

Abelous, J. E., and Soula, L. C. THE CHOLESTERINOGENIC FUNCTION OF THE SPLEEN. [C. R. de l'Acad. des Sciences, 1920, CLXX, p. 619.]

In the course of a research on the action of secretion the writers found that injection of dilute hydrochloric acid into the duodenum leads to an increase of the amount of cholesterin in the arterial blood. This hypercholesterinæmia is not produced in splenectomized dogs or rabbits, nor after previous ligation of the splenic hilum. Indeed, there is often a hypocholesterinæmia. But the blood of the splenic vein contains more cholesterin than the arterial blood. Further, there is always more cholesterin in the blood of the splenic vein than in that of the sub-hepatic veins. In all their experiments the writers used Grigaut's method of extraction of cholesterin. They record some experiments *in vitro* in demonstration of their conclusion that cholesterin is formed in the spleen. The spleen has a much greater cholesterinogenic function than the liver and the adrenals. [Leonard J. Kidd, London, England.]

2. ENDOCRINOLOGY.

Kretschmer, Ernst. FAMILIAL ENDOCRINOPATHIES. [Zeitschr. f. d. ges. Neurol. u. Psychiat., Vol. XLVI, p. 79.]

In a family that fell under the author's observation he discovered a congenital condition of somatic and psychic degeneration which affected principally the male members and seemed to be directly inherited from father to son. The manifestations were as follows: eunuchoidism (small testicles, long limbs, imperfect junction of epiphysis, small skull, flat occiput), acromegalic development of nose, hands and feet, changes in the sella turcica (perceptible without Roentgen picture), disturbances of the heart vessels (variability of the pulse frequency, arteriosclerosis), dermatographia, venous spasms, lymphocytosis, psychic inferiority, arthropathies with selective affection of the vertebral column and knee joints. There was also a peculiar disease of the muscles which in the loin musculature could be regarded as pseudohypertrophy with fatty formations, and in the rest of the body, especially in the shoulder region, as muscular hypertrophy without increase of function. This condition, in the center of which stands the testicle hypophysis complex, is probably to be interpreted as a polyglandular syndrome, because it can be directly referred in part to known endocrine disturbances and, for the rest, can be understood as due to such disturbances. [J.]

Gutman, J. THE DUCTLESS GLANDS AND CONSTITUTIONAL DIAGNOSIS. [Med. Rec., April 3, 1920.]

In this presentation the author calls attention to the necessity of studying the individual from the constitutional standpoint and not merely from the morphological one. He refers to the dependency of pathologic syndromes upon the constitutional habitus of the individual affected, and

points to the close relationship existing between constitutions and the endocrine glands. He calls attention to several fundamental facts which influence the nature of human constitutions:

- (1) The effects of the inherited powers of the endocrines upon development;
- (2) Their control of the vital metabolic processes;
- (3) Their domination of the important functions occurring during the three cycles of life;
- (4) Their intimate relationship and coöperative method of functioning; and
- (5) The consequences following their disturbances, physiologic or pathologic.

The author further proceeds to elucidate the principles mentioned. In regard to the first, he claims that every particle of protoplasm, every granule of the impregnated ovum, carries within it the essence of the parental ductless glands and, hence, all those elements which transmit to the offspring the racial, national and familial characteristics of its progenitors. These endow the child with the phenomena which we commonly consider inherited. They determine the features which identify the offspring as Caucasian or Mongolian, Scandinavian or Italian, Gentile or Jew. They determine the unique expression, character, habits, traits, ambitions, talents, longevity and idiosyncrasies peculiar to its race and family. The writer classifies human beings into four types: the thyrotrop, adrenotrop and pituitotrop, which are understood to be pure types, and a fourth class the mixed type, including individuals with features characteristic of two or more pure types. These types, tropisms or constitutions are defined not only by characteristic external features, but also by the mental and psychic phenomena of the individual. The pathological disturbances also follow closely the constitutional habitus of an individual. The morbid phenomena which we were taught to look upon as hereditary are so only because they affect people of similar glandular tropism. It is a commonly known fact that apoplexy, diabetes, arterio-sclerosis, interstitial nephritis, affect individuals of a certain type, known as status apoplectic, and practically never occur in another type of subjects, the thymico-lymphatic. On the other hand, chlorosis, tuberculosis, hemophilia, lymphadenoma, are known to affect thymico-lymphatic individuals and seldom the first mentioned type. This is due to the fact that these two types are made of two very dissimilar fabrics, are of different constitutions originating from two different endocrine sources, the adrenals on the one hand, the thymus on the other. Two beings of the same species *Homo*, but of different breeds, of unlike physical and mental capacity. This fact is of great practical value in diagnosis, because the relationship of morbid phenomena, functional and morphologic, is definite and characteristic of each type or tropism. It is also of

help in therapy because it enables the substitution of polypharmacy, empiricism and therapeutic nihilism by individualistic and accurate opotherapy.

In reference to the endocrine control of metabolism, the author states that the growth and form of our organs depend upon the influences of the glands of internal secretion which they exercise through metabolic control. Whether an individual is to be tall or short, lean or corpulent, graceful or awkward, is all dependent upon the peculiar reactions of the different endocrine glands, individually and collectively; it depends upon whether they functionate harmoniously or discordantly; upon the possibility of overworking one gland and relaxing another. He further cites examples of the remarkable changes occurring when a gland for some reason or another undergoes hypertrophy or atrophy in individuals during the period of their development; the astonishing changes in growth, mentality and sexuality of those affected by an overgrowth of the anterior pituitary with the result of acromegaly; the marked changes in the metabolic rate, sugar tolerance, oxygen consumption and urea formation in those affected with thyroidal disease; the unusual features of the eunuchoid type which even the layman quickly recognizes and thinks peculiar. This is because normally each and every endocrine is endowed with a definite function, within definite limits and with a prescribed rate of metabolic exchange determined by the physiologic activity of the organs under its control; under abnormal conditions, the metabolic rate is altered, some functions are augmented, others are increased, and a metabolic imbalance thus occurs.

The third principle upon which constitutions are built and in which the domination of the vital functions by the endocrines is shown is illustrated by the example of a cat suddenly confronted by a dog. The sight of the enemy brings to the cat's consciousness a vivid picture of danger. The mechanism of defense and offense are brought into play when these two are brought together by chance. The biologic mechanism whereby consciousness dictates an order requiring execution is directed to the adrenals, where the activating hormones which convert the static into kinetic energy are stored in sufficient quantities to meet all emergencies and activities in the life of the animal. Vasmotor energy is known to be concentrated to a greater extent in the adrenals than elsewhere. By various efferent paths orders are issued to check immediately all immaterial activities in organs not called for in the defense or flight of the animal. Thus, gastric digestion, intestinal absorption, sexual activity and similar functions are ceased, while oxygen, glycogen and other material necessary for the most strenuous function of the defensive organs is mobilized through the agency of the vascular and nervous systems to the muscles, nerves, brain, etc. Thus, the cat's brain is cleared for full action, the mind is freed from all immaterial thought, the sight is sharp-

ened, the hearing made most acute, the cardio-respiratory apparatus prepared for forceful action, the muscular system is loaded with kinetic force and prepared to spend it all in the struggle for dear life of its owner. All this is accomplished primarily through the endocrine system and secondarily through the vegetative nervous system under the control of the former.

The author next discusses the relationship of the endocrines to each other, calling attention to the predominance of certain of the glands in certain individuals and the control of the cycles of life in all individuals by others. At certain definite periods of life certain glands play a leading rôle in the development and physiological interpretations of the organism. All others, however, at all times coöperate harmoniously with the leader. Such united action is necessary to keep the individual in perfect balance and to serve his economy best. The leading gland determines the architecture and creates an individual of its own type; the others assist in this work. Under normal circumstances harmony prevails at all times. If, however, the leading gland or any other of its associates, because of special stress, suffers exhaustion and becomes unable to respond further to its task, the remaining glands hasten to its rescue and to assume its responsibilities. Such coöperation preserves a normal balance. They cause a hyper or hypofunction of the organs under their own control to substitute the deficiencies of the organs controlled by the exhausted gland.

In discussing the fifth basic principle of endocrine constitutionalism the author shows the effects of deficient glandular inheritance and states that individuals born with defective glands show most decided morphologic and functional distortions. In those, on the other hand, in whom the glands become defective in later life, the symptoms presenting themselves depend entirely upon the extent and nature of involvement. Glands need not be incapacitated in all their valencies; they may fail in a few of their multiple functions and remain active in all others. Some glands will withstand the strains of life and functionate a lifetime, while others may fall by the wayside. Such incidents as infections, school life, puberty, courtship, marriage and childbirth may be the rock upon which the constitution of an individual' endowed with poor quality endocrines may founder.

In conclusion, the author brings proof to sustain his argument that it is absolutely essential in the making of an honest and scientific diagnosis to dispense with the idea, that when a condition is labeled with a pathological name everything possible has been accomplished in the study of the case. No diagnosis is complete unless the case has also been studied from the endocrinologic viewpoint, for it helps one to decipher the whys and wherefores of the case and offers a more precise and more satisfactory explanation of encountered conditions not otherwise explainable. It enables one to individualize in diagnosis and to apply therapy which is suited to the case and is rational. [Author's abstract.]