is the outcome of recent experiments by Thorndike and others. Formerly, the theory of learning treated the two as on a par.

> The traditional doctrine of common sense and of all the sciences of man was that rewards and punishments were the positive and negative halves of one same scale or gradient, closely alike in potency. . . . This doctrine is false in certain important respects. . . . Except when and as it causes the person to shift to the right behavior and receive a reward therefor, the punishment has no beneficial effect comparable to the strengthening by a reward. . . . Psychology recommends that punishment be used only when and as it can be proved to be effective. . . . In the case of government, psychology emphasizes the importance of making a community attractive to the able and good rather than unpleasant for those who are incompetent and vicious. . . . The law is rightly skeptical about restrictive and punitive activities, but has not yet progressed far with alternatives. . . . Its voice is threatening and its acts are punitive. . . . Business, in contrast to government, has operated largely by rewards. . . . In general, the maxim "Reward good behavior" is as nearly a golden rule as any that psychology has to offer human society (pp. 199–207).

Labor is often conceived as pure punishment or annoyance, its only rewards lying in the pay envelope. Such a view overlooks the genuine rewards that spring directly from bodily and mental activity, from achievement and mastery, from companionship and participation, from the approval of one's fellows and even from loyal submission to the right sort of boss. Management, then, should take account of the whole man and not simply of the abstract "economic man," and it should see the man in his total life situation rather than simply while on the job.

Many other problems of industry, government and human welfare are approached in the author's characteristically candid and freethinking spirit, and the net effect is to leave the reader with a hope of ultimate solution. Perhaps the main contention of the whole book is that science is the best guide for human life. "The acceptance of impartial scientific truth as the guide in life is certainly a safe and sane policy, and can be a very idealistic one" (p. 390). "The social sciences are still weak and insecure; the doctors often disagree. Some can be found to support fantastic schemes. But it is surely better on the average to take their medicine than that of ignoramuses. The scientific method is dependable. Proposed treatments to cure political, economic, or other social ailments should be studied as far as possible by the impartial methods of science" (p. 958). Governments are constantly making experiments which would have scientific value if provision were made for tracing the consequences of any given legislative or administrative measure. "Our consideration of human nature in relation to human welfare has brought forth no panacea, and promises no miracles of any description. But it has shown that man has the possibility of almost complete control of his fate, and that if he fails it will be by the ignorance or folly of men" (p. 957). Even now we can see certain dependable guiding principles, looking toward the improving of the population and the provision of suitable education and opportunity for those who are able to render public service. Able and good men must not rest content with inferior positions in the world's councils. They must acquire power so as to make their ability and good-will count heavily in social affairs.

R. S. WOODWORTH

COLUMBIA UNIVERSITY

SOCIETIES AND MEETINGS

THE CELEBRATION OF THE OHIO ACADEMY OF SCIENCE

JUST fifty years ago, some fifty-four serious-minded, forward-looking seekers after truth (scientists) gathered in a small room of the old Central High School, in Columbus, Ohio, for the avowed purpose of forming an organization that would be "an inspiration and a stimulus to original research and investigation." And so the infant *Ohio Academy of Science* was born and during the fifty years of its existence has grown in size and usefulness, fully justifying, we believe, the prophecy made by Professor William R. Lazenby, the first secretary, namely, that "Once organized, I am sure the Ohio Academy would be a signal and all-inspiring success, and could scarcely fail to secure an honored position among the scientific organizations of our country." In fact, the academy had attained such influence and importance that four years ago, in anticipation of the approaching fiftieth anniversary, and at the suggestion of Dr. F. C. Waite, of Western Reserve University, it resolved: "That the incoming President appoint a preliminary committee of five on plans for the celebration and that this committee be charged to make a definite report on plans at the meeting next year."

Accordingly, a committee of which the writer was made chairman was appointed and did make a report at the annual meeting in 1937, the report heartily approving the idea of a celebration and suggesting that "it be done in a distinctive and comprehensive manner that will not only commemorate what has been accomplished in the past fifty years, but will also stimulate yet greater endeavor in the future."

The plan was unanimously approved and action taken at once to carry it out. It was enthusiastically agreed that our late honored and highly esteemed

co-worker, Dean George F. Arps, head of the Graduate School at the Ohio State University, was the very man for director, and he was unanimously chosen and accepted. Dean Arps, in his fine, enthusiastic way, laid out a most ambitious program and was busily engaged in setting up the machinery to carry it out when the "grim reaper" took him from us. For a brief period, confusion and discouragement prevailed, but, as so often happens under such circumstances, the hero emerges and it was so in this case! We found in our presidents the leadership we so sorely needed: first, President Claude E. O'Neal, of Ohio Wesleyan University, and later President William Lloyd Evans, Ohio State University. They stepped nobly into the breach and carried on to what we feel was a triumphant success.

The celebration was set for May 9, 10 and 11, at Columbus, the birthplace of the academy. The attendance was the largest in the history of the academy, and the program was full and rich, quite a number of speakers of national not to say international fame were on the program. The program began with a general meeting on Thursday evening at which His Excellency, the Governor of Ohio, John W. Bricker, spoke, also President Bevis, of Ohio State University; but the event of the evening was the address of Dr. Harvey Fletcher, of the research staff of the Bell Telephone Company, on "Sound Patterns."

Friday morning was given over to three concurrent symposia of great interest that were discussed by eminent authorities: (1) A symposium on "Hearing," discussed by R. H. Stetson and E. A. Culler; (2) a symposium on the "Basic Factors in Conservation," discussed by Guy W. Conrey, Frank J. Wright and E. N. Transeau; (3) a symposium on "Radiation and the Cancer Problem," discussed by E. U. Condon, Isadore Lampe and Francis Carter Wood. The afternoon was given over to one general meeting with three most interesting addresses: (1) Dr. R. W. Chaney, of the University of California, discussed "Forests on a Changing Earth"; (2) Dr. John L. Rich, University of Cincinnati, spoke on "Application of Airplane Photography to Geographic Studies," and (3) Dr. Charles F. Kettering, of the General Motors Corporation, spoke on "Industry and Science."

On Friday evening occurred the annual dinner and business meeting, which, as usual, was the climax of the general meetings. Two addresses were made on this occasion, one by Dr. James P. Porter, Ohio University, on "The History of the Ohio Academy of Science," and the other, a masterly presidential address, by Dr. William Lloyd Evans on "A Present-day Examination of the Postulates of John Dalton." The annual election of officers occurred at this meeting; the results are given below.

On Saturday morning the program consisted again of three concurrent symposia and in addition a botanical program. The first symposium was on "The Nervous System" and was discussed by Dr. Herbert S. Gasser, of the Rockefeller Institute, New York, by Dr. R. W. Gerard, of the University of Chicago, and by Dr. John F. Fulton, of Yale University. The second symposium was a Chemical-Physical Program and was discussed by Dr. Edward Mack, of the Battelle Memorial Institute, Dr. M. S. Newman, Ohio State University, and Dr. H. S. Booth, Western Reserve University. The third group discussed a "Genetics-Speciation Program," the leaders in the discussion being Dr. Laurence H. Snyder, of Ohio State University, Dr. Warren P. Spencer, College of Wooster, and Dr. David C. Rife, Ohio State University. In the botanical program four papers were presented: one by Dr. A. E. Waller, of the Ohio State University on "John H. Schaffner—a Résumé"; one by Dr. J. H. Gourley, Ohio Agricultural Experiment Station on "The Changing Point of View in Horticultural Research," one by Dr. Paul B. Sears, Oberlin College, on "Post-glacial Vegetation in the Ohio-Erie Region," and the fourth by Dr. E. Lucy Braun, University of Cincinnati, on "The Differentiation of the Deciduous Forests of the Eastern United States."

So much for the formal program—excellent in every detail. The meeting, however, was characterized by at least three other notable features: (1) The number and excellence of the exhibits; these were assembled and arranged by the Exhibits Committee under the leadership of Dr. Glenn W. Blaydes, of Ohio State University. Note that at the date of the printing of the program he had collected ninety-nine centralized exhibits and arranged for forty fixed exhibits; others probably came in later. The exhibits would have done credit to the American Association for the Advancement of Science; (2) The second notable step forward was the organization of a *Junior Academy Section,* under the inspirational leadership of Dr. Otis W. Caldwell, of the American Association for the Advancement of Science, and the persistent, intelligent, skillful, enthusiastic leadership of Dr. Charles W. Jarvis, of Ohio Wesleyan University, ably assisted by Mr. Orville Linebrink, of the Columbus high schools. Do you know these juniors came from many high schools in the state, and "believe it or not," they entered some sixty-seven or more papers, exhibits, demonstrations, etc., in the contest, any one of which would have done credit to their elders. If we may, without seeming to discriminate, we would like to refer to two of these: one, the "Dissecting of a Pig Embryo" put on by four girls from the Walnut Hills High School, in Cincinnati, namely, Katherine Baude, Margie Richmond, Anne Jane Theiler and Helen Weide-

man, with Miss Etta Elberg as sponsor; the other was entitled "Experiments Using Dry Ice," put on by two boys from the New Philadelphia High School, George Robb and Glenn Curtis, Miss Leila E. Helmick, sponsor. Both demonstrations were put on in a masterly manner, doing great credit to the pupils, the teachers and the schools from which they came. (3) The third notable advance, while not so spectacular, is very real and is found in the change in the form of government of the academy from the general to the council form of government, as provided in the revised constitution—somewhat after the manner of the American Association for the Advancement of Science.

As a result of a rather intensive campaign under the slogan "One Thousand Members in 1940" and under the leadership of Dr. C. W. Jarvis, the membership list of the academy was increased by 127 new members at the annual meeting, and still they come, and by three restorations so that we are well on the way toward 700, to say nothing of the Juniors.

The annual election resulted in the choice of the following as the officers for the ensuing year: *President,* Stephen R. Williams, Miami University; *Secretary,* William H. Alexander, Normandie Hotel, Columbus; *Treasurer,* Edward S. Thomas, Ohio State University.

WILLIAM H. ALEXANDER,
Secretary

THE ILLINOIS STATE ACADEMY OF SCIENCE

THE Illinois State Academy of Science met for its thirty-third annual meeting at Galesburg, Illinois, May 3 and 4. The meeting was well attended and facilities provided by Knox College and by the City of Galesburg were unusually well planned. All meetings progressed nicely on schedule, adding much to the pleasure and interest. The main features of the meeting on Friday were the general session in the morning, the special sections meeting in the afternoon, the Junior Academy exhibit and judging, banquets of the Junior and Senior Academies in the evening, followed by a joint lecture for both groups after the banquets. Awards for prize-winning exhibits in the Junior Academy were made following this lecture.

At the morning session three lectures were given: Dr. E. I. Fernald, professor of botany at Rockford College, and the retiring president of the academy, spoke on "Michael S. Bebb, Illinois Botanist and Letter-Writer." The lecture was illustrated with slides. Two other lectures, "Science and Common Life," by Anton J. Carlson, of the University of Chicago, and "Looking through Great Telescopes," by Oliver J. Lee, Dearborn Observatory, completed the morning program.

Arrangements were provided by the college for a joint luncheon, special tables and rooms being available for groups that desired this. The geologists met together and the Illinois branch of the American Association of Physics Teachers also. This latter group sponsored the physics section program and appointed a committee to organize an engineering and applied science section for the next annual meeting.

Altogether some 120 papers were presented at the section meetings in the afternoon. The chairmen elected to take charge of the respective sections for the ensuing year were:

Agriculture: Mr. C. H. Oathout, Western Illinois State Teachers College.
Anthropology: Mr. Floyd Barloga, 1423 N. Glenn Oak, Peoria.
Botany: Mr. Paul Voth, Department of Botany, University of Chicago.
Chemistry: Mr. George H. Reed, Knox College.
Geography: Dr. Arthur B. Cozzens, University of Illinois.
Geology: Mr. J. Marvin Weller, State Geological Survey.
Physics: Ph. A. Constantinides, Wright Junior College.
Psychology and Education: O. Irving Jacobsen, Shurtleff College.
Zoology: Dr. W. V. Balduf, Department of Entomology, University of Illinois.

It was voted to accept the invitation of a cooperating group headed by the Museum of Science and Industry, Chicago, to hold the next annual meeting there on May 1, 2 and 3, 1941.

The evening banquet was well attended and adjourned to enjoy an exciting demonstration lecture given by Dr. J. O. Perrine, of the American Telephone and Telegraph Company, who led the discussion with Pedro the Voder. The meeting was a joint one with the Junior Academy, and both groups are indebted to Dr. Perrine and the company he represented for the lecture. After the lecture awards were presented to the winners in the competition between the science groups of the Junior Academy and the American Association for the Advancement of Science. It was an enthusiastic occasion and demonstrated quite clearly the vitality of the academy work in the state of Illinois.

On Saturday morning the Burlington Railroad took a group of over a hundred Junior and Senior Academy members on a special train through their yards and tie-treatment plant in the vicinity of Galesburg. Three other science pilgrimages to points of interest in that part of the state were planned and carried out by the anthropologists, geologists and biologists. All trips were reported successful and well attended. The academy meeting was attended by over six hundred. It is anticipated that even a larger group will be in attendance next year when the meeting will be in Chicago.