

The Rats on the Roof

When Hans Selye was nineteen, he suggested to his teacher, Hofrat Professor Doktor Armin Tschermak Elder von Seysenegg, that diagnosing doctors should pay attention to the "syndrome of just being sick."

"Obviously," the professor said, "if a person is sick he looks it. What is so special about this? If a man is fat he looks fat."

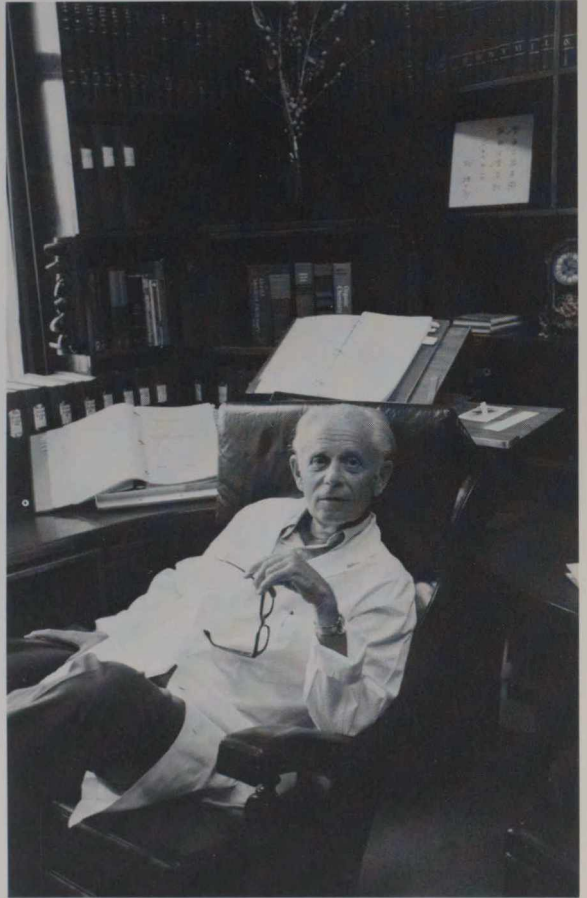
Actually Hans, whose mind was unconfused by incidentals, had taken the first unappreciated step in identifying "stress."

Ten years later, working at McGill University in Montreal as an assistant to Professor J. B. Collip and doing research on female sex hormones, he took extracts from the ovaries of recently slaughtered cows and injected them into female rats. He was looking for a change which could be attributed to some unknown hormone. The rats responded. Their adrenal glands enlarged, their lymphatic systems atrophied and they got peptic ulcers.

But he took extracts from other organs and injected the rats again. They responded in the same way precisely. Sex hormones clearly had nothing to do with it. Then he remembered the "syndrome of being sick."

He put all the rats on the wind-swept roof of the medical building. It was mid-winter and the rats shivered through the night and in the morning they had the syndrome: enlarged adrenals, atrophied lymphatic systems and signs of ulcers. He experimented further. No matter what type of stress he inflicted on the rats, they responded in the same way. Professor Collip invited him in for a heart-to-heart talk. He assured Selye that he was wasting his time. "Selye," he said, "try to realize what you are doing before it is too late. You have now decided to spend your entire life studying the pharmacology of dirt."

Fortunately Selye found one conspicuous supporter, Sir Frederick Banting, the discoverer of insulin, who dropped in from time to time and who arranged his first small grant, five hundred dollars. In 1944 Selye published some results in the *Journal of the American Medical Association*, and in 1952 he published *The Story of the Adap-*



tation Syndrome. Today his concept of biological stress is included in medical textbooks throughout the world. In essence it is this: When a person is under stress of any kind his body responds in a predictable way. The stress may be damaging (in which case it is called distress) or it might be exhilarating (eustress), such as news that one has won a sweepstakes.

"Stress can result from tensions within a family, at work, or from the restraining influence of social taboos or traditions. In fact, any situation in life that makes demands upon our adaptive mechanism creates stress. From a psychological point of view, the most stressful experiences are frustration, failure and humiliation. . . . On the other hand, we derive a great deal of energy and stimulation, considerable force and pleasure from victories and success. . . . Although these obvious differences exist between the effects of pleasant and unpleasant experiences, in biological terms both have a common effect—they cause stress. . . . Perhaps eustress [the joyful kind] is less likely to be harmful because it rarely equals the intensity and duration of suffering."

The Canadians in this issue are not, of course, the only ones with flair; they were selected by something close to happenstance. If, by chance, you have a flairy Canadian worthy of attention, drop us a line and tell us about him or her.