The results are in close agreement with those that have been obtained by other methods.

The Hypothesis of Radiant Matter: MORRIS LOEB.

Dr. Morris Loeb reviewed the present status of the hypothesis of radiant matter. He showed that the Electron Hypothesis rests partly upon the Lorenz-Maxwell electromagnetic theory of light, especially as exemplified in the Zeeman effect, and partly upon the electro-conductivity of gases, as studied by J. J. Thomson and others. To this must be added the various phenomena of the electric discharge in vacuo as well as of the radiations from thorium, uranium and radium, which are likewise explained upon the assumption of small particles actually propelled from the electrodes or expelled from the atoms. This has led further to the idea of a corpuscular structure of the atom, for which corroboration is sought in the apparent decomposition of the elements, the "degradation" of those of higher into others of lower atomic mass. In the opinions of many, the constituent corpuscles are themselves not matter but electric disturbances of the ether. Dr. Loeb pointed out certain discrepancies between various parts of the theory, which must be explained away, before it could be accepted as a whole. Thus, measurements upon the Zeeman effect indicate a very small number of electrons; while Rutherford's transformation hypothesis calls for a very large number of freely moving particles within the atom. A nebular or corpuscular structure of the atoms would give the electrons of the cathode rays a so much greater free path, than would result from the existence of atoms as solid bodies, that it becomes difficult to account for the various phenomena attending increasing rarefaction in the Crookes tube upon the kinetic reasoning usually applied. The speaker also showed that most of Thomson's calculations upon the speed and masses of the electrons, which are usually cited as showing the non-existence of matter, really depend upon the arbitrary assumption that the numerator rather than the denominator of the ratio e/m is a constant; while he really transfers the chief attributes of matter to energy, without, as a matter of fact, reducing the number of our fundamental ideas. Discussing the recent experiments of Cameron and Ramsay, he argued that the appearance of sodium and lithium in a copper nitrate solution, exposed to the emanation from radium, could not be taken as proof for the decomposition of copper, until a corresponding loss of the latter metal shall have been demonstrated. It will be remembered that Cameron and Ramsay ascribe the transformation of the emanation into helium, the lightest of the inert gases, to the bombardment of α particles; when water is present to take up some of the energy, neon is produced; while copper salts still further shield the emanation atoms, so that they are only degraded to argon, the heaviest member of the series. In view of the great excess of water-molecules in the copper nitrate solution, Dr. Loeb holds that this hypothesis calls for the presence of a great deal of neon, mixed in with the argon, while Ramsay and Cameron emphasize its absence.

The Stereochemistry of Indigo: K. GEO. FALK and J. M. NELSON.

Experiments upon Barfoed's Acid Cupric Acetate Solution as a Means of Distinguishing Glucose from Maltose, Lactose and Sucrose: F. C. HINKEL and H. C. SHERMAN.

C. M. JOYCE,
Secretary

DISCUSSION AND CORRESPONDENCE

TWO NEW METEORITES

Ainsworth Meteorite.—This siderite, to which I propose to give the name of the town near which it was found, was recently purchased from Mr. J. C. Toliver. It was found last winter by one of Mr. W. G. Townsend's little boys, who called his father's attention to it, partly buried in the sand beside a small creek in Brown Co., Nebraska, about six miles northwest of Ainsworth. It measures approximately $4\frac{1}{2} \times 6 \times 7$ inches, and weighs $23\frac{1}{2}$ pounds (10.65 kilograms). The specific gravity of the whole mass is 7.85. A fractured surface—showing beautifully the coarse octohedral structure—on one of the sharper edges

and adjoining side, shows where a considerable piece, weighing perhaps two pounds, was broken off, antecedent to its burial, probably at the time it fell. Two of the projections on one side are flattened, as if by pounding, but closer examination shows fine striæ running evenly across both surfaces, which are in the same plain and partly join each other, suggesting that the meteorite in falling may have glanced on a rock, making a slickensided surface. The meteorite also shows two marks made by a sharp tool, like an ax, which also apparently antedate its last burial in the sand. But the most marked feature about this iron is the presence, on the surface, in a number of places, of bright unaltered triolites with a part of a crystal face showing in one place. This feature, in connection with the general freshness of the iron and the presence of what seems to be the original surface over a good part of it, indicates that it is a comparatively recent fall.

Williamstown Meteorite.—I secured this siderite last March from Mr. A. E. Ashcraft, who found it April 25, 1892, on his farm in Grant County, Ky., three miles north of Williamstown. It is a nearly square, thin, flat-shaped iron about $16 \times 12 \times 2\frac{1}{2}$ inches thick in the center, thinning to a blunt edge at either end. It was entire when it reached me, with the exception of a few ounces broken from one edge, and weighed 68 pounds (30.85 kilo.) and has a specific gravity of 8.1. It has already been cut into a number of sections, which etch very readily, showing the structure to be that of a Mediam octohedrite. Three distinct systems of Kamacite lands are cut at approximately right angles, while a third is cut at an angle of 60° or 70°, thus showing an apparent breadth of about three times that of the other lands. Triolite seems to be pretty generally distributed throughout the mass in very small grains, although two nodules about one half inch in diameter were revealed, but the total amount of this mineral is small, as might have been inferred from the general smoothness of the surface, and the specific gravity.

A fuller description of both of these meteorites will be given when the analysis, which will be made at the National Museum, is completed.

Edwin E. Howell

Washington, D. C.,
September 17, 1907

Dr. Armsby's New Unit for Energy

In a paper read before the Society for the Promotion of Agricultural Science[1] Dr. Armsby suggests a new unit for energy. This unit is a million gram-calories and he calls it a *Therm*—spelled with a capital *T*. Since the word *therm* has been suggested and occasionally used to mean the gram-calorie, and since we are accustomed to use the prefixes *kilo* and *mega* to denote, respectively, a thousand and a million—as in kilometer, kilogram, kilowatt, megadyne, megohm—would it not conform better to our customary nomenclature to call the kilogram-calorie a *kilocalorie* and a thousand kilogram-calories a *megacalorie?* These names have the advantage that they would at once be understood by a man who had never seen them before, whereas the name *Therm* would for a time need explanation.

A. T. Jones

Purdue University

Special Articles

Some Life-History Notes on Megarhinus Septentrionalis[2] D. and K.

Some observations upon the life history of this rather rare and beautiful species of mosquito were made at this station[3] during the past season.

On September 10, 1906, the senior author collected 24 larvæ of this species and several of a smaller species, probably *Culex pipiens*, from a half-barrel tub of rain water, not more than 100 feet from an inhabited dwelling, on a farm near Church Hill, Tenn. All were placed in a small pail together and carried overland twenty-three miles in a buggy and then forty on the train to this laboratory,

[1] Science, Vol. XXVI., p. 670.

[2] Smithsonian Miscellaneous Collections, Vol. 48, Part 3, No. 1657.

[3] Tennessee Agricultural Experiment Station, Knoxville.