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Prof. Emil Schoenbaum [the sixty fifth birthday
commemoration]

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AKTUÁRSKÉ VĚDY

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During the occupation it was not possible for us to commemorate the sixtieth birthday of Prof. Dr. EMIL SCHOENBAUM; after the war, his pupils and friends therefore set about preparing a special publication in commemoration of his sixty fifth birthday. Contributions were submitted by messrs. ARROBA, BÍLÝ, BUNICKÝ, BYDŽOVSKÝ, CRUZ, HOSTINSKÝ, JANKO, PETR, TRUKSA, ZELENKA. For technical reasons, however, the idea of a special publication had to be abandoned and the contributed material, as far as its contents are suitable, will be published in this or in future numbers of „Aktuárské vědy“.

PROF. EMIL SCHOENBAUM.

Dr Emil Schoenbaum, Professor of Insurance Mathematics and Mathematical Statistics in the Natural Science Faculty of Charles' University was born on the 10th of June, 1882 at Benešov, near Prague. Already while attending secondary school he displayed great ability especially in mathematics which he then selected as his main subject of study in the Philosophical Faculty of Charles' University, Prague. On graduating, he first turned his attention to the theory of numbers, from which field he chose the theme for his thesis: „Algebraic bodies and ideally theoretical functions [x]“. The first published works of Schoenbaum, of which we mention especially the paper „Fermat's Theorem and the works of Kummer“, are also on the theory of numbers.¹⁾ In the year 1906, his deep interest in mathematics led him to Göttingen with a scholarship for the study of insurance mathematics; there he studied under Klein, Hilbert, Minkovsky and others. The library of the mathematical department of Charles' University contains the notes of Hilbert's lectures on mechanics made by Schoenbaum. On the request of Prof. T. G. Masaryk, at that time deputy in the Austrian parliament, in whose journal „Naše doba“ Schoenbaum published two articles in the years 1905 and 1906 on the theory of probability and statistics, Schoenbaum began to take an interest in social insurance. In Austria at that time, in the year 1906, pension insurance of salaried employees became law and Prof. Masaryk wished to have Czech specialists for the social insurance of manual workers the introduction of which was then being prepared. Even

¹⁾ „Fermatova věta a Kummerovy práce“. Časopis pro pěstování matematiky a fysiky.

after his election as President of the Republic, T. G. Masaryk remained in friendly contact with Schoenbaum. In addition to social insurance, Schoenbaum followed with keen interest also private insurance which was experiencing a quick development in the direction of more accurate computation methods and more just distribution of the profits of the insurance companies; his „Three lectures concerning life insurance“ of the years 1909 to 1912, published in book form, demonstrate how fine was his command over this field.²⁾ In insurance mathematics and mathematical statistics, Schoenbaum devoted himself to difficult theoretical problems. His two basic papers, „The use of Volterra's integral equations in mathematical statistics“ (1917) and „Concerning certain integro-differential equations“ (1920) resulted from these studies,³⁾ and also the paper „On the mathematical theory of disability insurance“.⁴⁾ In the first of this works, Schoenbaum sets out from the concrete problem concerning the mathematical theory of the disintegration of a homogeneous group of active persons during a certain time, if the disability and mortality among active individuals are dependent on age, and if the mortality and recovery of invalids are dependent on age and the duration of the disability. He then solves this problem generally, using the theory of integral and integro-differential equations, for any population of individuals undergoing a similar process of disintegration. In the second work, he broadens the original assumptions, including the return of individuals to the original population from one or more partial populations. These works, of fundamental importance for the dynamics of statistical populations with which Schoenbaum here for the first time dealt, roused lively interest in international actuarial circles and formed the basis of many other works.

Other papers of Schoenbaum also deal with the application of the mathematical theory of the disintegration of populations together with the solution of practical problems of the mathematics of social insurance. Of these we mention „A contribution to the theory of disability insurance“ and „A contribution to the theory of pension insurance“.⁵⁾ Of the remaining mathematical papers of Schoenbaum it is necessary to make special mention of „A contribution to the use of differential equations in insurance mathem-

²⁾ „Tři přednášky ze životního pojištění“. Spolek čsl. poj. techniků, 1913.

³⁾ „Použití Volterrových integrálních rovnic v matematické statistice“ (1917), „O jisté integrodiferenciální rovnici“ (1920). Rozpravy České akademie. „Anwendung der Volterra'schen Integralgleichungen in der mathematischen Statistik“. Skandinavisk Aktuarietidskrift, Uppsala 1924.

⁴⁾ „K matematické teorii invalidního pojištění“. Časopis pro pěstování matematiky a fysiky, roč. 47 a 53.

⁵⁾ „Příspěvek k matematické teorii invalidního pojištění“, „Příspěvek k matematické teorii pensijního pojištění“. Časopis pro pěstování matematiky a fysiky, roč. 47 a 53.

atics⁶⁾ and „Contribution à la théorie de l'ajustement mécanique“,⁷⁾ presented to the Congress of mathematicians in Bologna, 1928.

In 1919 Schoenbaum presented his habilitation (Docent's) thesis in the Natural Science Faculty of Charles's University in the Department of Insurance Mathematics and Mathematical Statistics and in 1923 he became the professor of this department. In this function he trained a number of able workers in insurance mathematics and mathematical statistics. Professor Schoenbaum always maintains his lectures on a high standard and continually supplements and modifies them in the light of the most recent technical literature on this subject. Schoenbaum devoted special attention in his lectures and tutorial classes to the applications of mathematics to national economics; in 1946 he introduced special lectures in econometrics at Charles' University.

In the year 1930 he founded and together with Dr. Havlík edited *Aktuárské vědy* (Czechoslovak Journal of Actuaries).

From among the manifold activities of Prof. Schoenbaum in social insurance, we shall mention only that he worked out the Czechoslovak pension bill of 1920, as well as the financial plan and the benefit and contribution scheme of the social insurance bill (for manual workers, 1924). The financial and actuarial report to this bill received the highest acknowledgment in specialist circles abroad; it was translated into German, French, Greek, English and Spanish. Prof. Schoenbaum also worked on the financial plan of the Czechoslovak bill concerning the insurance of self-employed persons (1925); the new pension Act of 1929 and its amendments of 1931 and 1934 are the work of his hand and he also played an outstanding part in restoring miners' pension insurance to solvency. It is necessary to mention that social insurance led Prof. Schoenbaum to a study of wage and population problems about which he has written many articles and given many lectures.

The fact that the International Labour Office appointed him their adviser is an indication of the esteem in which Prof. Schoenbaum was held abroad. At the suggestion of this Office he was in 1930 entrusted with the task of working out the financial bases and the bill on social insurance in Greece.

In 1939 Prof. Schoenbaum and his wife left Czechoslovakia. The International Labour Office sent him first to Ecuador to reorganize social insurance there; on the completion of this task, Prof. Schoenbaum received

⁶⁾ „Přispěvek k použití diferenciálních rovnic v pojistné matematice“. Časopis pro pěstování matematiky a fyziky, roč. 53 a 54.

⁷⁾ „Contribution à la théorie de l'ajustement mécanique“. *Atti del Congresso Internazionale dei Matematici*, Bologna 1928.

the highest recognition of the Ecuador government. In 1941 the Mexican government invited Prof. Schoenbaum to build up their national insurance. The result of his work was an Act which in many respects resembled the former Czechoslovak Act on social insurance, but avoided the deficiencies of the latter. In one of its resolutions the International Conference on Social Insurance held in Santiago de Chile recommended this Act as a model for all American republic. Then followed invitation to Bolivia to restore miners' insurance to solvency, then to Chile, Paraguay, Costarica, and in 1943 again to Mexico, to the United States of America and to Canada. In April 1944 Prof. Schoenbaum was along with minister Jan Masaryk one of the Czechoslovak delegates at the International Conference of Labour at Philadelphia and was elected there to be in charge of social insurance. He continued to function as adviser to the International Labour Office until in 1944 he was recalled to London by the Czechoslovak government to work out a proposal for the reconstruction of Czechoslovak social insurance (published in London in book form in Czech, English, French and Spanish). After his return to Montreal, Prof. Schoenbaum conducted a course to which were invited many outstanding American specialists. The Director of the International Labour Office thanked in particular the Czechoslovak government for freeing Prof. Schoenbaum for this task and in the speech of thanks to the Czechoslovak government, Prof. Schoenbaum was proclaimed the Father of American Social Insurance. During his stay in America he published a number of papers on insurance mathematics in technical journals and in all countries in which he worked he left behind many devoted pupils.

The end of the war found Prof. Schoenbaum in Montreal. Despite the wishes of the American states that Prof. Schoenbaum should stay with them, he returned to Prague to his previous teaching position.

The rare personal qualities of Prof. Schoenbaum earned for him many friends among university colleagues, among fellow-workers in social insurance and particularly among his students to whom he was always most obliging and with whom he always maintained the friendliest of relations. On the occasion of this belated commemoration of his sixtieth birthday, all of them wish him the best of health and every success in the field of science.

B. — T.