ELEPHANTIASIS ARABUM IN THE SOUTH SEA ISLANDS.

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ELEPHANTIASIS Arabum is nowhere more frequently met with than in the South Pacific. So common is it there that in some of the islands few attain adult life without having undergone attacks of the characteristic elephantoid fever and inflammation; and a very large proportion of the inhabitants—variously stated at from 1 in 20 to 1 in 3—develop genuine elephantiasis. Concurrently with this remarkable prevalence, there is enhanced liability to extreme degrees of development; and this not only as regards size of elephantoid swelling, but also as regards number of regions of the body and extent of area involved. Thus in those islands elephantiasis of the arms—a comparative rarity in India, Brazil, China, and other better known haunts of the disease—is very common; and a form still rarer in the countries I enumerate, occurring there only once in about 700 cases, elephantiasis of the mamma, is far from infrequent. The island of Huahine has an evil reputation for the disease. The few Europeans who reside there are nearly all affected, and very much in the same way and to the same degree as the natives. Samoa, likewise, though not so markedly as Huahine, is a well-known centre of elephantiasis; and there too the disease is seen in Europeans as well as natives, frequently attacking the arms, and, at times, the breasts, in addition to the usual sites—the legs, scrotum, or labia. The accompanying photograph, kindly sent me by Dr. Davies, of Samoa, is an excellent and unique representation of the mammary form of the disease. The picture is a valuable one, for I know of no other representation of this variety of elephantiasis in medical literature. That it represents a case of undoubted elephantiasis and not simply one of ordinary hypertrophy of the mammae, is clearly proved by the concurrent and well-marked elephantiasis of the left leg.

The elephantiasis of the South Sea Islands has not hitherto been adequately studied. Further than its extreme prevalence and its symptomatology, little seems to be known about it. The important subject of etiology has never been properly attacked. Although I believe that the elephantoid diseases, in their endemic forms at all events, are caused by filaria nocturna, I admit the possibility that this parasite may not be the only and universal cause, and that the endemic elephantiasis of the South Sea Islands may be the result of lymphatic disease induced by some pathological agent other than the filaria. I do not think so; but the possibility of

this, until we are in possession of additional evidence in favour of filaria nocturna being the cause, must be admitted. Such a possibility is suggested by certain features, not quite peculiar to, but so frequent in South Sea Islands elephantiasis as compared with elephantiasis elsewhere, that they are to this extent characteristic and call for explanation. Chief amongst these is the great liability to implication of the arms and breasts as already mentioned. Assuming that South Sea Islands elephantiasis is the same disease as the elephantiasis of other countries and that it is caused by filaria nocturna, the question occurs, how may we explain this unusual frequency of arm and breast implication there?

This I would do by referring to the obvious consideration, that in countries in which elephantiasis is unusually common, the endemic cause of elephantiasis must be unusually rife; and that therefore extreme degrees and rare forms of elephantoid infection are more likely to be met with there than in countries in which the endemic influence is more thinly sown, so to speak. As a corollary to this, and still assuming that filaria nocturna is the cause of elephantiasis in the South Sea Islands as elsewhere, we are led to the inference that filaria nocturna is present in proportionately larger numbers and in a larger ratio of the inhabitants of these islands than it is in countries in which elephantiasis is less common. This is a point which could and which can only be determined by direct observation. It is an interesting and important one, both as regards the geographical distribution of a dangerous parasite, and also as regards the etiology of elephantiasis; and I venture to avail myself of this opportunity to ask our *confrères* and others in the South Sea Islands to assist in settling it.

Some time ago I had an opportunity of determining the unusual frequency of the filaria in a district in which elephantiasis is particularly prevalent. According to Waring, in certain districts of Cochin, India, about 1 male in every 16.5 is affected with elephantiasis. Applying the reasoning process to Cochin which I seek now to apply to the South Sea Islands, I concluded that filaria nocturna must be very common in that part of India. Through the kindness of Surgeon-Major Elcum, I obtained suitable specimens of night-blood from eighty-eight Cochinese. In twenty-one of these I found filariae. Now, as elephantiasis is still more common in the South Sea Islands, if my view as to the pathology of elephantiasis is correct, we may expect to find the filaria even more frequently there than in Cochin. I am perhaps right, therefore, in conjecturing that nearly every South Sea Islander, in those islands in which elephantiasis is so common, has filariae in his or her blood. I must be careful to qualify this conjecture in one important respect; I ought rather to say, nearly every islander, except those affected

with elephantiasis, has filariæ in his blood. This circumstance, namely, the comparative absence of filariæ in those affected with elephantiasis, strikes one at first sight as somewhat strange, and, on superficial consideration, might seem to upset the doctrine of the filarial origin of elephantiasis. Properly considered, however, it is a powerful argument in favour of this doctrine. Elephantiasis is caused, I hold, by the infarction by filarial products of the lymphatic glands connected with the diseased areas. To give rise to this infarction, the parent filariæ must lie on the distal side of the glands. Being in this position it is impossible for the young filariæ—the filariæ we would otherwise encounter in the blood—to pass the blocked glands and get into the general circulation. Therefore, the person least likely, in a filarial district, to have filariæ in his blood, is one who is the subject of elephantiasis. My observations on Cochinese blood thoroughly bear this out. Of the 88 Cochinese blood-slides I have referred to, 14 came from cases of elephantiasis; only 1 of these showed filariæ. Of the remaining 66 slides, none of which came from cases of elephantiasis, 20 showed filariæ, or 1 in 3.7. This circumstance should be borne in mind. The filaria by the very fact that it has given rise to elephantiasis ensures the absence of its progeny from the circulation.

Although, reasoning from what is known about the filaria in other countries, there seems to be good reason to believe that it is the cause of South Sea Islands elephantiasis, until the blood of the natives of those islands has been carefully and systematically examined, we cannot claim that this has been proved. I have made many attempts to procure specimens of blood from the South Pacific, but, hitherto, my efforts have been in vain. I therefore avail myself of this opportunity to appeal to any of the profession who may be located in these islands, and to the surgeons of our cruisers and those of other countries, to missionaries, and to scientific travellers, to try to settle this matter. Should they themselves not have the necessary leisure and conveniences for the examination of blood, I would willingly undertake the examination for them provided they supply me with material. The preparation of suitable blood-slides is a very easy matter. The blood must be procured after sunset and in this way: Prick a ligatured finger with a needle, transfer a full drop of blood to an ordinary glass slip, 3 inches by 1 inch, spread the blood out in a fine layer with a needle, say over an area of 1 inch by $1\frac{1}{2}$ inch, lay the slip on its back until it dries, label it with name, hour, place, and disease (if any), pack away the slides in bundles, taking care by placing a piece of paper between the ends of the slips to keep the blood surfaces from coming in contact. Slides so prepared if kept dry do not spoil and can be examined successfully months or years afterwards. To find any filariæ they may contain, all that is necessary is to immerse the slides for about an hour in a weak watery solution of fuchsine, one or two drops of the saturated alcoholic solution to the ounce of water; decolorise in weak acetic acid, three or four drops to the ounce; wash in clean water, and then examine with an inch or half inch objective, searching every bit of the slide. A cover-glass is neither necessary nor desirable. The filariæ and white blood corpuscles are alone found to be stained; the former, therefore, are very readily discovered. The difficulty in procuring a sufficient number of glass slides in such countries can easily be overcome. Window glass and a glazier's diamond can be procured almost anywhere. To anyone willing to help in this matter I would repeat: Procure the blood always after dark, best about 9 or 10 P.M.; take it from all natives indiscriminately; search the stained blood with a low power; do not expect to find filariæ often in cases of developed elephantiasis. As some islands are said to be free from elephantiasis it would be important to ascertain if they are free also from filariæ; if possible, therefore, slides should be procured from the natives of these islands as well as from the natives of islands in which elephantiasis prevails. Twenty or thirty slides from as many natives from each island would suffice to settle this question of etiology of South Sea Islands elephantiasis for or against filaria nocturna.

[We shall be happy to receive such slides at the office of the BRITISH MEDICAL JOURNAL, 1, Agar Street, Strand, W.C., for transmission to Dr. Manson.]

RETENTION OF A GUM ELASTIC BOUGIE FOR MORE THAN ELEVEN MONTHS IN THE UTERUS.

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On October 15th, 1893, Miss H. consulted me about a sinus, situated over the sacrum, which had been discharging for six months. I arranged to give ether, and lay the sinus freely open and scrape the cavity, which at the time of the operation was found to lead down to the bone. The day after operation my attention was called by the patient to a purulent discharge which came from the vagina. On examination I felt a foreign body, part of which was in the vagina and the remainder in the uterus. The vaginal portion was bent round, and rested on the posterior wall. With considerable difficulty it was removed by the finger, and found to be a piece of gum elastic bougie measuring $5\frac{1}{2}$ ins. There was no evidence of perimetritic inflammation or implication of neighbouring viscera. On questioning the patient, she admitted that it had been inserted by a woman who is now undergoing penal servitude for procuring abortion in another case. The bougie was inserted on November 3rd, 1892. She miscarried two days later, and had suffered from pain in the back and purulent discharge from the vagina from that time up to April, 1893, when the sinus began to discharge. After the removal the patient did well, and was able to return to her occupation in a fortnight.

The points which seem to me to be noteworthy are, first, the retention of the bougie after the miscarriage had taken place; secondly, the comparatively slight mischief that resulted from the long residence of the bougie. The accompanying photograph gives a very correct idea of the appearance of the bougie.

ALCOHOLISM AND INSANITY.—The part which alcohol has played in the genesis of insanity in Ireland has been brought out in bold relief in the special Report, just issued, of the Inspectors of Lunatics in that country. Of the medical superintendents of the twenty-two district asylums, twenty agree that, in their experience, the most prevalent cause of insanity, after heredity, was alcoholism. The proportion of cases of lunacy due to alcohol varied from 10 to 35 per cent. of the whole admissions. The reports from two asylums pointedly refer to transformed inebriate transmission. The superintendent of the Ballinasloe district says that the offspring of inebriates are liable to many neurotic diseases, and, from Killarney, that cases of epileptic mania have occurred in the children of inebriates.