

Commencement

CALIFORNIA INSTITUTE OF TECHNOLOGY

June 7, 1940, at 4:45 o'clock

PROCESSIONAL MARCH

Grand March - - - - - *Leidzen*
The Institute Band

INVOCATION AND CHAPLAIN'S ADDRESS

REVEREND JAMES W. FIFIELD, JR., D.D.

CONFERRING OF DEGREES

Candidates presented by

FREDERIC W. HINRICHS, JR., A.M., *Dean of Upper Classmen*
W. R. SMYTHE, PH.D., *Chairman of the Committee on the Course in Science*
W. W. MICHAEL, B.S., *Chairman of the Committee on the Course in Engineering*
WILLIAM V. HOUSTON, PH.D., *Member of the Committee on Graduate Study*

*Degrees conferred on behalf of the
Trustees and Faculty by*

ROBERT ANDREWS MILLIKAN, PH.D., LL.D., Sc.D., *Chairman of the Executive Council*

COMMENCEMENT ADDRESS

THE WORLD OF TOMORROW

ARCHIBALD VIVIAN HILL, Sc.D., M.D., LL.D.
*Foulerton Research Professor and Secretary of the Royal Society of London
Nobel Laureate in Medicine*

ANNUAL REPORT

DR. MILLIKAN

BENEDICTION

(The audience will please stand for the Academic Procession and the Invocation)

Candidates for Degrees

DOCTOR OF PHILOSOPHY

- DAVID MAHLON BONNER, B.A., University of Utah, 1936
RALPH EDWARD BYRNE, JR., B.S., California Institute, 1933; M.S., 1934
SHANG-YI CH'EN, B.S., Yenching University, 1932; M.S., 1934
ALBERT O. DEKKER, B.S., California Institute, 1935
RUSSELL NIMTZ DOESCHER, B.S., California Institute, 1933; M.S., 1934
LOUIS GERHARDUS DUNN, B.S., California Institute, 1936; M.A., 1938
WILLARD ALEXANDER FINDLAY, B.S., California Institute, 1929; M.S., 1932
SIDNEY WALTER FOX, B.A., University of California at Los Angeles, 1938
ARTHUR ELLIOT HARRISON, B.S., University of California, 1936; M.S., California Institute, 1937
ROBERT GEORGE HELFER, B.S., Baldwin-Wallace College, 1936
PAUL CARRINGTON HENSHAW, A.B., Harvard College, 1936; M.S., California Institute, 1938
ISYDORE HLYNKA, B.Sc., University of Alberta, 1935; M.Sc., 1937
HSU CHANG-PEN, B.S., Chiao-Tung University, 1935; M.E.E., Cornell University, 1938
JAMES ELLIS LUVALLE, B.A., University of California at Los Angeles, 1936; M.A., 1937
WILLARD LEE MCRARY, B.S., California Institute, 1936; M.S., 1938
FRANK JOSEPH MALINA, B.S., Texas Agricultural and Mechanical College, 1934; M.S., California Institute, 1935 and 1936
GEORGE HEINEMANN MARMONT, B.S., California Institute, 1934
ALADUKE BOYD MEWBORN, B.S., University of Arizona, 1927; M.S., 1933
DWIGHT DANA MILLER, A.B., Whittier College, 1937
PARK HAYS MILLER, JR., B.S., Haverford College, 1936
BERNARD MORE OLIVER, B.A., Stanford University, 1935; M.S., California Institute, 1936
SHIH-I PAI, B.S., National Central University, 1935; M.S., Massachusetts Institute, 1938
DAVID PRESSMAN, B.S., California Institute, 1937; M.S., 1938
C. ERNEST REDEMANN, B.A., University of California at Los Angeles, 1931
HOMER JOSEPH STEWART, B. Aero. E., University of Minnesota, 1936
EDWARD REGINALD VANDRIEST, B.S., Case School of Applied Science, 1936; M.S., State University of Iowa, 1937
VITO AUGUST VANONI, B.S., California Institute, 1926; M.S., 1932
KENICHI WATANABE, B.S., California Institute, 1936
J. LEYDEN WEBB, B.S., California Institute, 1936
MAX WYMAN, B.Sc., University of Alberta, 1937
LUKE CHIA-LIU YUAN, B.S., Yenching University, 1932; M.S., 1934

MASTER OF SCIENCE IN SCIENCE

BIOLOGY

- WILLIAM EUGENE BERG, B.S., California Institute, 1939
✓GEOFFREY LORRIMER KEIGHLEY, B.A., University of Toronto, 1926

CHEMISTRY

- ✓CLARK WEBSTER GOULD, JR., B.S., College of Puget Sound, 1938
✓ERIK VILHELM HEEGAARD, B.S., Royal Technical College of Copenhagen, 1936
✓WILLIAM JASPER HOWELL, JR., B.A., Swarthmore College, 1938
✓ROBERT SYDNEY MOORE, B.A., University of Western Ontario, 1938
CHARLES DANIEL RUSSELL, JR., B.S., Niagara University, 1938

GEOLOGICAL SCIENCES

- ✓RUSSELL CARTER DOOLITTLE, A.B., Princeton University, 1935
✓JOHN MARSHALL HOLLOWAY, B.S., University of Manitoba, 1937
✓RUHOLLAH YAHYAW KARUBIAN, Diploma, Alborz College, Iran, 1934; Petroleum Eng., Colorado School of Mines, 1938
MELVIN NEWTON LEVET, B.S., California Institute, 1939
✓WILLIAM DABNEY LEWIS, A.B., Denison University, 1938
WALTER HEINRICH MUNK, B.S., California Institute, 1939
✓ELLIS EARL ROBERTS, B.S., Michigan College of Mining and Technology, 1937
✓CLAY TAYLOR SMITH, B.S., California Institute, 1938
✓ROBERT EARL WALLACE, B.S., Northwestern University, 1938

MATHEMATICS

- ✓SHERWIN PARKER AVANN, B.S., University of Washington, 1938

PHYSICS

- ✓RAYMOND CHARLES BAIRD, B.A., University of California at Los Angeles, 1938
JOHN C. EVVARD, B.S., California Institute, 1939
✓THEODORE BEATON SMITH, A.B., Ohio State University, 1938
✓GEORGE FREDERICK WHEELER, B.A., Ohio State University, 1938

MASTER OF SCIENCE IN ENGINEERING

AERONAUTICS

- ✓STEVEN ERIC BELSLEY, B.S., Purdue University, 1938; B.S. in AE., California Institute, 1939
✓JAMES OTIS BIGLOW, Lieut., U. S. N.; B.S., United States Naval Academy, 1938
✓HAROLD FISCHER, B.A., University of California at Los Angeles, 1938; B.S. in AE., California Institute, 1939

- ✓ JOSEPH LOUIS FREDRICK, B.S., Louisiana State University, 1938; B.S. in AE., California Institute, 1939
- ✓ WILLIAM ELLIS GENTNER, JR., Lieut., U. S. N.; B.S., United States Naval Academy, 1938
- ✓ GEORGE ANTHONY HATTON, Lieut., U. S. N.; B.S., United States Naval Academy, 1931
- ✓ WALTER LOUIS KOCH, Diploma, Technische Hochschule, Hannover, 1936; M.S., California Institute, 1938
- ✓ DALIMIL KYBAL, B.S., California Institute, 1938
- ✓ FRANK NEFF MOYERS, 1st Lieut., U. S. A.; B.S., California Institute, 1930; M.S., 1931
- ✓ HENRY TAKESHI NAGAMATSU, B.S., California Institute, 1938; B.S. in AE., 1939
- ✓ WALTER BROWN POWELL, B.A., Stanford University, 1937; B.S. in AE., California Institute, 1939
- ✓ ROBERT BEATON SMITH, B.A., Ohio State University, 1936; M.S., California Institute, 1938
- ✓ BRIAN ORVILLE SPARKS, B.S., California Institute, 1932; M.S., 1933

CIVIL ENGINEERING

- ✓ O'DEAN ANDERSON, B.S., Utah State Agricultural College, 1939
- ✓ NEIL ERASMUS BORGQUIST, B.S., University of Arizona, 1939
- ✓ JOHN BELL CABELL, B.S., Virginia Military Institute, 1937
- ✓ EDWARD VICTOR GANT, B.E., Vanderbilt University, 1939
- ✓ FORREST HOLT HALL, B.S., Colorado State College, 1939
- ✓ JUSTUS AXEL OLSSON, B.S., University of California, 1935
- ✓ SABIH AZIZ USTEL, B.S., Robert College, 1939

ELECTRICAL ENGINEERING

- ✓ FRANCIS WENDELL BEICHLEY, B.S., Kansas State College, 1937
- ✓ LAWRENCE GLENN BORGESON, B.S., California Institute, 1939
- ✓ GEORGE ALVIN BRETTELL, JR., B.S., Lehigh University, 1937
- ✓ PAUL OSCAR ENGELDER, B.S., California Institute, 1939
- ✓ PIERRE MARCEL HONNELL, B.Sc., Agricultural and Mechanical College of Texas, 1930; E.E., 1938; M.Sc., Massachusetts Institute of Technology, 1939
- ✓ RILEY COLEMAN HORNE, JR., B.S., Virginia Military Institute, 1936
- ✓ ADOLPH LOVOFF, B.S., Lawrence Institute, 1934; B.S.E., University of Michigan, 1936; M.S., 1937
- ✓ NORTON HAROLD NELSON, B.A., St. Olaf College, 1937
- ✓ VINCENT CHARLES RIDEOUT, B.Sc., University of Alberta, 1938
- ✓ SHIH CHEN TAO, B.A., The College of Yale-in-China, 1926; M.S., Yenching University, 1932
- ✓ TSUNG-SU WANG, B.S., National Central University, 1933
- ✓ ROBERT WINSLOW WINCHELL, B.S., California Institute, 1939
- ✓ WILLIS GEORGE WORCESTER, B.S., University of Colorado, 1939
- ✓ VICTOR WOUK, B.A., Columbia College, 1939
- ✓ ABE MORDECAI ZAREM, B.S., Armour Institute of Technology, 1939

MECHANICAL ENGINEERING

- ✓ SEYFETTIN AKMAN, B.S., Robert College, 1939
- ✓ BUHTAR BATU, B.S., Robert College, 1939
- ✓ DUANE WESLEY BECK, B.S., California Institute, 1939
- ✓ CLAUDE H. BROWN, JR., B.S., California Institute, 1939
- ✓ CHARLES FREDERICK CARSTARPHEN, B.S., California Institute, 1939
- ✓ PHILIP SARKIS DEVIRIAN, B.S., California Institute, 1939
- ✓ JACK TICHENOR GUERIN, A.B., Stanford University, 1940
- ✓ EDWIN PHELPS HARTMAN, M.A., Marquette University, 1929
- ✓ HAROLD ELSTON HEYWOOD, B.S., Oklahoma Agricultural and Mechanical College, 1929
- ✓ JOHN WARREN JACKSON, B.S., University of Cincinnati, 1934; M.E., 1937
- ✓ JAMES LESLIE KING, Com. (ret.), U. S. N.; B.S., United States Naval Academy, 1912
- ✓ FRED W. STOLTZ, B.S., Washington State College, 1937
- ✓ HERBERT CLARK SUMNER, B.A., Stanford University, 1939
- ✓ DANA BUSHNELL WARING, M.E., Cornell University, 1939
- ✓ ROBERT LYNN WELLS, B.S., University of Rochester, 1939

METEOROLGY

- ✓ ARVILLE CLIFFORD GIBSON, B.A., Indiana Central College, 1931
- ✓ WILLIAM JEFFREY GREEN, B.A., University of Manitoba, 1938
- ✓ CLARK LEWIS HOSMER, 1st Lieut., U. S. A.; B.S., United States Military Academy, 1936
- ✓ DAVID HAMILTON KENNEDY, 1st Lieut., U. S. A.; B.S., United States Military Academy, 1932
- ✓ RAYMOND TAYLOR LESTER, 1st Lieut., U. S. A.; B.S., United States Military Academy, 1931
- ✓ CARL ANDERSON MORE, JR., B.S., University of Colorado, 1938
- ✓ NORMAN LEWIS PETERSON, 1st Lieut., U. S. A.; B.A., Yale University, 1932

BACHELOR OF SCIENCE (Five Year Course)

CHEMICAL ENGINEERING

- ✓ ROBERT TRISSEL CARTER, B.S., California Institute, 1939
- ✓ ROBERT HENRY DOURSON, B.S., California Institute, 1935
- ✓ RAY VAN DEUSEN GERHART, B.S., California Institute, 1939
- ✓ JONAS EWING HITE, JR., B.S., Georgia School of Technology, 1938
- ✓ BERTRAM VICTOR ROUDEBUSH, B.S., California Institute, 1939

METEOROLOGY

- ✓ STEPHEN ERROL BLEWETT, A.B., Stanford University, 1939
- ✓ FREDERICK MARTIN BRASCH, A.B., Nebraska Wesleyan University, 1939
- ✓ STANLEY NEWTON HEAPS, B.A., Rice Institute, 1939
- ✓ NEWTON C. STONE, B.E., Southern Illinois Teachers College, 1934; M.S., University of Illinois, 1935
- ✓ PRESTON TORREY, B.S., University of New Hampshire, 1939
- ✓ ALAN TOWER WATERMAN, JR., A.B., Princeton University, 1939

AERONAUTICS

- LEWIS HARRY ABRAHAM, B.S., North Carolina State College, 1938
 JAMES WILLIAM BRAITHWAITE, B.S., California Institute, 1939
 HAROLD BROWN CROCKETT, B.S., University of Texas, 1939; M.S., 1939
 JOHN ANDREW DILWORTH, III, B.S., Louisiana State University, 1939
 EARL ROE DONNELL, Jr., B.S., University of Texas, 1939
 CHARLES FINK FISCHER, B.S., United States Naval Academy, 1934
 EUSTACE PLUMB HETZEL, B of AE, Rensselaer Polytechnic Institute, 1939
 RICHARD B. HULETT, B.S., University of Michigan, 1937
 HAROLD FRANCIS KLECKNER, B.S., University of Illinois, 1939
 ELLIS LAPIN, B.S., Drexel Institute of Technology, 1939
 HARLOWE JULIUS LONGFELDER, B.S., California Institute, 1939
 LUIGI MENIS, Laurea in Ingegneria, Royal Polytechnic Institute of Turin, 1935
 FRANCIS MORSE, B.E., Yale University, 1939
 JOSIAH EDWARD SMITH, B.S., California Institute, 1939
 HARRISON ALLEN STORMS, Jr., B.S., Northwestern University, 1938; M.S., 1939
 ROBERT FULTON TANGREN, B.S., California Institute, 1939
 JAMES BENSON VERNON, B.S., State University of Iowa, 1938; M.S., 1939
 JOHN OSWALD WESSALE, B.S., State University of Iowa, 1939
 JOHN MEINCKE WILD, B.S., Purdue University, 1937

BACHELOR OF SCIENCE (Four Year Course)

SCIENCE

- | | | |
|----------------------------|--------------------------|-----------------------------|
| KEITH ELLIOTT ANDERSON | BERNARD K. HAFFNER | HOWARD W. REYNOLDS, JR. |
| GEORGE HOWARD ARVIN | JOHN CLINE HARPER | HERBERT SARGENT |
| *ERWIN BAUMGARTEN | MARION ERNEST HINES | *WILLIAM BERTRAM |
| ROBERT RAYMOND BERLOT | WILLIAM THOMAS KLUGE | SCARBOROUGH |
| ROSSELL JONES BLACKINTON | *JEROME KOHL | E. WILBUR SILVERTOOTH |
| *LEO BREWER | DONALD HARRY KUPFER | RANDLOW SMITH |
| GEORGE REYNOLDS BROWN | GERALD BALFOUR LEVIN | WILLIAM AUSTIN SPOONER |
| *WILLIAM EMIL BROWN | *DONALD EDWARD LOEFFLER | DUMONT SUTHERLAND STAATZ |
| *FREDERICK CALVERT BRUNNER | *PAUL ALAN LONGWELL | MORTIMER HAY STAATZ |
| CLIFFORD C. BURTON | BERNARD LOVE | WILLIAM WELCH STONE, JR. |
| WILLIAM ROY CLEVELAND, JR. | WILLIAM ROBERT VICTOR | ELLERY CORY STOWELL, JR. |
| RAYMOND O. CLINTON | MARRIOTT | FRANK DOAN STREIGHTOFF |
| SHELDON CYR CRANE | *HAROLD SOMERS MICKLEY | YUJI TAJIMA |
| GERRIT DAAMS | *MARK MUIR MILLS | *ROSS DONALD F. THOMPSON |
| CLAUDE EDWARD DAVIES | DARRAGH EDMUND NAGLE | JACK TIELROOY |
| LEO DAVIS | YOSHINAO NAKADA | BERNARD M. TOBIN |
| JOHN PAUL DAY | FREDERIC CARL EMIL ODER | GILBERT RUSK VAN DYKE, JR. |
| FRANK WILLIAM DESSEL, JR. | RALPH GRAHAM PAUL | *DAVID JOSEPH VARNES |
| LUDWIG EPSTEIN | MILLER WINTHROP QUARLES, | RICHARD WASEM |
| ROBERT ERNEST FLEMING | JR. | JAMES MARSHALL WATKINS, JR. |
| IRVINE FISK GERMAN, JR. | ROBERT STANLEY RAY, JR. | THEODORE WEAVER |
| | | GORDON BRUCE WEIR |

ENGINEERING

- | | | |
|----------------------------|----------------------------|----------------------------|
| ROBERT POWELL ADAMS | WILLIAM CARL HOUSE | RICHARD WELLS POWELL |
| ROBERT WARD ALCOCK | MILLARD WOLFORD JACOBS | RAYMOND GARDNER RICHARDS |
| HOWARD BALLER | ROBERT RAMSEY JANSSEN | CHARLES HERRICK ROSE |
| GEORGE CLAIR BARBER | *JAMES W. JONGENEEL | HUBERT DAVID SAMUEL, JR. |
| DWIGHT HENRY BENNETT | LEROY JAMES KEMP | PERRY LATHROP SANDIFORD |
| CYDNOR MARK BIDDISON, JR. | JOHN HAROLD KEYSER, JR. | CARL GEORGE SCHRADER |
| ALEXANDER FREDERICK BREWER | STUART ALVIN KRIEGER | WILLIAM DAVIS SMITH |
| FREDERIC MORGNER BROSE | LUTHER PERRY KUTTLER, JR. | DELMAN SEWARD SPALDING |
| *ROBERT CLARENCE BRUMFIELD | ROLF OWES LANGERUD | ROBERT ELMER SPIELBERGER |
| JOHN CRAWFORD CAREY | WALTER RAMEY LARSON | COLLIS K. STEEL |
| DONALD B. CARSON | ERIC GILBERT LAUE | DAVID HENRY STEINMETZ, III |
| ARTHUR M. COMPTON, JR. | CHARLES CROXALL LEGRAND | JEAN BARRIEU STEVENS |
| ROBERT OSBORNE COX | WILLYS MALCOLM LEMM | WILLIS ALLEN STONER |
| JAMES VAILE CRAWFORD | ORSON BERNARD LOLMAUGH | ROBERT A. STROUD |
| EDWARD OAKES DICKERSON | WALLACE MATTHEW MACKAY, | RICHARD LOUIS SULLIVAN |
| W. DAWKINS ESPY | JR. | *GEORGE JUDSON TODD |
| GERALD PENTLAND FOSTER | *JOSEPH FRANK MANILDI | KIYO TOMIYASU |
| ALBERT FINLEY FRANCE, III | *ROY EDWARD MARQUARDT | WARREN H. VETTER |
| ROBERT ALEXANDER GEWE | JULES FREDERICK MAYER | RICHARD LANGAN WALKER |
| JAMES BRINTON GLASSCO | ROBERT BACON MEYER | DON LOMBARD WALTER |
| ROBERT B. GLASSCO | ROBERT SOUTH NEISWANDER | ROBERT WILLIAM WAYMAN |
| LOYD TWEDT GOODMANSON | CLINTON TOMS NEWBY | HOWARD JACK WHITE |
| *ROBERT WEBB GRIGG | DOUGLAS BLAIN NICKERSON | DAVID WALTER WHITTLESEY |
| ALFRED VICTOR GUILLOU, JR. | NORMAN PEERS OLDSON | JAMES WRIGHT WHITTLESEY |
| GILBERT WALTER HOFELLER | FRANK OLNEY | JOHN BRIDGERS WILLIAMSON |
| WALTER HOFMANN | CHARLES SUMNER PALMER, JR. | *CHARLES H. WILTS |
| HENRY GEORGE HOHWIESNER, | CHARLES MELVIN PAYNE | HERBERT MOORE WORCESTER |
| JR. | ROBERT AUSTIN PHILLIPS | ROBERT BUSBEY YOUNG |

*Graduated with honor in accordance with a vote of the Faculty