it is no easy matter to find, or if found to keep, the right road, and so it was that these first experiments, valuable as they were, soon ended, and it remains for the practical man, the experimenter rather than the student, to take up the problem and push it on to a solution. Edison is peculiarly fitted and equipped for this werk. When in good health, he is a close and constant observer, tireless and original. If he succeeds in finding a practical and reliable means of transmitting any kind of intelligible signal through the water between two vessels several miles apart, a principal cause of disaster on the ocean will have been removed. Though many ingenious and admirable contrivances have been thought out of late years to lessen the dangers of ocean travel, nothing has been done to prevent collisions in thick or foggy weather, which may fairly be said to be the most menacing of all.

It has before been explained in these columns that the present system of whistle and horn signaling is reliable only while favorable conditions prevail, to wit, in calm weather. At other times, when two vessels approach one another, only that which is to leeward is likely to hear the warning whistle or horn; and when the wind is abeam or quartering, the direction of the warning signals is so indefinite as to give little or no indication of the point whence danger is to be expected.

Were the sea telephone perfected, however, collision in thick weather could readily be averted. Vessels would keep their telephone warning going, as well as their whistles, and, while the latter only sounded a general alarm, the telephone would give the exact compass course of the direction whence each ship was advancing, and this, too, in time to prevent a meeting.

### THE SCIENTIFIC AMERICAN—ARCHITECTS' AND BUILDERS' EDITION.

We call the special attention of our readers to the announcement, published on another page, of this interesting and valuable publication. It has now been issued for about a year and a half, has grown rapidly in popularity, having attained the largest circulation of any periodical of the kind. While in general style of typography it bears a resemblance to the elegance of the SCIENTIFIC AMERICAN, still its contents and subject matter are almost wholly different, and it reaches an entirely distinct and separate circle of readers. It is, in brief, a comprehensive *Magazine of Architecture*, wherein will be found, illustrated in the most beautiful manner, the best examples of buildings and the various subjects thereto pertaining. It is especially full and abundant in its drawings of dwelling houses of moderate cost. In every part of the country are families who look forward to the time when they may possess a home of their own, with all its enjoyments of tranquillity and happiness.

In the selection of plans, and in the supplying of information relative to buildings and materials, this beautiful periodical of ours will be found most useful and valuable.

### The New Health Board President.

Mayor Hewitt appointed, a few days ago, Mr. James C. Bayles president of the Board of Health for this city.

The selection of Mr. Bayles for the office is considered by most persons to be a good one; but when it came to the knowledge of the politicians around the City Hall that the appointee was a non-partisan engineer and a Knight of Labor, it created considerable excitement among them—not that this class of politicians are so adverse to the Knights of Labor as their action would imply; but the fact was, they were disappointed that the mayor had the independence to go outside of their circle and appoint a practical engineer instead of a professional politician.

But Mayor Hewitt was equal to the occasion, and when his motive for making the appointment was questioned, made the following manly reply:

"I did not know when I made the appointment that Mr. Bayles was a Knight of Labor, but if I had, that fact alone would not have made any difference to me. I should have appointed him anyway, because I believed him to be a competent man for the position. Had I known that he was a member of the order, I might have asked him if he approved of the methods of the Knights, and the manner in which they acted during the last strike. If he had said he did approve of them, I should certainly not have appointed him as president of the Board of Health. But I believe that Mr. Bayles is opposed to such actions, and would not for a moment tolerate them.

"I am not opposed to trade organizations when they do not violate individual rights. What I am opposed to is their dictation and their assumption of the right to say who shall and who shall not work. Like Cardinal Gibbons, I find the paper declarations of the Knights of Labor to be beautiful. I am opposed to them when they violate these paper declarations. Mr. Bayles I believe to be a sensible man, and I think he will fill the place he now holds creditably. He has a perfect right to belong to any organization he sees fit. What I'm fighting for is liberty of action. If a man wants to join the Knights of Labor, let him do so, but don't let them try to compel other men to join the organization who do not want to have anything to do with it."

### Asses' Milk Diet.

In France, where the authorities do so much for the protection of the people at large, by their watchful care to prevent accidents to the work people, and their extensive provision for the protection and maintenance of homeless children and those of miserable parentage, the administration of the hospitals and other public institutions are constantly experimenting in the treatment of their inmates. Quite recently the administration of the Assistance Publique, in Paris, has decided to employ asses' milk at the Hopital des Enfants Assistes. For a while the administration substituted goats' milk for human milk; but the infants did not thrive upon it. The administration has now provided ten asses, which are kept in the stables of the hospital with their young. Each ass is capable of nourishing three children besides its own young for the first three months, and two children for the two following months. After this period it is capable of nourishing one child until the ninth month.

The superior soothing and nourishing qualities of asses' milk over that of the cow, or goats' milk, has been long known, and many persons who have suffered with dyspepsia, and after trying numberless remedies and been abroad for treatment, have returned with health restored, the result attributable to the use of asses' milk taken warm from the udder.

The writer has in mind a lady who had suffered an aggravating form of dyspepsia, until her digestive organs had become so impaired that the simplest diet could not be taken without producing great distress. She had been under the care of physicians of nearly every school of practice in this city, and finally she was taken to a neighboring city and placed under the care of a doctor distinguished for his successful treatment of dyspepsia. His system consisted principally in secluding his patients from their families and friends and requiring them to remain in bed for several weeks. After some three months' perfect rest (for even the reading of books or newspapers was denied her), and the daily application of electricity by an assistant of the distinguished practitioner, and the equally frequent application of oil and rubbing-in process by a faithful female attendant, the lady had become so weak it was with difficulty she could get out of her bed. Her food was specially prepared at the chemist's, under the direction of the doctor, but every variety she tried distressed her, and finally, as soon as a little strength had been restored, she returned to her home and resumed the milk diet, which, from long experience, she had found to produce less distress than any other. The rest cure, as it is called, was, in this lady's case, a failure, and what should be the next experiment to try was a question of serious discussion for some time, and, with many misgivings as to the result, it was decided to try a season abroad, and it was in France the diet of asses' milk was recommended and tried with the most beneficial results.

From the observation of the writer, we believe that suffering dyspeptics and delicate children may be relieved of a great deal of misery and precious lives saved by the more universal use of asses' milk, the virtues of which seem to be better understood on the Continent than by physicians in this country.

### Vulcabeston.

This is the name of a new article, intended to combine all the valuable qualities of asbestos and India rubber, of which, as its name indicates, it is mainly composed, although other vulcanizable materials enter into its composition. It forms a substance of the toughness of horn, although it can be made of any degree of flexibility; it is a non-conductor of electricity, and stands the severest test of acids, steam, gases, etc. From its quality of permanently resisting heat, which has been so long known as the characteristic feature of asbestos, it has been adopted by the United States Government for use around steam engines.

One of the most important uses of the new article is as a moulded piston rod packing ring, made to fit any sized rod or stuffing box, and to be sprung in place with a slight pressure, one or more rings being used as desired, and forming a perfectly tight steam joint. These rings do not wear the rod as do metal rings, and they are self-lubricating. The first set made of these rings has been in use over eleven months, in a Hartford, Conn., manufactory, on an engine run at 280 strokes per minute, and is still in perfect order, and said to be in as good condition as when first put in.

Vulcanized asbestos piston rod packing in the form of flexible rope, of all sizes, will not shrink or blow out, and is especially adapted for use on locomotives and ocean steamers, and in other places where loss of time in repacking is of the greatest consequence, and when the use of ordinary steam packings would, consequently, be entirely inadmissible. In consequence of its great strength and durability, it can be used wherever metallic packings have heretofore been necessary.

The new vulcabeston is made into sheet packing, hard, medium, and soft, in sheets or rolls, in all sizes of round and oval gaskets, and in hard and medium moulded piston rod packing rings of all the regular sizes, any special forms being readily made to order. The vulcabeston can, if desired, be made of any color, and is thus well fitted for a variety of ornamental work and other special uses.

Vulcabeston is manufactured exclusively by the Johns-Pratt Company, of Hartford, Conn., Mr. Johns, of the widely known H. W. Johns Manufacturing Co., of New York, and whose name has for more than a quarter of a century been prominently identified with all manufactures of asbestos materials, being at the head of the business.

### Proving the Soundness of an Eye.

In a large factory in which were employed several hundred persons, one of the workmen, in wielding his hammer, carelessly allowed it to slip from his hand. It flew half way across the room, and struck a fellow workman in the left eye. The man averred that his eye was blinded by the blow, although a careful examination failed to reveal an injury, there being not a scratch visible. He brought a suit in the courts for compensation for the loss of half of his eyesight, and refused all offers of compromise. Under the law, the owner of the factory was responsible for an injury resulting from an accident of this kind; and although he believed the man was shamming, and that the whole case was an attempt at swindling, he had about made up his mind that he would be compelled to pay the claim. The day of the trial arrived, and in open court an eminent oculist retained by the defense examined the alleged injured member, and gave his opinion that it was as good as the right eye. Upon the plaintiff's loud protest of his inability to see with his left eye, the oculist proved him a perjurer, and satisfied the court and jury of the falsity of his claim. And how do you suppose he did it? Why, simply by knowing that the colors green and red combined make black. He prepared a black card on which a few words were written with green ink. Then the plaintiff was ordered to put on a pair of spectacles with two different glasses, the one for the right eye being red and the one for the left eye consisting of ordinary glass. Then the card was handed him, and he was ordered to read the writing on it. This he did without hesitation, and the cheat was at once exposed. The sound right eye, fitted with the red glass, was unable to distinguish the green writing on the black surface of the card, while the left eye, which he pretended was sightless, was the one with which the reading had to be done.—*Pottery Gazette.*

### Oxygen in Vital Phenomena.

Some interesting information is given by Dr. B. W. Richardson respecting the influence, under varying conditions, of oxygen in vital phenomena (*Asclepiad*). It was obtained by inclosing mice in glass chambers containing atmospheres in which the proportion of oxygen varied with the experiment, and observing the time that lapsed before the animals became narcotized at different temperatures. It was found that, at a temperature of 55° F., when oxygen and nitrogen were present in the proportion of 1 and 4 (*i. e.*, common air), the animal became narcotized, and died asleep, in one hour and fifty minutes. In two parts of oxygen and three of nitrogen, as well as in three of oxygen and two of nitrogen, the animal remained free from narcotism thirty minutes longer, but eventually became rapidly narcotized, and died within two minutes of the same time. But with four volumes of oxygen and one of nitrogen, narcotism did not occur for two hours, and then lasted six hours before death took place, while with pure oxygen narcotism was also deferred for two hours, but only lasted four hours.

When an animal was placed in a vessel five times as large as those previously used, containing common air, so that the quantity of oxygen present was equal to the smaller atmosphere of pure oxygen, narcotism did not occur until after nine hours, and death after eleven and a half hours, which indicates the vital value of nitrogen as a diluting agent. In the case of the pure oxygen the larger proportion of the gas remained unchanged, and five similar experiments were made before sufficient carbonic dioxide was formed to cause asphyxia. When the temperature was lowered to 20° F., the effect was to reduce the vital combining power to such an extent that oxygen became practically an anæsthetic gas; in pure oxygen the animal was narcotized in a few minutes and died in half an hour, while in common air the animal remained longer awake, but died in forty-five minutes. When temperature was raised to 70° and 90° F., pure oxygen sustained life longer than common air in equal volume, but at 125° F. coma and death took place in fifteen minutes.

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