SCROFULOSIS AND TUBERCULOSIS.

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A CLEAR understanding of the true position of scrofula as a clinical entity will be considerably advanced by the recent publication in English dress of Cornet's special work on the subject.¹ According to him, the tubercle bacillus cannot possibly explain all the manifestations of scrofula; other bacteria are associated with it, or exist independently of it, especially pyogenic organisms. We must recognize two forms of scrofulosis—(1) the tuberculous, and (2) the pyogenic forms. In some instances the tubercle bacillus appears to be quite secondary, grafting itself on a pre-existing lesion of another kind. This classification will enable us to include under scrofula diseases which were formerly considered to belong to it, and yet were threatened with exclusion. To the tubercle bacillary group belong enlarged cervical and other glands, lupus and fungous joints, the diagnosis being confirmed by V. Pirquet's cutaneous reaction; while impetiginous eruptions, ozæna, etc., are dependent on pyogenic organisms, the different manifestations being determined by the soil on which the organism falls.

Characteristics and Forms of Scrofula.

There exists a symptom-complex distinctive of scrofula. Scrofulous children will show a swelling of glands, special irritation of mucous membranes, and eczematous irritation of the skin. They come under two classes: (1) the torpid form, in which the child looks pale, is unduly fat, and has a puffy face, with swollen lips and nose; and (2) the erethistic form—the opposite type—in which the child's features are thin, and the skin remarkably white and delicate, easily reddening on irritation of the superficial bloodvessels. Such children show a lessened resistance to a disease like tuberculosis, and will throw off the disease much less readily than healthy children. Probably tubercle bacilli gain an entrance through the air-passages, and the bronchial glands are affected first of all. Scrofulous children readily become tuberculous, and the affected tissues exhibit tubercle bacilli.

The Pathology of Scrofulosis.

Cornet looks upon scrofulosis as a complex of symptoms, almost entirely confined to childhood and youth, embracing not only swollen

¹ "Scrofulosis," by Professor Dr. G. Cornet. Translated from the second German edition by J. E. Bullock, M.D. London: John Bale, Sons and Danielsson, Ltd., 83-91, Great Titchfield Street, W. 1913. Price 15s.

neck glands, but certain affections of skin and mucous membranes and joints, which are characterized by persistency, recurrence, and multiplicity, and which may be traced to exogenous causes, such as either tubercle bacilli or pyogenic organisms, and a mixed form, the effects of which differ according as the tubercle bacillus or other germs come into play first or simultaneously; or to endogenous causes. According to Cornet, scrofulosis is either a slowly progressing localized tuberculosis, or an independent disease due to a certain disposition or dyscrasia which often presents tuberculous complications; it is thus evident that opinions as to the nature of scrofulosis have changed in recent times. Whereas formerly it was considered entirely distinct from tuberculosis, it may now be considered either a special disease or a tuberculous symptom-complex occurring especially in childhood. As pure tuberculosis and suppurative processes occur at all ages, and scrofulosis, almost without exception, occurs in the years of growth, there must be some primary favouring endogenous condition existing in the patient, either in the whole body or in certain parts of it, peculiar to youth, which in later years disappears of itself. Seeing that scrofulosis is met with in various organs of the body, a certain support is given to the idea that some constitutional change is connected with the predisposition to tuberculosis. Virchow described the condition as an inflammatory diathesis, and considered the pathological constitution which leads to scrofulosis to be a weakness of certain parts or regions, such as an incompleteness in the structure of the glands, generally connected with an incompleteness in the skin and mucous membranes; and as the growing glands in children are especially affected, scrofulosis is a disease of childhood. Lately the term "exudative diathesis" has been used by Czerny instead of "inflammatory diathesis." Outwardly the exudative diathesis shows itself by a mapped tongue, seborrhœa, milk-scurvy, etc., and, according to Czerny, is connected with improper nourishment and overfeeding, and depends on an innate and clinically latent defect in the composition of the body. It is due to exogenous causes, and becomes manifest early, even in the first weeks or months, by abnormal results of nourishment, such as loss of weight, though a plentiful supply of milk is taken and there is no digestive disturbance, or else by a marked increase of body fat, even when the food is poor in milk. The predisposition of infants to the exudative diathesis is connected with an innately low condition in the assimilation of milk (both human and cows' milk). Food in which the fat is replaced by carbohydrates frequently produces the phenomena of exudative diathesis and a return of the scrofulous habitus, and may be produced in children with a tendency to it by a fat-containing diet. Czerny even goes so far as to state that by means of food containing little fat the scrofulosis disappears, and scrofulous children are trans-

formed into "fine children with tuberculosis," an opinion which cannot be shared by many. Cornet draws attention to the fact that, as something more than the deprivation of milk, eggs, and sugar is necessary, we should expect an increase of scrofulosis in the later periods of infant life when milk and eggs, butter, and all fatty foods enter largely into the dietary. The fact that scrofulous symptoms may be removed by tuberculin treatment, without change of food, dispels the idea of an exudative diathesis; while the close relationship which has been traced between infection by bovine tubercle bacilli and scrofulosis confirms the supposition that scrofulous infection may be put down to tuberculous milk, and then becomes a tuberculous form of scrofulosis. Cornet remarks that it is well known that scrofulosis appears as a rule towards the end of the first and second years, and connects the experience that bovine infection appears almost without exception after the first year, with the practice, even amongst the poorer classes, of generally heating the milk for children under one year; whilst in later years, besides the frequent consumption of milk in the raw state, butter and other milk products increase the opportunities for tuberculous infection. Contrary to the idea that used to be held, that those who suffered from scrofulosis died later from tuberculosis of the lungs, it is now held by many that those who are predisposed to scrofulosis possess a certain amount of protection against tuberculosis. According to Escherich, the scrofulosis resulting from tuberculo-toxic changes in the integuments is the most harmless form of infantile tuberculosis, and offers a sort of protection against tuberculous infection. Cornet would also refer all tuberculo-scrofulous affections of the glands to bovine infection, and remarks that if scrofulosis sometimes depends on pyogenic infection, and so has nothing to do with tuberculosis, and if the tuberculous form depends on bovine infection, we are entitled to dread less tuberculosis in children, as the bovine type is, without exception, less pathological for the child than the human type. Though he admits that bovine infection may cause, in many cases in very young children, a general miliary tuberculosis, which cannot be distinguished from virulent infection of the human type, in persons of the same age, he points out that it is much more frequent for the bovine infection to act at the point of entry.

The idea connecting scrofulosis with lymphatism, a constitutional anomaly which distinguishes itself by a "great tendency of the organism to inflammatory reaction of an obstinate and recurrent nature," with exudation of lymph in which the lymphatic tissues take a decided primary and secondary part, is debated by Cornet on the ground that by drawing attention to the lymphatic system only, merely a part of the tendency is denoted, whereas it must be recognized that a certain abnormal preliminary state of the skin and mucous membranes exists in

a prominent degree, let the cause be what it may. Cornet thinks that scrofulosis is lymphatism combined with tuberculosis, the lymphatic constitution being the ground in which an accidental tuberculous infection will develop scrofulosis, and notices that Moro attaches much importance to the tuberculin reaction in discovering non-scrofulous cases, so that if they do not react positively to the tuberculin test, he considers them not scrofulous, but lymphatic, although they have all the external symptoms of scrofulosis; yet when the reaction is positive, the result perhaps of some latent focus, he considers them scrofulous. Cornet does not accept Soltmann's view—namely, that scrofulosis is an hereditary non-bacillary toxic scrofulosis—on the ground that scrofulosis does not appear immediately after birth, but generally at least six months after birth, and tuberculin reaction rarely occurs in the first year, when the toxin may be expected to be non-operative, and also though truly scrofulous children often descend from tuberculous mothers, relatively seldom from mothers who are tuberculous at the time of the child's birth. He merely mentions Behring's hypothesis, that scrofulosis is the clinical expression of the tuberculous diathesis induced by a special method of infection or by a very long latent stage.

In considering the localized diathesis residing in the skin, mucous membranes, and lymphatic glands, Cornet discusses the permeability of the skin and mucous membranes, its variation according to age and sex, holding that there is greater permeability in the young and the female sex; and in this supposed fact he finds a satisfactory explanation of the predominance of scrofulosis in youth as a special diathesis or readiness for illness in the skin, the mucous membranes and the lymph passages, by an increase of the normal greater permeability of these tissues in the young—a condition which he calls "embryonalism," and which, being more marked in girls than in boys, accounts for the greater prevalence of scrofulosis in girls (excepting scrofulosis of bones and joints).

The Management of the Scrofulous.

In the treatment of scrofulosis, Cornet points out the importance of recognizing the localized diathesis (embryonalism), which necessitates measures for raising the individual to "an older stage" of development, at the same time the infective germs of tubercle bacilli or pyogenous bacteria must be kept away from the body, and the spread of infection which may exist in the body must be hindered, and the consequences of the infection localized and healed. We have to consider the nature and the degree of the disease, whether there is merely a scrofulous predisposition or a pronounced scrofulo-tuberculous condition, and whether the scrofulous disposition is of the torpid or erethistic type, together with the state of nutrition and strength of the patient. Thus

it is that prophylaxis plays a great part in the treatment, and special attention must be given to general hygiene. As a matter of interest (such institutions being common in Germany, and rather lately being established in England), we notice the importance given to forest recreation places and forest schools. Cornet demands that in all districts sufficient arrangements should be made to allow of there being placed during the day in a healthy environment all those children who, in consequence of bad conditions of dwellings and of poverty, are exposed in a considerable degree to the dangers of arrested development, or of falling victims to tuberculosis or scrofulosis, and he describes the formation of forest recreation places and forest schools in Germany. He dissents from the objections which might be raised—namely, that carelessness and idleness may thereby be encouraged amongst mothers, because necessities of life compel the mothers to go out to work and leave their children much to themselves. He considers it an advantage to the State to reduce the mortality amongst weakly children, and to strengthen them, otherwise the weakly ones will grow up weakly. He remarks that infants' diseases often snatch away the strong and leave the weakly ones behind. He does not claim that forest recreation places and forest schools will remove established disease; their object is to prevent the establishment of disease. In Germany, measles, scarlet fever, etc., which often determine the development of scrofulosis and tuberculosis, have decreased during school-years when children are removed from their homes. Cornet also encourages the provision of simple dinners for children who come to school imperfectly fed, together with physical exercises, especially in the afternoon, leaving the morning to lessons, airing, and resting.