INSTITUTE STAFF MEMBERS RECOGNIZED IN AMERICAN MEN OF SCIENCE

Comparative Institutional Listings Disclose C.I.T. is outstanding.

Soon after 1900, Dr. J. McKeen Cattell, the psychologist, began collecting data for a statistical study of the conditions, performance, traits, etc., of a large group of men of science. So many biographies of living scientists were collected that the idea suggested itself of publishing this material as a reference work similar to *Who's Who in America* but limited to those who were working in the natural, exact, and applied sciences. The result was *American Men of Science,* published in 1906 and containing about 4,000 biographies. This compilation proved to be so useful that it has been revised and enlarged in subsequent editions, the last of which, published in 1938, contains about 28,000 entries.

Besides demonstrating the extraordinary increase in the number of workers in the general field of science, the successive editions of *American Men of Science* have provided a reasonably objective means of evaluating the quality of scientific work done at various educational institutions. In the first edition Dr. Cattell wished to designate the 1,000 students of the natural sciences whose work was considered to be the most important. Ten leading students in each science were asked to arrange in order of merit the names of their coworkers, and the 1,000 were distributed among the sciences in proportion to the total number of workers in each science. The designation was made by prefixing a star to the subject of research. In the more recent editions the practice has been followed of starring, each time, 250 additional names, to designate those men who, since the previous edition, have emerged as the most promising workers in their respective fields. The system of selection has been broadened until, in the 1938 edition, several thousand men of science took part in choosing the names which were to be starred. With such a choice, representing the opinion of men who are qualified to judge, the 1938 edition of *American Men of Science* furnishes sufficient data for an interesting comparison between the California Institute and other institutions which are fostering scientific research.

Mr. Stephen S. Visher, in the October number of the *University of Chicago Magazine,* has printed a table of the total number of starred scientists now at leading universities. His figures follow: Harvard, 68; Chicago, 46; Columbia, 41; California, 39; Yale, 35; Princeton, 33; Hopkins and Michigan, 30 each; Cornell and Minnesota, 26 each; California Institute, 22½; Illinois, Massachusetts Institute, Pennsylvania, Stanford, 22 each; Wisconsin, 19.

A more interesting comparison, however, is to be seen in the new names starred in the 1938 edition: Harvard, 17; Chicago, 12; California Institute, 11½; Princeton, 11; California, 10; Hopkins, 9; Columbia, Massachusetts Institute, Michigan, 8 each.

It is obvious, however, that these comparisons fail to give a complete picture, since they do not take into account the relative size of the institutions involved. Consequently, the following table gives the ratio between starred scientists and total number of teachers. (In each case, the total number of teachers was taken from the current *World Almanac.*)

California Institute	1 to 8.49
Princeton	11.58
Chicago	14.22
Hopkins	19.86
Minnesota	24.77
Michigan	25.33
Yale	25.86
Massachusetts Institute	27.23
Harvard	27.62
Wisconsin	29.95
Stanford	31.41
Cornell	39.23
California	53.77
Columbia	61.61
Pennsylvania	68.54
Illinois	73.59

In the foregoing comparisons, the California Institute and the Massachusetts Institute are at an advantage, since their non-scientific departments have, relatively, less importance in the total activities of the institutions. In order, then, to arrrive at a basis for comparison which makes no such discrimination, it is necessary to exclude from the total number of teachers those who are not working in fields where the starring system is used. The final comparison, then, gives the ratio between starred scientists and the number eligible for starring. Computing the number eligible for starring, it must be noted, involves considerable difficulty. In the case, for instance, of institutions which include a medical school, the question arises of whether only full-time members of the staff should be counted. Where any such question occurred, the most conservative and hence the most favorable count was used. Hence, the ratios must be regarded as only approximations.

Princeton	1 to 3
California Institute	3½
Harvard	4½
California	5
Yale	5½

Chicago	5½
Massachusetts Institute	6
Michigan	7½
Columbia	8
Stanford	9
Wisconsin	9
Illinois	12

On whatever basis the comparisons are made, the California Institute emerges in a very gratifying position. This is the more apparent when it is remembered that the development of research in the pure and exact sciences began at the Institute only a little over twenty years ago.

EDITOR'S NOTE: The June issue of the Alumni Review will contain names of men listed in "American Men of Science," together with a detailed analysis by individuals.

ENGINEERING COMMITTEES APPOINTED BY TRUSTEES

An Engineering Committee composed of men having a special interest in engineering education and research has been appointed by the Board of Trustees of the Institute. Its first meeting was held on January 20, 1939.

At this meeting which lasted throughout the weekend, the Committee made a complete tour of the engineering facilities on the campus and then proceeded to Palomar Mountain to view progress on the Observatory. After dinner at Warner's Hot Springs a round table discussion was held in which members of the Institute faculty participated.

The members of the Committee are as follows:

Garner A. Beckett, President, Riverside Portland Cement Co.

Scott Brown, Member Pasadena Advisory Board, Security-First National Bank of Los Angeles; formerly Vice-President and General Counsel Studebaker Corporation.

R.R. Bush, President, R. R. Bush Oil Company.

Thomas Fleming, Retired Consultant in Water Supply Engineering.

E. T. Foley, Member, Foley Brothers, Inc., St. Paul, Minn., Pacific Constructors, Inc., contractors on the Shasta Dam.

George G. Hoag, Retired, formerly with J. C. Penney Co.

Herbert Holt, '15, Manager, Bekins Van and Storage Company, Los Angeles.

Ralph B. Lloyd, Independent Oil Operator, Director, Security-First National Bank of Los Angeles.

Fred S. Markham, Capitalist.

Reese Taylor, President, Union Oil Company of California; formerly President, Consolidated Steel Corporation of Los Angeles.

William C. Mullendore, Chairman of Committee, Executive Vice-President, Southern California Edison Company.

—— T ——

ROUSE AWARD

Dr. Hunter Rouse, assistant professor of fluid mechanics, has been awarded the Norman medal of the American Society of Civil Engineers for his paper, "Modern Conceptions of the Mechanics of Fluid Turbulence," which appeared in the Proceedings of the Society. The Norman medal is the foremost award of the American Society of Civil Engineers, and is given each year for the most outstanding paper presented in the Proceedings.

COSMOCHRON

An interesting exhibit to be found in the Science Hall of the Golden Gate International Exposition is a Cosmochron, or geologic clock. The bronze hand on the face of the clock makes the circuit of "time" divisions, representing geologic periods. While it is ticking, the recorded voice of Dr. Chester Stock, professor of paleontology at Caltech, is heard describing the history of the cosmos, and a series of 42 slides is shown depicting what is known of the appearance of the world, animals and trees in the remotely past eras.

The cosmochron was built at the Griffith Park Planetarium in Los Angeles and will be on exhibition there at the close of the Exposition.

—— T ——

NEW ADVISER CHOSEN

Dr. Vannevar Bush, president of the Carnegie Institution of Washington, recently accepted an invitation to become a member of the Advisory Council of the Institute. Doctor Bush was formerly dean of engineering and vice-president of the Massachusetts Institute of Technology.

Another recent change was the election of Albert B. Ruddock to the Board of Trustees to fill the vacancy created by the death of Dr. George E. Hale. Mr. Ruddock is president of the California Institute Associates.

—— T ——

COLONEL LEEDS

Col. Charles T. Leeds, who was Professor of Military Science and Tactics at the Institute in 1917 and 1918, was recently elected a director of the American Society of Civil Engineers, representing the Southwest district for the three year term starting January, 1939.

—— T ——

EARTHQUAKE EFFECTS STUDIED

The Board of Supervisors of Los Angeles County recently voted an appropriation of $4,000 to help finance continued research in detailed studies of various types of buildings subjected to earthquake shock. The work which is under the direction of Prof. R. R. Martel, will attempt to determine if present building code requirements should be modified to achieve a uniformity in protection for all kinds of buildings.