ON

THE ORIGIN OF SPECIES

BY MEANS OF NATURAL SELECTION,

OR THE

PRESERVATION OF FAVOURED RACES IN THE STRUGGLE FOR LIFE.

BY CHARLES DARWIN, M.A.,

PRESIDENT OF THE ROYAL, GEOLOGICAL, LINNÉAN, ETC., SOCIETIES;
AUTHOR OF "JOURNAL OF RESEARCHESE DURING H. M. S. BEAGLE'S VOYAGE ROUND THE WORLD."

LONDON:
JOHN MURRAY, ALBEMARLE STREET.
1859.

The right of Translation is reserved.

CHICAGO:
THE UNIVERSITY OF CHICAGO
1959
GENERAL INFORMATION

The registration and information desk is located in the North Lounge of the Reynolds Club, 5706 South University Avenue. It will be open from 8:30 to 5:00 from Monday, November 23, to Saturday, November 28. Registrants should make seating arrangements for the Centennial and Thanksgiving dinners at the seating desk next to the registration desk.

Tickets for "Time Will Tell" are on sale at the Reynolds Club Box Office. All other Centennial events are limited to persons who have registered in advance. Admission to all events will be by ticket only.

Special programs will be distributed for the panel discussions, the Institute for High School Biology Teachers, and "Time Will Tell."

The Society for the Study of Evolution is holding its annual meeting during the Celebration, with headquarters at the Shoreland Hotel. Its sessions are listed in a separate program.

To reach a wider audience The Encyclopaedia Britannica Films, Inc., is filming the Celebration events to develop documentary films and educational material for distribution among groups unable to attend. WUCB, the student-operated campus radio station, is tape-recording the panel discussions and lectures and broadcasting these through closed circuit to Breasted Hall for the audience there. The University of Chicago Press is publishing the centennial papers and the panel discussions as a three-volume work titled Evolution after Darwin and edited by Sol Tax.

Transportation is available by taxi (Yellow Cab, Midway 3-8650); Emery-Drexel Livery service (FAirfax 4-6400); Chicago Transit Authority bus running east-west on 55th Street (CTA bus #55); and Illinois Central commuter train to the Loop.

Chartered bus service directly to and from the Shoreland and the Windermere hotels will be available to registrants from Tuesday through Saturday. Tickets must be purchased in advance. Registrants are advised to purchase a supply of tickets (25 cents each) at once (money will be refunded for those unused) and to plan to use the bus early to avoid waiting, congestion, and loss of reserved seats at sessions. Breakfast at Hutchinson Commons will be found to be especially convenient.

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<th>BREAKFAST</th>
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<tr>
<td>Hutchinson Commons</td>
<td>7:15—</td>
<td>11:30-1:30 except</td>
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<td>or Coffee Shop</td>
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<td>Billings Hospital</td>
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<td>International House</td>
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<td>Thursday: 8-9:30</td>
<td>Thursday: noon-2*</td>
<td>Thursday: 5-7*</td>
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*International House is serving on Thanksgiving Day for the convenience of Centennial Registrants before and after the Convocation.
Joining the University in sponsoring the Darwin Centennial Celebration are the National Science Foundation, the Wenner-Gren Foundation for Anthropological Research, and the National Institutes of Health. The first two have contributed transportation and living expenses for the participants; the third, costs of the panel discussions.
COMMITTEE
for the
DARWIN CENTENNIAL CELEBRATION

SOL TAX, Chairman, Department of Anthropology
ALFRED E. EMERSON, Department of Zoology
CHAUNCY D. HARRIS, Department of Geography
EVERETT C. OLSON, Department of Geology
H. BURR STEINBACH, Department of Zoology
ILZA VEITH, Department of Medicine

Appointed by the Chancellor in January 1956, the original Committee included also KARL P. SCHMIDT of the Chicago Natural History Museum, as Editor, and ROBERT REDFIELD of the Department of Anthropology. The planning for the Centennial was in large part their creation and was far advanced before the deaths of Dr. Schmidt on September 27, 1957, and of Professor Redfield on October 16, 1958.

FRANÇOIS BORDES, SIR JULIAN HUXLEY, and A. L. KROEBER, visiting Professors in the University during the Autumn Quarter, 1959, helped the Committee and other participants to plan the panel discussions.

CHARLES CALLENDER, Conference Director

MARIE-ANNE HONEYWELL, Conference Secretary
JEAN DAMES AND ROSE WEINER, Assistants

ROCHELLE DUBNOW, Director of volunteer work by students
MARIANNA TAX, Assistant

INSTITUTE AND NATIONAL CONFERENCE FOR HIGH SCHOOL BIOLOGY TEACHERS

RICHARD BOYAJIAN, University High School
Director of the Institute

JOHN C. MAYFIELD, the College
Director of the National Conference

Committee: G. ERNST GIESECKE and D. BOB GOWIN, Graduate School of Education; BARBARA F. PALSER, Department of Botany; HEWSON H. SWIFT, Department of Zoology.
1:30 P.M.
Mandel Hall

Issues in Evolution—"Introduction"
Sol Tax

2:00 P.M.
Mandel Hall

Issues in Evolution—I: "The Origin of Life"

Panel Discussion
Chairmen: Harlow Shapley and Hans Gaffron

Sir Charles Galton Darwin  Ralph W. Gerard
Th. Dobzhansky  H. J. Muller
Earl A. Evans, Jr.  C. Ladd Prosser
G. F. Gause

6:00 P.M.
Hutchinson Commons and Coffee Shop

Centennial Dinner
Presiding: Chauncy D. Harris, Dean, Division of Social Sciences

The Citizens Board of the University of Chicago will join the after-dinner program. Other registrants are invited to the limit of seating capacity.

8:30 P.M.
Mandel Hall

Welcome
Lawrence A. Kimpton, Chancellor, University of Chicago

"The Darwin Centennial Celebration"
Sol Tax

"Darwin the Traveller"
Sir Charles Galton Darwin
WEDNESDAY
NOVEMBER 25

9:45 A.M.
MANDEL HALL

ISSUES IN EVOLUTION—II: “THE EVOLUTION OF LIFE”

Panel Discussion
Chairmen: Sir Julian Huxley and Alfred E. Emerson

Daniel I. Axelrod
Th. Dobzhansky
E. B. Ford
Ernst Mayr
A. J. Nicholson

Everett C. Olson
C. Ladd Prosser
G. Ledyard Stebbins
Sewall Wright

2:45 P.M.
MANDEL HALL

“THE LADDER OF LIFE”

Advance showing of a film on “evolution in action”
Prepared by the Columbia Broadcasting System
for broadcast on CONQUEST November 29

3:30 P.M.
MANDEL HALL

Illustrated Lecture

“THE ORIGIN OF THE GENUS HOMO”

L. S. B. Leakey
THURSDAY
NOVEMBER 26

9:45 A.M.
MANDEL HALL

ISSUES IN EVOLUTION—III: "MAN AS AN ORGANISM"

Panel Discussion
Chairmen: GEORGE GAYLORD SIMPSON and F. CLARK HOWELL

MARSTON BATES
CESARE EMILIANI
A. IRVING HALLOWELL
L. S. B. LEAKEY

H. W. MAGOUN
BERNHARD RENSCH
C. H. WADDINGTON

3:00 P.M.
ROCKEFELLER MEMORIAL CHAPEL

DARWIN CENTENNIAL CONVOCATION
Presiding: LAWRENCE A. KIMPTON, Chancellor, University of Chicago

Convocation Address:
"THE EVOLUTIONARY VISION"
Sir JULIAN HUXLEY

Awarding of Honorary Degrees
Immediately following the recessional, official delegates will greet the recipients of honorary degrees in Ida Noyes Hall.

6:00 P.M.
HUTCHINSON COMMONS

THANKSGIVING DINNER
Presiding: EDGAR A. ANDERSON, President, Society for the Study of Evolution

8:30 P.M.
MANDEL HALL

"TIME WILL TELL"
An original musical play written for the Celebration
by ROBERT A. ASHENHURST and ROBERT POLLAK

OPENING PERFORMANCE
FRIDAY
NOVEMBER 27

9:45 A.M.
MANDEL HALL

ISSUES IN EVOLUTION—IV: “THE EVOLUTION OF THE MIND”
Panel Discussion
Chairmen: RALPH W. GERARD and ILZA VEITH
HENRY W. BROSN
MACDONALD CRITCHLEY
W. HORNSLEY GANTT
A. IRVING HALLOWELL
ERNEST HILGARD
SIR JULIAN HUXLEY
H. W. MAGOUN
ALEXANDER VON MURALT
N. TINBERGEN

I: 30 P.M.—4:30 P.M.
JUDD HALL 126

INSTITUTE FOR HIGH SCHOOL BIOLOGY TEACHERS
The National Conference for High School Biology Teachers brings to this Institute teachers from all over the United States. It is financed by a grant from the National Science Foundation as a means of widening the influence of the Centennial Celebration and of this Institute.

Panel and Discussion Sections
Chairman: H. BURR STEINBACH
EDGAR ANDERSON
TH. DOBZHANSKY
H. J. MULLER
GEORGE GAYLORD SIMPSON

8:30 P.M.
MANDEL HALL

“TIME WILL TELL”

SATURDAY
NOVEMBER 28

9:45 A.M.
MANDEL HALL

ISSUES IN EVOLUTION—V: “SOCIAL AND CULTURAL EVOLUTION”
Panel Discussion
Chairmen: CLYDE KLUCKHOHN and ALFRED L. KROEBER
ROBERT M. ADAMS
EDGAR A. ANDERSON
FRANÇOIS BORDES
SIR JULIAN HUXLEY
H. J. MULLER
FRED POLAK
JULIAN H. STEWART
LESLEY A. WHITE
GORDON R. WILLEYS
I2:00 M.
MANDEL HALL
ISSUES IN EVOLUTION—"CONCLUSION"
Sol Tax

1:30 P.M.—3:30 P.M.
JUDD HALL 126
INSTITUTE FOR HIGH SCHOOL BIOLOGY TEACHERS

Lecture and Film
EVOLUTIONARY ASPECTS OF SOCIAL COMMUNICATION IN ANIMALS
N. Tinbergen

Remarks
THE PLACE OF EVOLUTION IN THE CURRICULUM
Sir Julian Huxley

1:30 P.M.—5:30 P.M.
MANDEL HALL
INSTITUTE ON SCIENCE AND THEOLOGY
Arranged with the cooperation of the Federated Theological Faculty

Lecture
"CREATION AND CAUSALITY IN THE HISTORY OF CHRISTIAN THOUGHT"
Jaroslav Pelikan, Federated Theological Faculty

Lecture
"CREATION AND EVOLUTION IN PRESENT-DAY ROMAN CATHOLIC THOUGHT"
The Reverend J. Franklin Ewing, S.J., Fordham University

Panel Discussion
"WARFARE OF SCIENCE WITH THEOLOGY"
Chairman: Jerald C. Brauer, Federated Theological Faculty
Francois Bordes
Sir Charles Galton Darwin
G. F. Gause
William O'Meara, Department of Philosophy
H. Burr Steinbach
Leo Strauss, Department of Political Science

8:30 P.M.
MANDEL HALL
"TIME WILL TELL"
EXHIBITS

ON THE UNIVERSITY CAMPUS

REYNOLDS CLUB, SOUTH LOUNGE

*University of Chicago Library Exhibit.* The history of evolutionary theory and the influence of Darwin’s writings on social thought and theology are shown in a book exhibit assembled by the Department of Special Collections of the University Library. Among the books on display from the Library’s collections are first editions of seventeen of Darwin’s works, including the *Origin of Species*, presented to the University by Col. William M. Spencer of Chicago.

*University of California at Los Angeles Exhibit.* A series of posters loaned by the University of California at Los Angeles Biomedical Library illustrates Darwin’s precursors, his life and work, and contemporary reaction to his theories, and post-Darwinian developments in genetics, embryology, physical anthropology and psychology.

UNIVERSITY OF CHICAGO BOOKSTORE

Books by Celebration participants as well as works about Darwin and Evolution are on display and may be purchased at the Bookstore, 5801 Ellis Avenue.

IN AND NEAR CHICAGO

CHICAGO NATURAL HISTORY MUSEUM

“Darwin’s *Origin of Species*” is the subject of an exhibit in Stanley Field Hall. It consists of six panels that trace the history of the *Origin* and explain the meaning of, and the evidence for, natural selection. Included in the exhibit is a copy of the first edition of the *Origin of Species* loaned for the occasion by the John Crerar Library of Chicago. Original letters by Darwin and specimens from the Museum’s collections that were collected by him on the voyage of the “Beagle” will also be on display. The Museum, at Roosevelt Road and Lake Shore Drive, can be reached by car or by the Illinois Central Railroad’s commuter trains.

THE MUSEUM OF SCIENCE AND INDUSTRY, at 57th Street and South Lake Shore Drive, contains both scientific (including medical) and historical exhibits.

CHICAGO ZOOLOGICAL PARK (BROOKFIELD ZOO)

Members of the staff will be glad to arrange escorted tours which would include the Animal Hospital and Animal Study Center as well as the regular displays. For further information and arrangement of tours, call Bshop 2-2630. The zoo is about one hour by car (west on 55th Street and Garfield Boulevard to Harlem Avenue, north on Harlem to 31st Street, 31st to 8300 west) and can also be reached by Bluebird Bus from the Loop.

THE MORTON ARBORETUM, Lisle, Illinois, contains 1,225 acres devoted to the study and exhibit of woody plants.
PARTICIPANTS

The papers listed are being published by the University of Chicago Press and have been summarized in the special program prepared for the panel discussions. The discussions themselves are based upon advance study by the participants of all the papers.

ROBERT M. ADAMS
University of Chicago

Evolutionary Process in Early Civilizations

EDGAR A. ANDERSON
Missouri Botanical Garden

The Evolution of Domestication

DANIEL I. AXELROD
University of California, Los Angeles

The Evolution of Flowering Plants

MARSTON BATES
University of Michigan

Ecology and Evolution

FRANÇOIS BORDES
University of Bordeaux

Problems of Evolution in the Paleolithic Cultures

ROBERT J. BRAIDWOOD*
University of Chicago

Post-Pleistocene Evolution

HENRY W. BROSNIN
University of Pittsburgh

Evolution and the Understanding of Diseases of the Mind

MacDONALD CRITCHLEY
National Hospital, London

The Evolution of Man's Capacity for Language

SIR CHARLES GALTON DARWIN
Can Man Control His Numbers

TH. DOBZHANSKY
Columbia University

Evolution and Environment

ALFRED E. EMERSON
University of Chicago

The Evolution of Adaptation in Population Systems

CESARE EMILIANI
University of Miami

Dating Human Evolution

EARL A. EVANS, JR.
University of Chicago

Viruses and Evolution

PAUL FEJOS
Wenner-Gren Foundation for Anthropological Research

Discussion Participant

E. B. FORD
University of Oxford

Evolution in Progress

* Unable to attend the Celebration.
HANS GAFFRON
University of Chicago
The Origin of Life

W. HORSEY GANTT
Johns Hopkins University
Pavlov and Darwin

G. F. GAUSE
U.S.S.R. Academy of Medical Sciences
Darwinism, Microbiology and Cancer

RALPH W. GERARD
University of Michigan
Becoming: The Residue of Change

A. IRVING HALLOWELL
University of Pennsylvania
Self, Society and Culture in Phylogenetic Perspective

CHAUNCY D. HARRIS
University of Chicago
Committee, Darwin Centennial Celebration

ERNEST HILGARD
Stanford University
Evolution and the Understanding of Psychology

F. CLARK HOWELL
University of Chicago
with S. L. WASHBURN
Human Evolution and Culture

SIR JULIAN HUXLEY
The Emergence of Darwinism

CLYDE KLUCKHohn
Harvard University
Discussion Participant

ALFRED L. KROEBER
University of California, Berkeley
Evolution, History, and Culture

L. S. B. LEAKEY
Coryndon Memorial Museum, Nairobi, Kenya
Discussion Participant

H. W. MAGOUN
University of California, Los Angeles
Darwin and Concepts of Brain Function

ERNST MAYR
Harvard University
The Emergence of Evolutionary Novelties

H. J. MULLER
Indiana University
The Guidance of Human Evolution

ALEXANDER VON MURALT
University of Berne
A Decisive Step in Evolution: Saltatory Conduction

A. J. NICHOLSON
Australian Commonwealth Scientific and Industrial Research Organization, Canberra
The Role of Population Dynamics in Natural Selection

EVERETT C. OLSON
University of Chicago
Morphology, Paleontology, and Evolution

STUART PIGGOTT*
University of Edinburgh
Prehistory and Evolutionary Theory

*Unable to attend the Celebration.
FRED POLAK
University of Rotterdam
Evolution and the Understanding of Man in his Social Setting

C. LADD PROSSER
University of Illinois
Comparative Physiology in Relation to Evolutionary Theory

BERNARD RENSCH
University of Münster
The Laws of Evolution

HARLOW SHAPLEY
Harvard University
On the Evidences of Inorganic Evolution

GEORGE GAYLORD SIMPSON
Harvard University
The History of Life

G. LEDYARD STEBBINS
University of California, Davis
The Comparative Evolution of Genetic Systems

H. BURR STEINBACH
University of Chicago
Committee, Darwin Centennial Celebration

JULIAN H. STEWARD
University of Illinois
Evolution and Social Typology

SOL TAX
University of Chicago
Chairman, Darwin Centennial Celebration

N. TINBERGEN
University of Oxford
Behavior, Systematics and Natural Selection

ILZA VEITH
University of Chicago
Creation and Evolution in the Far East

C. H. WADDINGTON
University of Edinburgh
Evolutionary Adaptation

SHERWOOD L. WASHBURN*
University of California, Berkeley
with F. CLARK HOWELL
Human Evolution and Culture

LESLIE WHITE
University of Michigan
Four Stages in the Evolution of Minding

GORDON R. WILLEY
Harvard University
Historical Patterns and Evolution in Native New World Cultures

SEWALL Wright
University of Wisconsin
Physiological Genetics, Ecology of Populations and Natural Selection

* Unable to attend the Celebration.