Greenwich–Cape of Good Hope parallax observations. By changing the assumed data for the figure of the moon De Sitter[25] found 1/296. The data for the figure of the moon depend partly on observation of the lunar librations, partly on assumptions as to the way in which the density of the moon varies from center to surface.

The process of deducing the flattening from lunar perturbations is thus seen to be far from simple. The possibilities for reconciling the flattening of 1/294 found by this method with the 1/297 of the international ellipsoid lie: (1) in changes in the secular variations deduced from observation; (2) in data for the figure of the moon; and (3) in possible corrections to a very complex mathematical theory.

Jones[26] has recently used occultations at the Cape of Good Hope to correct the motions of the perigee and node, and his corrections tend to diminish the disagreement between Brown's value of the flattening and the new international value. The older lunar observations, however, are not so well represented and it is questionable whether the full amount of his corrections can be accepted without further consideration.

The figure of the moon, as De Sitter has shown, gives one way of reconciling, partially at least, the two values of the flattening. Because the moon is smaller and cooler than the earth its figure might depart relatively more from hydrostatic equilibrium than the figure of the earth can, and there is evidence to show that it does. In the present state of our knowledge, or ignorance, a wide range of suppositions is admissible. In the absence of direct evidence on this point the disagreement between Brown's value of the flattening and the value obtained by other methods might be used as evidence to show what the figure of the moon actually is.

The theory of these secular variations, like the lunar theory in general, is exceedingly long and intricate, but it has been so much worked over that it is probably now correct and must be assumed to be so, at least until some one with the necessary ability, energy and inclination discusses the matter further and finds an error. There seems to be room, however, for some slight improvement in a much simpler theoretical matter, the calculation of the flattening, f, from J. Astronomers, as a rule, have omitted certain second order geodetic terms in the equation connecting these two quantities. The inclusion of these terms increases the reciprocal of the ellipticity by 0.4 or 0.5, or perhaps more, the exact amount depending on the exact form of the approximate equation between J and f, which may be stated in more than one way when correct to the first order only. These second order terms would thus help to diminish the discrepancy still further.

The only conclusion that can safely be drawn at the present time is that the discrepancy between the value of the flattening from lunar observations and the new international value is probably not quite so large as it first appeared to be, since various considerations all working in the same direction tend to bring the two values together. The ideal and the problem of astronomers and geodesists is, of course, complete reconciliation of the flattening as determined by geodetic methods with the values determined by all the various astronomic methods.

WALTER D. LAMBERT
U. S. COAST AND GEODETIC SURVEY

[25] W. De Sitter, Koninklikje Akademie van Wetenschappen te Amsterdam, Vol. 27 (1915), p. 1309.

[26] H. S. Jones, Monthly Notices Royal Astronomical Society, Vol. 85, 1924, p. 11.

CHARLES VANCOUVER PIPER

A BOTANIST of great ability, a man of unusual breadth, Charles Vancouver Piper, died on February 11, in his fifty-eighth year, and those who knew him well sustained a loss that can never be repaired. His work as botanist and agronomist is too well known in the United States and abroad to require comment on my part; it is of the man, not the scientist that I would say a personal word. Piper was built on big lines, mentally and physically. His mind worked directly and he was straightforward and fearless in his pursuit of truth and in working for what he believed to be the right course to follow. He believed in looking facts in the face impersonally and his free spirit could never understand why men should evade facts and beat about the bush. Piper's views were positive, but withal he was ever ready to listen to and to respect a dissenting voice. He never resented a difference of opinion on the part of a subordinate, but his logical mind was prompt to demand a reason for any view expressed. It was this willingness to entertain another view and the reasonableness of the man that endeared him to those whose privilege it was to work under his direction, while his broad knowledge and sound views won their respect. Contact with Piper was always stimulating; he was interested in all phases of life and he could suggest more problems in one interview than the average worker could tackle in a life time.

Piper gave himself freely to his work, worked with unusual rapidity, lost no time in arriving at decisions and consequently accomplished a prodigious amount in a short time. He read rapidly and would go over a manuscript so quickly that it seemed he could not have read it carefully, yet it was rare that a weak

argument or a loose expression escaped him. We shall not soon see the like of him again, but those of us who remain will have to content ourselves with having known him and we shall cherish the memory of one who was so well worth knowing.

A. J. PIETERS

SAMUEL MARX BARTON

DR. SAMUEL MARX BARTON died on January 5, 1926, in St. Luke's Hospital, Richmond, Virginia, after two years of declining health and about two months serious illness. Dr. Barton was born near Winchester, Virginia, May 9, 1859. He received his B.A. and Ph.D. degrees from the University of Virginia, and did his major work in mathematics. After leaving the University of Virginia in 1885, he taught at Emory and Henry College in Virginia until 1893 when he resigned to do two years of graduate study at Johns Hopkins University. At the end of these two years he taught a short time at Virginia Polytechnic Institute, and was called to the University of the South, where he taught from 1896–97 until the time of his death. His major work was in pure mathematics, but he taught some classes in civil engineering.

He is author of "An Elementary Treatise on the Theory of Equations" and "The Elements of Plane Surveying." He was a fellow of the American Association for the Advancement of Science and of the American Mathematical Society. He was one of the charter members of the Tennessee Academy of Science and served as treasurer, vice-president and president.

Dr. Barton was held in high esteem by his colleagues and students at the University of the South and his scholarship and culture won for him many friends.

JOSEPH K. ROBERTS

VANDERBILT UNIVERSITY

SCIENTIFIC EVENTS

THE SMITHSONIAN-CHRYSLER EXPEDITION TO AFRICA

THE Smithsonian Institution, in cooperation with Walter P. Chrysler, automobile manufacturer, of New York, will send a party of scientific men under the leadership of Dr. William M. Mann, superintendent of the National Zoological Park, to British East Africa early in March. Their object will be to bring back alive, for exhibition in the National Zoological Park at Washington, which is under the direction of the Smithsonian Institution, approximately one hundred species of wild animals never before seen in America, as well as many other African animals at present rare in this country and not now found at the national park.

The Smithsonian Institution sent out the big game hunting expedition to Africa under Theodore Roosevelt in 1909. During its eighty years of active scientific research, the institution has directed and participated in many expeditions for varied purposes, including the collection of specimens for mounting. But the trapping of wild animals alive in such quantity and variety as will be attempted by the Smithsonian-Chrysler expedition is believed to be without precedent.

Dr. William M. Mann, superintendent of the National Zoological Park, will lead the expedition. Dr. Mann announced that the immediate inspiration of the undertaking is the lack of either giraffes or rhinoceroses at the zoo. From that point the plans have expanded so that they not only include the collecting of many wild animals alive, but have given the expedition a very broad scientific scope.

Tanganyika Territory in British East Africa has been selected as the best place to trap the wild animals that are the object of the trip. The expedition will proceed inland from Dar-es-Salaam, and will form a camp, if possible, on a ranch not too remote from a railroad. That will be headquarters during the entire stay of five or six months in the field. An experienced animal keeper from the National Zoological Park will remain there in charge with a corps of natives, whom he will train to receive and care for the animals brought in, until arrangements can be made for shipping them to this country.

The personnel of the expedition will include Albert J. Loveridge, of the Museum of Comparative Zoology at Harvard University, who was for eight years assistant game warden in Tanganyika Territory; Stephen Haweis, naturalist, artist and author; F. G. Carnachan, amateur naturalist with wide field experience; Charles Charleton, photographer representing the Pathé News, who will make a complete record of the trip in motion pictures, which will be exhibited in a series of reels in this country, and Frank Lowe, keeper at the National Zoological Park, who has had eighteen years experience in the care of wild animals.

A FIELD COURSE IN GEOLOGY AT PRINCETON UNIVERSITY

A COURSE to be given on wheels will be offered by the department of geology of Princeton University next summer. Traveling about 10,000 miles in a Pullman car designed especially for the course, a party of twenty-two professors, instructors and undergraduates will make a study of the geology and natural resources of the United States.

Leaving Princeton July 1, the party will stop at localities of geological interest, where field trips will be made under the guidance of local experts. Lectures will be given en route and conferences will be