in our recent investigations that the exposure of birds to light infection early in life protects them against serious injury from infection later on.

Once the multiplicity of the species of *Eimeria* infecting poultry is realized and the basic principles of such infections are understood, there is probably no other group of hosts in which coccidiosis may be studied so advantageously. While it is a rather difficult matter to maintain stocks of young mammals free from all such infections, "day-old" chicks are now available in reasonably large numbers throughout the year, and young turkeys, pheasants, *et cetera,* may be obtained at certain seasons. The uniform susceptibility of such hosts, the ease with which infection is produced and the regularity of results under laboratory conditions, all lend themselves to accuracy in this field of work. It is reasonable to expect that much may be learned also by the application of exact methods of observation and experiment to the practical problems in coccidiosis.

SCIENTIFIC EVENTS

SUMMER MEETINGS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

SEVERAL years ago the council of the American Association for the Advancement of Science voted to hold summer meetings. The first of these meetings, held at Pasadena, California, last summer, will be remembered for its wealth of important scientific symposia and numerous excursions. Physicists, chemists and other scientists came from all parts of America to attend the scientific sessions held at that time.

The second meeting of this series of summer meetings will be held at Syracuse, New York, on June 20 to 25. For a meeting of national scope such as that of the association, Syracuse's geographical position is ideal. It is overnight from Eastern Canadian points, New England, New York, Washington, Baltimore, Philadelphia, Pittsburgh, Detroit, Cincinnati, and but slightly further from the South and Middle West. It is within 300 miles of one third of the population of the United States, and a ride of not more than eighteen hours will bring three quarters of the population of the United States to Syracuse. Such institutions as Syracuse University, Cornell University, the University of Rochester, Colgate University, Hobart, Wells and Union Colleges are within three-hour rides of Syracuse.

Preliminary indications are that the number of symposia at Syracuse will be much larger than the number at Pasadena. Extensive program plans are being made by a number of sections. Each of the fifteen sections of the association will plan to hold two or more sessions devoted to studies of special subjects. Already the programs of Section C (Chemistry) and Section N (Medical Sciences) are taking definite shape in this direction. Each local representative is working diligently with the secretary of the section which he represents. Indeed, the chairman of the local committee, Dean Hugh P. Baker, promises to replace any one who does not take an active part in the program planning. Only a few of the affiliated societies will meet with the Association at Syracuse, so that the section secretaries and the local representatives will be given the privilege of organizing the programs as they think best. Since the by-laws of the association forbid sections to hold programs competing with the programs of affiliated societies meeting with the association, this will offer to some of the section secretaries an opportunity which has never before presented itself.

The next summer meeting after that at Syracuse will be held in connection with the Century of Progress World's Fair at Chicago from June 19 to 30, 1933. The fair will make available a large sum of money which will enable the association to invite seventy-five distinguished foreign scientists whose expenses will be paid. From two to nine such guests will be invited for each section. It is planned to organize one symposium in the field of each of these distinguished guests and thus make it possible for American and European scientists to exchange views on subjects uppermost in their minds to-day. In addition to these sectional symposia, it is expected that the various affiliated societies meeting with the association at that time will hold sessions for the reading of papers.

Preparations for the World's Fair are rapidly nearing completion. The Hall of Science, covering five acres of land, will be the center of this mammoth undertaking. Indeed, here and throughout the fair the dependence of industry and civilization itself on science will be pictured. Nearly ten acres of floor space will be devoted to science exhibits.

CHARLES F. ROOS,
Permanent Secretary

THE ASTROPHOTOGRAPHIC BUILDING OF THE HARVARD OBSERVATORY

THE astrophotographic building of the Harvard Observatory was dedicated on Wednesday, March 23, and on that day there were scientific conferences and meetings in accordance with the following program:

I. MORNING SESSION. The Observatory Library at 10

o'clock. Conference on Astrophotographic Problems: Professor Harry H. Plaskett presiding.

The Harvard Collection: Dr. Annie J. Cannon, curator of astronomical photographs.

The Physics of the Photographic Process: Professor G. B. Kistiakowsky, department of chemistry, Harvard University.

A Survey of Photographic Astrometry: Professor Frank Schlesinger, director, Yale Observatory.

The Current Photographic Programs of the Harvard Observatory: Dr. Harlow Shapley, director, Harvard Observatory.

II. AFTERNOON SESSION. The Observatory Library at 2 o'clock.

A. Acceptance by President Lowell of the Keys to the new Astrophotographic Building from Mr. Charles A. Coolidge, president of the Harvard Alumni Association, representing the architects.

B. Conference on *The Time Scale*, under the auspices of the Harvard Chapter of Sigma Xi: Dr. Harlow Shapley presiding.

On the Concept of Time: Professor Percy W. Bridgman, department of physics, Harvard University.

The Astronomical Measurements of Intervals of Time: Professor Robert H. Baker, director of the observatory, University of Illinois.

The Age of Mankind: Professor Ernest A. Hooton, department of anthropology, Harvard University.

The Radioactive Base Line of Time Estimates: Professor Alfred C. Lane, department of geology, Tufts College.

The Geological Time Scale and its Applications: Professor Arthur Holmes, Durham University, England.

The Stability of the Solar System: Professor E. W. Brown, department of mathematics, Yale University.

Meteors and the Age of the Universe: Professor Ernst J. Öpik, Tartu University Observatory, Esthonia, lecturer in astrophysics, Harvard University.

C. Reception to members of Sigma Xi and invited guests in the director's residence.

III. EVENING SESSION. The Observatory Library at 8 o'clock. Joint Meeting of the Bond Astronomical Club and the Staff of the Harvard Observatory.

The Zodiacal and Planetary Symbols: Dr. Cecelia H. Payne, Harvard Observatory.

Astronomical Sketches: Members of the Bond Club and the Observatory Staff.

TESTS TO DETERMINE THE NATURE AND SOURCE OF THE COSMIC RAYS

DR. ARTHUR H. COMPTON, professor of physics at the University of Chicago, has left for Panama, where he will make the first of a series of tests in various parts of the world to determine the nature and source of cosmic rays. Dr. Compton's work will be part of a cooperative study, involving a dozen physicists working in several parties under his direction, to measure the intensity of the rays which apparently come from interstellar space.

The cosmic ray meter consists of a steel "ionization chamber," containing argon at 30 atmospheres pressure. The cosmic rays penetrating the chamber set up an electrical current in the gas (argon) which is measured with an electrometer. A series of lead and copper spheres, weighing in all 200 pounds, shield the ionization chamber from local rays, permitting only the cosmic rays to enter. The Carnegie Foundation and the University of Chicago will share the expense of the projected study.

The objective of the expedition, according to Dr. Compton, is "more complete knowledge of the nature and place of origin of cosmic rays. A survey such as this should give the most adequate test that has yet been devised to distinguish whether the cosmic rays are photons, such as light and x-rays, or electrons, such as give rays to the earth's aurora. Because of the effect of the earth's magnetic field, electrons would give less intense rays near the equator than near the poles, and presumably there should be other variations with the geographical location."

The present project continues work which Professor Compton did last October on Mount Evans, Colorado, and in the Swiss Alps. The new measurements will be made at altitudes ranging from 7,000 feet to 26,000 feet. The tests on Mt. Chico in Panama will be followed by studies at Huancayo, Peru. Mt. Cook in New Zealand, Mt. Kosciusko in Australia, Mauna Kea in Hawaii and Mt. McKinley in Alaska are the next objectives. At the end of the summer Dr. Compton will return by way of Colorado, where further studies will have been made.

Three other cooperating parties will report at the end of the summer. One will take measurements on the Volcano Lanin in Patagonia and at Punta Arenas in Chile. A second, in charge of Professor S. N. Naude, of the University of Cape Town, will climb Mt. Winterhoek in South Africa, and possibly Mt. Brukkaros. In India, Professor J. N. Benade, of Punjab University, Lahore, will go to Mt. Nunga Purbat in Kashmir, third highest peak in the world, and will, if possible, make tests at several altitudes ranging as high as 20,000 feet or more. Professor Benade will then proceed to Kandy, Ceylon; Singapore, Straights Settlement, and Mt. Tjerimai, Java, for further measurements.

Negotiations are also being made with several independent groups, which are planning expeditions to the