

R. D. Lawrence, M.D., F.R.C.P., 1892-1968

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By diabetics throughout the world, and particularly in England, the death of R. D. Lawrence on August 27, 1968, will be regarded as a personal loss. In his lifetime he was once rightly described as the greatest living diabetic, a title he earned not only by his devotion to the welfare of diabetics, but also by his contribution to our knowledge of diabetes and by his unique example of personal courage and determination.

Lawrence graduated from Aberdeen University where the student magazine described him as "one of the best all-round men the University has ever seen." He excelled both in work and games and also found time to devote to music. He qualified in 1916 and served in the R.A.M.C. in India until 1919 when he returned to England and was appointed House Surgeon in the Ear, Nose and Throat Department of King's College Hospital. While performing a mastoid operation, he received an injury to his eye from a splinter of bone. An acute septic infection led to the discovery of glycosuria and the diagnosis of diabetes. Permanent damage to the vision of one eye ruled out any career in surgery. Faced with what then appeared to be certain death in a matter of a few years at most, Lawrence went into general practice in Florence, Italy, in order to spare his family and friends the distress of witnessing his slow death from starvation and ketosis; he also wished to die in beautiful surroundings.

In 1923, in response to a telegram from Dr. G. A. Harrison, Lawrence drove across Europe and reached King's College Hospital on May 29, 1923, to begin insulin therapy. By that time his peripheral neuropathy was so severe that he was unable to "get the matches out of the box." His excellent recovery was followed by his appointment as biochemist to King's College Hospital which marked the beginning of his career in the field of diabetes.

Lawrence devoted himself wholeheartedly to research on diabetes and built up the diabetic clinic at King's which later became the largest and best known of its kind in England. He turned his disability into an asset and, when asked what he would feel if he woke one morning to find that insulin injections were no longer necessary, replied "life would be rather pointless!"

Apart from his personal example and scientific con-

tributions Lawrence's chief claim to fame was the way in which he brought the management of diabetes within the comprehension of the general practitioner and intelligent patient. To this end he wrote *The Diabetic Life*, a unique book which was first published in 1925 and has had seventeen editions in English and been translated into several foreign languages. For this he was later awarded the Fothergillian Gold Medal of the Medical Society of London. His determination to simplify treatment as far as possible resulted in the publication in 1929 of the *Diabetic A.B.C.*, in which his "line diet" was developed as an ingenious method of dieting for patients who might be unable to understand the complexities of grams and calories.

In 1934, together with H. G. Wells and a few others he became the founder of the first diabetic association, the prototype of over thirty such associations in different countries of the world. Because of the success of this new development, what had been originally called The Diabetic Association had to be renamed The British Diabetic Association. Robin Lawrence was the first Chairman of its Executive Council and retained office for twenty-seven years; he subsequently became the Association's Honorary Life President. He was also active in the foundation in 1950 of the International Diabetes Federation, and was its first President. When the IDF met in Toronto in 1964, together with his old friend, the late Dr. Joseph Hoet, he received the degree of Honorary L.L.D. of Toronto University.

In 1957 he suffered a severe hemiplegia, a few weeks before he was due to retire from King's. He remained semiconscious and confused for nearly two weeks and then, to the surprise of all but those who knew him well, began to recover.

He regained a measure of his former vigor, and once again showed his determination to overcome physical disability. He remained in private practice almost to the end of his life, but the death of his beloved wife did more than any ailment could to remove his will to battle on against increasing adversity.

Robin Lawrence had a colorful personality and, like all good Scotsmen, the will to succeed. Self-pity had no place in his make-up, and his patients received from him more help than pity. Although considered by some,

who did not know him, as being extrovert to the point of exhibitionism, in reality he was essentially modest, especially in the field of science and medicine; he never gave orders to his juniors, he only made suggestions. He had an original mind and the rare ability of being able to distinguish at once between the vital and the trivial. He was an astute observer, and it was no accident that he was the first to recognize and describe

the condition to which he gave the name lipoatrophic diabetes.

Apart from golf, tennis and squash, at which he was no mean performer, his chief hobby was fly-fishing and his greatest joy and comfort music; he was a good singer and an able pianist. The name of Lawrence, like that of Joslin, will long be remembered in the annals of clinical diabetes and by countless diabetics.

A Personal Tribute

Frank N. Allan, M.D., Boston

I first met Robin Lawrence at the meeting of the American Diabetes Association in 1946, when the Association joined with the University of Toronto in celebration of the twenty-fifth anniversary of the discovery of insulin. The demonstration of his dynamic personality cannot be forgotten.

Dr. Lawrence, recognized as one of the leading authorities on diabetes, with worldwide reputation, was among the group of distinguished visitors honored at the banquet. Presentation of the Banting Medal to each in turn followed by an acceptance speech, along with other after-dinner orations, made an interesting but prolonged program. Lawrence, describing his personal experience as one of the diabetic patients who by the narrowest margin survived long enough to be saved by the introduction of insulin therapy, stimulated the audience and revived its attention. In conclusion, he humorously declared his confidence that he would live out the normal life span, free from complications affecting his vital organs. "I'm not worried about any of them," he said, "except perhaps for my liver."

Lawrence did indeed live well beyond the life span of three score years and ten, presumably without concern about his liver. Although handicapped in his later years by ill health common to old age, he nevertheless continued to maintain his interest in promotion of the welfare of diabetics through personal and organizational service. American physicians attending the triennial congresses of the International Diabetes Federation will recall his regular attendance and active participation.

At its annual meetings, the American Diabetes Association, of which he was an honorary member, regularly received greetings by cablegram.

Lawrence was born in Scotland on Nov. 18, 1892. He attended Aberdeen University receiving the M.A. degree in 1912 and M.B. Ch. B. with honors in 1915. He was also awarded the Fife Jamieson and Lizar's Gold Medals in 1915. He served in the Royal Army Medical Corps until 1919. He then received an appointment as house officer at King's College Hospital. During his residency he was captain of the hospital's hockey team; he also represented the hospital at lawn tennis.

An accident occurring in the course of an operation nearly robbed him of his sight. A flying chip of bone damaged his cornea and severe sepsis followed. Then diabetes was discovered. With the best diabetic regimen available at the time, he managed to exist until 1923 when he received treatment with some of the first insulin to be made available in England. His life being saved, he decided to devote himself to work on diabetes.

He held an appointment as biochemist in the King's College Hospital and Medical School for seven years. In 1931 he became assistant physician in charge of the recently established diabetic department and was promoted to head the department in 1939. By this time he had established himself as the leading authority on diabetes in Great Britain. His book, *The Diabetic Life*, reached its seventeenth edition in 1965 and also appeared in French, Spanish, Dutch, Italian, and Swedish.

Lawrence taught patients to control diabetes in orthodox fashion with emphasis on regulation of the diet. But in one respect, his own technic in the self-administration of insulin was unique. Sitting beside him at a dinner before a medical meeting in Boston, I was startled to see him give himself an injection of insulin by his method. While carrying on an active conversation, he gave the injection through his trousers into his thigh! "I've never seen an infection from an insulin injection," he remarked. (Others have. The extreme rarity does not justify endorsement of the time-saving, convenient Lawrence procedure).

Dr. Lawrence earned the M.D. degree in 1922 and M.R.C.P. in 1927. He was elected to Fellowship in the Royal College of Physicians in 1932 and was Oliver-Sharpay Lecturer at the College in 1946. In the Royal Society of Medicine, he served as president of the Sections of Therapeutics, Endocrinology, and Experimental Medicine. He was a member of the Harveian, Physiological, and Biochemical Societies. He was president of the Listerian Society in 1947-48.

In an early issue of *DIABETES* (1:420-21, Sept.-Oct. 1952) the organization of the first society concerned with diabetes was described by Lawrence in his typical style.

"The love of money is the root of all evil," saith the prophet. But the need for money in a good cause can be a powerful stimulus; indeed it led to the beginning of The Diabetic Association. I make no apology for this title as it was the first and only association then...

"I started to raise money from some of my rich and grateful patients for a new diabetic department. Amongst these, I approached the great writer, H. G. Wells, who, not feeling so affluent in his contribution as I expected, offered to write a letter of appeal to *The Times*... This letter raised enough money from some thirty subscribers for my immediate hospital purposes and put into mind the idea of an association for diabetics for self-help in social matters and to raise money for research, really my main interest."

Leadership in the organization of the International Diabetes Federation was another of his achievements. He served as its President for nearly a decade.

R. D. Lawrence died on Aug. 27, 1968, but he will long be remembered by diabetic patients and their physicians. He can be identified as one of the inspiring examples of individuals for whom diabetes has been no barrier to a successful career.

ABSTRACTS

Appels, A.; Kattermann, R.; Proschek, H.; Hubrich, K.; Frerichs, H.; Söling, H. D.; and Creutzfeldt, W. (Med. Klin. und Poliklin. der Univ. Göttingen, Göttingen, Germany): INVESTIGATIONS OF THE EFFECTS OF DIET, TOLBUTAMIDE AND BUFORMIN AND THEIR COMBINATION ON BODY WEIGHT AND SEVERAL METABOLIC PARAMETERS IN DIABETICS. I. BODY WEIGHT, CARBOHYDRATE METABOLISM AND IMMUNOREACTIVE INSULIN. *Diabetologia* 4:210-20, 1968.

Verbatim summary. The effects of the administration of tolbutamide, buformin or their combination for eight weeks on glucose tolerance, fasting IRI and lactate and pyruvate levels in 103 maturity-onset diabetics have been compared with corresponding values during a preceding control period of five weeks. The group on buformin showed a significant weight loss. There was no weight loss during tolbutamide treatment. Glucose levels decreased in all groups investigated. Fasting IRI levels showed a tendency to decrease at the end of the buformin monotherapy period. There was a transient tendency for fasting IRI levels to increase at the beginning of tolbutamide therapy. A significant increase of lactate concentrations and of the lactate/pyruvate quotient was not observed during buformin treatment, nor did tolbutamide induce a change in lactate levels. Pyruvate levels

were significantly lowered towards the end of the tolbutamide period.

Boquist, L.; Havu, N.; Pihl, E.; and Falkmer, S. (Inst. of Pathology, Univ. of Umeå, Umeå, and the Kristineberg Zoological Station, Fiskebäcksil, Sweden): HEAVY METALS AND PANCREATIC ISLET TISSUE—SOME ULTRASTRUCTURAL AND EXPERIMENTAL OBSERVATIONS. 4th Annual Meeting Scand. Soc. for the Study of Diabetes, Stockholm, Feb. 1-3, 1968. *Diabetologia* 4:246, 1968.

Verbatim summary. Biochemically, it is well known that insulin has a marked affinity for zinc and also for other heavy metals, as e.g., cobalt. We have previously found experimentally that injected cobalt concentrates in pancreatic islet tissue and that repeated injections at L.D. 50 can evoke localized necrosis in the islets with hyperglycemia. Like other diabetogenic agents a single injection at L.D. 50 of cobaltous chloride lowers the glutathione content of islet tissue. This decrease occurs two days after injection when the cobalt concentration in the islets is high.

By an ultrastructural modification of the sulphide-silver procedure it has been found that when zinc occurs in the β cells, it is localized to the secretion granules. Zinc-containing