morning session, and Ex-President R. S. Woodward during the afternoon session.

The Council announced the election of the following persons to membership in the Society: Professor Sir R. S. Ball, Cambridge University, England; Dr. Otto Dunkel, Wesleyan University, Middletown, Conn.; Mr. W. H. Osborne, Purdue University, Lafayette, Ind.; Professor H. S. Rietz, Butler College, Indianapolis, Ind.; Professor J. H. Scott, Yankton College, Yankton, S. D.; Professor B. F. Yanney, Mount Union College, Alliance, Ohio; Mr. W. H. Young, M.A., Cambridge University, England; Professor I. N. Van der Vries, Kansas University, Lawrence, Kansas. Seven applications for admission to the Society were received. The Council presented a list of nominations for officers of the Society in anticipation of the annual election which occurs at the December meeting. A committee was appointed to arrange for the next summer meeting, which will be accompanied by a colloquium or series of lectures on special fields of mathematics.

The following papers were read at this meeting:

(1) Dr. E. R. Hedrick: 'On the foundations of mechanics (preliminary communication).'

(2) Dr. E. V. Huntington: 'Definition of a commutative group by independent postulates.'

(3) Professor Peter Field: 'On the infinite branches of plane curves which have no point singularities.'

(4) Dr. Edward Kasner: 'The apolarity of double binary forms.'

(5) Professor Maxime Bôcher: 'An application of the Riemann-Darboux generalization of Green's theorem.'

(6) Professor Maxime Bôcher: 'Note on Laplace's equation.'

(7) Dr. Virgil Snyder: 'On the quintic scrolls having three double conics.'

(8) Miss I. M. Schottenfels: 'Note on the types of groups of order p^n every element of which, except identity, is of order p (preliminary communication).'

(9) Dr. L. P. Eisenhart: 'Surfaces referred to their lines of length zero.'

(10) Professor L. E. Dickson: 'Three sets of generational relations defining the abstract simple group of order 504.'

(11) Professor L. E. Dickson: 'Generational relations defining the abstract simple group of order 660.'

(12) Dr. G. H. Ling: 'The approximate representation of a function by means of functions defined by quadratic equations.'

(13) Dr. C. N. Haskins: 'On the invariant of differential forms of degree higher than two.'

After the meeting several of the members dined and spent the evening together.

The next meeting of the Society, on December 29–30, will be the annual meeting for the election of officers and delivery of the presidential address.

F. N. Cole,
Secretary.

Discussion and Correspondence.

The Carnegie Institution.

In the discussion of the Carnegie Institution in recent numbers of Science, sight has apparently been lost, in a number of cases, of the fact that the participant in the discussion is not endowing a novel institution and laying down its general plans. That part of the work has been admirably performed by Mr. Carnegie, and a repeated return to first principles by recalling the text of Carnegie's plans is not out of place.

One of the objects of the institution is clearly set out to be 'to discover the exceptional man and enable him to make the work for which he seems specially designed his life work.' Of course we each and every one recognize ourselves at once as having been especially referred to in this statement, and clearly this and that other fellow could not possibly have been meant. Among those who certainly could not have been meant are the ones who 'shall of course look out for' their 'share of the spoils.' Newly hatched schemes and plans thought of to help use the income do not commend themselves.

The thought so well expressed by Carnegie in the portion of one of his sentences quoted above and so lucidly put by Sternberg: "In my opinion a considerable portion of the income should be used in assisting individuals who have demonstrated their fitness for research work to some special field of investigation, who have a definite object in view and well-considered plans for attacking the prob-

lem or problems which have engaged their attention" and reiterated in different words by Gage, Jordan, Holland, Cockerell, Ganong, Titchener, Clayton, Coulter and others is undoubtedly the one that has impressed the majority of scientific men as the important element in the Carnegie plan. Stain manufacturers, mechanics, publishers, bibliographers, etc., are but servants of the investigator and deserve but secondary consideration. The extent to which buildings are to be erected has been decided by Carnegie himself.

What are we, the exceptional men, able to do without the Carnegie Institution, and what will his endowment enable us to do that we cannot do without it or can do only with great difficulty? What, in other words, are our greatest needs?

If we are connected with a university we can by hook or crook manage to get some time for research—if we cannot, we are perhaps not worth considering by the Carnegie Institution. All of us can get room without any great difficulty—in fact, the universities are running to marble palaces with such luxuriant enthusiasm that in many cases there is little left to maintain their permanent inhabitants. There is as vulgar pride in elaborate university buildings as there is discreet silence as to the salaries of the professors filling them. We in the universities can also get apparatus and books, though as we approach these less conspicuous parts of the equipment there is greater hesitancy in adequately supplying the needs. When it comes to supplying the means of keeping animals for experimental work or to make expeditions for securing needed material for a definite research, we either meet with increasing difficulty in the university or we must look entirely to outside help. Such outside help can be secured in a limited way from a few research institutions, as the Elizabeth Thomson Science Fund, the American Association for the Advancement of Science, the American Botanical Society, etc. Beyond this, existing institutions do not help us. We are not able to begin a life-long research demanding much time or money or both with the assurance that, as long as our results are commensurate with the outlay, our work will not have to be abandoned at a critical time. Here, it seems to me, the Carnegie Institution can step in to good advantage. It can do this: (1) By buying part of the time of an 'exceptional man' from his institution by paying part of his salary if time is the prime requisite of his work; (2) by providing the means of carrying on an expensive research (traveling expenses, assistants, providing and maintaining aquaria, etc.), in many cases doubtless on condition that his university grant him the time needed for his research; (3) by appointing him a Carnegie professor without routine duties or stipulated place of residence. It ought to make no difference whether a paleontological Carnegie professor has his residence on the plains of Wyoming or Patagonia, an American or at times some European museum. If no mistake is made in selecting the right man there need be no fear as to the results to be obtained. The exceptional man with his problems may be selected in the way already adopted by the institution, *i. e.*, by committees of specialists.

The salary of the Carnegie professorships need not be larger than the average university salaries and they may still be looked upon as the highest and most desirable positions to be obtained by American men of science.

With such a plan the entire income of the Carnegie Institution can be profitably employed without interfering with existing institutions and without devising cumbersome administrative machinery or buildings. When we consider the needs and possibilities along this line, so far from being overwhelmed by the magnitude of the endowment, we may even be permitted to regret that the institution was not started with at least twice its present income.

C. H. EIGENMANN.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. SECTION D, ANTHROPOLOGY.

THE fifty-second meeting of the American Association for the Advancement of Science will be held at Washington, D. C., during Convocation Week, December 29, 1902–January 3, 1903. This meeting is the first of the general Society to be held at this time. Dr.