

## Alexander Lipschütz (1883-1980). A biographical synopsis\*

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*Alexander Lipschütz was born in Riga, Latvia, in 1883. He obtained his M.D. from the University of Göttingen, Germany, in 1901. He conducted research at the Universities of Zürich, Bonn, Göttingen, Bern and Vienna. He was full Professor of Physiology at the Universities of Dorpat (1919-1926), in Tartu, Estonia, and Concepción (1927-1936), in Chile. Later, he became the first Director of the Institute of Experimental Medicine, of the Chilean National Health Service. He authored 22 books and a large number of scientific papers, mostly on Endocrinology and Oncology. He directed 16 medical theses at the University of Concepción and 81 at the University of Chile. He was awarded with the first Chilean National Prize in Science (1969). He died in Santiago, Chile, in 1980.*

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### THE EARLY YEARS

Alexander Lipschütz was born in August 28th, 1883, in Riga, Latvia. It must be remembered that Latvia had been a province of czarist Russia since 1795, and became independent only in 1918, at the end of the First World War. Nevertheless, in 1940, Latvia and Lithuania were again annexed to Russia, and both Baltic states became Soviet Socialist Republics in 1945. Definite independence, hopefully for ever, was achieved only last year.

Alexander Lipschütz studied medicine in the universities of Berlin, Zürich (Switzerland) and Göttingen (Germany), getting his medical degree from the latter in 1901.

From 1908 to 1912, he worked on the physiology of the central nervous system, at the Institute of Comparative Physiology,

University of Göttingen, under the direction of Professor Max Verworn.

He later collaborated with Professor August Pütter in research of comparative physiology of basal metabolism (standardized). Some years later, he was appointed assistant professor in the Universities of Zürich, Bonn and Göttingen. Between 1914 and 1919, he was private lecturer (*Privatdozent*) in the famous "*Hallerianum*" of the University of Bern (Switzerland), where he did research on the social problems of human nutrition.

His interest in experimental endocrinology aroused in Eugen Steinach's Institute in Vienna (Austria), where he conducted experiments on "feminization" of castrated male Guinea pigs, in which he grafted a female Guinea pig's ovary; this resulted in abundant milk secretion in the male. In 1916, Lipschütz successfully achieved the inverse

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operation, that is, the "masculinization" of a castrated female Guinea pig, in which he grafted a testicle. To no one's surprise, Steinach's and Lipschütz' results caused quite a commotion on the scientific community of that time, particularly on account of the work of Sigmund Freud, also in Vienna, on child sexuality.

Between 1919 and 1926, Dr Lipschütz was full Professor of Physiology in the famous University of Dorpat (Tartu), in Estonia. There, in the midst of the liberation war, he organized a new Institute of Physiology, which within a few years became a center of international renown.

While in Estonia, he was found to be suffering from lungs' tuberculosis. The only treatment at that time being a high altitude climate, he was forced to seriously think about changing both job and climate. He rejected an offer from the University of Sophia (Bulgaria), and accepted an offer from the University of Concepción (Chile). He probably thought he could find some place in Chile where his health would improve, and he moved to this country in August 1926. In September of the same year, he began his work as full professor and Director of the Institute of Physiology, responsibilities which he carried out brilliantly until 1936 (Fig 1).

Professor Lipschütz was the first President of the Society of Biology of Concepción, affiliated in 1926 to the "Société de Biologie" of Paris, France; he served also as Director of its Bulletin. He became the first Dean of the Faculty of Medicine of the University of Concepción (1927).

#### THE PROFESSOR

At 8 o'clock sharp, Professor Lipschütz made his entrance to the classroom, neatly dressed in a white gown. His white, wavy hair and imposing beard made him look like a biblical prophet.

He exposed every aspect of the vast subject of the course with great enthusiasm, taking pride in his prodigious memory, illustrating particular points on the blackboard, or projecting books and journals, personally carrying out demonstration experiments, or

showing high quality scientific films. One of them showed the circulation of red and white cells in the blood capillaries of the skin and lungs of a frog, filmed by the future Nobel Prize August Krogh (Denmark); another one illustrated the contraction of intestinal villi, filmed by Prof Veszi, from Hungary; a third one showed the eminent Swiss physiologist Walter Rudolf Hess' famous experiments on the effect of electrical stimulation of the hypothalamic centers in the cat, which years later would win him the Nobel Prize of medicine and physiology.

Dr Lipschütz possessed indeed a personality of overflowing energy, a vast humanistic culture, meticulous precision when formulating new concepts, and irresistible joy. For everyone, attending to his lectures became an unforgettable experience.

His physical aspect showed a leptosomic constitution, aquiline nose, big dark and penetrating eyes, bushy eyebrows and a contrasting pale skin. All these characteristics, as a whole, showed the scholar in him, and



Fig 1. Portrait of Alexander Lipschütz, while being Professor of Physiology at the University of Concepción, Chile (1926-1936).

he was considered as such by the scientific community of the country, even by the general public. But his teaching did not always take place in an atmosphere of mutual understanding and affection. All of the sudden, for no apparent reason, there came to him an unexpected change of humor, a real explosion of bad temper, sometimes manifested with truly offensive expressions, occasionally addressed to us, his students, or sometimes to his assistants, when they had committed an inexcusable mistake, in the professor's opinion. As an examiner, on the other hand, he was very benevolent, both in the practical examination at the end of the course, as well as in the theoretical one. This was all the more evident if we consider the tremendous difference between an "*homo sapiens*", in Linneus' classification, and his students, who belonged to another category, perhaps that defined by the German psychiatrist Horst Geyer, as "*homo insipiens*", which in Latin means an "incipient" man, also one who is ignorant, senseless, and foolish.

#### THE SCIENTIST

Professor Lipschütz distinguished himself for his impressive dedication, his great enthusiasm for the new findings of science, his extreme meticulousness in the writing of the experimental protocols, his refined surgical technique, and his insistence that the animal's anesthesia—during the surgical procedure—should be perfect, to avoid unnecessary suffering. He himself performed the corresponding autopsy, to obtain the histological controls of the changes produced at the tissue level, as a result of the hormone action.

When Professor Lipschütz reported the results of his experiments in a scientific congress, his talks were always very objective, precise, and full of colour. With his rich personality, he succeeded in awakening the audience's interest for the theme, irrespective of its complexity and difficulty, and of the fact that his audience in the conference was made up of non-specialists.

The multiple nature of Prof Lipschütz' scientific personality is reflected when

we examine the themes of his line of work.

#### AN EXTRAORDINARY DUEL

The fact that Prof Lipschütz was a polyglot (English, Estonian, French, German, Greek, Latin, Latvian, Spanish and Russian), made him quite conscious of his linguistic abilities.

On the occasion of an International Congress of Endocrinology, which took place in Buenos Aires, Prof Lipschütz attended a conference delivered in perfect Spanish by Dr Hans Selye, a researcher from the McGill University of Montreal (Canada). Intrigued by this fact, Prof Lipschütz, accompanied by Dr Luis Vargas-Fernández, one of his collaborators at that time and who would be awarded later with the National Prize in Science, went to pay Dr Selye a visit. Selye was becoming an international figure for his original work on the phenomenon of "stress".

Prof Lipschütz challenged Dr Selye to an original duel, which consisted in asking a question in a specific language, to which the opponent would have to give the answer in the same language. The polyglot dialogue began in German, then continued in French, then in English, Latin, Greek, Russian, and so on, until Dr Selye asked a question in Hungarian, to which Prof Lipschütz could not answer. Dr Selye then became the winner of this extraordinary battle, much to the chagrin of the self-worshipping challenger.

#### HIS INDIGENIST VOCATION

Another feature of Prof Lipschütz personality refers to his constant interest in anthropology and Indoamericanism. At one time he was head of the "Chilean Mission for the Study of the Fuegian Indian", in which he was assisted by his wife Margaret Lipschütz (*née* Vogel) and by Dr Grete Mostny, Hans Helfritz and Fidel Geldres. As an outcome of this expedition, works were published on: i- blood groups of three tribes of Tierra del Fuego (1946); ii- physical characteristics of Fuegians (1947); iii- the last Fuegians: transculturing and deculturing, extinction and extermination (1962).

## SCIENTIFIC PRODUCTIVITY

Prof Lipschütz was the author or co-author of about 500 scientific articles in 80 different journals, edited in countries such as Argentina, Austria, Belgium, Canada, Chile, England, France, Germany, Italy, Russia, Spain, Switzerland and the USA.

Prof Lipschütz was the author of 22 books on biomedical subjects (neurobiology, endocrinology and oncology) (Table I) and problems related to scientific research and the university role (Table II). They were originally written in German, English or Spanish, but were later translated into Czech, English, Estonian, Finnish, French, German, Japanese, Lithuanian, Portuguese, Russian and Spanish. He also authored another 8 books on sociological subjects, mostly related to Indoamericanism, and written in Spanish (Table III).

He directed the theses of 16 medical graduates from the University of Concepción (1926-1936) and 81 from the University of Chile (1936-1953).

## DISTINCTIONS

Professor Lipschütz was regular or associate member of 9 academies or scientific so-

cieties, and honorary member of 19 scientific societies.

In 1944, Prof Lipschütz received the "Charles Meyer Cancer Award" of the National Science Foundation (USA). In 1969, he was awarded the first National Prize in Science, established by the Chilean government.

## A BELATED REPENTANCE

Near the end of his long life, Prof Lipschütz (1970) left the following written testimony:

"After having lived such a long life, I dare to tell you, in all frankness, that the most distressing remembrance I have is that of the injustices I committed in relation to men; the remembrance I have that I could hurt other people's feelings. And of the number of such acts, which go against the spirit of service to others, and which one commits from one's very infancy".

Apparently, Alexander Lipschütz was all his life what the French call "*un enfant terrible*". Unfortunately, these negative traits of his personality were as harmful to him as to those who came into contact with such an eminent man.

Professor Lipschütz died in Santiago, Chile, at the age of 96 years, the 10th of January, 1980.

TABLE I

## Books on biomedical subjects

1915	LIPSCHÜTZ A: Allgemeine Physiologie des Todes. Vieweg: Braunschweig. 184 pp.
1915	LIPSCHÜTZ A: Allgemeine Physiologie des Hungers. Vieweg: Braunschweig. 92 pp.
1916	LIPSCHÜTZ A: Physiologie und Entwicklungsgeschichte. Jena: Gustav Fischer. 24 pp.
1917	LIPSCHÜTZ A: Probleme der Volksernährung. Bern: Akadem Buchhandl. 74 pp.
1918	LIPSCHÜTZ A: Über den Einfluss der Ernährung auf die Körpergröße. Bern: Akadem Buchhandl. 32 pp.
1919	LIPSCHÜTZ A: Die Pubertätsdrüse und ihre Wirkungen. Bern: Bircher. 454 pp.
1924	LIPSCHÜTZ A: Internal Secretions of the Sex Glands. Cambridge: Heffer; Baltimore: Williams & Wilkins. 513 pp.
1929	LIPSCHÜTZ A: Autonomía del Corazón. Santiago: Editorial Nascimento. 83 pp.
1930	LIPSCHÜTZ A: Die experimentellen Grundlagen der Eierstocksverpflanzung. Leipzig: Wissenschaftl Verlag. 51 pp.
1930	LIPSCHÜTZ A: Transplantación Ovárica. Sus Bases Experimentales. Madrid: Morata. 83 pp.
1930	LIPSCHÜTZ A: La Autorregulación Orgánica. Madrid: Morata.
1934	LIPSCHÜTZ A, PI-SUÑER J: Curso Práctico de Fisiología. I. Bioquímica y Fisiología General. Madrid: Morata. 235 pp.
1935	LIPSCHÜTZ A, PI-SUÑER J: Curso Práctico de Fisiología. II. Movimientos, Secreciones y Psicofisiología. Madrid: Morata. 245 pp.
1950	LIPSCHÜTZ A: Steroid Hormones and Tumors. Baltimore: Williams & Wilkins. 309 pp.
1954	LIPSCHÜTZ A: Cáncer Gástrico Experimental. Santiago: Central de Publicaciones.
1957	LIPSCHÜTZ A: Steroid Homeostasis, Hypophysis and Tumorigenesis. Cambridge: Heffer. 92 pp.
1959	LIPSCHÜTZ A: 50 Años de Endocrinología Sexual. Santiago: Editorial Andrés Bello. 117 pp.
1970	LIPSCHÜTZ A: Trastornos Hormonales Experimentales y la Tumorigénesis. Santiago: Editorial Universitaria. 48 pp.

TABLE II

## Books on the university role and medical research

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1935	LIPSCHÜTZ A: La Función de la Universidad. Santiago: Editorial Nascimento. 47 pp.
1939	LIPSCHÜTZ A: El Médico y la Medicina Experimental. Santiago: Editorial Nascimento. 118 pp.
1943	LIPSCHÜTZ A: La Organización de la Universidad y la Investigación Científica. Santiago: Editorial Nascimento. 216 pp.
1958	LIPSCHÜTZ A: Tres Médicos Contemporáneos: Pavlov, Freud, Schweitzer. Buenos Aires: Editorial Losada. 325 pp.

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TABLE III

## Books on sociological subjects

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1937	LIPSCHÜTZ A: Indoamericanismo y Raza India. Santiago: Editorial Nascimento.
1944	LIPSCHÜTZ A: El Indoamericanismo y el Problema Racial en las Américas. Santiago: Editorial Nascimento. 501 pp.
1956	LIPSCHÜTZ A: La Comunidad Indígena en América y en Chile. Santiago: Editorial Universitaria. 205 pp.
1963	LIPSCHÜTZ A: El Problema Racial en la Conquista de América, y el Mestizaje. Santiago: Editora Austral. 384 pp.
1968	LIPSCHÜTZ A: Perfil de Indoamérica de Nuestro Tiempo. Antología 1937-1962. Santiago: Editorial Andrés Bello. 329 pp.
1968	LIPSCHÜTZ A: Oriente y Occidente - del Neolítico al Siglo XX. Santiago: Editorial Universitaria.
1970	LIPSCHÜTZ A: Seis Ensayos Filosóficos Marxistas (1959-1968). Santiago: Editorial Andrés Bello.
1971	LIPSCHÜTZ A: Los Muros Pintados de Bonampak - Enseñanzas Sociológicas. Santiago: Editorial Universitaria.

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## HOMAGES FROM TWO NOBEL PRIZE WINNERS

When Prof Lipschütz reached the age of 70, the "*Acta Physiologica Latino-Americana*" published a special issue (*Festschrift*) in his honour. The Argentinean Nobel Prize in Physiology and Medicine, Prof Bernardo Houssay (1953) paid homage to the scholar in the following words:

"On reaching 70 years of fruitful existence, for his valuable scientific work in his school, for his role as initiator and driving force of physiology and experimental endocrinology, for his performance as a stimulating teacher, his influence has crossed Chilean frontiers—his adopted country—and extended all over America, and reached Europe and the USA".

"The biologists all over the world know and respect his work. Chile and Latin America are deeply grateful to him. He is and has been an extraordinary example of altruistic dedication to work. For that reason, and for his successful work, Lipschütz—a strong and able septuagenarian—is now surrounded by his admiring colleagues, by the respect and affection of his numerous disciples and friends, who put their faith in his wisdom".

Pablo Neruda (1963), Nobel Prize in Literature, wrote the prologue to Prof Lipschütz's book "The Racial Problem in the

Conquest of America, and Half-Breeding". There, the great Chilean poet said:

"The most universal of Chileans was born far from this land. But he has taught us more than millions of those who were born here. The most important man in my country these years is Alexander Lipschütz."

"He will be 80 years old these days, and I feel proud to leave here the weak testimony of an ardent soul, of a truly wise man."

"My pride is, besides, to state here that even though we rarely see each other, since I came to live in my Isla Negra, we continue to be the natural and genuine friends who exchange, from house to house, new findings, flowers, and poetry".

## EPILOGUE

To conclude, we can say that:

The first Physiology Institute of the University of Concepción, under the direction of Prof Alexander Lipschütz, was in reality a "metastasis" of an homologous Center-European Institute, with regard to organization, library, equipment, theoretical-practical teaching methods, and quality of its scientific research.

The decade 1926-1936 represents the "golden age" of the University of Concep-

ción, because Professor Lipschütz's name appeared in the scientific sky as a new star, with its own light, as a model institution, not only for Chile, but for all Latin America.

In that Institute of Physiology -which had its noble house on N° 7, Caupolicán Street, in Concepción-, the ideal of a university, as expressed by Wilhelm von Humboldt, founder of the University of Berlin, was put into practice. This ideal was the unity of research and teaching (*Einheit von Forschung und Lehre*), as it is practiced in most of the universities of the Western world.

For all the above reasons, it is undeniably justified that we should remember Prof Alexander Lipschütz, the distinguished teacher and researcher.

#### ACKNOWLEDGEMENTS

The lists of books authored by Prof Lipschütz, presented in Tables I to III, are mostly based on data provided by his life-long secretary, Miss Dagmar Staden.

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