colith-forming Protozoa. The subject-matter is also varied, this first number for example containing the following contributions:

1. 'Die Protozoen und die Zelltheorie.' An essay by Professor Richard Hertwig replete with excellent points and suggestive ideas.

2. 'Bemerkungen über Cyanophyceen und Bacteriaceen.' A special morphological paper by Professor Otto Bütschli on the nature of the so-called *Centralkörper* in certain species of Nostocaceæ and Bacteria.

3. 'Beiträge zur Kenntnis der Colliden.' A systematic paper by Professor Karl Brandt on one of the orders of the Peripylarian Radiolaria.

4. 'Die Coccolithophoridæ.' A morphological, and systematic paper by Dr. K. Lohmann on these little-known phytoflagellates.

5. 'Notiz über die *Trichomonas hominis*.' A note by Dr. S. Prowazek on a human parasite.

6. 'Das System der Protozoen.' A proposed classification of the Protozoa by Dr. F. Doflein.

The *Archiv* is to appear at irregular intervals and without set limits as to size. Contributions in English, German and French will be printed in these languages without German summaries.

We heartily wish for the success which the new undertaking deserves.

G. N. C.

SCIENTIFIC JOURNALS AND ARTICLES.

The Journal of Physical Chemistry, November. 'Alloys of Lead, Tin and Bismuth,' by E. S. Shepherd. A quite complete study of these alloys, from which the conclusions are drawn that from them the tin crystallizes pure, but often in an unstable denser form; and that lead and bismuth form two series of solid solutions, in each case with contraction. When the fused alloys are cooled fairly rapidly the saturation concentrations are not reached. A bibliography accompanies the paper. 'Influence of the Solvent in Electrolytic Conduction,' by Harrison Eastman Patten. A paper from the University of Wisconsin presenting the following conclusions among others: The lowering of the specific electrical conductivity of non-aqueous solutions by addition of a pure solvent has been found to be approximately proportional to the number of gram-molecules of solvent added. Here is offered a new method for molecular weight determinations. Electrical conductivity seems to be the resultant of: (1) The tendency of some molecules to transfer the charge produced by an impressed electromotive force, and (2) the resistance offered to this transfer of charge by other molecules. Conduction of electricity by solutions depends upon the fact that a compound is formed by the solvent and solute when solution takes place.

The *Botanical Gazette* for November contains the following papers: D. S. Johnson contributes additional morphological information in reference to the Piperaceæ, describing the ovule, seed and fruit of *Piper;* the development and germination of the seed of *Heckeria;* and the germination of the seeds of *Peperomia* and *Heckeria*. The development of the ovary, ovule and embryo-sac in *Piper* and *Heckeria* differs widely in several respects from that found in the related genus *Peperomia*. *Piper* and *Heckeria* differ strongly from one another in the formation of endosperm, which in the former begins with free nuclear division, and in the latter with cell formation. In germination the swelling of the endosperm and embryo bursts the seed coats and the endosperm protrudes through the rent as a sac which continues to surround the embryo until foot, root and cotyledons are differentiated. The author concludes that the aleurone containing endosperm of these forms acts as a digesting and absorbing apparatus for transferring the starch stored in the perisperm to the embryo. He calls attention to several other genera in which a small amount of endosperm separates periplasm and embryo and seems to serve this function. Henry Kraemer discusses the structure of the starch grain, the results of his observations being that the starch grain consists of colloidal and crystalloidal substances, these being arranged for the most part in distinct and separate lamellæ. The reason that this struc-

ture is not apparent under natural conditions is because the refractive properties of the crystalloidal substances so nearly resemble those of the associated colloidal substances. Aven Nelson publishes his fourth 'Contributions from the Rocky Mountain Herbarium,' dealing with Chenopodiaceæ, *Cratægus*, and a number of miscellaneous species. A number of new species are described and a new genus allied to *Argemone* is proposed. Alexander W. Evans describes a new liverwort (*Diplophylleia apiculata*) from the eastern United States.

SOCIETIES AND ACADEMIES.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE fifty-second annual meeting of the American Association for the Advancement of Science, and the first of the Convocation Week meetings, will be held in Washington, D. C., December 27, 1902, to January 3, 1903. The retiring president is Professor Asaph Hall, U.S.N., and the president elect, President Ira Remsen, Johns Hopkins University. The permanent secretary is Dr. L. O. Howard, Cosmos Club, Washington, D. C., and the local secretary, Dr. Marcus Benjamin, Columbian University, Washington, D. C. President Roosevelt is honorary president of the local committee. The preliminary program with information in regard to hotel headquarters, railway rates, etc., will be found in the issue of SCIENCE for November 21. The following scientific societies will meet at Washington in affiliation with the Association:

The American Anthropological Association will hold its first regular meeting during Convocation Week in affiliation with Section H of the A. A. A. S. President, W J McGee; secretary, George A. Dorsey, Field Columbian Museum, Chicago, Ill.

The American Chemical Society will meet on December 29 and 30. President, Ira Remsen; secretary, A. C. Hale, 352A Hancock street, Brooklyn, N. Y.

The American Folk-lore Society will meet in affiliation with Section H of the A. A. A. S. President, George A. Dorsey; vice-presidents, J. Walter Fewkes, James Mooney; secretary, W. W. Newell, Cambridge, Mass.

The American Microscopical Society will probably hold a business meeting on December 29. President, E. A. Birge, Madison, Wis.; secretary, H. B. Ward, University of Nebraska, Lincoln, Nebr.

The American Morphological Society will meet on December 30 and 31. President, H. C. Bumpus; vice-president, G. H. Parker; secretary and treasurer, M. M. Metcalf, Woman's College, Baltimore, Md.

The American Philosophical Association will meet on December 30 and 31 and January 1. Secretary, H. N. Gardiner, Northampton, Mass.

The American Physical Society will meet in affiliation with Section B of the A. A. A. S. President, Albert A. Michelson; secretary, Ernest Merritt, Cornell University, Ithaca, N. Y.

The American Physiological Society will meet on December 30 and 31. President, R. H. Chittenden; secretary, F. S. Lee, Columbia University, New York, N. Y.

The American Psychological Association will meet on December 30 and 31 and January 1. President, E. A. Sanford; secretary and treasurer, Livingston Farrand, Columbia University, New York, N. Y.

The American Society of Naturalists will meet on December 30 and 31. President, J. McK. Cattell; vice-presidents, C. D. Walcott, L. O. Howard, D. P. Penhallow; secretary, R. G. Harrison, Johns Hopkins University, Baltimore, Md.

The Association of American Anatomists will meet on December 30 and 31. President, G. S. Huntington; vice-president, D. S. Lamb; secretary and treasurer, G. Carl Huber, University of Michigan, Ann Arbor, Mich.

The Association of Economic Entomologists will meet on December 26 and 27. President, E. P. Felt; secretary, A. L. Quaintance, College Park, Md.

The Astronomical and Astrophysical Society of America will meet during Convocation Week, in affiliation with Section A of the A. A. A. S. President, Simon Newcomb; secretary, George C. Comstock, University of Wisconsin, Madison, Wis.

The Botanical Society of America will meet on December 31 and January 1. President, B. T. Galloway; secretary, D. T. MacDougal, New York City.

The Botanists of the Central and Western States will meet on December 30. Committee in charge of the meeting, John M. Coulter, University of Chicago; D. M. Mottier, University of Indiana, Bloomington, Ind.; Conway MacMillan, University of Minnesota, Minneapolis, Minn.