

THE FUNCTIONAL PATHOLOGY OF DISEASE. By *Arthur Grollman, M.D., Ph.D., F.A.C.P.* \$15.00, 979 pp., *The Blakiston Division, McGraw-Hill Book Company, Inc., New York, Toronto, London, 1963 and 1957.*

The editor and authors of the updated and expanded second edition of this textbook have accomplished their goal well, that is, a practical correlation of physiology and other basic science disciplines with everyday clinical medicine. The text is clearly written and easily understood with only occasional errata. Normal and abnormal physiology are entered into in sufficient detail to permit comprehension of the circumstances underlying many of the common disorders encountered in the practice of clinical medicine. Various disease

states are described from the point of view of their underlying pathophysiology.

The book can be recommended as a good beginning for medical students and interns for whom it is basically intended, and as a general review for others. However, the more experienced medical practitioner and specialist may find the discussions somewhat disappointing in that they frequently lack depth or completeness, particularly in regard to new and controversial concepts. Since the book is not meant to be a complete textbook of physiology or of medicine, it is understandable that many omissions are necessary.

In general, the book is an admirable attempt to bridge the gap between the basic and clinical sciences in medical teaching.

Frank Libman Engel 1913–1963

Dr. Frank L. Engel died suddenly and prematurely at the age of forty-nine following massive myocardial infarction on July 11, 1963, in Durham, North Carolina. His death is a stunning loss to his devoted wife and collaborator, Mildred, his daughter, Susan, and to his colleagues, all of whom were also his friends.

Dr. Engel's credentials were impressive. He obtained a Bachelor of Arts degree at Dartmouth College in 1934 and was graduated from the Johns Hopkins School of Medicine in 1938. He was an Associate Professor of Physiology and Professor of Medicine at Duke University. While his membership in the American Diabetes Association and The Endocrine Society reflected his major research interests, he was heartily welcomed into all of the major societies that mark the stepping stones of academic recognition. He was elected to the Southern Society for Clinical Research, The American Society for Clinical Investigation and the Association of American Physicians. Significantly, he was a member of not only the American College of Physicians, but also the American Physiological Society.

In the best sense of the word Dr. Engel was a specialist. However, he differed from many of his colleagues in that he specialized in an astonishing number of areas. As an administrator he not only supervised a highly productive research laboratory, but also found himself at the apex of a complex and unique Endocrine Service with components from Anatomy, Physiology, Biochemistry, Pediatrics, Obstetrics and Gynecology, as well as Medicine. He was instrumental in the development of the Duke Clinical Center and, in his quiet way, played a crucial role in shaping the course of the Duke Medical Center.

Dr. Engel was an excellent physician. He was well grounded in the technics of bedside medicine. This understanding of patients' problems stemmed from the combination of a logical mind and a feeling for the suffering of others. These skills were largely self-acquired and it may surprise many of his peers and students to learn that his formal training in clinical medicine was limited to a two-year internship at the Mount Sinai Hospital in New York.

"Frank Engel was an unusually gifted teacher. He taught effectively at all levels. First-year medical students, third- and fourth-year medical students, interns, residents, fellows and faculty colleagues, all came under his spell. His work in physiology with the first-year students was one of the most effective recruiting devices ever developed by the Department of Medicine."

This quotation is from a tribute paid to Dr. Engel by his Chief, Dr. Eugene Stead, himself a teacher of considerable renown. Although his productivity was great (his bibliography includes an imposing list of more than 130 papers), he did not run a "research factory" because of his strong feeling of responsibility toward research fellows. While he received as many as forty applications per year from hopeful neophytes from all over the world, he accepted only a few because of his strong commitment toward the growth and maturation for all individuals who came under his tutelage. His small office always adjoined his laboratories, and his door was never closed to anyone who needed his help. He was not a "hoverer."

One of his first research fellows recalls with amusement, his consternation, after his arrival in Durham, on being led to a well-equipped laboratory and, shortly

thereafter, left entirely to his own devices.

A dispassionate appraisal of his research endeavors leads to the conclusion that Frank Engel ranks among the leading experimental endocrinologists of this generation. His was the definitive work on the biochemistry of shock, and he carried out penetrating studies on the protein catabolic action of adrenal steroids. He developed unifying concepts in the difficult area of the endocrine control of intermediary metabolism, and, most recently, he, with his collaborators, was pursuing the fascinating subject of the relationship of structure to function of protein hormones, particularly with regard to corticotropin.

Dr. Engel's interest in carbohydrate metabolism and diabetes was only a part of his over-all efforts to understand basic problems in endocrinology. He devised the insulin-glucose tolerance test for the detection of unresponsiveness to hypoglycemia. He discovered a new form of experimental diabetes, that secondary to fluoracetate poisoning. Finally, he made major contributions to our

knowledge of the pathogenesis of ketosis both in experimental animals and in man.

The only imposing aspect of Frank Engel's personality was his intellect. He was a small, somewhat shy individual who felt most comfortable in small groups. Once, during the course of ward rounds, he was patiently employing the Socratic method in an effort to extract information from a tense and befuddled medical student. The student suddenly fainted. The astonished instructor pondered for days how he could possibly engender enough anxiety in anyone to provoke syncope. Frank Engel was a delightful raconteur. His conversation often sparkled with wit and he punned shamelessly. He thought an L.E. cell might better be called a "lupuscyte!"

All in all, Frank Engel serves as a model for that dwindling band of men who would like to feel comfortable both at the bedside and in the laboratory. He was a quiet, kind, reasonable, and *reasoning* man.

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ABSTRACTS

Alpert, Samuel; Cervini, Grace; and Salzberg, Gertrude. (Diabetic Clin.; Diabetic, Arthritis, and Geriatric Clins.; and Clin. Lab., Veterans Administration, Regional Office, N.Y., N.Y.): DIABETES DETECTION SURVEY. *New York J. Med.* 63:3087-89, Nov. 1, 1963.

A report on a diabetes detection survey conducted among 508 employees of the authors' organization. Thirteen new diabetics were discovered. Eleven were males and two were females. Three of the males and one of the females were obese. Positive family history was present in six of the males and one of the females. The authors emphasize the advisability of conducting similar surveys within all large employee groups.

C.A.R.

Anderson, J.; and Mazza, R. (Kings College Hosp. Med. Sch., London S.E. 5, England): PYRUVATE AND LACTATE EXCRETION IN PATIENTS WITH DIABETES MELLITUS AND BENIGN GLYCOSURIA. *Lancet* 2:270-72, Aug. 10, 1963.

Because previous studies had shown that insulin requiring diabetics excreted larger amounts of pyruvate in the urine than obese diabetics and normal patients, the relationship between glycosuria and pyruvate and lactate excretion was further investigated in twenty-five insulin-requiring diabetics who had a low renal threshold for glucose and in eleven healthy subjects with renal glycosuria. The diabetics were found to have mean blood pyruvate and lactate levels about twice those of the renal glycosurics and they also excreted quantities of pyruvate and lactate which were greater. This relationship existed both

before and after glucose loading. Since urinary pyruvate excretion in patients with renal glycosuria was no higher than normal, the factor causing increased pyruvate excretion in diabetics is probably the diabetic process rather than a renal factor. However, urine lactate excretion was high in both groups and suggested that patients with renal glycosuria have a defect which affects lactate as well as glucose. T.G.S.

Annotation. DIURETICS AND DIABETES. *Brit. Med. J.* 2:1422, Dec. 7, 1963.

Attention is called to the continuing reports of the impairment of carbohydrate tolerance by thiazide diuretics and by chlorthalidone ("hygroton"). Most of the reports have come from clinics for treatment of hypertension, whereas alterations in carbohydrate tolerance have not been described by physicians handling large numbers of diabetic patients.

The mechanism by which thiazides alter carbohydrate tolerance remains obscure. R.F.B.

Arnould, Yvette; Bellens, Roger; Franckson, J. R. Marcel; and Conard, Victor (From Laboratoire de Médecine Expérimentale, Univ. of Brussels, Brussels, Belgium): INSULIN RESPONSE AND GLUCOSE-C-14 DISAPPEARANCE RATE DURING THE GLUCOSE TOLERANCE TEST IN THE UNANESTHETIZED DOG. *Metabolism* 12:1122-31, December 1963.

Glucose loads of 2 gm. per kilogram were administered to trained unanesthetized dogs by gastric intubation after which measurements were obtained of blood glucose levels, serum