Observations

ON

THE ETIOLOGY AND TREATMENT OF
SEBORRHOEIC ERUPTIONS.

A Preliminary Report

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THE widespread distribution and intractability of seborrhoeic eruptions among troops on active service will sufficiently excuse the early publication of some new conceptions as to their nature and treatment.

The condition is very prevalent, and Major H. MacCormac, R.A.M.C., was fully justified in his assertion at a recent lecture "that there is practically no skin disease in the army that is not complicated by seborrhoea." The manifestations are protean, and include such apparently widely differing eruptions as a crusted and weeping eczema of the scalp, a dysidrotic eczema or cheiro-pompholyx of the fingers, and a patch of lichenification on the calf of the leg.

The appearances vary according to the anatomical situations and chronicity of the lesions, and the degree of secondary microbial infection; the dermatological textbooks which are based entirely on the records of ordinary civil experience afford only a moderate degree of assistance in their elucidation. Every medical officer on active service will have met with the military varieties of the disease, which for convenience may be classified in three groups:

1. Those which arise on the scalp, face, ears, and neck.
2. Those which are found on the trunk below the neck and on the extremities, and which are very commonly associated with one or both of the two exceedingly common parasitic diseases—scabies and pediculosis. The regions then involved correspond very closely with the sites most commonly affected by the acarus and pediculus, and will not be separately dealt with in this communication.¹
3. Those which arise on the trunk and limbs, and have no demonstrable association with either scabies or pediculosis. They are mainly follicular, and not generally acute in type, and form the large bulk of cases which in civilian practice are grouped together under the term of "eczema." Want of space forbids a detailed discussion of this group also.

CLINICAL APPEARANCES OF SEBORRHOEIC ECZEMA OF THE
HEAD AND NECK.

In the most acute stage the primary lesions are groups of small vesicles on an erythematous base, but they are seldom seen, as the associated pruritus leads almost immediately to their forcible rupture by scratching. The serum exuded becomes rapidly infected by the ordinary pyogenic cocci and a septic crust results. The appearance at this stage is not unlike that seen in the impetigo contagiosa of hospital out-patient departments, and is doubtless responsible for much confusion both as regards nomenclature and treatment. In seborrhoeic dermatitis the crust covers a patch of "eczema" easily irritated by strong applications, whereas in impetigo contagiosa there is no such underlying condition, and the local infection rapidly clears up with the destruction of its cause—a streptococcus—and does not tend to relapse.

In the acute condition, as it affects the head and neck, we find crusting and weeping patches of eczema on the scalp, eyebrows, and beard regions. On the ears, where the skin is relatively thin, exfoliation and bleeding sometimes result, and there is frequently an associated eczema of the external auditory meatus. Deep and intractable septic fissures commonly persist in the post-aural folds and tax the skill and patience of the physician to the utmost.

In about 85 per cent. of these cases there is associated seborrhoeic dermatitis of the anterior and posterior mid-thoracic regions, while a common and troublesome sequela

is the development of constantly recurring boils, especially on the neck just below the scalp margin.

In a very large number of our cases we have noted in synchronism with the above-described skin lesions an associated nasal and nasopharyngeal catarrh, to which we shall presently refer.

The stage of subsidence is characterized by desiccation of the lesions and separation of the crusts. Its duration is variable and depends largely on the scientific application of suitable remedies. Inspection of the scalp in the acute stage commonly reveals congestion and erythema of the epidermis. This persists on the scalp and eyebrows for a considerable time after all other traces of the affection have subsided. The patient who has once had an attack is very liable to relapse. In this respect the clinical history resembles the civilian prototype of the disease, and it was this consideration that first led us to the conception of an underlying constitutional dyscrasia, which might be responsible not only for the skin eruptions, but also for the not uncommonly associated nasal and nasopharyngeal catarrh.

In this assumption we are supported by an eminent French dermatologist, M. J. Darier,² who has correlated the tendency to seborrhoeic eruptions with a peculiar type of skin, to which he has given the name "keroze." Its clinical stigmata are briefly:

1. A brownish or dirty yellowish complexion.
2. Wide-mouthed and prominent pilosebaceous follicles, with hyperkeratosis of their orifices.
3. A slight thickening of the skin, with diffuse hypertrophy of the horny layer, and a tendency to fine desquamation.

It is on this substratum or *terrain* that seborrhoeic manifestations most commonly appear.

In the first decade of life there may be pityriasis sicca of the scalp; towards puberty and after, seborrhoea oleosa; from the fifteenth to twenty-fifth years we frequently find acne vulgaris, rosacea, and the so-called eczematides, while seborrhoeic alopecia takes its origin between the twenty-fifth and thirtieth years. The areas of the body affected are both diffuse and regional. The middle area of the face, the medio-thoracic regions, the flexures of the limbs, and the pubic and internatal regions, are peculiarly susceptible.

The etiological factors, according to Darier, are two: Sexual development, and erroneous diet, in which excessive carbohydrates and stimulants, faulty mastication, constipation, etc., all play a part. Darier's conception has found many supporters. In his view, the bacteria described as specific by Sabouraud and Unna (and always met with abundantly in seborrhoeic lesions) owe their activity and pathological effects mainly to the soil on which they are growing, which in its turn is dependent on the underlying constitutional state of the patient.

We are entirely in sympathy with this opinion, and we believe that the frequent relapses suffered by patients with such eruptions are thus to be explained. It is true that local treatment alone will remove the seborrhoeic eruptions, but the same is the case with psoriasis, the constitutional basis of which is now admitted by nearly all dermatologists.

A careful study of many hundreds of cases of seborrhoeic eczema has convinced us that the main factor in their production is a metabolic dyscrasia, or error in biological assimilation, while external irritants such as parasites, mustard gas, and bacteria, are the excitants, and play the part of spark to powder.

The frequent association of nasal and nasopharyngeal catarrh with the outbreak on the skin suggested a close relation between them; and one of our colleagues, Captain C. Jones-Phillipson, a specialist and writer on diseases of the upper respiratory tract, very kindly undertook the examination of a large number of cases submitted to him. A full report of his findings will, it is hoped, be published by himself or in collaboration with us, at some future date. Suffice it here to say that, in 59 out of 93 cases examined, posterior rhinoscopy revealed a yellowish mucopurulent secretion. The discharge varied in amount. In some cases the vault of the nasopharynx was coated, as if painted over with a scum-like mucus; in others, again, it was in amount sufficient to be expressed into the pharynx on exciting a forcible elevation of the soft palate. In a further 24 of these cases conditions of the nose and nasopharynx were demonstrated sufficient to warrant the

supposition that a similar state of sepsis as in the 59 already recorded had previously existed, and recurred from time to time.

Simultaneously with his examinations some bacteriological experiments were carried out, with the result that a streptococcus of the *faecalis* group (in addition to numerous staphylococci) was recovered from both the nasal mucosa and the eruptions on the skin in many such patients.

Darier does not lay stress on the nasopharyngeal catarrh so commonly associated with seborrhoeic eczema, but we were greatly assisted in our thesis by a perusal of some clinical studies in children by Czerny.³ His findings may be summarized under four headings:

1. Certain children present a congenital susceptibility to catarrh—that is, to bacterial infection of their skin and mucous membranes, as well as to certain nervous disturbances. To this tendency he gives the name of "exudative diathesis."

2. The manifestations of this diathesis are provoked by excess of diet, and its subjects are particularly intolerant of carbohydrates and fats.

3. As a result of the repeated acute infections of the mucous membranes and skin, each of which is usually accompanied by an abnormally high temperature, secondary changes take place in the lymphoid tissues of the body, giving rise to adenoid vegetations, parenchymatous tonsillitis, and adenitis, especially localized to the cervical glands.

4. The condition known as the status lymphaticus is the extreme or end form of the exudative diathesis.

In England, Dr. H. C. Cameron⁴ is a strong supporter of Czerny's views. He adduces an important observation of his own, and points out that children of the exudative diathesis (or, as he prefers to call it, the status catarrhalis) are subject to an extreme "wateriness" of their tissues which gives them a fictitious appearance of plumpness. Their really wasted condition is revealed in three or four days by exclusion or reduction of their carbohydrate dietary, and there is a coincident loss of weight. A return to plumpness is ensured by a resumption of the bread and sugar, which in pre-war days were the staple ingredients of most meals in certain classes of society.

It will be noted that both Czerny and Cameron lay considerable emphasis on the etiological importance of a carbohydrate dietary in the production or aggravation of the exudative diathesis. We do not believe that an excess of carbohydrates plays the main part in the production of seborrhoeic eczema, but we are convinced that excess in this respect has a contributory and possibly a deciding influence in the production of the acute manifestations. Many of our patients have admitted excess of carbohydrates—several an almost exclusive dietary of sweet biscuits, jam, and chocolate prior to the onset of the eruptions—but the metabolic problem will be discussed as a whole subsequently.

TYPES OF SEBORRHOEIC INDIVIDUALS.

There are in our collective experience two types mainly of seborrhoeic individuals:

1. Those congenitally predisposed, or who have acquired the tendency in infancy. These patients give a history of operations for adenoids, glands in the neck, frequent attacks of bronchitis, eczema, etc., in their childhood. They have thus in their youth conformed in all respects to the type of individual described by Czerny as exhibiting the "exudative diathesis."

2. Those in whom the state has suddenly appeared as the result of active service and its inevitable conditions.

1. Patients who conform to the first type, as may have been supposed, are more difficult to treat, and far more likely to relapse after apparent cure, than individuals in the second group.

The subject is usually a young adult with the adenoid facies, prominent and often carious teeth, high-arched palate, enlarged tonsils, and the victim of constantly recurring colds and sore throat, bronchitis, asthma, etc., with which have been associated for many years or "as long as he can remember," acute outbreaks of eczema of the scalp, ears, face, trunk, and extremities, each attack of which appears to have become more obstinate and difficult to get rid of than the last.

2. The second type of affected individual develops symptoms for the first time on active service. An inquiry into his past history does not usually elicit a story of frequent colds or catarrhal attacks. The configuration of the upper respiratory tract is apparently normal, although there is often an associated subacute nasopharyngitis of the

type noted as characteristic by Captain Jones-Phillipson. Prognosis is better in this type of case, and relapse less likely to occur.

THE URINE OF SEBORRHOEIC PATIENTS.

In our experience, there is one feature which is common to both types of seborrhoeics, and that is a pronounced and remarkably constant hyperacidity of the urine. It was this association that first led one of us (H. W. B.) to the assumption that the seborrhoeic state is really a manifestation of acidosis. It has been proved by us again and again that as soon as the urine becomes amphoteric, or is made alkaline by the administration of drugs by the mouth, the acute stage of a seborrhoeic eruption comes to an end, and the patient rapidly improves in health, and that, conversely, the urine is invariably acid at the onset of a relapse. The chemical examination of the urine, it is true, has never yet revealed the presence of diacetic or beta-oxybutyric acids, nor is it suggested that the degree of acidosis present at all resembles that commonly met with in diabetes, but there are certain resemblances in the clinical features of the two diseases. The striking susceptibility in both to secondary infections, such as carbuncles and boils, the congested appearance of the extremities, the hyperacidity of the urine, and the reaction to treatment by alkalis, are worthy at least of cursory examination.

The chemical investigation of the condition of relative acidosis in such cases as we have delineated is still incomplete; but one test suggested by A. W. Sellards,⁵ and considered by him to be the most delicate, was applied to a large number of cases. This test consists in determining the "alkaline tolerance." The meaning of this phrase may be explained as follows:

The normal alkalinity of the blood depends on the existence in it of certain fixed bases, chiefly carbonates and phosphates; these are the so-called "buffer" salts. They combine with and partially neutralize acids; without their presence acid by-products of metabolism—for example, CO₂ and lactic acid—would render the reaction of the blood so acid as to be physiologically intolerable. In a normal person with a sufficiency of these fixed bases in his blood and tissues, the intake of any appreciable quantity of alkali—for example, sodium bicarbonate—is followed by its immediate excretion in the urine. If, however, the fixed bases are deficient, additional alkali taken, instead of being excreted, is stored in the tissues and the urine remains acid.

Sellards has shown that 5 grams (about 75 grains) of sodium bicarbonate given by the mouth is practically the upper limit of normal tolerance, this amount being almost invariably sufficient to change the reaction of the urine of a normal person from acid to alkaline. In cases of acidosis very much larger quantities must be given before the reaction of the urine changes.

THE ALKALINE TOLERANCE OF SEBORRHOEIC PATIENTS.

When the possibility of the existence of acidosis in seborrhoeic patients first occurred to us we immediately began to test the therapeutic effects of giving them an alkaline mixture thrice daily an hour or half an hour before meals. Our original mixture consisted of sodium citrate gr. xxx, sodium bicarbonate, potassium carbonate āā gr. xv, compound infusion of gentian 1 oz.

The beneficial result of this treatment was immediately apparent, but it was observed that many patients did not pass alkaline urine until after they had taken the medicine for many days or even weeks, and in some the urine remained persistently acid. We then decided to employ a mixture modelled on a formula suggested by Dr. Langdon Brown for the control of acidosis in diabetes—namely, sodium bicarbonate 3 j, potassium citrate gr. xxx, calcium lactate gr. v, magnesium carbonate gr. v, chloroform water 1 oz.; this preparation has now been given in hundreds of cases, and careful observations have been made on the reaction of the urine from day to day. As a result of its use two fundamental facts have been established:

1. That the majority of patients with seborrhoeic manifestations show a markedly increased alkaline tolerance, many of them to an astonishing degree.

2. That in nearly all cases, once the urine has been rendered alkaline, all active inflammatory processes cease, and the eruption rapidly clears.

As examples of unusual alkaline tolerance the following cases may be quoted:

CASE I.

This patient took 4 oz. of above mixture per diem for three days: urine still strongly acid; then 6 oz. per diem for twelve days: urine still acid; then 9 oz. per diem for two days: urine still acid; after 9 oz. per diem for two more days urine became alkaline—that is to say, this patient consumed during a period of nineteen days 15 oz. of sodium bicarbonate and 7½ oz. of potassium citrate without passing an alkaline urine, and it was not until he was taking 9 drachms of sodium bicarbonate and 4½ drachms of potassium citrate per diem that an alkaline urine was obtained.

CASE II.

This patient took 3 oz. of the mixture daily for twenty-two days: urine still acid at the end of this time. He then took 4½ oz. per diem for three days and 9 oz. per diem for two days: urine still acid. After taking 9 oz. per diem for five days the urine became alkaline.

CASE III.

This patient consumed 6 oz. of the mixture daily for twenty-one days, and his urine was still strongly acid at the end of this time.

Many other cases showing a similar alkaline tolerance could be given. Such extreme instances are, however, exceptional, but the very great majority of patients with active seborrheic lesions show a tolerance far greater than that observed in normal persons in whom a single dose of the mixture is sufficient to render the urine alkaline.

Therapeutic Effect of Alkalis in Seborrheic Patients.

After studying the effect of giving alkalis in some three hundred cases with seborrheic manifestations, we have satisfied ourselves that their action may be described as specific. As remarked above, the tolerance varies in different persons, so that the quantity of alkali required to produce the desired effect must be determined by repeated examination of the urine.

In the great majority of cases the activity of the inflammatory processes ceases as soon as the urine is rendered virtually alkaline.

So constant is this phenomenon that it is almost always possible to predict with confidence that, should a patient under alkaline treatment present new or active lesions (for example, eczema or boils), his urine will be found to be still acid; an increased quantity of alkali must therefore be given until the reaction of the urine changes. As might be expected, the lower the alkaline tolerance the more rapid is the reaction to treatment, and the less the tendency to relapse.

The most convincing clinical proof of the influence of alkalis in these cases was afforded by patients in whom, after an initial cure, active seborrheic manifestations recurred when the alkaline mixture was discontinued, only to disappear again, often without any local application, when the alkaline treatment was resumed.

The following is a brief extract from the clinical notes of three such patients:

CASE IV.

J. A.; admitted February 23rd, 1918, with severe localized patches of moist seborrheic eczema on the right cheek and stains of old lesions on the right eyebrow. The urine was intensely acid. He was treated with the sodium citrate mixture, 2 oz. thrice daily. On the following day the patches on the face were drying up; the urine was still acid. On February 28th there was marked improvement, and the urine was alkaline. The treatment was continued until March 7th, when it was stopped. On March 18th there was a persistent patch on the chin, the left eyebrow was impetiginized, and the urine was again acid. The mixture was resumed as above. Two days later the lesions had much improved; the urine was alkaline and remained so. On March 22nd the chin was slowly improving and the cheek was healed. By the end of the month all lesions were quite healed.

Note that improvement dates from resumption of medicine. The local treatment was the same throughout—namely, calamine liniment.

CASE V.

F. A.; admitted January 19th, 1918, with symptoms of a very seborrheic type: acute weeping seborrheic eczema of face, typical nasopharyngitis, boils on back. Previous similar attack in France in 1916. Had had slight attacks in civil life also. The urine was acid. He was treated with sodium citrate mixture, 1 oz. thrice daily. On January 24th some improvement was noted; the urine was less acid. On the 26th the dose was increased to 2 oz. thrice daily; his condition was much improved; urine still less acid. On the 29th he continued to improve; urine slightly alkaline. On this date all treatment was omitted.

January 31st. First relapse. Sodium citrate mixture, 2 oz. thrice daily, resumed from this date. On February 6th the condition was again quiescent; urine neutral. Medicine again omitted.

February 16th. Second relapse, now acute; urine very strongly acid. Mixture resumed, 2 oz. thrice daily. On February 22nd his whole appearance was changed, and on the following day he was quite free of all lesions; urine alkaline. The treatment was continued, and on March 1st his condition was very satisfactory; urine amphoteric.

Note that two well-marked relapses followed omission of the sodium citrate mixture. The local treatment throughout was by calamine liniment.

The following striking case was specially examined for the purposes of this report, and is under treatment at the time of writing.

CASE VI.

A. O.; admitted June 6th, 1918, with active scattered impetigo on chin, root of nose, and both ears. Urine very acid. The following day treatment by sodium citrate mixture, 1 oz. thrice daily, was commenced. On June 9th his condition remained the same; urine still acid. The dose of the mixture was then doubled, and on June 11th the lesions on face were much improved; urine alkaline. The medicine was now omitted. On June 13th there were fresh acute lesions on the left eyebrow; urine again acid. Sodium citrate mixture, 1 oz. thrice daily, resumed. June 15th: Left eyebrow clearing; urine alkaline. Medicine again omitted. June 17th: Seborrheic eczema of right external auditory meatus; urine again acid. Treatment by sodium citrate mixture, 2 oz. thrice daily, was resumed and continued without local treatment, and on June 22nd all lesions were completely healed and the urine alkaline.

Note that the relapses in this case followed the omission of the mixture with an almost mechanical precision. The local treatment throughout was by calamine liniment.

In two cases of acute seborrhea of the head and face no local treatment whatever was given, neither lotion, powder, ointment nor fomentation from the day of admission to the day of discharge. The affected areas cleared up completely under the influence of the above described alkaline mixture—in the first case in one week, in the other in ten days from the date of commencement of treatment.

LOCAL TREATMENT.

It is not hereby contended that administration of alkalis abolishes the necessity for local applications, but it is claimed that this method of treatment hastens in remarkable fashion the clearing of the various eruptions dependent on the seborrheic state, and, provided that the patient be then given an adequate quantity of alkaline salts per diem, relapses will not occur.

The best local applications are oily alkaline suspensions of calamine—for example:

B. Calamine praep. ...	...	...	...	...	...	℥ss. xxx
Aqua calcis ...	...	...	...	...	...	3 ij
Ol. arachis, vel ol. olivae ...	...	...	...	ad	...	3 j

Most seborrheic lesions are amenable to this application, which should be renewed not less than twice daily, on lint. When oil is difficult to obtain in sufficient quantity, we have found sodium bicarbonate in 2 per cent. solution in water very useful. It must be applied thrice daily at least, as a "soak" on lint under jaconet, and should be changed once during the night if the lesions are very acute.

At a later stage when erythema and congestion with irritability of the skin surface persist, the part should be covered with lint or linen smeared with Lassar's paste. All hairy parts, with the exception of the eyebrows and lashes, should be close cropped or shaved.

We consider that the curative value of local alkaline treatment rests on the same fundamental principle as the administration of alkalis by the mouth. Practically all pathogenic bacteria prefer slightly acid media. One and the same inoculation from a seborrheic eyebrow on two agar slopes of different reactions afforded some exceedingly interesting and significant results, and opened up a large field for speculation. The normal slightly acid medium produced an abundant growth of *Staphylococcus aureus* and *albus*, with numerous small clear colonies of streptococci. On the other slope, the reaction of which was just alkaline to litmus, there were found no streptococci at all, and the comparatively few colonies of staphylococci that grew were of the *albus* variety only, and markedly pleomorphic and degenerative in type. Much work on these lines remains to be done.

Diet.

We have purposely avoided a prolonged examination of the theoretical considerations that underlie the mechanism of acidosis, but desire to raise one question as to its mode of production in patients with the status *seborrhoeicus*.

In his very admirable summary of the normal mechanism whereby a slightly alkaline reaction of the blood is continuously maintained, Sellards upholds three factors as of primary importance:

1. Intake of fixed bases in the food.
2. Elimination (a) of carbon dioxide by the lungs, (b) of acid by the kidney.
3. Neutralization of acid in the body by ammonia.

Now the fixed bases in the food are derived mainly from fresh vegetables and fruit, and a deficiency of these is well known to lead to a decrease of the alkaline salts, particularly the carbonates, and the mono-acid dibasic phosphates of sodium, calcium, and magnesium—the so-called buffer salts—in the blood and urine.

The army ration, excellent in all other respects, is unavoidably deficient in just those fresh materials that are most important in maintaining the requisite equilibrium between acid and basic radicals.

We have eliminated scurvy—a serious factor in the campaigns of previous centuries—by the judicious selection of dietary and by our advances in the preservation of protein substances.

At this juncture it would be altogether premature to lay it down as an axiom that the modern army ration is responsible for the *seborrhoeic* diathesis, but we will go so far as to suggest that it is probably contributory, directly or indirectly, in its production and aggravation. The biological influence of carbohydrates in the production of the catarrhal state, on which Czerny and Cameron lay great stress, is, in our opinion, an accessory factor. We may here cite the case of one of our colleagues—himself a dermatologist—with a remarkably *seborrhoeic* diathesis. He can produce at will (and has twice actually done so experimentally) an acute typical *seborrhoea* of the head and face by rapid ingestion of an excessive quantity of sugar.

It may be assumed that if the digestion and other functions of the body proceed normally, carbohydrate, if taken in moderate quantity, is completely oxidized to CO₂ and water, but if for any reason oxidation is interfered with, intermediate acid substances (of stronger acidity than CO₂) remain incompletely oxidized, and, in the absence of a sufficiency of neutralizing buffer salts, tend towards a reduced alkalinity of the blood and tissue fluids. Similarly, according to Sellards and other writers, protein, particularly meat, is one of the chief sources of acid substances during its metabolism. This being granted, an excess of meat (which is supplied very generously to our armies) will itself tend to the production of acidosis, and will thus reinforce the action of the carbohydrate factor in this direction.

A condition of relative acidosis is produced on these assumptions by two factors:

1. A deficiency of the "buffer salts" that counteract the production of acid.
2. An increased production of acid substances, probably owing to faulty metabolism of excessive carbohydrate and protein substances in the diet.

CONCLUSIONS.

As a result of our investigations we may conclude:

1. That there is a constitutional state, which may exist from infancy or may appear *de novo* in adults, and which may be termed the status *catarrhalis* or *exudativa* (Czerny). Where this condition exists the skin and mucous membranes show an abnormal susceptibility, not only to various bacterial infections, but also to mechanical and chemical irritation.
2. Persons in whom the status *catarrhalis* is present, either permanently or temporarily, are liable to develop the multitudinous eruptions which have been variously termed *seborrhoeic* eczema or dermatitis, true eczema, pustules, boils, and the wrongly termed "impetigo"—really an impetiginized *seborrhoeic* eczema. These manifestations, in whole or part, are intimately dependent or asso-

ciated with the existence of an underlying dyscrasia, to which we have ventured to give the name of

The Status Seborrhoeicus.

3. There is considerable clinical and therapeutic evidence to suggest that all patients with the status *seborrhoeicus* are suffering from a relative acidosis. We are of opinion that this condition may have resulted from a diminution of the intake in their food of the fixed bases—the mono- and di-sodium phosphates, and the carbonates, which are normally present in fresh fruits and vegetables, and which are largely responsible for the maintenance of an exact alkaline-acid equilibrium in the blood and tissue fluids.

4. As a practical outcome of these considerations there is abundant clinical evidence of the value of alkalis in the treatment of *seborrhoeic* eczema.

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A Collective Investigation

OF

TEN THOUSAND RECRUITS WITH DOUBTFUL HEART CONDITIONS.

Conducted at the National Hospital for Diseases of the Heart by C. CHAPMAN GIBBES, R. O. MOON, S. RUSSELL WELLS, P. HAMIL, F. W. PRICE, and J. STRICKLAND GOODALL.

REPORT II,*

BY

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BEFORE investigating the etiology of any particular cardiac disorder, it was considered desirable to determine the incidence, on the whole 10,000 cases, of the various diseases which have been supposed to lead to damage of the cardiac valves or myocardium. In every case inquiry was made for a history of the following ailments:

Rheumatic fever	Tonsillitis	Influenza
Chorea	Scarlet fever	Syphilis
Rheumatism	Diphtheria	Gonorrhoea
Growing pains	Pneumonia	

and also as to whether the recruit had been subjected to muscular strain or not.

Rheumatic Fever.

Since rheumatic fever, or acute rheumatism, is commonly agreed to be one of the most frequent causes of organic lesions of the heart, it was felt desirable to determine the percentage of the cases examined giving a history of this disease. It is important to define accurately what is meant by the term rheumatic fever. The word "rheumatism" is popularly used to describe a variety of affections. Rheumatoid arthritis is frequently spoken of by the laity as rheumatism. The aching pains in the joints which accompany various acute diseases such as influenza are often called rheumatic pains, as are the joint pains occurring in tonsillitis, though here some consider that there is more justification for the use of the word "rheumatic." In addition to this there are the various slighter forms of rheumatism which may differ only in degree from rheumatic fever. Some writers, following Poynton, regard chorea as a manifestation of rheumatism, and go so far as to speak of chorea as "cerebral rheumatism." We have, therefore, thought it well to confine the term "rheumatic fever" to cases in which there is a distinct history of fever, pain and swelling of the joints, and confinement to bed for several weeks. This, of course, does not exclude the possibility of some cases of gonorrhoeal rheumatism being classified as rheumatic fever, but the absence of a history of any urethral discharge and a consideration of the patient's statement usually prevented any doubt arising.

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