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/ by Kendal Franks.**

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AND
THEIR SURGICAL TREATMENT

KENDAL FRANKS

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ON THE NATURE

OF

SCROFULOUS GLANDS IN THE NECK,

AND

THEIR SURGICAL TREATMENT.

BY

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ON THE NATURE
OF
SCROFULOUS GLANDS IN THE NECK,
AND
THEIR SURGICAL TREATMENT.*

I SHOULD scarcely be justified in discussing the methods of dealing with that condition of the glands of the neck which centuries have agreed in calling *scrofulous*, were I not in the first place to attempt to explain what is meant in the present day by *scrofula*. According to the views which we hold on this subject will our treatment depend. If we look upon *scrofula* in all its stages as a *diathetic* disease, then our treatment will be directed to correct this tendency; in other words, we shall have recourse to constitutional measures as the most rational—as those which promise the greatest success. If we, on the other hand, hold that *scrofula* is *infective*, that it owes its origin to a virus making its way into the system from without, then our treatment should in the first place be directed against the virus, to keep it out of the system or to eliminate it. Between these two modes of estimating the nature of the disease we have a third, which combines them both—namely, that *scrofula* is an infective disease due to a definite poison, which can only find its development, however, when planted in a suitable soil; that is to say, when it gains an entrance into the tissues of a person

* Read in the Surgical Section of the Academy of Medicine in Ireland,
April 16, 1886.

presenting a peculiar constitutional habit, "the greater vulnerability of parts and the greater pertinacity of disturbances," as Virchow has defined it.^a If we accept this latter view—and recent investigations, I believe, have fully established its truth—scrofula must cease to exist as a distinctive disease, and the neutral zone between scrofula and tubercle, which has been the battle-ground of pathologists in years past, must disappear. We shall never, I suppose, eliminate the term scrofulosis, but we shall use it in a different sense from that to which we have been accustomed. In the light of the pathology of to-day we cannot accept as a definition of scrofula that it is "a tendency in the individual to inflammations of a peculiar type, the distinctive features of such inflammations being as follows—they are usually chronic, apt to be induced by very slight irritation, and to persist after the irritation that induced them has disappeared."^b In spite of the attempts of pathologists to give a definite meaning to the term, no one will deny that the word scrofula has been used to designate most of those diseases whose pathology was a chaos of confusion, and that Henle's description of it was well merited, that "scrofula is the receptacle into which one vaguely casts all the ailments which afflict children under fourteen years, and of which we do not know the cause."^c In discussing, then, the true nature of scrofula, it will be interesting to review shortly its history, and to trace the lines which have led to our present state of knowledge concerning it.

The term was originally given to the disease by the Romans in order "to give prominence to the similarity presented by the thickened neck, the diminished prominence of the chin, and the

^a Krankhaften Geschwülste. Vorles. XXI.

^b Treves. Scrofula and its Gland Diseases, p. 37. 1882.

^c Handbuch der Rationellen Pathologie. 1846-53.

swelled upper lip—all consequences of the swellings of the glands—with the physiognomy of the hog.”^a In the sixteenth and seventeenth centuries the resemblance between the caseous masses found in the lungs in phthisis and in scrofulous lymphatic glands in the neck was observed, and Cullen, amongst others, began to range phthisis in the list of scrofulous diseases. “The views generally held at that period on this question,” says Birch-Hirschfeld, “may be summed up in the sentence that scrofulosis reigned supreme over the domain of tuberculosis, tubercular phthisis itself being looked upon as a scrofulous disease.” Laennec heralded a new epoch. Tubercle now became the chief factor, and all processes in which cheesy substance was found were classified with tuberculosis, scrofulous glands being considered only as a small subdivision of tubercular disease. But at this time little was known as to the nature of tubercle itself. The term was applied to nodules, but it had little other significance. Laennec pointed out that these nodules, originally grey and clear, had a tendency to become opaque and yellow, or, in other words, to caseate. Thus, in the lung two distinct conditions were found—the grey tubercle and the yellow, the latter being, however, the result of certain changes in the former—that is to say, the grey tubercle had a tendency to caseate in its centre; and by the fusion of several of these, larger caseous masses were formed, which went by the name of yellow tubercles. The identity of scrofulosis in the glands in the neck and of tuberculosis in the lung was then again called in question, when Virchow came forward and demonstrated that this cheesy substance was not necessarily due to decay of the grey nodules, but might occur in the most heterogeneous tissues. Tubercle was now restricted to the grey

^a Birch-Hirschfeld. Ziemssen's Cycloped. Vol. XVI., p. 744.

semi-transparent nodules, the size of a millet-seed, hard and firm, which have since been known as miliary tubercles; although these, from their want of blood-vessels and their low organisation, frequently tended to cheesy metamorphosis. Virchow accordingly laid down that no cheesy product was to be accepted as tuberculous unless sufficient evidence had been given of its origin from miliary tubercle. Such evidence was not at that time forthcoming in respect to the cheesy masses found in scrofulous glands—hence scrofulosis was not to be considered as a form of tuberculosis. Virchow went even further, and the cheesy infiltration of the lung, called “tuberculous” by Laennec, was not tubercular at all, but should be termed “scrofulous broncho-pneumonia.” But even this position of the question was not destined to remain long unassailed. Microscopists turned their attention to the study of the so-called grey or miliary tubercle. That it was the ultimate specific cause of tuberculosis began to be doubted, as certain tissue changes, which were acknowledged to be due to tuberculosis, were found to occur sometimes in which these distinct grey tubercles could not be discovered. In such instances the microscope revealed certain minute bodies, to which the name “submiliary tubercles” was given, and it was then shown that the millet-seed bodies, termed miliary tubercles, were made up of a collection of these microscopic nodules. This submiliary tubercle, called by Köster “primitive or elementary tubercle,” is composed mainly of cells. In the centre of a typical specimen we find one or more giant cells. Forming a zone around this are many so-called epithelioid cells, and around these again is a zone of leucocytes. “All these cell elements are supported by a fine reticulum, which is generally concentrically arranged at the periphery, and towards the centre is observed to be continuous with

the processes that commonly come off from the giant cells. The affected district is non-vascular."* This is the description of "primitive tubercle" as we understand it to-day; but it must not be supposed that this accurate histological account of it was received without much opposition. Indeed, it would seem that in its earlier days pathologists were so engaged in their conflicts concerning it that the fight over the identity or non-identity of scrofulosis and tuberculosis remained for many years in the position in which it was left by Virchow. During this period of dormancy caseous or cheesy nodules were looked upon as the products of the degenerative changes which followed on scrofulous inflammation. There was nothing specific in them. But this controversy on scrofulosis was only dormant, and it broke out with renewed vigour in the years 1865-69. A new method of attacking the question was instituted by M. Villemin. Anatomical and microscopical methods gave way to the method of inoculation, and Virchow's ground was cut from beneath his feet. These inoculation experiments showed two things—firstly, that if the cheesy matter from scrofulous glands were injected into an animal, it produced general tuberculosis as readily as tuberculous matter; and secondly, as shown by Wilson Fox, that if tuberculous matter were introduced beneath the skin, it gave rise to enlarged caseous and suppurating glands—in fact, to all the symptoms of a localised scrofula. The conclusion to be drawn from these experiments seems obvious—namely, that these local manifestations of what was termed scrofula were in reality tubercular, and that if any difference could be made out between these terms, it could only be one of degree. Such a wholesale subversion of Virchow's views, which had taken possession of pathologists for

* Treves, *op. cit.*, p. 9.

several years, could not naturally be accepted without dispute. The experiments themselves were largely discounted, and it was maintained that, as the so-called acute general tuberculosis, which was described as following on inoculation, occurred in "animals," it was not the same as general tuberculosis in man. It now became apparent that it was more necessary than ever to understand the histological characters of the true tubercle, to distinguish it from simple inflammatory neoplasms, and to determine whether the giant cell, with its external zones of epithelioid cells and leucocytes, was pathognomonic of tubercular diseases. In 1870 Wagner prepared the ground for a more accurate knowledge of the microscopical characters of these primitive tubercles, and the more complete elucidation of their differences from simple inflammatory neoplasms, made almost immediately afterwards by Schüppel, established their distinctive character. With this definite idea as to the true characteristics of tubercle itself, he proceeded to combat Virchow's views, taking for his text Virchow's own dictum—that no cheesy product was to be accepted as tuberculous unless sufficient evidence had been given of its origin from miliary tubercle. This missing link was now supplied. "This demonstration," says Birch-Hirschfeld, "has been furnished by Schüppel's numerous and searching investigations to such an extent that no further doubt is left as to the frequent occurrence of well-characterised tubercles in the lymphatic glands—partly in the form of secondary development with pre-existing tubercles of other organs—partly, however, as primary tuberculosis, to which latter category belong those very conditions which have been regarded heretofore as the most characteristic products of scrofulous disease.* Friedländer goes

* *Op. cit.*, p. 751.

a step further when he states that "all the more important scrofulous affections are intimately associated with the formation of tubercles."^a From this period the number of diseases in which tubercle was discovered went on increasing year by year. Köster, in 1869, found them in the so-called granulations in "white swelling." In 1879 Volkmann demonstrated that "white swellings" were nothing but tubercular osteoarthritis, and that they owed their origin most frequently to a focus of tubercle in the epiphysis. In 1881 Lannelongue showed, in his work on "Cold Abscesses," that the walls of the sac were studded with tubercles; and in 1883 Kiener demonstrated the identity between caries and tubercular osteitis, and showed that this specific osteitis may assume either the encysted or diffused form. The advocates of the identity between scrofula and tuberculosis seemed thus to be triumphing along the whole line, when a new difficulty arose. The giant cell, with its peculiar arrangement of cells around it, was declared not to be pathognomonic of tuberculosis. In 1875 Ziegler showed that it was found in inflammation artificially produced by inserting two little glass discs beneath the skin or in some of the cavities of the body in dogs and rabbits, and M. Martin obtained them around other irritating particles, or by introducing micro-organisms into the circulation. The question was thus again an open one, and stood thus: inoculation experiments had crowned the proof, afforded by anatomical and clinical observations, that scrofulosis and tuberculosis could not be separated, but hitherto there was no peculiarity of the structures which was pathognomonic of tubercle as a specific element. The infective nature of tuberculous and scrofulous matter alike was established, but the *materies morbi*, the virus itself, had

^a Volkmann's Samml. Klin. Vorträge, No. 64.

not been recognised. Such, briefly, may be said to have been the point reached up to the spring of 1882. We all remember the sensation which was caused, not only among scientists, but in the world at large, by the announcement of Koch in March of that year, that he had discovered the bacillus of tubercle; that he had succeeded, by the method of double staining with aniline dyes, in demonstrating the existence of the microbe; that by cultivations on solid media he had isolated it; and that by inoculations of the pure cultivations in animals he had proved its virulence. Whatever doubts may have been at first thrown upon the discovery, whatever scepticism may have been at work to detract from it or to prove it false, all have disappeared, and there are few who to-day will deny that Koch's bacillus is the active agent in the production of tubercular diseases, wherever they are found or in whatever guise they appear. Virchow's statement—that no cheesy product was to be accepted as tuberculous unless sufficient evidence had been given of its origin from miliary tubercle, must now be modified and enlarged. In place of it we may assert that all inflammatory products, whether in the stage of cheesy degeneration or not, in which the bacillus of tubercle can be demonstrated, are to be accepted as tuberculous. At the same time we must remember that their absence is not conclusive evidence against the tuberculous nature of a diseased part, as in certain stages of a tuberculous mass the bacilli may disappear. What assistance this discovery has afforded to the physician, or what influence it has had upon his art, is not my object to discuss. For the surgeon it has opened up new fields of labour, and has had a most powerful influence on his work. "The sphere of tubercular diseases," writes Volkmann, recently, "with which the surgeon has to do,

has increased so enormously during the last fifteen years, insomuch as a great number of diseases with which he has to deal day by day are recognised as belonging to tuberculosis, that, I say, the surgeon has now almost more to do with this disease than the physician."^a

Addressing, as I am, the Surgical Section of this Academy, let me call your attention to the enormous advantage which the surgeon possesses over the physician in the treatment of tubercular diseases. The diseased tissues are, or can be, exposed to view; frequently it is in the surgeon's power to remove the whole tuberculous patch, and with it the tissues in the immediate neighbourhood, while the patient still lives; and his opportunities for doing so, and the organs that are accessible to him, are increasing year by year. Now, in order to establish a disease in any organ as being undoubtedly tubercular, Volkmann^b enumerates three conditions as co-existing:—Firstly, the well-known structural condition, which has been styled "true tubercle;" secondly, the presence of the tubercle bacillus; and, thirdly, the positive results yielded by inoculation experiments. When these three conditions are verified in any diseased part, it cannot be questioned that the affection is one of true tuberculosis. This criterion has been applied to a large number of diseases, and has given positive results. I cannot now do more than enumerate a few of those diseases with which we are familiar under other names, but which henceforth must be classed as tubercular. On the skin we find lupus and certain ulcers, which have commonly been classed as scrofulous; similar conditions of the mucous membranes, and frequently fistula in ano; in the deeper structures, most forms of chronic abscesses, especially

^a Langenbeck's Archiv. für Klin. Chirurg., 1886, p. 109.

^b Op. cit., p. 125.

those associated with scrofulous glands, diseased bone, &c. ; and in diagnosing these abscesses the so-called pyogenic membrane is of great use. "The characteristic abscess membrane," says Volkmann, "occurs only in connection with tubercular abscesses, and it must be looked upon, therefore, as an absolutely safe criterion for diagnosis." All those forms of disease of the bones and joints which have hitherto been described as caries, Pott's caries, white swelling, strumous or scrofulous disease of the joints, fungous degeneration and so forth, belong also undoubtedly to tubercular infection, and the same is true whether the disease originate in the epiphyses of the bones or in the synovial membrane. Lastly, of all parts of the body in which positive proof of the existence of tubercle has been given, the lymphatic glands are most frequently engaged, because their very function exposes them to infection. Under the head of tubercle we must range all those affections of the glands which have hitherto been termed scrofulous enlargement, strumous disease, and caseous degeneration—in fact, by far the larger number of cases in which we find the glands of the neck enlarged.

My excuse for having gone at some length, and yet as briefly as I could, into the pathological aspect of the subject, must be that upon our view of the question in this light the further question of surgical treatment is based ; and also that in most of the works in our own language the tubercular nature of the disease is not recognised sufficiently. In support of this assertion I shall quote a few passages from some of the more recent surgical works which deal specially with the subject of scrofula and tubercle. In the first volume of Ashhurst's "*International Encyclopædia of Surgery*," p. 242, in the article on Scrofula and Tubercle, written by Mr. Butlin,

and published in 1882, he thus speaks of the morbid anatomy of scrofula:—"There is not in scrofula, as in tubercle, a pathological body, either microscopical or of larger size, peculiar to the disease. All the changes are those of inflammation; but the products of scrofulous inflammations may be analysed, chemically and histologically, without the discovery of any substance or structure which may not equally occur in any, or indeed in every, inflammation." This was, no doubt, written immediately before Koch's Address before the Physiological Society of Berlin, but it does not even represent the position of the question as it stood for several years prior to the discovery of the bacillus. The identity of the two diseases had been fully recognised by leading pathologists, as I have endeavoured to show; the only question waiting for solution being, "What is tubercle?" Again, in Mr. Treves' work on "Scrofula and its Gland Diseases," published also in 1882, p. 20, after giving the evidence for and against the identity of these diseases, he proceeds to discuss the value of the inoculation experiments, especially with respect to the conclusions drawn from them by M. Villemin. He then makes almost a pathetic appeal in favour of scrofula and its future distinctive existence. He says:—"But even now some pathologists still advance the opinion (which I give in the words of M. Villemin) that 'tubercle alone gives tubercle by inoculation.' Those who retain this view are compelled to exclude from scrofula all its classical features—the caseous gland, the cold abscess, osteitis, periostitis, and 'white swellings;' and all that they can leave for the disease are a few superficial lesions, the products of which will in time be probably found to be inoculable—and then, for M. Villemin and his followers, scrofula will be an extinct disease." Well, terrible as the alternative is, we must face

it; and as we must now hold that "tubercle alone gives tubercle," and that, as the bacilli from scrofulous lymphatic glands, when inoculated, give rise to tubercle, we must also hold that scrofulous lymphatic glands are tubercular, Mr. Treves will have to accept his alternative and acknowledge that scrofula as a distinct disease has ceased to exist. Let me cite another extract, one from Dr. Clifford Allbutt's lecture on "Scrofulous Neck," as it illustrates the dawn of the tubercular aspect of the disease in these countries. He says in his lecture published last year, p. 12: "Our knowledge of the tubercle bacillus is as yet too young to tell us whether scrofulous neck always depends upon the introduction of the tubercle bacillus by way of the mucous membrane of the throat or otherwise—too young, indeed, even to tell us whether the tubercle bacillus is an essential part of scrofulous neck at all. We know that it may be found there, and that scrofulous neck has of late years been regarded as morphologically tubercle, so that we are safe at least on the broad postulate that inoculation from sources of corrupt or caseating pus does very commonly set up a more or less generalised tuberculosis." I do not wish to assert that every enlargement of the cervical lymphatic glands is tubercular. We eliminate in this discussion those forms of adenitis which are associated with various infectious and simple inflammatory processes; we omit the so-called rheumatic bubo which appears in otherwise perfectly healthy individuals, without discoverable cause, most frequently in the axillary and inguinal glands, and which often terminates in suppuration—in fact, only those affections of the gland are here discussed to which the term scrofulous is usually applied, and these, we assert, are due to the specific action in them of the tubercle bacillus. The diagnosis in the early stage is

extremely difficult, indeed sometimes impossible, between the tubercularly infected gland and the simple form of adenitis which results from some local irritation. Thus the glands in the neck may enlarge from the irritation caused by a carious tooth, or an attack of tonsillitis, or a simple cold. But as the irritating cause disappears the swollen gland will subside, though sometimes it takes a long time to do so. But in the tubercular gland it is quite otherwise. The irritating cause may disappear or have been so slight as to escape notice, but the infected gland remains stationary for a time or continues to enlarge, and presently we find other glands following in its wake, and enlarging too. In the early stage our only means of diagnosis is to wait, and what was at first obscure will soon be cleared up by the future progress of the case.

Now, to understand the process of infection in the cases referred to, we must for a moment look at some of the characteristics of the bacillus itself. It cannot develop in a temperature below 86° or above 106° ; therefore, outside an animal body it cannot grow in this climate. Inside the body it grows and multiplies. A bacillus takes a month to reach its fullest development. It multiplies by fission and by the formation of spores. These spores are much more resistant than the bacillus itself. Drying the bacilli or the spores does not destroy them. It is not therefore difficult to understand how easily the infection may spread. The sputa of phthisical patients, for example, swarm with them. When these sputa dry, the bacilli and their spores, in a dry but active state, are scattered far and wide in the air, and may come in contact with a suitable soil whereon to develop. An ordinary healthy individual does not present this soil. The bacilli may be inhaled into his lungs, may be swallowed with his food, or mixed up in his saliva—they may

even lodge on some abraded mucous surface, and yet may do no harm. The antiseptic power of healthy living tissue is fully recognised. But there is undoubtedly some defect of constitution, some "vulnerability" of the tissues, which we do not understand, which furnishes a fruitful soil. Call scrofula, if you will, the peculiarity of the soil on which the bacillus grows; but the seed itself and its growth, and the manifestations of its development, let us call tubercle. We shall thus have clear ideas, at least, as to what we mean; we shall not continue to confound together the soil, and the seed which grows on it. Now, look at the behaviour of the bacillus when once it finds a local habitation congenial to it. As I have said, a bacillus requires nearly a month for its full development, and shows hardly any signs of growth under a week or ten days. During this period they may be cast off in the bronchi by the action of the cilia; in other regions they may be expelled with the secretion of the part. But suppose they gain an entrance through some abraded part, they are taken up by the lymphatic vessels and carried to a neighbouring gland, or they may develop in the tissue where first they found a resting-place. In the case of the glands in the neck, we can generally trace the history back to some such local infection. Thus a child suffers from eczema of the head, and the child is of a delicate constitution; we are told it is scrofulous. Or the child has a purulent otorrhœa or ulcers in the mouth, or it suffers from a discharge from the nose. Later on a gland in the neck, usually only on one side, enlarges. Or a young adult, and sometimes even one more advanced in life, suffers from a cold, from an attack of tonsillitis, or from enlarged, sometimes caseating, follicles in the pharynx (and I have not infrequently traced it to this cause); and even after this ailment has

subsided, and is perhaps forgotten, a gland or more begins to swell. Long after the exciting cause has ceased to act, the gland either remains *in statu quo*, hard, nodulated, movable, or it may develop rapidly all the series of phenomena which are known as scrofulous. Other glands enlarge, and frequently we find all the glands on one or on both sides of the neck sharing in the process. This whole series of events is explained by what we know of the behaviour of the tubercle bacillus. By some such channel as I have mentioned the bacillus enters; it is taken up in the lymph streams, and is arrested by the first lymphatic gland it meets. In such cases too much importance cannot be attributed to the functions of the lymphatic glands. They act as defensive outposts, as filters to free the lymph of infective and deleterious matters which it may contain, but in doing so they themselves suffer. In process of time the bacillus grows within them, multiplies, and gives rise to the formation of true tubercle. These tubercles become yellow in the centre, they coalesce, and in process of time form a caseous mass. At this period one of three things may happen—in other words, the gland may follow one of the proverbial “three courses.” First, it may get well, though this is not a frequent result. Secondly, it may suppurate,^a make its way to the surface, and discharge its contents, and this may end in cure. Or, thirdly, it may extend, infecting gland after gland. Even here, too, nature may accomplish a cure by a slow process of successive suppurations, which may eventually eliminate the disease. But should nature fail to do so, the last gland between the bacilli and the general circulation may become infected, the last outwork of

^a This suppuration is not a necessary result of caseation, but is probably due to the entrance of some form of micrococcus by the same or some other channel as that by which the bacillus entered.

defence may be carried, and then the whole system is exposed to general infection, and a more or less acute general tuberculosis results. But what is to determine which of these three courses shall be followed? It seems to depend on one or other of two factors—firstly, on the number of the bacilli which have gained access to the gland; secondly on the constitution of the patient. Koch has shown that it is of the greatest significance whether the infection has been produced by a few bacilli or a large number. In his inoculation experiments, he found that a large number of bacilli, after first producing a diffuse caseous infiltration, both at the site of injection and in the neighbouring glands, gave rise rapidly to general tuberculosis. If the number of bacilli introduced were smaller, the length of time which preceded general infection became longer; and when the bacilli were few, this period might be very long, or in some cases generalisation might not occur at all. In spontaneous tubercular infection in man the dose is usually small, though sometimes it is often repeated; and hence it is that in tuberculosis of the glands in the neck general infection of the system most frequently does not occur. The constitutional condition of the patient plays a part only second to the strength of the dose received. I have already alluded to the fact, recognised by all, that a certain state of the system—a certain constitutional susceptibility—is necessary in order that an individual may contract tubercular disease; that is, that every person does not offer a suitable soil for the growth of the bacillus. What is equally true is that persons may possess this vulnerability in different degrees, and, moreover, that the same person does not afford at all times the same suitability of soil. Clinical experience has taught us this over and over again, and upon these axioms are based all our constitutional

methods of treatment, the importance of which in every case cannot be over-estimated. In every case, whether we adopt surgical measures or not, we should aim at so improving the health of the patient by those means, which it is not within the scope of this paper to discuss, that to the best of our ability we shall put him into a condition to contest successfully with his unseen foes.

Taking, now, these two factors, we see that even when a gland has become infected we may hope for spontaneous resolution, provided that the infecting dose has been small, and provided that the patient's constitution has so improved that the gland tissue is healthy enough to cope with the bacillus. Now, what do we observe in such a case? The bacilli gradually disappear from the caseous mass, and may not be finally found at all, and the broken-down tissue may be absorbed, or it may calcify, and recovery ensue. This is, unfortunately, a rare occurrence. But supposing these factors are not sufficiently strong to bring about such a desirable end, the patient may eliminate the disease by a process of suppuration. The caseous masses in the gland—and they are usually multiple—begin to show evidence in the centre of suppuration. This may go on to a considerable extent before any external symptoms of suppuration appear. So that because a gland is hard and movable, and is not tender to touch, we cannot assume that that gland does not contain many central abscesses of small size. Gradually these abscesses coalesce; the gland becomes tender; it enlarges more and more; inflammation extends to its capsule and to the neighbouring parts, and soon adhesions form. By slow degrees the skin over it becomes involved; it becomes firmly adherent; it thins; the abscess opens and discharges, and a sinus is left, which may, and generally does, keep open for weeks or

months, discharging a thin pus with cheesy matter contained in it; and when it heals it leaves behind it an ugly and disfiguring and puckered scar. But, even so, the patient is well quit of his disease. More frequently, however, the bacillus has made its way into neighbouring glands. One by one these enlarge, and the same slow process of suppuration begins; another sinus forms through unhealthy purplish skin, and another scar is left; and the cycle is repeated till the whole neck is seamed and unsightly. Is not this a true picture of the disease, and one with which we are too commonly familiar? If more were needed to paint it in its true colours, let me give it in the eloquent words of Dr. Clifford Allbutt:—"That the ugly finger of scrofula should be laid chiefly upon children, young men, and maidens, has this pathos in it, that it disfigures them at the spring-time of life—at that time when hope and promise make all life precious, and all death seems the loss of untold treasure; when beauty and gaiety have their fleeting day, and for the loss of them the world is poorer."

But even while this local process of decay is going on the general system is not safe from its ravages. As long as these caseous masses of tubercle exist in the body, so long must we bear in mind that the danger of generalisation is possible. But even if we were sure that by repeated and prolonged suppurations the danger of extension were removed and the bacilli expelled, the scarring of the neck is not the least consequence which may follow. Remember that this disease would never have originated but for a peculiar constitutional susceptibility. Will that susceptibility be diminished by months or years of suffering? Will it not rather be enormously increased? During this period "septic matters are absorbed into the blood, recurrent and variable hectic dissipation the

appetite, flesh, and strength, so that the patient finds himself at the end of it all, if not unsound in his internal organs, at any rate a far worse man than he would have been had this trial been spared him."^a Let him become again exposed to tubercular infection, let him breathe impure air impregnated with tubercular poison, and who shall say that he will escape with healthy lungs? It is believed by some that in subjects predisposed to scrofula the involvement of the glands in youth affords them some sort of protection against phthisis subsequently. But this view cannot be upheld. Only the other day a girl came into hospital with extensive disease of both lungs, and her neck was seamed with old scrofulous scars. The worst case of tuberculous glands in the neck I ever saw was in a girl who died of phthisis.

Such, then, being the nature of these so-called scrofulous glands, and such the consequences which we have to face, I think I am justified in asserting that the time has come when the treatment of this disease, except in its earliest stage perhaps, should pass from the domain of the physician, and should be entrusted to the surgeon. In the earlier stage, while still the diagnosis remains uncertain, the treatment is one of expectancy, tempered by constitutional measures. But when once the diagnosis is assured, and there is no evidence that resolution is likely to take place, bearing in mind the nature of the disease we have to deal with, and the consequences which may follow from waiting too long, I am strongly convinced that the surgeon's art should intervene to assist Nature, and to do that quickly which unassisted she would do if she could, but often fails in accomplishing, or only succeeds when her victory has cost her dear. When as yet the poison has infected but one or two

^a Clifford Allbutt. *Op. cit.* P. 12.

glands, we have good grounds to hope that by their removal we may eliminate from the system every focus of infection. Every case is not suitable for the same method of treatment, and in some cases we have little choice left to us as to what method we shall adopt. Of all the various surgical methods at different times suggested, there are three which I shall specially refer to as being the best. Each one is applicable to a different class of cases, and, although they have been applied indiscriminately by their special advocates, I think there are well-marked lines which should divide those cases in which a special method is applicable from those in which it is not. These three methods are—(1) scooping, (2) cautery puncture, and (3) excision.

Of the first method—scooping—I need say but little, as the subject has been very fully and ably discussed in a lecture by Mr. Teale, which was published last year.^a I shall merely quote a few of his conclusions, with which I entirely agree. 1. "That surgery can secure the healing in a few weeks of gland cavities and sinuses, even though they have existed for years, and of wounds resulting from the removal of caseous and suppurating glands." 2. "That in dealing with sinuses, gland abscesses, and decayed or semi-decayed lymphatic glands, the action of the surgeon must be vigorous and thorough." 7. "That in dealing with a sinus the channel should be enlarged by the knife or by Bigelow's dilator, and the whole of its granulating surface should be scraped off. Where a sinus is shallow and covered by thin blue skin this imperfect covering should be rasped away by the scraper, and any cutaneous overhanging edges should be trimmed off by the scissors." 8. "That, in dealing with a sinus or an abscess, the surgeon should

^a On Scrofulous Neck, by T. Clifford Allbutt; and on Surgery of Scrofulous Glands, by T. Pridgin Teale. 1885.

not rest content until he has discovered and eradicated the gland, always remembering that, if it be not obvious, there is sure to be a small track leading through the deep fascia to the missing gland. This opening should be enlarged so as to admit the spoon of Lister's scraper." These conclusions which I have quoted explain the classes of cases to which, I think, this method is suitable, and to which I believe it should be restricted. These classes embrace cases in which sinuses exist, or in which a superficial abscess communicates through an opening in the cervical fascia with a suppurating and caseous gland beneath. It is also sometimes a good treatment to adopt when the changes going on inside a gland have given rise to inflammation of its capsule and to the formation of firm adhesions between it and its surrounding tissues. For in these cases enucleation of the entire gland is extremely difficult. I have employed this method in many cases, and my experience of it has strongly impressed me with the belief that the classes of cases I have mentioned are those to which the method should be restricted. In all of these cases the method of excision is fraught with too much difficulty to authorise us to adopt it in preference to this apparently simpler plan; but, on the other hand, it should not be extended to cases in which enucleation can be readily performed, and for this reason:—In most of these tuberculous glands the gland capsule shares in the disease, and in the scooping operation this is necessarily left behind; moreover, there may be, and there frequently are, enlarged and tuberculous glands in the neighbourhood which have not yet softened. These escape the spoon, and later on become the foci from which fresh infection starts. Of much less importance is the fact that the incision after enucleation seldom takes more days to heal than that after scooping

takes weeks. On these grounds I hold that the scooping operation should *only* be done in those cases in which excision is inapplicable.

The second method of treatment is that by cauterization. It has found its chief advocate in these countries in Mr. Treves,^a and it has also found much favour in France. Mr. Treves expresses the opinion that it is "one of the very best operative measures at the disposal of the surgeon for the cure of scrofulous glands." He thus describes it:—"In this operation I make use of a thermo-cautery point about as thick round as a No. 7 catheter. This point, having been heated to a bright-red heat, is thrust through the skin into the substance of the gland, and passed in three or four directions in the body of the tumour before it is removed. . . . If no pus or cheesy matter follows the removal of the iron, a simple zinc dressing may be applied, but if any such matters escape, then a poultice should be ordered. . . . It is more adapted for adherent than for movable glands." This method I have lately employed, and in certain cases I think it should be productive of good. Its *modus operandi* would seem to be that the intense heat destroys the tubercle bacilli and their products, and it leaves a channel for their escape externally which does not allow of extravasation into the neighbouring cellular tissue. It seems to me that in softened adherent glands it would probably be more effective than the method of scooping.

The third method of dealing in a radical manner with these tuberculous glands is by excision. It is specially suitable in those cases where the glands are not adherent. The operation is easier the harder the glands are—that is, the less advanced they are in the process of suppuration. The great advantages I claim for

^a Scrofula and its Gland Diseases. P. 193. 1882.

this method are that we can in most cases entirely remove all the affected parts, including the capsule of the gland. The wound is a clean incision, mostly through healthy skin, and therefore, with strict antiseptis, heals by first intention, and leaves a scar which in process of time becomes white and often unnoticeable. When the glands are non-adherent, they can be enucleated with great ease. On the 8th of this month, through an incision an inch and three-quarters long, I removed eight glands, three as large as walnuts, and all of them caseous. Seven days after, the wound was healed, and the scar even then scarcely noticeable. But when the tubercular process has been allowed to run its course for a long time, and adhesions have formed, then the real difficulty is experienced, and often a tedious dissection is required before the diseased glands can be removed. And here let me say that this difficulty is often of our own making. We meet a case in which two or three glands in the neck are swollen and hard. A careful inquiry into the history of the case will satisfy us that the glands are scrofulous. But instead of dealing with them at once, we allow the disease to spread, more glands to become infected, and adhesions to form, whilst we wait. Wait for what? To try the effects of this or that external application, painting with iodine, or a host of other remedies, which experience should have taught us in that stage are no remedies at all. Sometimes the delay is due to our unwillingness to make a cut which may leave a scar, and then nature takes the matter in hand—the gland softens, an abscess forms, and the end of it is that a far worse scar is left than would have resulted from timely intervention. Besides, all this time other glands are preparing to go through the same process. Such things ought not to be. What I maintain is, that the earlier we

attack these glands the less we shall have to do, and the smaller and more insignificant the scar will be; and, what is more important still, the focus of the disease may be got rid of through quite a small opening. Often, however, we have at least this satisfaction, that we cannot blame ourselves if the disease has become extensive. It may be so when first we see the patient, but even in the most extensive cases of scrofulous glands we may hope for a cure by surgical art. I have notes of fifteen patients from whom I excised tuberculous glands. Two were operated on twice and two three times, making in all twenty-one operations. Some of these were comparatively simple cases, two or three glands only requiring removal. Some of the cases were most extensive, and of these three present points of special interest.

The first of these cases was that of a boy aged seventeen, whose neck was enormously swollen on the right side, owing to the enlargement of the glandulæ concatenatæ and submaxillary glands. I operated on him twice. The first time was on June 12th, 1883. A curved incision, about four inches long, was made behind the sterno-mastoid muscle, and all the enlarged glands removed. They were all caseous, several presenting centres of suppuration in the middle of the cheesy masses. I mention his case because he was attacked with erysipelas three days after operation. The erysipelas began low down on his back, spread gradually over his whole body, with the exception of the parts underneath the antiseptic dressings. This part remained healthy throughout, and the wound healed well. Some months after I removed the submaxillary glands. A similar mishap occurred in a second case, but both made perfect recoveries.

The second case I wish to mention was that of a married woman, aged twenty-three, who presented a long chain of glands

extending from behind the left ear to the clavicle. They were movable and hard in the upper two-thirds, but below they were soft and suppurating. I excised them all at one operation on April 3rd, 1884. The abscess cavity was scraped out, and a drainage-tube inserted through a counter-opening close to the clavicle, the wound being itself completely closed. The dressings were not disturbed till the seventh day, when the wound was quite healed. The drainage-tube was removed, and the sinus was completely healed on the fifteenth day. She left hospital three days later. I saw her again a few months ago, a year and three-quarters after operation. There were no more enlarged glands, and the incision was reduced to a fine white pliant scar.

The last case to which I shall refer is that of a girl aged eighteen, who was studying to become a schoolmistress, but was rejected on the ground of health, as the left side of her neck was bulged out with a large number of swollen glands. She was greatly disfigured. I operated on the 29th of April, 1884. The incision reached from the mastoid process to within an inch of the outer third of the clavicle. All the superficial and deep glands were involved, those lying underneath the sterno-mastoid muscle being very difficult to enucleate. I removed in all forty-eight glands at this operation. She made a slow recovery, but a good one. I saw her the other day, nearly two years after operation. There is a long scar, but it is soft, white, and flexible; and she can so arrange her hair as to make it almost imperceptible. She is in excellent health, and has had no return of the disease—in fact, as we might expect, it is not possible to feel any glands in that side of the neck. I mention this case especially as showing that excision can be safely done, even in such an extreme case.

Before concluding this paper, there is an objection which I should like to answer—an objection which I have heard raised, especially in regard to these extensive operations; and it is this—Is it not a very serious matter to interfere to any great extent with the lymphatic system in the neck? That objection is entirely theoretical; I have not seen in any of the cases on which I have operated any evil consequence referable to this cause. Besides, we must bear in mind that caseous glands are, to all intents and purposes, functionally destroyed. If there is any reason in the objection at all, the blame must be left at the door, in the first instance, of the tubercular affection; and, secondly, at the door of those, be they doctors or patients, who allow the disease to progress to such an extent—a disease, which, I trust, I have shown can be arrested in its early stages by the timely and judicious intervention of surgical art.









