PROCEEDINGS OF THE BERKELEY SYMPOSIUM

PROCEEDINGS OF THE BERKELEY SYMPOSIUM ON MATHEMATICAL STATISTICS AND PROBABILITY

Held at the Statistical Laboratory
Department of Mathematics
University of California
August 13–18, 1945, January 27–29, 1946

EDITED BY JERZY NEYMAN

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY AND LOS ANGELES
1949

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY AND LOS ANGELES
CALIFORNIA

CAMBRIDGE UNIVERSITY PRESS
LONDON, ENGLAND

PRINTED IN THE UNITED STATES OF AMERICA
BY THE UNIVERSITY OF CALIFORNIA PRESS

FOREWORD

THE BERKELEY SYMPOSIUM on Mathematical Statistics and Probability was made possible by a special grant of the Administration of the University of California. Also, special funds were made available to assist the publication of the present *Proceedings*.

During World War II the majority of statisticians were working on problems of defense which frequently bore the imprint of immediate practical importance. The purpose of the Symposium was to mark the end of the war and to stimulate the return to theoretical research. It happened that the conclusion of hostilities with Japan coincided with the second day of the first part of the Symposium, held in August, 1945.

The order in which the papers are published is essentially that in which they were delivered at the Symposium. Slight changes were occasionally introduced to facilitate the reading of contributions relating to the same subject.

The subjects of the papers vary considerably, illustrating the range of problems which in one way or another tie up with mathematical statistics and probability. Some papers are limited to the presentation of experimental problems requiring statistical treatment. In others, statistical theory plays a considerable role; but it is still a secondary role, that of a tool used by the observer or the experimenter to clarify some complex phenomena. Although in both these categories of papers mathematical statistics appears as a servant, the papers are of great interest to the professional mathematical statisticians, for whom applicational problems are a source of inspiration in their theoretical work. This circumstance is reflected in several papers dealing directly with the theory of statistics and probability. The theoretical approach culminates in a philosophical paper analyzing the concept of probability. Finally, a somewhat separate position is occupied by several contributions on the organizational setup best suited both for the development of mathematical statistics and for making its services readily available to research workers in other fields.

It is hoped that the publication of these *Proceedings* will stimulate research and foster coöperation between the experimenter and the statistician, a coöperation promising benefits for both.

J. NEYMAN
Director of the Statistical Laboratory

CONTENTS