become interested in biological fluctuations and has issued a series of publications, outlining from the standpoint of a mathematician the trend of populations beginning with simple cases where two species contend for the same food, and then adding a factor at a time until a complicated association is built up, including the possibilities of forcing and damping the fluctuations by physical factors. From these calculations he has deduced certain laws that govern the cases where certain assigned coefficients apply. This work, I believe, is destined to take its place along with that of Willard Gibbs so far as significance in the field of science is concerned. Here, then, is a great opportunity to show that these mathematical theorems do or do not apply in the field of nature. It is a wonderful opportunity and I wonder if we are equal to it. We are dealing with populations in which organisms are units just as the physiologist deals with organisms in which organs, tissues and cells are units and as the physical chemist deals in systems in which colloidal particles, molecules, atoms and electrons are units. It is infinitely complicated and infinitely fascinating.

To summarize, we have in entomology a wealth of material and it has taken us a long time to get over some of the more elementary stages in our progress, but the great extent of the field is one of the most promising things in our science. The character of much of this material is such that it is destined to aid greatly in bringing to the public in general an appreciation of nature, thereby making a great contribution to our cultural life. But our age is moving pretty rapidly and, if we are going to get this before the public and see that our society maintains its well-balanced poise, we must all of us be active. Those to whom entomology is an avocation must take the obligation seriously to see to it that society, in its enthusiasm for material progress, does not forget some of the finer things of life.

In the field of scholarship our future is bright. No one can deny the wealth of material at our command, and I believe we have no reason to feel ashamed of the records of the past. Let us not spend any time in denouncing the verdict as to the scholastic position of entomology at the present time. Let us see to our own attitudes rather than decry the attitudes of others. It is difficult to maintain our scientific poise against the enormous economic pressure that comes upon us, but let us do it at all costs, knowing full well that it is in scholarship that our ultimate salvation lies.

Let us look to our scientific spirit. It has been my conclusion, after visiting many of the entomological laboratories of Europe and America, that the one most important factor for scientific progress is the spirit of the research man himself. Given a certain threshold value of material laboratory equipment, beyond this there is nothing that determines the significance of results more than the spirit of the man who is doing the work. And how costly is the petty administrative dictation which dampens such spirits and thereby deprives science of the most precious acquisitions of a laboratory! If this is true of individuals, it is certainly true of groups.

Even scientists themselves become enemies of progress when there is strife between them. One of the most discouraging tendencies of scientific progress is that of the crowd to down the man who steps out in advance, regardless of who or where he is. This does not imply the exclusion of friendly rivalry or the suppression of criticisms of questionable hypotheses. It is a plea for both individualism and cooperation in research and, above all, intellectual honesty in the spirit of research. Remember that when facts are accumulating for or against a hypothesis they are not accumulating for or against its author. If he is intellectually honest, his hypothesis is a tool for progress which is gained by proving or disproving it.

So in this day of organization and super-organization, of budgets of money and budgets of time, of teaching loads and weighted credit hours, of research project statements and reports, and even of achievement tests, I still say that the most important thing in scientific progress is the spirit of science itself. My recommendation for the progress of entomology is to turn absolutely free in the field all such great spirits that can be found, unburdened by the regulations of organizations, with no dictation as to the form of the final report, but with infinite trust in the spirit of research.

ROYAL N. CHAPMAN
UNIVERSITY OF MINNESOTA

SCIENTIFIC EVENTS

THE NEW HARVARD CHEMICAL LABORATORIES

THE formal opening of the Mallinckrodt and Converse laboratories was held last week, when the donors were entertained at a reception and dinner. Among those present was Mrs. Edmund C. Converse, widow of the late president of the Bankers Trust Company. Mrs. Converse and her family gave the Converse Memorial Laboratory in memory of her husband. Mr. Edward Mallinckrodt, Jr., represented his father, the late Edward Mallinckrodt, of St. Louis, who gave the first large sum, which made the new laboratories possible.

The Mallinckrodt Laboratory will house practically all of the undergraduate courses in chemistry. The top floor is devoted to elementary chemistry, inorganic chemistry and qualitative analysis. The second floor contains the Horsford Laboratory given by Mrs. William G. Farlow, widow of the former head of the chemical laboratory. This laboratory is devoted to quantitative analysis; the remainder of the floor is devoted to elementary organic chemistry. Physical chemistry, electrochemistry and photochemistry are placed on the first floor. Industrial chemistry is provided for in the Bradley Laboratory, given by Robert S. Bradley, president of the American Agricultural Chemistry Company, in memory of his son, Robert S. Bradley, Jr. This occupies part of the first floor and the basement.

The Converse Memorial Laboratory is devoted primarily to research in organic chemistry. It also contains on its top floor the course in advanced organic chemistry. The new chemical library is housed in this building.

The equipment of the new laboratories is advanced and complete, in great contrast to the old Boylston Laboratory which for years housed Harvard's chemistry courses. Seven professors' suites, comprising a study, a private laboratory and an adjoining room for a professor's assistant are provided. Rooms for research students are provided adjacent to those for the professors, in order that student and teacher may work in close cooperation.

Three lecture halls have been built in the Mallinckrodt Laboratory, one seating 420, one 250 and a third 90 students. To the rear of the lecture platforms there are preparation rooms where the experiments and demonstrations for the lectures can be prepared and assembled. Special overhead and underneath illumination is available on all the lecture desks, and the halls can be wholly darkened by black curtains which are operated electrically.

The departmental library occupies a large room on the first floor of the Converse Laboratory and a corresponding room directly underneath it in the basement. These rooms and their equipment were given by Mrs. Gould as a memorial to her husband, Frederick Saltonstall Gould, Harvard '75. They are panelled in antique oak and their furniture has been specially designed.

The campaign for funds for the new laboratories was brought to a successful close in the spring of 1926. The executive committee appointed by the Corporation of Harvard College, with Bishop William Lawrence as chairman, and Dean Wallace B. Donham, of the Graduate School of Business Administration, as executive chairman, was able to announce the receipt of $2,000,000 toward the construction of the building and $1,000,000 for endowment. The firm of Coolidge, Shepley, Bulfinch and Abbott was selected as architects.

THE SOUTHWEST ARBORETUM OF THE BOYCE THOMPSON INSTITUTE FOR PLANT RESEARCH

TWELVE hundred persons attended the dedication of the Boyce Thompson Southwest Arboretum at Superior, Arizona, sixty miles east of Phoenix, on April 6. The arboretum is at the base of the old Pickett Post Mountain and had an ideal setting for the dedication.

Boy Scouts of Superior acted as guides to the throngs visiting the institution, which was dedicated to the service of mankind. F. J. Crider is director of the arboretum. He is assisted by Fred Gibson and Palmer Stockwell.

The arboretum now has more than 3,000 specimens of plants, many of them native to the Southwest desert country. Hundreds of them have been imported from foreign countries. Through the study of these plants it is hoped to bring new products to Arizona soil.

This year some 600 new plants have been added to the gardens. Flora from the tropics and the Orient have been transplanted with the view of making them staple agricultural products of this section.

Giant tortoises imported from the Galapagos Islands attracted much attention from the visitors. The flower gardens, cactus gardens and the nursery also attracted attention. An interesting machine makes an autographic record day by day of the growth of the giant or Sahuari cactus. This machine shows that the cactus shrinks at a certain period each day.

Four Hopi Indians gave a number of their tribal dances at the luncheon hour and the University of Arizona band played during the afternoon.

Dr. William Crocker, director of the Boyce Thompson Institute for Plant Research at Yonkers, N. Y., presided in the absence of Mr. Boyce Thompson.

President Leroy Shantz, of the University of Arizona, and Professor William Trelease, of the University of Illinois, gave short addresses. Governor John C. Phillips, of Arizona, spoke in appreciation of the work of Mr. Thompson in establishing the arboretum.

THE FIFTH INTERNATIONAL BOTANICAL CONGRESS

THE executive committee of the Fifth International Botanical Congress, of which Professor A. C. Seward, F. R. S., of the University of Cambridge, is president, requests that the following announcements should be made public: