the region was carried on independently and in the company of Professor White. There appears to be abundant evidence to show that during the last ice invasion, in a hilly portion of Holmes, Ashland and Richland counties in Ohio, the ice-sheet did not melt back with a definite front, but stagnated in the valleys. The ice-sheet advanced from the Lake Erie region southward over the Allegheny escarpment, upon the Appalachian Plateau, which rises gradually to an elevation of about 1,300 feet above sea-level in Holmes County, where a major divide extends in an east-west direction. The ice, loaded with debris and comparatively thin, pushed slightly over the divide and stagnated in the valleys. The glacier near the ice-front melted away in ragged fashion, and it is believed that the ice first melted from the uplands, exposing the hills and ridges. Across this area there was no definite ice-front at any time during the melting of the glacier. The deposits in the valleys and bordering them are kames, kame terraces and a few eskers, and are such as would be deposited from and around detached blocks of stagnant ice. The best development of these deposits is present in the broad valley extending from Mansfield to Shreve and in some of the tributary valleys. Several lakes, such as Odell Lake, Long Lake and Round Lake, represent a series of kettle-holes once occupied by blocks of ice. Ice-contact slopes appear at places around them. Kames and occasional kame terraces appear to be numerous in a zone along the sides of the valleys. The belt in which stagnation occurred is ten or more miles wide and extends from a point beyond Millersburg on the east to Mansfield on the west, a distance of possibly thirty-five miles as the crow flies. Further investigation may disclose similar evidence of stagnation in other portions of Ohio.

KARL VER STEEG

COLLEGE OF WOOSTER

THE ALLEGED TRANSFORMATION OF SERUM ALBUMIN INTO SERUM GLOBULINS

THE old claim that serum albumin may be transformed into serum globulins has recently been revived, this time with heparin as the transmuting agent.[1] The criteria of identity given by Fischer are all physical characteristics, and it seemed of interest to apply also the more delicate and specific methods of immunology.

We have found that the addition of heparin to crude horse-serum albumin at pH 5 did cause the precipitation of a substance soluble in salt solution and precipitable by half saturation with ammonium sulphate, but that the addition of heparin to carefully purified crystalline serum albumin did not cause any flocculation. In both cases we found that the albumin-heparin mixture or compound still reacted to the same degree as albumin with an anti-albumin serum, and did not react with anti-globulin serums prepared either by injecting isolated globulin or by adsorbing an anti-horse-serum antiserum with albumin. The latter reacted readily with globulin.

It would seem inexact, then, to say that albumin-heparin compounds are identical with serum globulins. Details will be published elsewhere.

SANFORD B. HOOKER
WILLIAM C. BOYD

EVANS MEMORIAL, BOSTON

TRIPLETS

ALTHOUGH there have been many investigations of the resemblances between siblings, identical twins and fraternal twins, no extensive study of triplets has been made. Because of the possibility of one, two or three egg fertilizations, the study of triplets offers a unique opportunity to secure information on the influence of heredity and on the differential effects of environment. A study of triplets is now under way at the Institute of Child Welfare of the University of Minnesota. Since triplets are difficult to locate, the institute requests that any one knowing triplets send their names and addresses to the Institute of Child Welfare, University of Minnesota, Minneapolis, Minn.

JOHN E. ANDERSON,
Director

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

MATHEMATICS, PHYSICS AND ASTRONOMY AT ATLANTIC CITY

FORTY-ONE scientific societies will meet with the associati on at Atlantic City, from Tuesday, December 27, to Saturday, December 31, 1932 (see SCIENCE, for October 28, for list of societies and hotel headquarters). Many of these are planning important sessions for the reading of papers on timely topics (see SCIENCE, for November 11).

The first session of the thirty-ninth annual meeting

[1] A. Fischer, *Naturwissenschaften*, 19: 965 (1931); 20: 471 (1932). C. r. Soc. Biol., 108: 882 (1931). SCIENCE, 75: 443 (1932). *Klin. Wchnschr.*, 11: 936 (1932).

of the American Mathematical Society will be held on Tuesday morning, December 27, jointly with Section A (Mathematics), Section K (Economics, sociology and statistics) and the Econometric Society, the topic being "Statistics." Wednesday afternoon will be devoted to a joint meeting of the society, Section A and the Mathematical Association of America. At this session Dean L. P. Eisenhart, of Princeton University, retiring president of the society, will deliver an address on "Some Recent Developments in Differential Geometry." Following this address, Professor E. R. Hedrick, of the University of California at Los Angeles, will speak on "Tendencies in the Logic of Mathematics." On Thursday afternoon there will be a business meeting and a general session of the society. Later in the afternoon, at 4:30 P. M., the tenth Josiah Willard Gibbs Lecture, entitled "Thermodynamics and Relativity," will be delivered by Professor R. C. Tolman, of the California Institute of Technology. Sectional sessions of the society will be held on Tuesday evening and on Wednesday and Thursday mornings.

The seventeenth annual meeting of the Mathematical Association of America will be held on Tuesday afternoon, December 27, 1932, and all day Wednesday, December 28. The program will consist of invitation addresses.

The mathematicians have arranged a trip to Princeton for Friday, the train leaving the Pennsylvania station in Atlantic City at 8:45 A. M. At 11:30 A. M., soon after the arrival in Princeton, there will be an opportunity to inspect the new mathematical building, Henry Burchard Fine Memorial Hall. In the afternoon at 2:00 P. M. in Fine Memorial Hall there will be a symposium on "Application of the Operational Calculus to Mechanics," at which Professor I. von Neumann, of Princeton University, and Professor G. D. Birkhoff, of Harvard University, will speak.

Section B (Physics) will hold joint meetings with the American Physical Society, the American Meteorological Society, the American Association of Physics Teachers and the Society of Rheology. The retiring vice-president of Section B, Dr. Bergen Davis, of Columbia University, will give an address on "Conquests of the Physical World." Other addresses of broad interest will be given at general sessions of the association by Dr. Dayton C. Miller and Dr. O. H. Caldwell (see SCIENCE, for November 18).

The American Physical Society plans meetings from Wednesday, December 28, to Friday, December 30. Plans are practically complete for a symposium on "Cosmic Rays," in which Dr. Robert A. Millikan, Dr. A. H. Compton and others will take part (see SCIENCE, for November 11). The meetings of the American Association of Physics Teachers on Friday, December 30, and Saturday, December 21, will be made up of invited and contributed papers. The Society of Rheology will meet on Tuesday, December 27, and Wednesday, December 28.

A new general lecture of the American Association for the Advancement of Science, known as the Hector Maiben Lecture, will be given by Dr. Henry Norris Russell, of Princeton University, on Friday evening, December 30, at 8:30 P. M. in the Municipal Auditorium (see SCIENCE, for November 18). In speaking on "The Constitution of the Stars," Dr. Russell will review the works of Eddington, Jeans, Vogt, Milne and others and point out the present status of the problem. Professor Harlow Shapley, of Harvard University, will deliver the annual Sigma Xi Lecture on December 28, on "Fact and Fancy in Cosmogony."

Section D (Astronomy) will hold joint meetings with the American Astronomical Society. Sessions for papers are planned for the afternoon of December 27, morning and afternoon of the 28th, and morning of the 29th. Dr. J. H. Moore, who was in charge of the Lick Observatory eclipse expedition to Fryeburg, Maine, has chosen "Solar Eclipse Problems" as the subject of his address as retiring chairman of Section D. This address will be given at one of the regular sessions.

CHARLES F. ROOS,
Permanent Secretary

THE NATIONAL ACADEMY OF SCIENCES

PAPERS PRESENTED AT THE ANN ARBOR MEETING

AT the autumn meeting of the National Academy of Sciences, held in Ann Arbor, Michigan, on November 14, 15 and 16, the following papers were presented:

Interpretation of phenomena due to accommodation coefficient of ions at cathode surfaces: KARL T. COMPTON. About three years ago the writer, in collaboration with Dr. C. C. Van Voorhis, discovered an apparent inequality between the rates of generation and dissipation of heat at the negative electrode in a tube through which an electric current was transmitted through gas at low pressure. The hypothesis suggested to explain this was that the positively charged gas ions which bombard the electrode under the influence of the applied voltage, and become electrically neutralized by capturing electrons when they strike the electrode, do not lose all their kinetic energy of motion (as has hitherto been supposed)