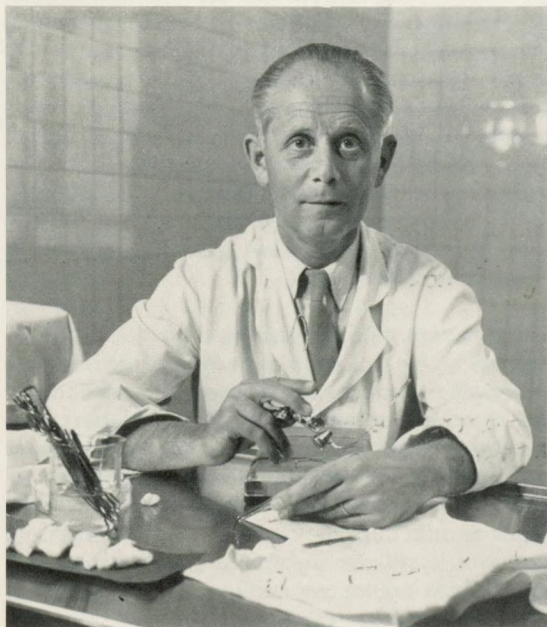


Leading Men of Science

Hans Selye



Hans Selye was born in 1907 in Vienna, the only child of Hugo and Felicia (Langbank) Selye. His father was a well-known surgeon and his grandfather and great grandfather had been physicians. In 1924 he entered the German University of Prague as a medical student. In the following year he continued his studies at the University of Paris and in 1926 he studied for a further year at the University of Rome. In 1927 he returned to the German University of Prague where, as a pupil and assistant of Arthur Biedl (experimental pathology), he was awarded an M.D. degree in 1929 and a Ph.D. in chemistry in 1931.

In 1931 he was awarded a Rockefeller research fellowship and went to the Johns Hopkins University in Baltimore, U.S.A., and a year later to the McGill University in Montreal, Canada; where he was appointed assistant professor in biochemistry in 1934.

Selye discovered the first evidence for his stress theory in 1936, when he found that, after injecting ovarian and placental extracts into his laboratory animals, the organs of the animals changed markedly and always in the same way. He noted marked enlargement of the adrenal cortex, atrophy in the thymolymphatic system and formation of ulcers in the stomach and intestinal canal. To begin with he thought he was on the track of an unknown hormone contained in his tissue extracts, but he soon discovered that other fluids which did not stem from the living tissue, e.g. dilute formalin, as well as any kind of damage to the organs of the laboratory animals brought about the same reaction. He published his observations in the "Nature" issue of July 4, 1936 ("A Syndrome Produced by Diverse Nocuous Agents"). However, he received little attention or support for his new idea that nature, by a unified reaction mechanism, fights against different types of damage and that a possibility must exist of making therapeutic use of this body reaction.

In the face of strong opposition Selye devoted himself to the task of finding the causes of this stress syndrome. Only a few of the noted and experienced research-workers of the day agreed with his views.

In moments of doubt he gained added strength from the fact that one of the most noted Canadian scientists—Sir Frederick Banting—had been interested in his studies from the outset. As an adviser for the Canadian National Research Council, Banting often visited university laboratories throughout the country, and when he came to Montreal he frequently dropped into Selye's small, crammed laboratory and listened attentively to the young research-worker's future dreams for the syndrome of "just being sick". Nothing could have helped Selye more. Banting was also responsible for Selye's first financial support—a modest grant of \$500. But this was not nearly so important as the moral support and the added peace of mind he gained from being taken seriously by the discove-

rer of insulin, both of which encouraged him to go on with his research into the new syndrome. After many painstaking attempts at finding the causes of a seemingly unimportant observation, Selye's perseverance brought him success and he provided medical science with the general adaptation syndrome. He discovered that in this syndrome the body's defence mechanism goes through the three following stages: 1. the alarm reaction of the organism to any noxious agent; 2. the "adaptive" stage; and 3. the exhaustion stage which arises if the noxious situation lasts too long, causing the hormonal defence system to collapse.

In 1945 Selye left McGill University, where he had been associate professor of histology since 1941, to accept an appointment as professor and director of the Institute of Experimental Medicine and Surgery at the University of Montreal.

In 1946 he was honoured by an invitation from the Collège de France to give a series of lectures on the general adaptation syndrome in Paris. He later received many similar invitations, but this one had special significance for Selye who is a great admirer of Claude Bernard.

Research studies in the past years have all had some connection with the stress theory. Diseases which seem to be quite unrelated, such as rheumatoid arthritis, high blood pressure, cardiac necrosis and even the research now being carried out on calciphylaxis are really only by-products of the original idea that non-specific tissue reactions to damage are mainly directed by humoral factors which can be analysed, identified and, within limits, deliberately influenced.

Professor Hans Selye is the author of approximately 1000 publications. These include: 16 books; the "Encyclopedia of Endocrinology" in 6 volumes; the "Textbook of Endocrinology"—which is regarded as the most complete work on this subject; "Stress", and 5 subsequent "Annual Reports on Stress"; "The Story of the Adaptation Syndrome"; "The Stress of Life", which appealed widely to all types of people and was translated into 9 foreign languages; "The Pluricausal Cardiopathies"; "The Chemical Prevention of Cardiac Necroses"; his monograph on "Calciphylaxis" (published last year), a new type of reaction of the organism discovered by Professor Selye, which is at present the main subject of his research programme and lectures. He is now working on a

book on the mast cell—the contents of which will be presented in a completely unorthodox way—and another book with a more philosophical content—"If I Had Known".

Apart from Claude Bernard, Selye also admires Louis Pasteur, Robert Koch, Paul Ehrlich, and, most particularly, Walter Cannon, whom he highly esteemed both as a person and as a pure scientist. Selye's work on stress was greatly inspired by Cannon's discovery of the sympathetic emergency reactions and he always felt closely allied to him by a mental affinity and similarity of thought.

Hans Selye's way of life and work is based on simplicity. To his assistants and students he is a friend and he follows up their careers after they have left him with great interest.

It was a great blow to Professor Selye and to medicine in general when the library of the Montreal Institute, which had been built up with loving care, was almost completely destroyed by a fire in February 1962. Damaged beyond usefulness were a total of 400,000 items and a complete reference system with more than 2,000,000 entries*.

In February 1949 Professor Selye married Gabrielle Grant; they have 4 children. As he has the rare gift of finding pleasure in the small things of life, he has no difficulty in relaxing. He enjoys good books, music (especially Viennese melodies and gypsy music), flowers, and, of course, traveling, visiting foreign countries and exchanging views with scientists from all over the world. Here his knowledge of languages, which is well above average—he speaks nine languages—helps him a great deal.

*The editors wish to express the hope here that the Institute's appeal for assistance, books, reprints and financial aid proves to be a great success.