Clinical Observations

TROPICAL AILMENTS AS THEY ARE MET WITH IN BRITAIN.

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So widespread is our empire, so intimately connected are we with countries of different, and for the most part warmer, climates than our own, that there is scarcely a family in these islands that has not some relative who occasionally returns to his native place from abroad. In many instances the tropical resident is sent home on sick leave or to recoup after a long spell in a trying climate. He may be suffering from actual illness on landing, but it is not uncommon for a tropical resident whilst at home to develop some latent illness, such as malaria, blackwater fever, liver ailments, or dysentery. It comes about, therefore, that medical men—in what some Londoners call the "very depths of the country," in the most remote Highland glen, or in the wilds of Galway—may find themselves called upon to treat unfamiliar tropical ailments with the very names of which they may be unacquainted. A short summary of some of the more common tropical ailments may therefore be useful to medical men in practice in Britain.

MALARIA.

Curiously enough in regard to the diagnosis of malarial affections, the danger is not so much that they may go unrecognized, but that any and every ailment attended by an increase of temperature, occurring in tropical residents sojourning at home, is apt to be attributed to malaria. It is only within the last few years that medical men engaged in practice in the tropics have themselves come to weed out several diseases from the malarial group, for with them in the past, as with medical men at home at present, a febrile state was almost invariably considered due to malaria, or had malaria in some measure tacked on to it.

Malaria infection is determined by the presence of the malaria parasite in the blood, by periodicity of the fever, and by the effect of quinine upon the illness.

It is not given to every medical man to possess the knowledge of the technique necessary to the recognition of the malaria parasite in the blood; but the periodicity of the fever and the effect of quinine are conditions which every medical man is capable of recognizing, if he takes but ordinary time and care to thoroughly observe. At times the patient misleads his doctor, for all old tropical residents consider themselves authorities on "fever," and the medical man at home is regarded by them as ignorant of how to recognize or treat their "fever." They frequently deny having had malaria, but state they have previously had "touches" of ordinary "West Indian fever," "West Coast fever," "West African fever," "Mauritius, Indian, or Hong Kong fever," and so forth. These delusive beliefs on the part of the patient that it is not malaria, but some specially local infection, that is the cause of the febrile state, must be disregarded by the medical man—not argued about, but silently disregarded—in the knowledge that most of these so-called "touches of fever" with local names are malarial. Again, the patients' statements that they never had malaria or fever whilst abroad, even if it were true—which it generally is not—must not negative the possibility that it is malaria they are now suffering from at home, it may be for the first time; for the first severe attack of malaria may develop whilst the patient is on the way home or after he has been at home some time. The doctor must trust to his thermometer, to the effects of quinine, and to a blood examination where and when that is possible.

That a man (even a medical man) may be suffering from malaria whilst resident in the tropics, and yet be unaware of the fact, is borne out by the following occurrence. Whilst attending a patient suffering from malaria, and in whose blood I had just recognized malarial parasites, I wished to demonstrate to others the different appearance presented by healthy blood and blood infected by malaria. I thereupon pricked my own finger, and placed a smear

below the microscope. To my astonishment I found my own blood contained many parasites, and, on taking my temperature, found that it was 102° F., and I had to extend my investigations on others present before finding a malaria-free specimen. I did not know I had fever, and had I been asked would have denied that I ever suffered from malaria. This observation (made in 1892) confirmed my belief for all time as to the diagnosis of malaria by the microscope, and emphasized the fact that, all unknown to oneself, one may be suffering from malaria.

Chronic malaria is, however, the form in which the medical practitioner at home meets with cases of malaria for the most part. In such cases the condition of the spleen is usually a manifest guide in diagnosis. Given an enlarged spleen, with occasional attacks of increased temperature, however slight, in a person returned from a tropical country, malaria has to be thought of. After more than a usual amount of exercise or fatigue from any cause, after exposure to wet or cold, or when any intercurrent affection such as an attack of ordinary cold or of influenza supervenes, the malaria-infected patient is apt to develop febrile attacks of a continued or intermittent character. These febrile attacks might be naturally expected, but what one does not look for are attacks of fever during the hot weather—that is, during the months of July and August in England. Let me illustrate this point by again giving a personal experience. On reaching Britain in March, 1896, I had an enlarged spleen, anaemia, slight fever, the usual shortness of breath, and the chronic "tiredness" characteristic of chronic malaria. During the colder months, March to June, the fever disappeared and the spleen lessened. After exposure to a blazing sun at Henley Regatta from 11 a.m. to 5 p.m., fever developed, and for two months the temperature ranged from 100° F. to 102° F. When the colder weather returned the temperature fell to the normal; but in July and August, 1897, the temperature again returned at from 99.5° F. to 102° F. With the colder weather a normal temperature again obtained, but in July and August, 1898—for the third year in succession—the temperature again ranged from 99° F. to 101° F. During the fourth year, 1899, the return of the hot weather did not cause fever, but I suffered from a severe and persistent neuralgia with loss of power in the left arm, forearm and hand, which lasted throughout July and August—a malarial neuritis, a condition often denied but in this instance undoubted.

The account just given shows that it is not the cold but the hot weather in Britain, especially in the south of England, that has to be dreaded by the old tropical resident who is the subject of chronic malaria. The appreciation of this fact gives the cue to treatment, namely, to get away to a colder climate (not a warmer) when malarial fever shows itself.

The régime to follow in regard to treatment in the case of a patient the subject of malaria, returned from a tropical climate, should be: When a febrile attack is recognized—it is not always ushered in by a rigor—the patient should be sent to bed between blankets, placed upon a mild diet with plenty of warm drinks, but no alcohol. Quinine in powder or in solution should be given in adequate doses. It is best to begin—if the attack is intermittent—to give the drugs between the attacks of fever, or when the temperature is just beginning to rise; if the fever is continued or remittent, the drug should be given when the temperature is lowest. The first dose of quinine may be from 10 to 15 grains, and repeated in 7-grain doses every six hours for forty-eight or seventy-two hours.

The salt of quinine may be either the sulphate or bisulphate or the hydrochloride. If hyperpyrexia obtains, it is best to inject the hydrochloride in 5 to 10 grain doses intramuscularly. When hypodermically administered, local abscesses and ulceration of a persistent character are not unknown. If, after three days, active treatment by quinine fails, the cause of the temperature must be sought for elsewhere, and hepatic inflammation, hepatic abscess, or typhoid be thought of.

When the patient recovers from the attack, the future treatment consists either in the administration of quinine prophylactically, 7 grains every fifth and sixth days during the hot weather, or a change of residence. Concerning the question where to send patients suffering from chronic malaria, the writer has come to very definite opinions. First, to avoid the seaside and low-

lying country, and get to the hills. The best part of the British Isles during the hot weather in England for the patient the subject of malaria to sojourn in is in the north of Scotland—in the counties of Nairn, Moray, Banff, and the western part of Aberdeenshire. Morayshire and Nairn are preferable, as in these counties the rainfall is lowest and the dampness less than in any other part of the British Isles.

In the winter, say the months of December to March, send the patient to the hills in Switzerland at a height not lower than 4,000 ft. For the past few years, I find that patients with enlarged spleen due to malaria do better in Switzerland at one of the high health resorts than anywhere else. A month of outdoor life at these high levels is well-nigh a specific for an enlarged malarial spleen. No harm has ever been known in my experience to result from this treatment, and the effects have been invariably beneficial.

It is still the custom with some to send a woman home when pregnant, so that she may avoid the dangers attributed to parturition in a tropical climate. It is usually during the sixth month of pregnancy that this doubtfully beneficial step is taken. It is unnecessary to point out the dangers of a long sea voyage for a woman under these conditions. On arriving at home the woman is attended by her own doctor, and after parturition it is not infrequent that on the third day after delivery a rigor followed by high temperature causes anxiety. If such a case is followed it may be that even when the temperature is distinctly intermittent, recurring, say, every third day, the condition is not recognized, and the patient is submitted to the usual treatment for puerperal fever. The various falls in temperature are attributed to the active régime pursued, and the woman has to suffer the tormenting treatment usually followed for puerperal fever. It is well for the practitioner to remember the possibility of such attacks, and his anxiety will be at once allayed when he finds full doses of quinine bring back the lochia and control the febrile attacks. When a woman is known to be subject to malaria it is well to give quinine as a prophylactic immediately before or immediately after the child is born, and to continue the drug in small doses for eight or nine days.

HAEMOGLOBINURIA.

It happens that residents in West Africa may on reaching Britain develop haemoglobinuria; it may even happen that the first attack of blackwater fever occurs at home. The recognition of this disease is puzzling unless the urine is seen, for the patient may be first examined whilst in a state of semi-consciousness and unable to direct attention to the urine. Under such circumstances the diagnosis is difficult in the extreme. Given, however, a patient returned from West Africa with a high and continued temperature, with enlarged spleen, and not seldom a swollen liver, vomiting, a jaundiced tinge of the skin, pain in the loins, occasional delirium, blood-stained urine, feeble and irregular pulse, and all the symptoms of profound illness, the diagnosis ought to be possible. The blood examination in haemoglobinuria is usually negative as regards malarial parasites, but shows the condition associated with pronounced anaemia. The treatment of blackwater fever is unsatisfactory, as it is not yet decided whether quinine should be administered or not. If it is to be tried, it should be injected intramuscularly into either hip or loin in a full dose, 7 to 15 grains of the hydrochloride of quinine. Whether administered or not, all remedies calculated to promote action of the skin and kidneys must be employed. Vomiting allayed by ice and mustard to epigastrium and the general condition of the patient maintained. I found 10 minims of oil of turpentine, repeated every two hours until five doses were given, effective in diminishing the haemoglobinuria whilst quinine was withheld. It must be remembered that in some cases quinine causes a return of the haemoglobinuria every time it is administered.

DYSENTERY AND SPRUE.

Bowel complaints are the most common form of illness one is called upon to treat in this country in patients returning from warm climates and the most troublesome to deal with. Happily the diagnosis of dysentery presents no difficulty as a general rule. The acute form presents the typical blood-stained shreds of mucus in the stools with

or without the presence of faeces. The temperature rises two or three or more degrees, and the frequency of the motions, tenesmus, and general enfeebled state serve to stamp the nature of the complaint. The chronic form of the disease—loose motions, with some mucus, occurring frequently but mostly in the early morning hours and in the forenoon—is more commonly seen in Britain. In the chronic form the temperature may or may not be raised, but the liver is abnormal in size, being either diminished or markedly increased, and in the latter state tender on percussion or palpation.

Sprue is characterised by an intestinal flux, sore tongue, general wasting and anaemia. The stools are bulky, frothy or fermenting, and occur most frequently in the early morning and forenoon. In severe cases the patient is also disturbed once or twice during the night.

In almost all cases of chronic dysentery there will be found pain in the left iliac region, and a tender spot can be made out on deep pressure in the left iliac region corresponding to MacBurney's spot on the right side in disease of the appendix. The tender spot is situated over the lower end of the sigmoid flexure where it joins the rectum, and in 90 per cent. of the cases a congestive or a commencing organic stricture will be found in this part of the bowel when a high examination is made per rectum with the sigmoidoscope.

Mistakes in diagnosis in chronic dysentery and chronic or intermittent flux in patients returning from the tropics are common. Because the patient has resided in the tropics one is apt to forget that there are other causes of loose motions and of mucus in the faeces with or without blood. Of these the more common are intestinal parasites, of which the more frequently met with are round worms (*Ascaris lumbricoides*), *Bilharzia haematobia* and *Ankylostomum duodenale*. The presence of round worms (it may be in scores) is a common feature of tropical life, especially in the Far East. It is well to recognize this condition, and to remember to administer santonin, more especially in cases in which loose stools alternate with normal motions. *Bilharzia* seldom gives rise to dysenteric-like stools until after the urinary tract is involved, when, with the signs and symptoms of haematuria, blood and mucus may appear in the stools. The presence of the spined ova of the parasite is readily recognizable on microscopic examination of the stools. *Ankylostome* worms in the intestine do not necessarily imply that the patient has acquired the parasite in the tropics, for it is now met with in many European countries, and quite lately they have been found in miners in Britain. Constipation is the rule, but occasionally there are attacks of diarrhoea, with blood in the motions. If the ankylostomiasis is pronounced there will be marked anaemia with gastric disturbance, but it is only by microscopic examination of the stools that the diagnosis will be cleared up by finding the ova in the stools. The ova are oval in shape, possessing a clear transparent shell through which the yolk segments, two or four in number, can be readily made out.

Intestinal parasites are so frequently met with in the faeces in tropical residents, that medical men in Britain would do well to submit the stools to an expert of all cases of patients coming under their care who present symptoms of intestinal flux, be its character what it may.

In women the pelvic organs ought to be examined in all cases of intestinal flux. I have "cured" instantaneously several cases of so-called chronic dysentery and sprue, and the passing of intestinal mucous casts by replacing a retroverted or retroflected uterus and inserting a ring support. In other cases left pelvic adhesions of the uterus and left ovarian trouble—from the fact that they involve the rectum or sigmoid flexure—set up intestinal troubles, which when the cause is removed the so-called dysentery or chronic diarrhoea disappears.

What is called chronic dysentery, but in reality is simply diarrhoea, is a common feature of hepatic disease in patients returned from the tropics. All too frequently the simple morning diarrhoea of the tropics is due to hepatic derangements set up by alcohol—a fact that is apt to be overlooked because the patient is home from the tropics, and the ailment is looked upon as "climatic" when the cause is frequently whisky. In long-standing cases of this nature the condition of the liver will help in the diagnosis, and if, in addition to morning diarrhoea and hepatic atrophy or hyperplasia, there is albumen in the urine, associated with hepatic tenderness on palpation,

the part played by alcohol should not be difficult to arrive at.

Tropical dysentery as met with in Britain is best treated by ipecacuanha. The Epsom salt treatment in this country fails as a rule, and it must be noted that treatment by ipecacuanha is more likely to ensure a permanent cure than that by Epsom salts. After having had the stools examined microscopically for ova, or if that is impossible, after the administration of three 4-grain doses of santonin, a dose of castor oil is given. When the bowels are well cleared, and suppose the ipecacuanha is to be administered at, say, 10 a.m., proceed as follows: At 9.40 give 20 minims of tincture of opium by the mouth; at 9.50 place a mustard plaster on the epigastrium (these precautions are given to allay the tendency to vomiting); at 10 o'clock give 30 grains of freshly-powdered ipecacuanha root in cachets; keep the patient lying down with the head low, with directions to move about as little as possible. Should vomiting occur within a few minutes the dose must be repeated. For three hours it is well to give nothing by the mouth, but if thirst distresses, small pieces of ice may be placed in the mouth occasionally. After three or four hours weak tea or beef-tea may be given, and the regular "feeds" afterwards gone on with. On the following day give 25 grains of ipecacuanha with the same precautions. The dose of ipecacuanha is repeated on successive days in doses of 20, 15 and 10 grains respectively. The smaller doses are to be given even should the first dose bring down a healthy stool. No food should be given for three hours before giving the ipecacuanha nor for three hours after. The tendency to vomit is so slight after the second day that the opium may be withheld and the times of fasting lessened.

Sprue was usually treated by milk, and milk alone, no farinaceous or proteids of any kind being allowed. Milk will bring down, usually after a few days, a "solid" motion, and as long as the milk is given these apparently solid motions obtain. Milk stools are not faecal; they consist merely of the milk curd and do not resemble faeces in appearance or smell. The patient is nourished and kept alive by the whey formed when the milk curdles, the whey is absorbed and the curd passed in the motions. When, however, more solid food is combined with the milk diet the hoped-for cure is not maintained. I have long ago discarded the milk treatment of sprue and instead employed a purely meat diet, commencing in very bad cases with beef-tea, beef essence and beef jellies administered hourly, and if the condition improves giving pounded, finely-minced or shredded beef thrice daily, with calves' foot or beef jellies between the meat meals. Weak China tea, without sugar, or with saccharin if preferred, is given half an hour after each meal. It is well to observe fast days from meat, and on these days milk may be given as pure milk, as curds (junket without flavouring), and two or three times in the day as butter-milk. On no account is the milk and meat diet to be combined or given on the same day. After a time the meat need no longer be pounded, but is given finely minced or as a cut from the joint. Of vegetables, after a time may be given stewed celery, or sea-kale, or spinach. Wet packs (cold or warm) to the abdomen help; but as a rule no medicine is given, except perhaps cyllin in 3-minim doses, as recommended by Dr. W. Hartigan. The strawberry cure of sprue is in some cases effective when nothing else succeeds; the patient may be fed on fresh strawberries only, 6 to 8 lb. daily; after a few days the sprue symptoms in some cases have disappeared by this treatment.

"TROPICAL LIVER."

The "tropical liver" of fiction was due to brandy, and the cases of "liver" met with to-day in tropical residents are due to alcohol far more often than to climate. When first a European takes up residence in a warm country the action of the liver is excessive. The stools are copious, loose, deeply bile-stained, and rather frequent, and the new immigrant is possessed by a feeling of fitness. In a few months—four to eight months—the state of physiological excess fades, and is succeeded by a condition of hepatic failure with its attendant digestive troubles. The liver will be found diminished in size and in a state of atony and perhaps some atrophy. This is the normal liver of Europeans dwelling in the tropics after the first twelve months, who remain temperate in eating and drinking. From some intercurrent disease brought on by chill or

dysentery or from conditions set up by continued over-indulgence in alcohol or food, combined with insufficient exercise, the liver may become swollen, tender and congested, attended by slight increase of temperature, gastrointestinal troubles, morning retching, morning diarrhoea, and a feeling of depression and disinclination to work. This man is at the turning point of his existence. If left to himself he will in all certainty develop a craving for alcoholic stimulant to overcome the feeling of depression, so that he may continue his work; if he has the fortune to fall into the hands of a capable medical man whilst yet in the early stages of the trouble, he may be cured of "liver" and saved from becoming hopelessly alcoholic.

The medical man in Britain must, therefore, expect to find the liver of tropical patients as frequently diminished in size as enlarged, and he must not assume the liver is sound—that is, performing its normal physiological purposes—because it cannot be felt below the rib cartilages. In sprue, in the person who is not alcoholic or gluttonous, in cases of long-standing diarrhoea the liver will as a rule be found below the normal size, and neither painful nor tender to palpation. As a rule, with small livers the temperature does not exceed the normal.

In other cases the liver may be enlarged, when the explanation must be sought for to be due to excess at table or to chronic inflammation or hepatic abscess, set up as a rule by dysentery. In such cases the temperature is usually above the normal.

The treatment in the case of small livers when no fever is present is to give the organ work to do. Milk will not accomplish this, so meat should be administered instead, even when intestinal flux due to sprue is present. When the liver is enlarged and tender, and there is increased temperature, milk answers well, being given with the idea of reducing the hepatic functions to a minimum; it is only when the temperature approaches the normal and the liver area diminishes and the tenderness lessens that a fuller diet is allowable. Rest in bed is necessary when the temperature is above the normal, as well as in bad cases of sprue and chronic dysentery. Drugs in the form of chloride of ammonium, rhubarb and soda, some one of the purgative waters daily with occasional doses of calomel, or full doses of ipecacuanha, are helpful in enlargement of the liver associated with fever; in the small liver when there is no fever drugs are not indicated.

Spas may be beneficial in cases of enlarged liver with fever, but are not indicated for patients with small livers in whom there is no febrile state. Of the British spas—Harrogate in summer, Strathpeffer in autumn, and Bath in winter are the most suitable.

HEPATIC ABSCESS.

A fair number of cases of tropical liver abscess reach British shores every year; of these, some are diagnosed, some are buried with the pus in their bodies, whilst in yet a third group the pus finds its exit without surgical aid.

As a rule, a tropical liver abscess occurs in persons who have had dysentery, but that liver abscesses may occur in persons who have never had dysentery is now a well-established fact. I classify liver abscesses into supra-hepatic, intrahepatic, and subhepatic, according to the situation of the pus. Of these, the first named is, as a rule, independent of dysentery; the last named has nothing to do with dysentery, and it is only in the group named intrahepatic that dysentery is in almost a constant relationship. There is more, therefore, in this classification than merely an intimation of the situation of the pus, for, in addition to being perhaps independent of dysentery, the pus in the suprahepatic abscess is sterile. When first I announced that I found supra-hepatic pus was, as a rule, sterile, I was very naturally disbelieved; now it is accepted as a fact. The abscess following dysentery is, on the other hand, intrahepatic, and the pus is infected by organisms.

The classical signs and symptoms of a liver abscess are: Pain or fullness in the right hypochondrium (the abscess is usually in the right half of the liver), cough on taking a deep breath, gastric disturbance, uncertainty of appetite, increase of temperature, night-sweats, and occasional rigors. A patient presenting symptoms of this character, on reaching Britain not infrequently has his ailment put down to tropical liver and malaria, owing to the fact that he has fever, and is treated accordingly. After dosing with quinine and having "liver" remedies,

he is all too often sent to a spa, where he is "liver-packed," massaged, douched, dieted, and dosed. Meantime the liver abscess increases and may burst into a neighbouring organ, unless the bulging of the abscess on the abdominal wall determines that a surgical operation is called for. The pain in such cases varies with the situation of the pus. When suprahepatic, the pain is usually acute, there is usually neuralgic pain in the right shoulder, congestion of the base of the right lung, and a short and hacking cough. When the pus is in the liver substance (intrahepatic) there need be no pain nor lung congestion, shoulder-ache, nor cough. Subhepatic abscesses are so rare that they need not be considered here.

When pus in the liver is suspected, it must be sought for at once. The patient must be anaesthetized (chloroform), and the needle of an aspirating syringe not longer than $3\frac{1}{2}$ in. thrust into the liver in several places if necessary. When pus is found, the operation must be proceeded with at once. For the physician to put a needle into the liver, and, having found pus, leave the patient with instructions that the surgeon is to be called on the following day, amounts to malpraxis. The liver must not be searched for pus unless and until all is ready for immediate operation. The operations in vogue are two in number. One is cutting down upon the liver either by way of the thorax or by the abdominal wall, according to the indicated presence of the pus; the other is by trocar and cannula—the introduction of a stretched drainage tube through the cannula and syphonage. When operation is deferred until the pus causes bulging of the abdominal or thoracic wall, incision is satisfactory, but when the abscess is deep-seated, cutting operations are over-hercic and unnecessary.

Liver abscesses occur in tropical countries in out-of-the-way parts as well as near large centres; when the medical man is single-handed or with only untrained native help, the transthoracic operation is wholly unjustifiable. I have operated in just over 100 liver abscesses, with 17 deaths, and have employed the trocar and cannula, except in one or two instances, in every case.

There is no single sign or symptom that is conclusively indicative of pus in the liver; the rule is, when pus is suspected search for it immediately.

SKIN AFFECTIONS.

Perhaps the most common tropical skin affection the medical man is called upon to treat in Britain is what is termed Dhoobie itch (washerman's itch). It affects chiefly the perineum, scrotum and groins, but may extend to the umbilicus and the armpits. The pathology of this "itch" is complex, and the washerman may not have, and likely seldom has, anything to do with it. It is a form of intertrigo caused by at least two or three of the more common fungi which produce ringworm.

The treatment in most instances is simple. The lotio calcii sulphurati, mentioned in Martindale and Westcott's *Extra Pharmacopoeia* as a substitute for Vlemineckx's solution, is usually effective after a morning and evening application for three days.

The condition I have termed "foot tetter," for want of a better name, as the exact pathology of this disease is not yet made out, is a troublesome affection of the soles of the feet, characterized by areas of raised epidermis, which become scaly and hard; cracks and fissures appear about the toes, causing at times lameness, and attended by intense itching. The disease is very persistent, and may last for years—ten or even more after the patient has left the tropics, recurring during hot summer weather in this country, although never wholly dying out during the winter.

The treatment is to completely cover the affected parts with some paste or plaster which will wholly exclude the air for several weeks; as this treatment is troublesome and inconvenient few will be found to carry it out.

Of the many skin affections, most are common to both temperate and tropical countries, although a few are part and parcel of some general condition of tropical origin. Perhaps the most interesting of these and the most difficult to rightly interpret are the skin lesions found in sleeping sickness. Strange as it may seem, cases of this disease do occur in white men coming to Britain, and the peculiar wandering, irregular, eczematous-looking patches presented by the skin would be impossible, in the present

state of our knowledge, to explain aright, had we not other symptoms and signs to guide us.

PLAGUE AND CLIMATIC BUBO.

Plague has occurred in several British ports of late years, and in most instances the disease has been readily recognised by the medical men of our ports, who are at the present time on the *qui vive* for this disease.

A more puzzling disease is the climatic bubo met with in the men of the Royal Navy, in the merchant service, and in soldiers and civil tropical residents. Especially is this disease prevalent in men returning from plague-stricken districts. The resemblance to true plague is very marked, and it is only by the absence of the true plague bacillus from the glands and perivascular regions that the diagnosis is possible. Climactic bubo, or, as I term it, *pestis minor*, is not a fatal malady; a groin gland enlarges, suppurates, and breaks by two or three or more openings, leaving a necrosed gland or glands at the bottom of the cavity. The patient has usually a period of three weeks' fever and illness. The treatment is early excision of the gland or glands affected.

BERI-BERI.

Beri-beri is seldom, if ever, seen in Europeans returning from the tropics, but it must not be forgotten that in 1896 and 1897 beri-beri prevailed in the lunatic wards of the Dublin Infirmary, and it is possible the disease may come up for recognition in other quarters of these islands.

MALTA FEVER.

Malta fever is not an uncommon disease for medical men in Britain to have to treat. The disease is usually diagnosed before the patient reaches these shores, although it is possible that a man from the Mediterranean in whom the disease is incubating may develop the disease after landing.

Malta, Mediterranean, or undulant fever is characterized by repeated attacks of fever with spells of apyrexia of various lengths—weeks to months. Many signs and symptoms may arise during the illness—enlarged spleen and (sometimes) liver, effusion into the joints, agonizing pains at times in the back, head, or limbs, anaemia, and marked loss of weight; sciatica, intercostal neuralgia, profuse perspiration, and orchitis are not uncommon, and gastro-intestinal derangements frequent.

Of all fevers to treat, this is perhaps the most troublesome. It is impossible to say when it has finished, for the *Micrococcus melitensis* may be met with in the blood for years after all febrile symptoms have subsided. There is no specific known, and the legend of "treat symptoms as they arise" is perhaps truer of all that can be done for Malta fever than any other ailment. Change of air or of country is useless as a specific measure, although advantageous to the general health.

FILARIASIS.

In regard to filaria and filariasis, I have on several occasions been asked to see cases of chyluria in this country. The patients came from the West Indies and from China, and the nature of the ailment consisted of backache, occasional retention of urine, followed by the passage of "milky" urine. When this urine is allowed to stand the whole mass at first coagulates, but later the coagulum contracts and a clot separates, floating in a milky fluid.

The history of the case and the appearance of the urine suggests filarial infection. This diagnosis will be clinched if the embryo filarial worms are seen in the urine or if they are demonstrable in the blood. In the urine they are usually demonstrable at all times of the day and night, but in the blood the worm can be found, in the most common of the filarial infections, between the hours of 10 p.m. and 6 a.m. only—hence the name *Filaria nocturna* given to this species of worm.

In another case the contents of a hydrocele may be of a milky appearance and show filaria embryos microscopically. In yet another instance the patient may suffer from enlarged (lymph) scrotum or elephantiasis. The meaning and import of varicose groin glands, in which the scrotum may or may not be involved, are very naturally a puzzle to the medical man in Britain. In addition to these conditions elephantiasis may be met with usually of the scrotum or of one or both lower extremities.

The meaning of these signs and symptoms is at once explained if the medical man has the knowledge that they may be, and generally are, evidences of the blocking of the lymphatics, usually of the trunk, by the ova of the filaria worm.

There is no specific treatment, but residence in Britain or any non-filarial country tends to lessen the fertility of the parent worm, and so lead to the diminution and final disappearance of the embryos from the blood. In two of the cases of chyluria I have seen in this country there were neither embryos to be found in the urine nor in the blood, but the history of filarial fever attacks, and the condition of the urine left no doubt that the cause of the condition was due to blocked lymphatics in the prevertebral lumbar region.

It may happen that a person returned from a filarial-infected country may develop the first attack of fever in this country or that the lymph scrotum may develop on the journey homewards.

These bald observations on a few of the more common tropical ailments met with in patients returned from the tropics may serve the purpose of familiarizing medical men at home with diseases outside the routine of practice, and perhaps help them to recognize chance tropical ailments which occasionally come their way. I am aware of the many omissions from the list of tropical diseases I might have enumerated and also of the curtailed and wholly imperfect description of the diseases mentioned.

A Clinical Lecture

ON

REFERRED PAIN AND ITS DIAGNOSTIC VALUE.

DELIVERED AT THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

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AFTER some introductory observations, Dr. Forsyth said: Regarded from the broadest standpoint, pain is a necessary, desirable, and advantageous factor in the evolution of the species as well as in the development and survival of the individual. The statement is too obvious to need amplification, but it implies a corollary that must be borne in mind. Pain is not always pathological. It may be purely physiological, and between the two are many grades. To give just one example. How shall we place intestinal colic? In some cases it must undoubtedly be pathological, but in others it is just as surely physiological, and where are we to draw the dividing line?

Attempts to classify pain have not always been particularly happy, but we may make the following distinctions. There are the pains of inflammation, of pressure, and of stretching—the two latter probably the same. Then there is neuralgic pain—pain with no organic lesion—and subjective pain, where the mind itself is at fault. Lastly, and this is the variety I wish to speak of to-day, there is referred or sympathetic pain. Such vaguely-defined sensations as hunger and thirst can hardly claim admission to our classification.

By referred or sympathetic pain I mean that variety of pain which is located to one healthy part of the body as a result of disease in another. It may be the only pain produced by the disease, or it may co-exist with a greater or less degree of local pain set up in the affected viscus. Here, however, we must recognize that referred pain can arise without remote disease. From time to time cases are recorded in which pain, even of the intensest, has been produced in one part by gentle stimulation of another. There is the case of the woman who suffered such pain and soreness over the angle of the scapula after suckling her infant that the pressure of clothing became intolerable. There is the example recorded by Witmer, where a pinch to the neck on the right side set up pain in the left dorsal region. With this patient a pimple on the back of the neck was notably irksome because of the referred pain it entailed. Other examples may be found

here and there in the medical periodicals, but I have time to mention only a couple more. One of the best known is Monro's patient who experienced sharp pain in the right side when a certain area on the right forearm was rubbed, and an unusually curious case is that recorded by Mitchell, where stimulation of a mole on the leg produced pain in the chin. But these are unique examples of what I may call physiological referred pain, and for an everyday illustration we need seek no further than our own selves. Most of us after eating an ice-cream feel pain in the forehead just above the eye. Here we have a natural—or should I say unnatural?—stimulus applied to the stomach, and a pain referred to the trigeminus.

Before we can recognize the diagnostic import of referred pain we must first understand its causation. Many observers have noted the connexion between a lesion in one situation and pain in another; and Head showed that the limits of this pain tallied with those of herpetic eruptions. Further, he discovered that herpes zoster appeared over an extent of skin innervated by some one posterior nerve root. It was clear, then, that each area of referred pain corresponded to the same nervous distribution, and that the pain was referred along a posterior nerve root. So far so good, but how establish the relationship between a viscus or group of viscera and a remote strip of skin? The answer is not difficult. The spinal cord consists of segments each of which receives one pair of posterior nerve roots. Each root brings fibres, some cutaneous, some visceral, and the impulses arriving from both enter the cord by a common path, and reach the brain by the same routes. This transmission along one highway of impulses from two localities must inevitably lead to confusion, and a message arriving from one will be liable to reference to the other.

Now, a moment's reflection will show that all day long our consciousness is being interrupted by stimuli coming from the skin, and rarely by any from viscera—indeed, the man who knows he has viscera is a poor creature—and therefore we fall into the slack practice of ascribing to the skin *all* the sensations that reach us. The habit is natural and harmless so long as we are in health, but it leads to error when a deep-lying viscus grows uneasy. Such an organ sends up its message of complaint demanding rest and decreased work, and we, undone by our lax attention, are unable to locate the mischief, and lightly conclude that the impulses come whence they usually start—from the skin. We say the skin of such and such a part is sore, and we cannot tolerate our clothes upon it. We loosen a belt or a band and indulgently shield our perfectly healthy dermis by a soft swathing of wool, while the slighted viscus continues to go crying in the wilderness. Sooner or later, however, its messages grow so imperious that we are compelled to heed them, and then we recognize something in their nature which differs from any cutaneous sensation we are familiar with. Thus we light on the correct source of the pain, and realise that the trouble lies elsewhere than in the skin.

Not only is pain referred to spinal segments of the trunk, but areas on the head and face supplied by cranial nerves may betray a similar sympathy with visceral disease. For example, soreness of the vertex of the scalp will be associated with disease of the stomach and occipital tenderness will go with ovarian disorder. These connexions, though difficult to explain, must not be forgotten.

Recently Head published a further series of observations of importance which throw light on our subject. His experiments and conclusions are too detailed to be discussed here, and for my present purpose it will be enough to give his broad conclusion. He believes that the whole body, within and without, skin and viscera, is innervated by a system subservient to the more lowly sensations of pain and of the extremes of heat and cold. This system he calls the protopathic system. In addition there is another system—the epicritic—distributed only to the skin and concerned in cutaneous localization, discrimination of distances between stimulated points, and the finer grades of temperature called warm and cool. Now it is interesting to note that with referred pain the skin is in a condition of hyperalgesia but never of hyperaesthesia proper—that is to say, a disturbance of the visceral protopathic sense leads to a disturbed somatic protopathic sense but never to a disturbed epicritic sense.