

mannigfachen Drüsenanschwellungen, kurz, mit allen Erscheinungen des primären Geschwürs.

6. Nach demselben, im gewohnten Zwischenraume, entwickelt sich die secundäre Syphilis und verläuft, als wenn sie auf anderem Wege übertragen wäre.

7. Es ist also von der grössten Wichtigkeit, niemals Impfstoff von einem verdächtigen Individuum zu entnehmen, und wenn es sich um einen Neugeborenen handelt, es nicht vor dem Alter zu thun, wo erfahrungsgemäss die erbliche Syphilis sich durch deutliche Zeichen offenbart.

8. Wenn besondere Umstände dennoch eine solche Abimpfung nöthig machten, so müsste man die grösste Sorgfalt dahin richten, dass nur reiner Impfstoff ohne Blut oder syphilitische Flüssigkeit verwendet werde.

9. Von notorisch syphilitischen Menschen soll man in keinem Falle Impfstoff verwenden (Arch. gén. XVI. 321).

XV.

Ueber den Aussatz der Gegenwart in aussereuropäischen Ländern.

Briefliche Mittheilungen an den Herausgeber.

1. Bericht des Hrn. Macnamara zu Mozufferpore in Bengalen.

To Prof. R. Virchow
Berlin.

Mozufferpore
Tirhoot, Bengal.

My dear Sir,

In answer to a circular lately forwarded to me by the Director Gen. Medical Dept. enclosing a printed letter of yours on the subject of leprosy I have the pleasure to send you the following notes.

Before making any observations on the disease in question, I propose describing in a few words the situation and general features of the district of Tirhoot and shall state briefly and concisely any peculiarities of the people which appear to me to bear on the subject.

Little is known of the History of this part of India prior to its being conquered by the Mussulmans in the year 1225. By them it is described as being rich and remarkably fertile. The Mussulmans were not allowed to enjoy possession of the Country long and though near Patna the stronghold of the Mussulmans in this part of India, they never gained an ascendancy in the district, and at the present time are universally far inferior to the Hindos.

Tirhoot is situated between lat. $25^{\circ} 26'$ — $26^{\circ} 42'$, long. $84^{\circ} 58'$ — $87^{\circ} 11'$ and is bounded on the north by the mountainous country of Nepal which separates it from the Himalays, and on the south by the river Ganges. The country is undulated and like other parts of the valley of the Ganges is remarkably fertile. It abounds in lakes and fine rivers, by means of which the drainage of the Himalays pass into the Ganges. These streams overflow their banks during the rainy season i. e. between June and Septembre, and lay the district for miles under water. The climate is mild and moist as compared with some other parts of India, the maximum temperature being for the year 87° , the minimum 69° and the mean 75° . The district is admirably suited to the European constitution, but the Natives suffer much from Malaria and its attendant evils. The soil is formed of an alluvial deposit and in many places is saturated with muriate of soda, sulphate of soda, saltpeter and other mineral salts, and as a consequence a vast number of the inhabitants suffer from goitre. During the last six months no less than 6000 patients suffering from goitre have attended at the dispensary under my charge. The largest goitre as also spleen is quickly cured by means of the Biniodide of Mercury.

The Natives are on the whole well of. They are cleanly in their habits and according to an orientals ideas industrious. They live in small, mud huts, in which they cook, eat and sleep. They use no furniture, squatting on the ground and eating their food

like a monkey with their hands; the poor classes sleep on the ground. Their clothing consists of a slight cotton garment thrown over the shoulders and another round the loins; in the cold season they bear in addition a blanket. Their food consists of rice and dal (a parched pea) and Indian corn together with the sweet potato and other esculent vegetables; occasionally they eat fresh fish and butter, as also the curd of milk. But the lower classes seldom touch these and by far the majority never taste any kind of animal food. The higher classes consume wheat in place of Indian corn and some of them take milk, but in other respects their food consists exclusively of the above named articles. This of course refers to the Hindoo; the Mussulmans eat meat every day and live in much the same way, as Christians do, so far as their diet is concerned.

The men as a rule are remarkably intelligent, quiet and industrious. Though small in stature and light in weight (the average being about $7\frac{1}{2}$ stone), they are very strong and can undergo great physical exertion. Thus 12 men frequently carry a heavy man some 30 or 40 miles in a Palkie during the night, and I have known the same 16 men carry a man 120 miles in 36 hours. A Native thinks nothing of starting off and walking 25 or 30 miles a day, feeding upon nothing but rice and parched indian corn all the time. But though active and strong, they are timid in the extreme.

They have very strict laws against intermarriage. From the age of 14 or 15 they allow themselves an uncontrolled indulgence in sexual intercourse, and though by law a Hindo should keep only one wife, yet like the Mussulman the number is limited only by a man's means. In fact, virtue like the principle of truth is quite unknown to the Natives of this part of India.

Leprosy was known and described by the most ancient writers in this country. The „Madhab Midan” and other books on medicine are described by the Mussulmans as being of very great antiquity, and recent researches have confirmed this statement. In these books, written as they are in the Sanskrit (now a dead language), there is a distinct and curious account of leprosy. The various forms are recognised and accurately portrayed; on the other hand

syphilis was unknown to these writers and has got no sanskrit name, thus proving that leprosy in this country existed for ages before syphilis was ever heard of, this disease having been distinctly and clearly shown by contemporary native writers to have been introduced into India by the English and Portuguese. Thus I think proving in an uncontrovertable way that the two diseases are distinct and separate complaints.

Leprosy is divided by the old Hindu writers into three classes, the white, red and black, and there are a vast number of subdivisions. I do not propose entering into all these, as there can be no practical advantage in doing so. The disease is said to be caused by eating fish and butter at the same time, too much sleep, walking in the sun after meals, drinking cold water when hot, and in fact any cause which in their opinion produced disease of the air and bile or phlegm, by which the blood was impured and through it the skin. On the other hand the disease was said to be frequently caused by an individual having been guilty of sin in some former state of existence and that he was thus cursed by the Gods; or leprosy might be caused by sins or neglect of the Brahmins and that the disease would in this case pass on to the children.

There are no laws in existence either ancient or modern by which the leper is made an outcast, or forbiding him to cohabit with his wife or to separate himself from his family. In fact the disease is held in such extreme detestation and horror by the Natives that there was no occasion to make such laws. A man having become a leper is at once an outcast, his wife and family run away from him, and he is left the most miserable creature in the world usually to die as an outcast unpitied, uncared for and unburied. There are a few instances in which this is not the case and especially among the rich. These in spite of this fearful disease can keep their family around them, and do cohabit with women and get children who are certain to have the disease also. In fact female children born of parents having had leprosy are destroyed at once. There have never been any hospitals either ancient or modern to accommodate these poor people in; our so called

Christian Government has never come forward to help these unfortunate creatures, though I have little doubt, that one large well managed establishment in every district in India would be the means of eradicating leprosy. For there can be no doubt, it spreads by contagion and is also hereditary. Those afflicted with leprosy frequently leave their family and go on a pilgrimage to perform the „praschitta“; otherwise they conceive that the disease will pass along with their souls into various other conditions and they will be tormented thus for ages.

I cannot discover any connexion between leprosy and malaria. I have thrown many instances in which leprous patients have certainly never had fever, and on the other hand thousands and thousands of people frequently get fever and yet never have leprosy. Neither do I think, that bad or insufficient food can be the cause of this disease, as the natives of this part of India are quite as well fed as those in Ireland, and we do not hear of leprosy breaking out among shipwrecked or other people who have undergone great depravation on account of the want of food. Moreover the rich are in proportion equally affected with leprosy, as the poor; the Mussulman who eats animal food, is as frequently attacked with leprosy as the Hindu.

Leprosy is to be found in every locality throughout the whole of Tirhoot and Nepal and it is quite as frequently met with among the rural as among the inhabitants of towns and cities.

I observe that a theory has lately been started that the disease depends upon a certain kind of food, which some people eat. A similar opinion was put forward a short time since by a medical officer in the North West, as accounting for the number of cases of paralysis he met with. But had he interrogated all the Cholera patients under his care, he would have found that they all eat the same dal to which he attributes paralysis, to this dal (Kassarie) or parched peas, being in fact one of the staple articles of food among a large class of people, as bread is in England. But it would surely be absurd to suppose that consumption was produced from our eating bread, because every man in England, who has ever had phthisis, will certainly be found to have eaten

bread. And so with regard to the above mentioned theory in regard to leprosy, fish may be its cause or anything else, but till it be discerned that this kind of food produces the same result all over the world, there can be no reason to ascribe the origin or cause of leprosy to salt fish. As far as the people in India are concerned, this cannot be the cause, for I can safely say that of all the leprosy patients that have ever been under my charge, not one of them has ever tasted salted food. I may here remark that I have never heard or seen of a case in which a European has had leprosy in India *), but the half casts get it just as frequently as the natives.

The average number of leprosy cases attending the dispensary under my charge is alone 400 a year; these are of course new or rather fresh patients and are entered as such in the dispensary case books. Of old patients, I feel convinced, I am under the mark when I say that 3000 attend in the year or on average 8 for day; the total number of patients attending the dispensary amount to some 25000 per annum. I have also ample opportunities of watching cases among my private patients and as my practice among the natives is very extensive, I think I may assert that I have considerable practical experience as regards this formidable disease.

The conclusions I have come to are that it may be divided into three classes:

1. Leprosy in which there is simply an absence of pigment in the skin in certain parts of the body. It is attended with no pain or swelling, ulceration or other abnormal condition of the part, and is not therefore contagious nor necessarily hereditary.
2. Leprosy commencing with a tawny discolouration of the skin in various parts of the body, followed by numbness and ulceration of the part and ending in mortification of the extremities and death; it is both hereditary and contagious.

*) See the note at the end of this letter.

3. The true lepra tuberculosa which is also hereditary and contagious, terminating in mortification of the part; it often follows syphilis, and had it not been distinctly and clearly described long before syphilis was ever heard of, I should probably have considered it a form of leprosy connected or following as a sequence to syphilis.

The first form seldom makes its appearance, before the age of puberty has been attained. It is accompanied by no pain or other bad symptom; the only thing, the patient has to complain of, is that the skin in certain parts of the body becomes perfectly white. The hands and feet are usually the first affected and the discolouration or rather the want of colour takes place in a remarkably symmetrical manner on either side of the body. The hair becomes perfectly white in the part affected; the skin however retains its sensibility, its excretion etc. being performed in a normal way. I have never observed that the furrows in the skin become deeper or are more strongly marked than usual. In fact it appears to me, that the only disease is a want of colouring matter in the cuticle, but that the disease bears some intimate relation to the worst forms of leprosy, will be seen from the following case.

A very rich Zamindar applied to me about 14 months ago. He was suffering from the first or white form of the disease: his arms, legs and face being perfectly colourless. He was the eldest son of his father, who had died some years ago from the second or ulcerative form of leprosy. My patient's eldest son, a lad of about 23 years of age, was affected with the third or tubercular form of the disease, it being as yet in a mild and perhaps manageable form. It is remarkable, that the grandfather was the eldest son of his father and though he had several brothers and sisters, was the only member of the family affected with this disease. My patient again was the eldest son of his father and none of his brothers, sons or daughters were affected with leprosy, except the eldest boy. I before mentioned that among the higher classes these lepers manage to keep their wives, as in this instance and to get children, and there cannot be the slightest doubt that the

various comforts of life which riches can command, tend to mitigate the horror of the disease and to stop its progress.

I know of no cure for this form of leprosy. The natives stain the part affected with various plants, a weak solution of nitrate of silver being in great repute among them and though the native doctors profess to cure this complaint, I have never seen or heard of a case of the kind that has been permanently relieved and much less cured.

In the second form of leprosy mentioned above the disease usually commences by a peculiar creeping sensation which the patient describes as being situated in the veins of or under the skin. This continues for some time, after which the part becomes pale, of a tawny colour in patches of various sizes over the body. These spots lose all sensation in them; you may scratch, cut or burn the skin, without causing any pain. The cuticle becomes slightly thickened and the lines on it necessarily more distinct than usual, and there is an increased amount of desquamation of the epithelium. The part becomes dry, secretion being stopped. There is however no swelling or tumefaction. After a time a vesicle appears usually in the centre of one of these leprosy spots and this rapidly extends till a large blister forms and bursts, leaving an unhealthy painless ulcer. Sores of this kind form all over the body, particularly on the extremities, which thus become oedematous. The ulcers eat down to the bones which become carious and die, mortification takes place and joint after joint drops off, till all the fingers and toes have been destroyed. The disease during this time has affected every part of the body, causing however little or no pain; the hair falls off, the nose and palate are eaten through, and the patient becomes the most fearful looking object in creation, and gradually subsides into rottenness and dust; for a considerable part of the body has died and been cast off long prior to the infortunate man's dissolution. A fate very common to these poor creatures is to be eaten alive by the jackalls and other wild animals. They lose their hands and feet; no one will receive or protect them, and they are left, when nearly dead, to be devoured by the wild animals.

This form of the disease runs its course very slowly. I have known men who have been affected with it for 20 years and are still strong and well in other respects. The disease may stop of its own accord or may be relieved by medicine. I have no doubt, that arsenic, heam and Choulmogeale have a decided effect in checking the disease, but I have never seen a case really cured. I should be glad to send you some of the extract of heam to try in other diseases of the skin, if you or any friend will give it a fair trial. The oil of Choulmogeale is also a much valuable drug in these cases.

A peculiar variety of this form of disease is seen very frequently among the outpatients. They apply for advice, having the tawny spots on the body together with one or more ulcers on the sole of the foot or heel. These ulcers appear as if they had been cut or punched out of the skin and muscles; they are very deep, passing down to the bone and about as large as a shilling, so that one can thrust ones thumb to the bottom of them; they are very difficult to heal, and cause great inconvenience and pain in walking. The natives have such a dread of ever mentioning the name of leprosy as in their own language (Kuschtha), but they call it Sunke brusasic (?) i. e. the disease of numbness, as this is the first symptom that appears.

The third form described is the true Elephantiasis Graecorum. It runs its course usually with far greater rapidity, than the last described form, and is frequently attended with great pain. It is very often preceded by syphilis, especially if large quantities of mercury have been given for the cure of the disease. The patient notices an oily shining appearance of the skin, but there is at this early stage seldom any loss of sensation in the part; on the other hand it is frequently highly sensitive. The part becomes swollen from deposition of a peculiar amorphous deposit under and among the cells of the cuticle; small soft tumours there form, involving the true skin. These appear first about the lobes of the ear, nose, nipples, face, hands and legs; they are often terribly painful (I think universally except among those patients who have had syphilis). The hair falls off, the tumours ulcerates and a

nasty foul sore forms, which rapidly spreads; the bones become affected, and the end is much the same as in the last described form. The process is however quicker and is attended with more pain and is less amenable to medical treatment. In fact every tumour appears to develop itself into small cancer and examined under the microscope is found to be composed of a fibrocellular structure much resembling some forms of cancer. There can be no doubt in every mind of these two last forms of disease being hereditary and in my opinion contagious also.

I refrain from making any remarks as to what I may suppose to be the cause of this disease. Such ideas must be very limited and the vast amount of information at your disposal will enable you to arrive at a far more correct conclusion than it is possible for an isolated individual like myself to do.

I am Sir

Yours sincerely

N. C. Macnamara,
Civil Surgeon.

I believe, I have now a case of leprosy under my charge in the person of a lady (a German), the wife of the missionary of the place. She has a spot about 5 inches long above the right ankle, in which the power of sensation is lost and the skin in this part has ceased to secrete. She noticed this on taking of her stockings. All the other parts of the leg perspired, but this spot. The symptoms have only come on for two months, and I shall watch them with some curiosity.

2. Berichte des Dr. Friedel, preussischen Marinearztes, über den Aussatz in China, Japan und den canarischen Inseln.

Auf See, 24° 30' +. 122° 34' O. L.
15. November 1860.

Eine längere Musse im Hafen von Hongkong hat es mir möglich gemacht, einige Nachfragen nach der Lepra zu machen und Sie finden auf dem angebogenen Blatte die Zeugen des Interesses, mit welchem die angeregten Punkte hier aufgenommen worden sind. Herr Lobscheid, früherer deutscher Missionar, jetzt Inspector der Regierungsschulen in Hongkong und einer der einflussreichsten