

REPORT OF THE DIRECTOR

April 20 and June 8, 1943

At the two meetings of the Board held April 20 and June 8, 1943, the Director made a comprehensive report on the researches in progress at the Institute during the past year. He referred to his three reports of 1941 in which he dealt in turn with each of the three schools, and he undertook in these two meetings to bring the Trustees up to date as to the work being done both by the faculty and the members of the Institute. Comparisons are difficult, but it would perhaps be fair to say that the results of research published or about to be published during the year 1942-1943, are more important than those of any previous year in the history of the Institute, although much of the work now published was, of course, begun several years ago.

Work in progress is difficult to describe and for this reason the main part of this report will be devoted to results actually published. Important contributions may be expected in the near future from Professors Alexander and Morse in the field of topology, and Professor Veblen has nearly finished his book on spinors. Professor Einstein reports that he is now following a new, promising, and highly interesting approach to the problem of the unification of electro-magnetic forces and gravitation, but whether it will lead to the goal he as yet cannot say. In the words of Professor Weyl, "If anybody has earned the right to attack such a long-range problem and if anybody has a chance to find its solution at the present state of physics, it is Professor Einstein." Professor Weyl has succeeded in proving a basic theorem on harmonic integrals, which had

last year completely baffled all the members of the seminar which Professor Chevalley of Princeton University conducted on this subject in Fuld Hall.

One of the most interesting of the projects of the Mathematics School is a book on mathematical economics by Professor von Neumann of the Institute and Professor Morgenstern of Princeton, entitled The Theory of Games and its Application to Economics and Sociology. It is expected that the book will shortly be published by Princeton University Press. It is based upon a mathematical theory of games of strategy which has been developed by Professor von Neumann in various articles published since 1928. In this book the same mathematical approach is made to economic and sociological questions. The purpose of the volume is to show that a rigorous approach is possible to these problems involving questions of parallel or opposite interest, perfect or imperfect information, free rational decision or chance influences.

Important contributions to mathematics (too long to summarize) have been made by various members of the Institute during the year, notably by Professors Pauli, Gödel, and Siegel. Perhaps the most important of these is a paper in the field of number theory by Professor Siegel, entitled Symplectic Geometry. Professor Siegel submitted this paper in the form of a beautifully handwritten manuscript to the American Journal of Mathematics. The paper was returned by the referee with the suggestion that it was so important that the original manuscript should be preserved as a treasure in the library of the Institute and that a typewritten copy be made for the printer. Professor Weyl has made the comment that it is probably not too much to say that if the School of Mathematics had accom-

plished nothing else in the ten years of its existence but to enable Siegel to produce this and other papers which he has published during the last three years it would have fully demonstrated its usefulness to the scientific world. .

The demand throughout the country for teachers of mathematics has steadily thinned the ranks of the members of this School as different individuals have been called to college and university posts. It is our expectation that the School will be strengthened next year by the advent of two important mathematicians from China.

In the School of Economics, Professor Earle and the members of his group have sponsored, in connection with Princeton University, an important conference on military man power and American policy and have published a large number of contributions in that field, the most important of which is a volume on the development of modern military thought, which is expected to appear in the autumn. The practical work of Professor Earle and the members of his group in connection with the war effort has been extremely important but is of too confidential a nature to make it advisable for me to report on it to the Trustees at this time.

Professor Mitrany has now finished his work with the Chatham House group in Oxford and is expected to return to the Institute in the autumn. Professor Riefler continues at his post as Minister to Great Britain but flies home for occasional periods of leave and is able in this way to keep his contact with the work of the Institute. The School of Economics has had a larger number of members during the past year than ever before. These men have published a considerable number of contribu-

tions to economics and economic and political history. Perhaps the most ambitious undertaking is that of Dr. Clarence D. Long, who has been working for two years as a Guggenheim Fellow at the Institute on the history of unemployment in the United States. His statistical picture of the labor market from 1914 to 1940 will be completed in the autumn and should be an extremely useful volume for public authorities in the determination of economic policy in the period immediately following the war. Equally pertinent to the post-war situation, in a different field, will be Mr. Mitchell's account of the political currents and cross currents which brought about the Senate's rejection of the Treaty of Versailles in 1920. In the interest of brevity, the studies reported to the Board by Drs. Gilbert, Gottmann, Mantoux, Possomy, Silberner, and Weiller are here omitted.

In the School of Humanistic Studies the number and importance of published works during the year probably exceed those produced in either of the other schools. Miss Goldman has published several contributions on the general subject of Greek and Roman terra cotta figurines from Tarsus and has collaborated in the publication of other archaeological papers by Mr. Holland, Miss Welker, and Miss Jones. Professor Herzfeld has nearly finished the revision of his book on the Songs of Zoroaster and now has three volumes on Persian archaeology practically ready for publication. Professor Lowe has completed Volume IV of his Codices Latini Antiquiores. The proofs have been returned to Oxford by air mail and the volume will appear as soon as the Clarendon Press can complete the printing.

Professor Meritt has, in addition to his other duties, assumed the editorship of the American Journal of Philology. He is already the editor of *Hesperia*, and Professor Renssalaer Lee, the editor of the *Art Bulletin*, now spends half the year at the Institute, so that three of the most important journals in the humanistic field are now edited in Fuld Hall. Progress on Professor Meritt's epigraphical studies has been continuous and contributions have been made by Drs. Raubitschek, Capps, Oliver, Pritchett, Clement, and Broneer. An interesting product of the epigraphical seminar now in preparation is an Athenian Prosopography - a Who's Who of the ancient world. This will have the distinction of being probably the only Who's Who in existence, admission to which is strictly determined by desert. When finally completed it will be a work of reference which every important library will have on its shelves and of which every student of classical antiquity will make constant use.

Among all these publications of the Humanistic School the most important by general consent are Professor Panofsky's two volume work on Albrecht Dürer and Dr. deTolnay's volume on the Youth of Michelangelo. Professor Panofsky's book is the first comprehensive work in English on Dürer to be published in forty years. It adds much to our knowledge of the artist and may easily be expected to take rank as the best book about him ever published. Dr. deTolnay's book on Michelangelo covers the period down to 1508 and is the first of five volumes which deTolnay has planned about the Master. Probably nothing comparable in thoroughness of scholarship has ever been published about Michelangelo in any language. Publications of Dr. Swarzenski on minor arts of the Middle Ages and Dr.

Weitzmann on Byzantine subjects can only be mentioned, and the book which is now being written by Dr. Frankl may wait for review until its publication.

The League of Nations group has, during the three years it has been working in Fuld Hall, steadily increased the number and importance of its publications. Lists of these publications are contained in all the handbooks and need not be repeated in this report. From the point of view of economic research the most important of all the productions of the League group during the past three years is a report of the Delegation on Economic Depressions, The Transition from War to Peace Economy. This study, based upon statistical information covering the period at the end of the last war, deals with the effects of war economy on industrial activity and the problems arising during the transition from war to peace economy both in the domestic and the international fields. A copy of this interesting and important document is being sent to each member of the Board with the compliments of Mr. Loveday. On the fly leaves of the pamphlet will be found lists of recent publications of the Economics Section of the League. The presence of the League group in Fuld Hall has been a great stimulus to the work of the Institute in the field of international economics and constitutes a delightful addition to our intellectual and human resources.

FRANK AYDELOTTE, Director