sist of eight species. No subspecies are admitted, notwithstanding that all but two of the species have been subdivided, and we think rightly, by recent authors. The nomenclature is not fully up to date, for two of the species have older tenable names than those here used. A new name, *Colius hæmatonotus,* is given, apparently by inadvertence, in the key on page three, to *Colius castanonotus* Verreaux. Our author refers all the species of this family to a single genus, but, as we have elsewhere shown, *Urocolius* Bonaparte, containing *Urocolius macrourus* and *Urocolius indicus* (= *erythromelon* Auct.), has more than one claim to recognition. The single plate in this part represents *Colius leucocephalus* and details of two other species.

The cosmopolitan family Pelecanidæ (pelicans) (part VII.) comprises, according to Doctor Dubois, the single genus, *Pelecanus,* with eleven forms, three of which he ranks as subspecies. In the case of *Pelecanus californicus,* which he considers a race of *Pelecanus fuscus* (or, as it should be called, *Pelecanus occidentalis* Linnæus), he is probably right; but *Pelecanus thagus* Molina is apparently a distinct species. The plate shows a figure of the somewhat doubtful *Pelecanus sharpei,* together with the heads of four other forms.

The Musophagidæ, or plantain eaters (part VIII.), another characteristic African family, are here referred to seven genera, without subfamilies. The largest genus, *Turacus,* contains twenty-one forms, including several subspecies; but all the other genera are small, none having more than four species. Two of them—*Corythæola* and the recently discovered *Ruwenzorornis*—are monotypic. We are glad to see that Doctor Dubois adopts the original form of the generic name *Chizærhis* Wagler, instead of the emendation *Schizorhis* so much in vogue. No new forms are described in this number. The two plates illustrate nine species.

HARRY C. OBERHOLSER

SCIENTIFIC JOURNALS AND ARTICLES

The American Museum Journals for November and December are both out containing much information in regard to the work of the Museum. There is a new departure in the shape of colored plates, one showing a boulder containing a deposit of precious opal on quartzite, the other the group of wild turkeys recently placed on exhibition. The December number contains accounts of the expeditions made in 1907 to obtain material for bird groups, of the making of an Attu basket, and of an ant-hunting trip to Europe. It also comprises the Index to Vol. VII.

The Bulletin of the Charleston Museum for November continues the "History of the Museum" by William G. Mazyck and covers the period from 1798 to 1850. We find here many notable and well-known names, such as Gibbes, Holmes, Holbrook, Bache, Maury and Twomey.

Bird Lore for November-December is of unusual interest and contains illustrated articles on "A Thrashing by Thrashers" by Herbert K. Job, "Around the Horn for Petrels" by John T. Nichols, "The Heath Hen" by George W. Field, "A Season's Field Work" by Frank M. Chapman, and the "Migration of Flycatchers" by W. W. Cooke. The number comprises a long and interesting Report of the Work of the Audubon Societies by the President, William Dutcher, and various Special Agents. This should be read by everyone.

The Museums Journal of Great Britain for November notes the gift to Bournemouth of the residence and collections of Mr. Cotes to form an Art Gallery, another of the many instances where collections made by men of wealth have eventually found their way to the public. W. W. Watts discusses "Some Uses of a Museum of Industrial Art," noting the importance of arousing interest in artistic objects, by showing their historical associations or the conditions under which they have been made. A. B. Meyer presents "Some Notes on the Peacock in Display" showing that the position of the wings may be different in different individuals.

SOCIETIES AND ACADEMIES

THE INDIANA ACADEMY OF SCIENCE

THE winter meeting of the academy was held in the Shortridge High School at In-

dianapolis, November 28 and 29. President D. M. Mottier presided and, at the opening session, delivered an instructive and interesting address on "The History and Control of Sex." The following papers were read either in general session or in the sectional meetings formed by grouping related subjects:

GENERAL

"The Origin of Adaptation in the Fresh-water Fauna," by C. H. Eigenmann.

"Spectacles—A Concession to the Theory of Evolution," by A. G. Pohlman.

"New Science Laboratories in Moore's Hill College," by A. J. Bigney.

"A Study of the Sex Ratio in the Fruit Fly," by W. J. Moenkhaus.

"Some Photographs (lantern slides) of Daniel's Comet, 1907," by W. A. Cogshall.

"The Celebration by the New York Academy of Sciences of the Two-hundredth Anniversary of the Birth of Linnæus," by G. W. Wilson.

"Hand Dexterity," by A. G. Pohlman.

"The Autopsy in Relation to the Public Health," by H. R. Alburger.

"An Investigation of the Fuel Value of Indiana Peats," by R. E. Lyons.

ZOOLOGY

"Tardy Humming Birds," by W. B. Van Gorder.

"The Moulting Mechanism of Lizards" (lantern slides), by H. L. Bruner.

"A Crow Roost near Remington, Ind.," by F. J. Breeze.

"The Relation of the Degree of Injury to the Amount of Regeneration and the Moulting Period in Gammarius," by Mary Harman.

"The Influence of Environment on Man," by Robert Hessler.

"Some Internal Factors controlling Regeneration in Scyphomeduson, *Cassiopea Xamachana*," by Charles Zeleny.

"Selective Fertilization in Certain Fishes," by W. J. Moenkhaus.

"Heredity in the Tumor Cell," by H. R. Alburger.

"The Circulation through the Fetal Mammalian Heart," by A. G. Pohlman.

"The Technique of the Three-dimension Reconstruction Model," by A. G. Pohlman.

"Experiments on the Rate of Regeneration," by M. M. Ellis.

"Observations on the Senses and Habits of Bats," by W. L. Hahn.

"Some Notes on the Habits of the Common Box Turtle," by Glen Culbertson.

BOTANY

"The Peronosporates of Indiana," by G. W. Wilson.

"The Existence of *Rœstelia pencillata* and its Teliosporic Phase in North America," by F. D. Kern.

"The Heterotype Chromosomes in *Pinus* and *Thuja*," by I. M. Lewis.

"Insect Galls of Indiana," by Mel T. Cook.

GEOLOGY

"A Probable Origin of the Small Mounds of the Mississippi and Texas Regions," by A. B. Reagan.

"Indiana Soil Types," by C. W. Shannon.

"Structures in the So-called 'Huron' Formation of Indiana, induced by the Solution of the Mississippian Limestone Beneath," by J. W. Beede.

"Stratigraphy of the Richmond Formation of Indiana," by E. R. Cummings.

"Some Peculiarities of the Valley Erosion of Big Creek and its Tributaries in Jefferson County," by Glen Culbertson.

PHYSICS

"The Cause of Surface Tension," by A. L. Foley.

"Loss of Weight in Chemical Reactions," by J. B. Dutcher.

CHEMISTRY

"The Electrolytic Production of Selenic Acid from Lead Selenate," by F. C. Mathers.

"Some Complex Ureids," by James Currie.

"Thiocarbonylsalicylamide and Derivatives," by R. E. Lyons.

"The Volumetric Determination of Selenic Acid," by R. E. Lyons.

The attendance at the meetings was about seventy-five and the interest shown in the work being done in the state was above the average. New members were elected and the treasurer's report showed a satisfactory condition of the finances. Professor Amos W. Butler, secretary of the state board of charities and one of the oldest members, called attention to the fact that two years hence would occur the quarter centennial anniversary of the organization of the academy, and suggested the desirability of a meeting befitting the occasion. As a result plans were started looking to the celebration of the event. The academy's library, which now numbers several thousand volumes

of books and pamphlets, was consigned to the care of the state librarian, who is to catalogue and shelve the collection, and make it as available for use by the members and the public as is any part of the library. The academy reserves the right to remove the collection at any time under certain stipulated conditions.

A discussion of the general welfare of the academy developed the need of bringing more of the science men into closer touch with the work of the academy, and of extending its influence to every part of the state. For this work a committee was appointed whose duty it is to devise a way of bringing the work of the academy more directly to the attention of the scientists. And as a further means to the same end it was decided to hold the winter meetings at different educational centers instead of at Indianapolis, which for years has been the stated meeting place. Finally, it was the general feeling that interest would increase if the state appropriation for publishing the *Proceedings* could be increased so that the papers would appear in a more extended form and if separates of the papers could be secured at a more reasonable price. The summer meeting was discontinued for the present.

JAMES H. RANSOM,
Secretary

THE PHILOSOPHICAL SOCIETY OF WASHINGTON

THE 639th meeting of the society was held November 23, 1907—President Hayford in the chair. Mr. Fred E. Wright spoke of "Recent Improvements in the Petrographic Microscope" describing briefly the most important improvements which have been made in the petrographic microscope during recent years. The different attachments and accessories were considered especially with reference to their general applicability and the degree of accuracy attainable by their use. The speaker explained that the improvements had been chiefly brought about by the demands of geologists and mineralogists. The optical principles involved in the study of minerals, and how these can be applied in mineral classification, were briefly defined. With the microscopes now available it is possible to measure the refractive index of mineral grains that are only a few thousandths of a millimeter in diameter. Special mention was made of the double micrometer ocular for determining optic axes of minerals. By its aid the optical angle can be measured to one degree if both axes are visible, or to 3° if only one is visible. Special appliances were also shown for measuring the extinction angle by the use of which the best accuracy attainable is from 10′ to 15′.

Mr. W. P. White presented a paper on "Calorimetric Measurements within the Electric Furnace." The special furnace which it was proposed to use in the high temperature measurements, and the conditions which the electric furnace imposes on high temperature problems were briefly mentioned. The difficulty of obtaining a good calorimeter was pointed out.

The method of dropping heated bodies from a furnace into a calorimeter is familiar and satisfactory, but fails to give many inversion —and latent heats which require to be determined on a rising temperature. Dropping into a furnace or manipulation with it is exceedingly difficult. By measuring the heat flowing into a crucible by means of the difference of temperature between crucible and furnace wall, a new and simple radiation method is obtained. In a preliminary survey, this method was satisfactorily applied to 2-gram charges of silicates as high as 1560°. The temperature rose 8° a minute; the temperature difference (furnace wall—crucible) was about 3°, which was measured to 0.1°. Results agreed within six per cent. By keeping the temperature difference constant and varying the rate, systematic errors in the reading of the thermoelements were avoided. This method compares the latent with the specific heat, which is then to be determined by the dropping method.

R. L. FARIS,
Secretary

THE TORREY BOTANICAL CLUB

THE meeting for November 27, 1907, was called to order at the Museum Building of the New York Botanical Garden at 3:45 P.M. by the secretary, and Dr. N. L. Britton was

elected chairman. Nineteen persons were present.

Mr. G. V. Nash exhibited a flowering specimen of the orchid *Masdevallia bella*. The Rev. Leander T. Chamberlain read an extract copied from the Province Laws of Massachusetts, 1736–1761, p. 153, entitled "An Act to Prevent Damage to English Grain, arising from Barberry Bushes." All persons in the province having barberry bushes growing on their land, were ordered to destroy them before a named date. Severe penalties were prescribed on failure to comply with this law. A brief discussion of the subject followed.

Dr. Britton exhibited a specimen from Jamaica, W. I., illustrating an economic use of cat-tails. This was a "bed," made from the split stems of the *Typha domingensis*.

The following scientific program was presented:

A New Utricularia from Long Island: JOHN HENDLEY BARNHART.

The new species was described and specimens of it exhibited. The paper and description will be published in full in the *Bulletin of the Torrey Botanical Club*, for December, 1907.

Some Anomalous Leaf-forms: C. STUART GAGER.

Specimens were shown illustrating the formation of ascidia in the white (?) clover and in a leaflet of the licorice (*Glycyrrhiza*); variations in the branching of the leaf-blade of a species of *Fraxinus;* transitions, in *Aralia racemosa,* from a once-compound to a normally twice-compound leaf; branching of the leaflets of *Hicoria ovata* and of *Æsculus hippocastanum;* and various stages of transition, in *Gleditschia triacanthus,* from once-compound leaves to twice- and thrice-compound ones, the transitional forms occurring in some instances on the same branch, and even on the same leaf. Rosette leaves were also shown from several species of Biotian asters, showing gradual transitions from a slight indentation of the margin of the blade along its basal half to the development of petiolate leaflets, so that the leaf appeared to be a pinnately compound one. The possible causes of these variations were briefly discussed.

Brief discussion followed the presentation of both papers.

C. STUART GAGER,
Secretary

THE AMERICAN CHEMICAL SOCIETY. NEW YORK SECTION

THE third regular meeting of the session of 1907–8 was held at the Chemists' Club, 108 West 55th Street, on December 6.

Messrs. T. J. Parker, L. H. Baekeland, Hugo Schweitzer, G. C. Stone, E. G. Love and Morris Loeb were elected to represent the section in the council of the society.

The following papers were read:

The Relative Solubility of Silver Halides and Silver Sulphocyanate: ARTHUR E. HILL.

The solubilities of silver chloride, sulphocyanate, bromide and iodide are compared by the method of solution equilibrium; when silver chloride, for example, is treated with a solution of potassium sulphocyanate a partial decomposition of the chloride occurs, as shown by the expression

$$AgCl + KCNS \rightleftarrows AgCNS + KCl.$$

According to theory,

$$\frac{S_1}{S_2} = \sqrt{\frac{C_1}{C_2}}$$

where S_1 and S_2 stand for the solubilities of the two difficultly soluble salts, expressed in equivalents per liter, and C_1 and C_2 are the concentrations of their anions in solution when equilibrium has been reached. The salts considered are well suited to study by this method, since the dissociation constants of the potassium salts are equal, and the silver salts are all totally dissociated; hence no corrections for inequalities in dissociation are necessary. By application of the foregoing formula to the four salts mentioned, in solutions of varying concentration, the relative solubilities at 25° C. are found to be as follows:

AgCl	= 1.00000
AgCNS	= 0.07480
AgBr	= 0.05500
AgI	= 0.00077

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