

eases of bone, and Dr. James T. Case, Battle Creek, Mich., slides of the alimentary tract. Others have promised to send slides, and it is the intention to add to the collection from time to time as important work is done. The collection is available for study by any civilian practitioner on application to the curator, Army Medical Museum, Washington, D. C.

WE learn from the *Journal* of the American Medical Association that acting under auspices of the commission appointed by the Medical Society of the State of Pennsylvania for the Conservation of Vision that an active campaign is under way against ophthalmia neonatorum, needless eye injuries in the trades, trachoma, wood alcohol, wrong lighting of buildings and like causes of blindness. In addition to a large number of distinguished laymen, acting as advisory members, the Commission on Conservation of Vision includes Dr. Wm. Campbell Posey, Wills Eye Hospital, Philadelphia, chairman; Dr. Wm. W. Blair, University of Pittsburgh, Pittsburgh, Pa.; Dr. Clarence P. Franklin, Philadelphia; Dr. C. M. Harris, Johnstown, Pa.; Dr. Edw. B. Heckel, Pittsburgh, Pa.; Dr. T. B. Holloway, University Hospital, Philadelphia, secretary; Dr. Wendell Reber, Temple University, Philadelphia; Dr. Edward Stieren, Pittsburgh, Pa.; Dr. Lewis H. Taylor, president of State Society, Wilkes-Barre, Pa.; Dr. Wm. Zentmayer, Wills Eye Hospital, Philadelphia; Dr. Samuel G. Dixon, commissioner of health of the state of Pennsylvania, Harrisburg, Pa., honorary chairman.

ALASKA coal fields continue to be undeveloped, according to the United States Geological Survey. The only coal being mined is some lignite coal taken out for local use at Cook Inlet, on Seward Peninsula, and at several other localities. The total production in 1912 did not exceed 100 or 200 tons. One oil company continued operations in the Katalla petroleum field in 1912, as in 1911. One of the two producing wells is said to have been sunk to a depth of about 800 feet. The oil is procured by pumping and is refined in a small

plant located near Katalla, and the gasoline finds a ready sale in the coastal settlements of this part of Alaska. There are several other oil companies which control property in this field, but these seem to have done little in the way of development during 1912.

UNIVERSITY AND EDUCATIONAL NEWS

A GIFT of \$4,350,000 to the Cornell Medical School is now officially announced. The name of the donor is withheld but he is believed to be Col. Oliver H. Payne, of New York City.

AT the conference of the Association of American Universities, held November 6, at the University of Illinois, eighteen of the twenty-two institutions admitted to membership were represented as follows: University of California, Dean A. O. Leuschner; Catholic University of America, Professor D. W. Shea; University of Chicago, Dean Rollin D. Salisbury and Dean Albion W. Small; Clark University, Professor J. W. Baird; Cornell University, Dean E. Merritt; University of Illinois, Dean D. Kinley and Dean K. C. Babcock; State University of Iowa, Dean C. E. Seashore; Leland Stanford Junior University, Professor W. W. Willoughby; University of Kansas, Professor F. H. Hodder; University of Michigan, Dean K. Guthe; University of Minnesota, Dean G. S. Ford; University of Missouri, Dean I. Loeb; University of Nebraska, Dean L. A. Sherman; University of Pennsylvania, Dean H. V. Ames and Dean J. C. Rolfe; University of Wisconsin, Director G. C. Comstock.

THE non-resident lectures in the graduate course in Highway Engineering at Columbia University appointed for the 1913-1914 session are as follows: John A. Benschel, New York State Engineer; William H. Connell, chief, Bureau of Highways and Street Cleaning, Philadelphia; C. A. Crane, secretary, the General Contractors Association; W. W. Crosby, chief engineer, Maryland Geological and Economic Survey, and consulting engineer; Charles Henry Davis, president, National

Highways Association; John H. Delaney, commissioner, New York State Department of Efficiency and Economy; A. W. Dow, chemical and consulting paving engineer; H. W. Durham, chief engineer of highways, Borough of Manhattan, New York City; C. N. Forrest, chief chemist, New York Testing Laboratory; Walter H. Fulweiler, chief chemist, United Gas Improvement Company; Frank B. Gilbreth, consulting engineer; George P. Hemstreet, superintendent, The Hastings Pavement Company; Samuel Hill, president, American Road Builders' Association; D. L. Hough, president, the United Engineering and Contracting Company; J. W. Howard, consulting engineer; Arthur N. Johnson, state highway engineer of Illinois; William H. Kershaw, manager, Paving and Roads Division, the Texas Company; Nelson P. Lewis, chief engineer, Board of Estimate and Apportionment, New York City; Harold Parker, first vice-president, Hassam Paving Company; Paul D. Sargent, chief engineer, Maine State Highway Commission; Philip P. Sharples, chief chemist, Barrett Manufacturing Company; Francis P. Smith, chemical and consulting paving engineer; Albert Sommer, consulting chemist; George W. Tillson, consulting engineer to the president of the Borough of Brooklyn.

DR. O. W. RICHARDSON, F.R.S., professor of physics in Princeton University, has been appointed to the Wheatstone chair of physics at King's College, London, in succession to Professor C. G. Barkla, F.R.S.

DR. KARL BOEHM, of Heidelberg, has been appointed professor of mathematics in the University of Königsberg as successor to Professor G. Faber.

DISCUSSION AND CORRESPONDENCE

ATOMIC IONIZATION AND ATOMIC CHARGES

IN a discussion of "The Rutherford Atom" in *SCIENCE* for August 22 Mr. Fulcher gives Kleeman's table of the relative ionization of different elements by the β and γ radiation and concludes that "atomic ionization seems to depend primarily upon the atomic weight,

which is probably proportional to the number of electrons in the atom."

Whatever theory of atomic structure we may adopt, it seems certain that electrons are held to their atoms by electrical forces in which the mass of the atom can play no part. If a relation exists between the mass of an atom and its electrical charge, then a corresponding relation should exist between its mass and its attraction for electrons. Since the ionization investigated by Kleeman consisted in the separation of electrons from their atoms by the discharge of α , β and γ radiation through the substance, it seems probable that the weaker the hold of the atoms upon their electrons the greater would be their ionization.

Elsewhere I have tried to show that it is possible to calculate the electrical charges of a number of free atoms from their atomic mass and their velocity in electrolysis. If the above reasoning is correct, the charges calculated in this way should bear a definite relation to the ionization in Kleeman's investigation.

Unfortunately, the atomic charges can be calculated in this way for only four of the elements in Kleeman's table, but the indications given by these four seem so conclusive that I have thought it worth while to present them here. The four elements referred to are hydrogen, chlorine, bromine and iodine. Their relative ionization by the different rays and their charges as electrolytic ions are given in the table below.

Element	Ionization			Charge
	α Rays	β Rays	γ Rays	
H.....	.175	.18	.18	+ 5
Cl.....	1.16	1.44	1.44	— 36.5
Br.....	1.72	2.76	2.81	— 84.9
I.....	2.26	4.10	4.50	—132.5

It will be seen that while the ionization produced by the β and γ rays is practically the same, that produced by the α rays is much less. In either case, however, there is a constant relation between the ionic charges and the amount of ionization, showing that the greater the negative charge of the atom the