

methods, and the application of digestion coefficients in practice.

The compilation represents a large amount of painstaking work and study on the part of its authors, but it was well worth the undertaking and will prove a valuable summary. It will make it possible to use American digestion coefficients quite generally, in place of the European ones which were for many years the main reliance. The compilation will also serve a useful purpose in showing the lines in which additional digestion experiments are needed to supplement the data already obtained, and in calling attention to feeding stuffs which have not been sufficiently studied as to their digestibility.

E. W. ALLEN.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES.

SECTION OF ASTRONOMY, PHYSICS AND CHEMISTRY.

A MEETING of the Section was held on Monday evening May 7th. Mr. Bergen Davis read a paper describing some new experiments in stationary sound waves. The experiments were in three groups, those with a sound wave anemometer, those with the use of empty gelatine medicine capsules instead of cork-dust to show the Kundt figures, and those concerning the longitudinal motion of a cylinder closed at one end across the stream lines in a stationary sound wave.

The stationary sound wave was that produced in a stopped organ pipe, provided with a glass panel for observation, when it was sounding its first overtone. A thin rubber diaphragm near the central node prevented air currents due to the blowing of the pipe. The cups of the miniature anemometer were made by dividing No. 2 gelatine capsules longitudinally so as to form half cylinders and mounting them on card-board arms. The anemometer rotated with ten revolutions per second in the loop of the wave and came nearly to rest in the node. The rate of revolution at various positions along the wave varied approximately according to a sine curve. The maximum amplitude of the wave as calculated from the above rate was .57 cm.

The Kundt's figure experiment was performed by emptying a box of No. 5 gelatine capsules into the middle of the loop. They arranged themselves in rows across the pipe. Each capsule attracted its neighbor at the ends and repelled it at the sides. The experiment is quite striking.

The motion of a cylinder perpendicularly to the stream lines was obtained by using a capsule from which the cap had been removed. Such a capsule moved in the direction of the closed end with considerable force. This was also shown by making a small mill with a capsule at the end of each of four card-board arms. The rates of revolution in various parts of the wave made, when plotted, nearly a sine curve. The force acting normally to the closed ends of the cylinders was measured with a torsion balance. The square roots of the torsion deflections gave, when plotted, an approximate sine curve. The experiment was performed in air, illuminating gas, carbon dioxide and hydrogen. The torsion deflections were directly proportional to the densities of the gases. Professor William Hallock first suggested the cause of this effect, showing that it was due to the principle of Bernoulli, that a gas in motion is less dense than the same gas at rest. The vibrating air has considerable velocity while the air within the cylinders is nearly at rest. The force is due to the difference of density on the two sides of the closed end of the cylinder. The author used this principle to determine the amplitude of vibration. Professor R. S. Woodward assisted him in applying the proper hydrodynamical principles, and he calculated that the change in density was such as to give a pressure of 21 dynes per square centimeter, while the amplitude was .33 centimeters. This agrees closely with the value obtained with the sound wave anemometer.

Professor Hallock also exhibited some color photographs and some sound wave photographs taken by Professor R. W. Wood, of the University of Wisconsin.

WILLIAM S. DAY,
Secretary of Section.

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY.

A REGULAR meeting of the Section was held on May 28th. The first paper, by G. B. Ger-

mann, on 'The Acquirement of Motor Habits' reported some experiments in which the author measured the degree of perfection attained in rapid naming of one hundred color squares arranged in regular order, by the time required to read the whole series. Results were presented for the rapidity of reading at different stages of practice and after different intervals of discontinuance of practice.

The second paper, by C. H. Judd, was on the subject 'Studies in Vocal Expression.' This paper reported measurements of changes in pitch during the articulation of single words. The pitch was determined by means of enlarged records of diaphragm vibrations which were compared with the tracing made from a standard tuning fork. Twenty records were reported. In general the accented syllable was higher in pitch than the unaccented syllables, though this was not true in such words as 'abhorrent' and 'abnormal.' The final syllable in the twenty records showed a very general tendency to fall off in pitch. The amount of change in such words as 'educing' and 'illusion' will appear from some cases of the former. The three syllables were as follows: case I., 161, 244, 171 (the end of the syllable being at 131); case II., 157, 255, 185 (end of syllable 125); case III., 172, 248, 166 (end of syllable 123). Other records did not show such marked changes. One for the word 'abasement' is as follows: 103, 150, 140.

CHARLES H. JUDD,
Secretary.

THE NEW YORK SECTION OF THE AMERICAN CHEMICAL SOCIETY.

THE June meeting of the New York Section of the American Chemical Society was held on the 8th inst., at the Chemists' Club.

The retiring chairman, Dr. Chas. F. McKenna, invited the president of the Society, Dr. William McMurtrie, to preside. An address was made by Dr. McKenna on the 'Advancement in the Study of the Properties of the Metals,' and on the 'Present and Future of the New York Section of the American Chemical Society.'

The election of officers for the ensuing year resulted as follows:

Chairman, Dr. C. A. Doremus.

Secretary and Treasurer, Durand Woodman.

Executive Committee, C. F. McKenna, M. T. Bogert, P. C. McIlhiney.

The following papers were then read:

'Comparison of Iodine and Bromine Figures of Various Fatty Oils,' by H. T. Vulté and Lily Logan.

'The Chemistry of Materials used in Perfumery and kindred Arts,' by T. C. Stearns.

'Rapid Method for Separation of Cadmium, Bismuth, etc., from Zinc and Manganese,' by George C. Stone.

'On the Oxidation of Platinum,' by Dr. R. C. Hall.

A motion was made and seconded that a fund should be raised for a prize for the best paper read before the Society during each season. This was in pursuance of a suggestion made by the chairman in his address.

Notice was given of the general meeting of the American Chemical Society, to be held in the latter part of the month, after which the Section adjourned.

DURAND WOODMAN,
Secretary.

DISCUSSION AND CORRESPONDENCE.

PREHISTORIC REMAINS IN JAPAN.

TO THE EDITOR OF SCIENCE: While in Okayama, Japan, in the early part of this month I was conducted by Rev. J. H. Pettee to the hills about two miles east of the city to see some prehistoric stone structures which he had noticed in his rambles. The first one to which we came was situated about 500 feet above the valley (which was nearly at sea level) near the summit of a steep declivity overlooking an extensive country. This was built of stones laid up in regular courses, some of them very large. One stone was $5\text{x}5\text{x}4\frac{1}{2}$ feet. Large flat stones served for the roof. The entrance was twenty-one feet long, six feet wide and about twelve feet high. This opened into a room twelve feet long, of which the north side was flush with one of the walls of the entrance, making the entire length of this wall thirty-three feet. The room is twelve feet square, and about the same height.

The whole was covered with a mound of earth, upon which trees of considerable size were growing. This one had been cleaned out