DR. P. H. VANDER WEYDE.

P. H. Vander Weyde, the well known scientist, and a former frequent contributor to the pages of the SCIENTIFIC AMERICAN, died at his residence in this city on the morning of March 18, after an illness of a few days.

Dr. Vander Weyde was born in Nymegen, Holland, in 1813, a country to which his family, originally German, emigrated at the time of the Reformation. He studied at Durpldorf and was graduated from the Royal Academy at Delft. He was early known as a scientific teacher, writer and lecturer, his first appearance in the latter capacity having been made at Bois-le-Duc in 1833, when he delivered a lecture on acoustics before the philosophical society of that place. Subsequently he was appointed to the chair of mathematics and natural philosophy at the Government School of Design. In 1842 he established a journal devoted to mathematics and physics, and three years later was awarded a gold medal by the Society for the Promotion of Scientific Knowledge for a text book on natural philosophy. At the same period, he was editor of a political journal which vigorously waged war against government abuses.

In 1849 he came to New York, bringing with him a valuable historical collection of philosophical apparatus which he had been forming for some time. He then turned his attention to medicine, and after studying at the College of Physicians and Surgeons and the New York University Medical College, was graduated from the latter institution in 1857. Directly after his graduation, he was appointed professor of chemistry in the New York Medical College; was also appointed physician to the Northwestern Dispensary, and practiced medicine in several parts of the city until 1859, when he relinquished his profession to occupy the chair of physics, chemistry, and the higher mathematics at the Cooper Institute.

In 1864, the chair of industrial chemistry was expressly created for him at Girard College. Resigning this professorship two years later, he returned to this city, and devoted himself to scientific writing and experimentation. In or about 1869, he constructed, after wood cuts published in a German periodical, a telephone transmitter that had been invented by the German schoolmaster Philip Reis. This apparatus, the first seen in this country, is illustrated and described in the SCIENTIFIC AMERICAN for May 29, 1886. The original instrument of Reis had no adjusting screws, so that its operation was uncertain. Having provided these and made certain other improvements, the instrument worked very satisfactorily. Not so with the receiver, with which he first had considerable trouble, but of which he succeeded in remedying the defects by abandoning the principle of Reis and substituting the intermittent magnetization of an iron bar for the intermittent elongation of iron needles. This resulted in the production of a receiver which worked perfectly.

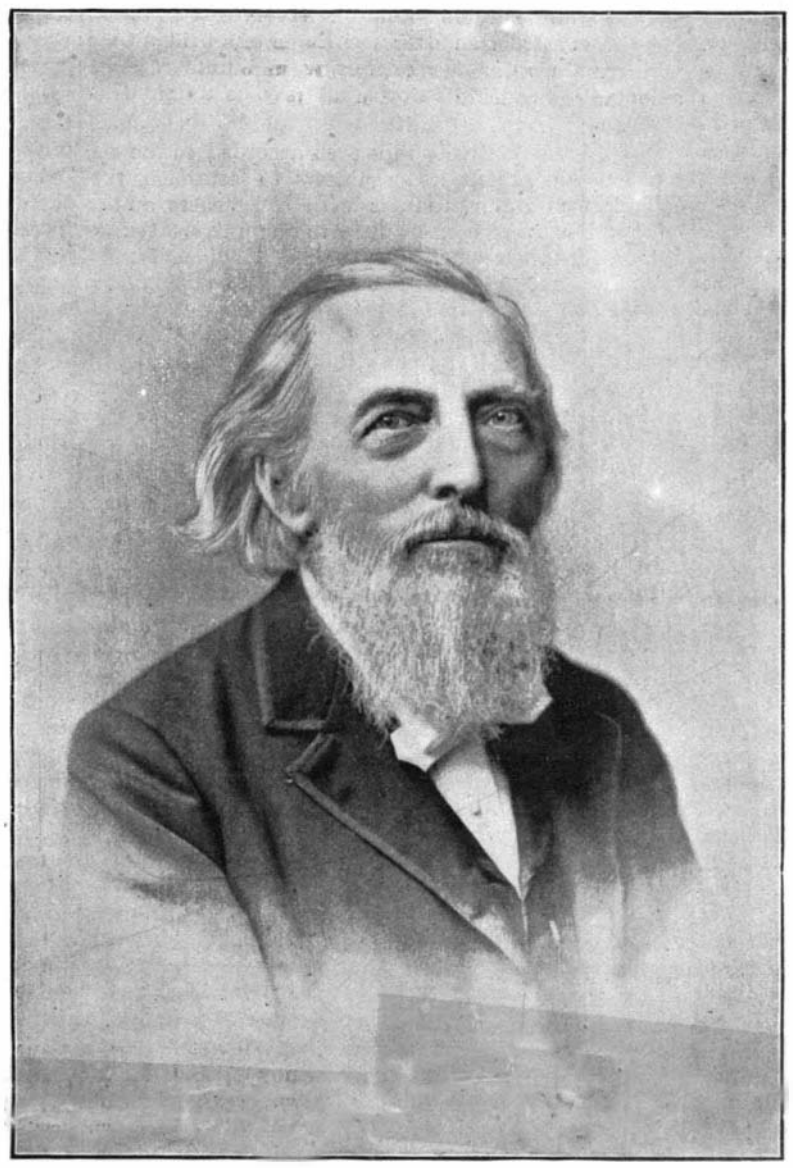
Dr. Vander Weyde was not content to rest with the instruments of these types only, but a year or so later, in 1870, made a form in which there was a horseshoe magnet mounted back of and facing the plate armature. It was simply a powerful electro-magnet receiver, something like, but immeasurably superior to, the instruments shown in the Bell patent of six years later.

In 1869, Dr. Vander Weyde accepted the editorship of the Manufacturer and Builder, a scientific journal of this city. During his long connection therewith his pen was very active, and his contributions to the scientific press and especially to this journal were numerous. He was one of the editors of Appleton's New American Cyclopedia and contributed many scientific articles to that work. As an inventor he had a wide reputation, the number of patents taken by him on inventions of his own, mostly pertaining to electricity, being more than two hundred.

Dr. Vander Weyde, who claimed descent from Walther von der Vogelweide, the celebrated minnesinger of the thirteenth century, was also an accomplished musician and well known as a composer, the number of his compositions amounting to more than three hundred.

He was corresponding member of numerous scientific societies in Europe and America.

Notwithstanding his advanced age, he enjoyed vigorous bodily and mental health up to the time of his death, within a week of which event he wrote and completed an article upon modern electricity for a scientific journal of this city.



DR. P. H. VANDER WEYDE.

Waves.

At the Royal Institution recently Lord Rayleigh, F.R.S., delivered the first of a course of six lectures on "Waves and Vibrations." After giving a brief account of the nature of the wave forms, he said that he proposed that day to deal more especially with waves of water. In such waves the velocity was not independent of the wave length (or distance between crest and crest), as it was in the case of sound waves, which in air moved with the same speed whether they were long or short. With waves of water the long ones traveled more quickly than the short. Waves at sea were mostly generated by wind, though other causes, such as earthquakes, occasionally operated. By blowing the surface of a long trough of water with a powerful fan the lecturer showed that the waves produced close to the source of the wind were shorter than those set up further away. The effect of oil upon waves was also illustrated and explained. Oil had no effect upon big rollers, but the broken water upon which it acted was just what was dangerous to boats in a tempest. A storm in mid-ocean generated waves of all lengths, but at a distance a kind of regularity was found, since the long waves arrived first, the shorter ones following afterward. In the island of Madeira the lecturer said he had observed waves with the long periodic time of ten seconds. The height of waves in the sea had often been exaggerated, owing to the difficulty of measuring them, but the highest authentic observation was about forty feet. The lecturer next discussed stationary waves as opposed to the progressive waves of which he had been speaking. They were described as the result of the meeting of two perfectly equal sets of progressive waves, and the production of two systems of them was shown in a round tank. Lord Rayleigh then spoke of the effects of waves on ships. He showed a small model boat so weighted as to have the same rolling period as the waves in the tank in which it floated. The result was that its rolling was exceedingly violent, but became comparatively slight when the weights were altered so as to change the rolling period. War ships, in which stability was very essential, were designed to have a longer period of roll than any waves they were likely to encounter. The lecture was concluded with some remarks on standing waves, which it was explained would be formed in a river flowing four miles an hour by a wave traveling up it at the same speed. The waves produced would be standing as regards an observer on the bank, but progressing as regarded the water.

THE FRENCH EXPOSITION OF 1900.

The preparatory period of the Universal Exposition of 1900 has been devoted by Mr. Alfred Picard, its distinguished commissioner-general, to a public exposition of the projects, which, as Mr. Guadet has well expressed it, in a report relating to the operations of the jury, which terminated its labors on December 28, 1894, has been especially a "competition of ideas." The result of it has been entirely satisfactory. The French architects have been able to respond to the appeal that was made to them with their habitual qualities of activity, fertile improvisation and artistic training.

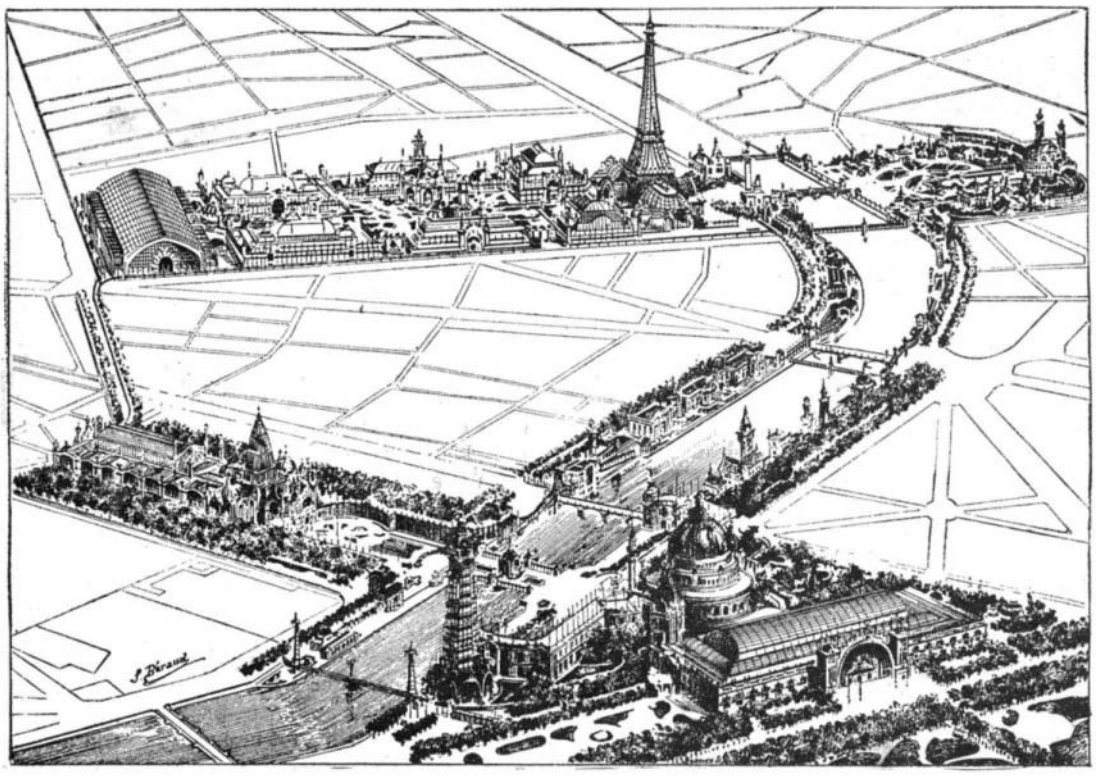
Finally, eighteen laureates have been rewarded, taking three first prizes, four second prizes, five third prizes and six mentions. According to the terms of the programme, their projects remain the property of the administration, which can use them as material from which to borrow the general elements of the final project that it has to establish. This labor is entrusted to Mr. Bouvard, an architect of merit whom a participation in the work of our preceding universal expositions makes especially competent.

This competition is itself alone a first indication of utility and interest. After examining what it has furnished, it cannot be doubted that the Exposition of 1900, although it has to surpass the fine one of 1889, will be attended with a success that will be as great as it will be brilliant. For the artistic and industrial honor of France, it will worthily mark the debut of the twentieth century.

Let us recall here that the laureates of the competition of projects for the Exposition of 1900 were the following:

First prizemen: Messrs. Girault, Henard and Paulin. Second prizemen: Messrs. Cassien Bernard, Gautier, Larche & Nachon and Raulin. Third prizemen: Messrs. Blavette, Esquie, Rey & Tronchet, Sortais & Toudoire and Pradelle. Fourth prizemen: Messrs. Bonnier, Hermant, Louvet & Varcollier, Masson-Detourbet, Mewes, Thomas and De Tavernier.

All these projects proceeded from the following great principles: To establish a con-



MR. GIRAULT'S PROJECT FOR THE PARIS EXPOSITION OF 1900.