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XVIII. *OBSERVATIONS ON THE LEPRO ARABUM, OR ELEPHANTIASIS OF THE GREEKS, as it appears in India.* By WHITELAW AINSLIE, M.D. M.R.A.S.

Read June 4, 1825.

It is, I presume, a truth pretty well established, that all such cutaneous affections as are not ushered in by particular febrile symptoms, are more common and more inveterate in hot than in temperate climates: but, with the exception of Doctors Hillary and Towne, I am not aware that any author on tropical diseases has bestowed much attention on maladies of this description, though some of them are singular in their character, and most of them very untractable.

Travel writers, foreign as well as English, have been more liberal of their observations. Pocock * mentions those of Damascus; Volney † notices the cuticular complaints of Egypt; Stedman, ‡ in his work on Surinam, is equally considerate; Browne, § in his travels in Africa, makes particular mention of the *Boras* (Leuce) and *Dzudham* (Elephantiasis), both in Egypt and Syria: he indeed says that the leprosy is more rarely to be met with in the first than the last named country, which it might not perhaps be difficult to find a reason for; and, in support of his assertion, we may cite Savary, who, in his "Letters on Egypt," informs us that he never, while there, || saw one unfortunate leper; though, by his "Letters on Greece," it would appear that he found several in the islands of the Archipelago (pages 110, 111). Galen, ¶ however, gives us a very different account of that land in his days. "In Alexandria quidem Elephas morbo plurimi corripiuntur propter victus modum, et regionis fervorem." It is, notwithstanding,

* See Pocock's Travels, vol. ii. page 122.

† See Volney's Travels in Egypt, vol. i. page 248.

‡ See Stedman's Surinam, vol. ii. page 285.

§ See Browne's Travels in Africa, page 332.

|| On the other hand, Pliny tells us that Elephantiasis was common in Egypt.—Nat. Hist. lib. xxvi. chap. 1.

¶ Vide Op. Galen, class vii. page 107, F.

strange, that neither Strabo nor Herodotus, so far as I can learn, makes the least mention of it. Niebuhr,* in his "Travels in Arabia," speaks of the *Bohak* (Alphos), *Baras* (Leuce), and *Dzudham* (Elephantiasis), as all common amongst the Arabs. On Ceylon† such affections are but too frequent. In the Island of Candia, leprosy was observed by Sonnini;‡ who seemed to think that it was the only contagious disease which the inhabitants had, and that it was originally brought to them from Asia. In the more remote parts of that quarter of the world, in China,§ in Sumatra,|| all along the shores of the Malaya peninsula, the most piteous wretches are often seen, covered with scurf, or deprived of their fingers and toes; and on the different islands,¶ which constitute the Indian Archipelago, similar sufferers are perhaps still more common.

I shall now proceed to give some account of Elephantiasis, as it appears in our Eastern dominions.

Sauvages has given perhaps the best nosological definition of the disorder: "Facies deformis tuberibus callosis, ozæna, raucedo, cutis Elephantina, crassa, unctuosa, in extremis artubus anæsthesia."

This, it will be seen, differs from Cullen's description in two essential points: the latter author having omitted ozæna, which is a never-failing symptom of the disease in its advanced stages; and moreover calls it *morbis contagiosus*, of which there are great doubts, notwithstanding the assertions of the learned Darwin; indeed, for my own part, after the most minute inquiry, I am led to conclude that it is not a contagious disease; and should be further inclined to believe, with due deference to the high authority just mentioned, as well as to *Pierre Campet*,** *Aretæus*,†† and *Dr. Towne*,‡‡ that

* See Niebuhr's Travels in Arabia, vol. ii. page 278.

† See Marshall's Medical Topography of Ceylon, page 43.

‡ See Sonnini's Travels in Greece, page 396.

§ See Dr. John Clarke's Observations on the Diseases of long Voyages, vol. i. page 128.

|| See Marsden's Sumatra, page 151.

¶ Leprosy is so frequent in those islands, that the Dutch were obliged, and we afterwards followed their example, to allot a small island for the exclusive use of the unhappy sufferers; it is called Lepers Island, and is near that of *Saparoa*, under the government of Amboyna. For the frequency of the disorder in those islands, the reader is referred to Mr. Crawford's History of the Indian Archipelago, vol. i. page 34.

** See *Maladies graves de la Zone Torride*, page 290.

†† Vide *Aretæus*, lib. ii. cap. xii.

‡‡ See Towne's Treatise on West-India Diseases, page 190.

the supposition of its ever having been so, must originally have proceeded from the desire every one naturally evinces to shun all such as are afflicted with this frightful and loathsome distemper. The most intelligent Tamool doctors, with whom I have conversed on the subject, informed me, that what they call *Kústam* (*Cusht'ha*) (*Lepra Arabum*) cannot be caught by infection during the common intercourse of life; but that it might perhaps be given by introducing leprous blood, or ichor, into a sane habit, by means of inoculation; and this appears to be a rational enough conclusion, when we reflect that the complaint is not, like *Pruritus*, confined to the skin, but seems to be connected with a degeneracy of the whole fluids. I cannot find any well authenticated fact of an Indian having caught the disease, by associating with those who had it; nor, of three Europeans whom I have known to die of Elephantiasis, did either the wives or servants, who had lived with them for several years, become infected.

There is every reason to believe, however, that this species of leprosy is hereditary: it is certainly so far so, that children born after the malady has commenced on either of the parents, are liable to be attacked by it. The Hindu medical men have no doubt that the *Cusht'ha* descends in this way; but at the same time they tell us, that some of the children may escape it altogether, while others, though they may have remained quite healthy for a number of years, will at length fall victims to the disease: they have also made the same observations in this instance, which we have done with regard to other hereditary evils in Europe; that is, that one generation may escape the constitutional infirmity, and the next in descent suffer from it. Some authors,* who have noticed the affection as it appears in other parts of the world, have told us, that men labouring under it are very salacious; I cannot learn, however, that any such peculiarity attaches to the lepra in Hindust'han: on the contrary, it has been questioned† whether the miserable objects afflicted by it are capable of sexual intercourse: but there appears to be no good reason for supposing that they are

* Such as Hillary in his *Diseases of Barbadoes*, pages 325, 326; Sonnini in his *Travels through Egypt*; Bancroft in his *Natural History of Guiana*, page 385, &c.; MM. Vidal and Johannis in their account of the disorder at Martigues. See a treatise on the supposed hereditary nature of diseases, by J. Adams, M.D. page 91.

† Dr. Adams, in his work on *Morbid Poisons*, speaks particularly of a wasting of the genitals in Elephantiasis, as he found it at Madeira.

not, at least during the early stages of the disorder, before the numbness of the extremities has proceeded to its greatest height, or the general debility becomes excessive. Nay, do we not every day see children, the professed offspring of a leprous parent, whose legitimacy we have no right to doubt?

Perhaps there is no class of human infirmities into which greater confusion has crept, than into that of cutaneous diseases; the ancients themselves appear to have adopted names in the most vague and indefinite manner; and the Arabian writers, their translators, and commentators, have unfortunately been little more distinct; this much, however, is certain, that the *Lepra Arabum* is the *Elephantiasis* of the Greeks; the *Elephantia* of Haly Abbas; the *Juzám*, also *Ddul'ásád* of the modern Arabs; the *Khórah* of the Persians; the *Ara mauny wanny* of the Cingalese: by the Hindoos it has got various appellations, *Jagáru*, *Bar'd ázár*, &c. In Dakhíni it is often termed *Ruggit Pitthie*; it is the *Untat* ونت and *Keddál* قدال of the Malays; the *Tubug*, also *Cheureuh* of the Javanese; the *Ma-fung* of the Chinese; the *Nambí* of the Sumatrans, and the *Kústam* of the Tamools. The Sanscrit name of it is *Kusht'ha* (कुष्ठ) whence Hindi, *Kór'*.

Dr. Hillary, in his work already cited (pp. 322, 335), makes an erroneous distinction betwixt the malady now under consideration, and what he calls “*the leprosy of the joints*;” for the latter is nothing else than an advanced stage of the former, and is termed by Dr. Towne, in his diseases of the West-Indies, “*the joint evil*.” Dr. Hillary further supposes, that the leprosy of the joints is no where noticed by the Greek physicians, and only by *Haly Abbas* amongst those of Arabia; a mistake, which, after having made, however, he seems inclined to correct, by adding, “*without indeed they meant that sort of leprosy in which they mention the falling off of the limbs*.”

Aretæus* of Cappadocia, who wrote in Greek, has given us, under the title of *Elephantiasis*, perhaps the most perfect picture of this distemper that has ever appeared; and takes particular notice of the falling off of the fingers and joints of the feet; he farther adds, perhaps a little extravagantly,

* A knowledge of the exact period at which Aretæus lived appears to be one of the desiderata in medical history. Le Clerc, in his “*Histoire de la Médecine*,” says it is probable that he may have been contemporary with Galen; but this is merely conjecture: and of the two (Galen and Aretæus) so much is only correctly known, that they lived during the long interval betwixt Pliny and Paul Eginatus, and Aetius.—See *Hist. de la Médecine*, pages 516, 517.

that, before death ensues, the leper is sometimes actually torn limb * from limb. The medical men of his day and country not unfrequently called the affection *Leonia*, from the circumstance of its distorting the human countenance, and giving it somewhat the appearance of that of a lion when enraged; others again, the same writer observes, bestowed on it the appellation of *Satyriasis*, from the shameless lasciviousness that attends it.

Modern French writers have named this leprosy "*Le mal rouge*," and it may be found described under that name by Pierre Campet, in his "*Maladies graves de la Zone Torride*" (p. 290). But, although he gives upon the whole a tolerably good account of it, he does not bestow on it its proper name of Elephantiasis; that he thinks fit to reserve, like Dr. Thomas,† and some others, for what we term the *Barbadoes* or *Cochin leg*, which is the *Elephas* of Haly Abbas, and the *Elephantia* of Avicenna. Modern Arab ‡ physicians call it *Dái'l-fil* داع الفيل. It is the *A'nay taal* of the Tamools: the *Yëanügáy-káloo* of the Gentoos; in Dakhíni it is *Hati ka paön* هتي كاپارن in Sanscrit गजपाद *Gaja-páda* (Elephant's leg); and in Cingalese, *Goney Parangy*.

Dr. Adams seems to be of opinion, that the Greek authors were not only totally unacquainted with the leprosy, distinguished by the tumefaction on the limb, and which afterwards got the name of Elephantia, from some of the Arab authors; but that the Latins§ themselves were practically ignorant both of this and the true Elephantiasis of the Greeks. In this last inference, however, which is perhaps drawn from Lucretius,|| I presume that the Doctor has made a slight mistake, of which the reader may satisfy himself by turning to Pliny's¶ Natural History, where he will find that the genuine Elephantiasis was well known in Italy, but not before the time of Pompey the Great; yet it would not appear to have been of long continuance in

* Vide Aretæus, lib. ii. cap. xiii.

† See his *Modern Practice of Physic*, vol. ii. page 188.

‡ It would appear that *Abubékér Mohamed Rhazes* has, of all the Arab writers, given the best account of this disease: he lived and practised in Persia upwards of eight hundred years ago, and has made an exact distinction betwixt *Elephas* and the true Elephantiasis.—See *Histoire de la Médecine*, by Le Clerc, page 771.

§ See Adams on *Morbid Poisons*, page 289.

|| See Lucretius, lib. v.

¶ See Pliny's *Nat. Hist.*, lib. xxvi. cap. i.

that country, in which I believe it is at present no where to be found ; at all events very rarely.

We have to regret that the very able writer cited above (Adams), who has allotted several pages of his valuable work to leprous impurities, did not do something more than he has done to remedy the want of arrangement, which has been so long complained of in this class of diseases : for, notwithstanding his great research, and evident conviction of what was wanting, he seems finally to have taken without distrust the nomenclature such as he found it, however vague and indiscriminate ; and, after detailing with a master's hand many of the most marked symptoms of the Elephantiasis of the Greeks, under its proper name, he adds : " But when I use the single term Elephantiasis, my wish is, to confine it to the modern disease, the Barbadoes leg : " in this way the old confusion is carried on ; and to two complaints, very opposite in their nature, is given the same appellation.

There are no less than three names bestowed by the Tamool doctors on the Elephantiasis of the Greeks : *Kústam*, *Cárin Kústam*, and *Përi Vishadi* ; the first signifies in their language the disease that cuts short ; the second has the word *Cárin* prefixed, to denote the black or rather purple colour of the tubercles, and of the countenance and skin altogether, of such as labour under this dreadful affliction. The third and last name, *Përi Vishadi*, or great disease, is a term used by the Brahmins, and others of high rank, merely from delicacy, to avoid pronouncing the word *Kústám*, which when spoken never fails to excite a degree of disgust.

The leprosy of the Arabians, by which I must be understood to mean the Elephantiasis of the Greeks, is by no means of rare occurrence in the Indian peninsula, and spares no caste nor sect, though it is certainly more commonly found amongst the poor than the rich, owing no doubt to their manner of living, and consequent languid circulation. It is not often, as I have already remarked, that it shews itself before the age of puberty ; but when it does, it seems to repress in a wonderful degree the growth of the body. Boys or girls so disordered never attain to any graceful stature, but soon become meagre, shrivelled, and miserable ; their voices are shrill as well as nasal, and continue so. With coming years they evince little sexual desire, and that hair which usually covers the chin of boys, and pubes, after a certain period, either never appears at all, or is of a very delicate texture, and but thinly scattered. When the disease begins at this early stage of life, the mind as well as body seems to suffer in the general wreck. Such

lepers are poor in spirit, drooping and listless: they are rarely seen to smile, and have not unfrequently a weakness of intellect approaching to idiotism. But the malady commonly begins its depredations about the age of twenty-three or twenty-four, seldom later than forty; and the following are the symptoms, so far as I have been able to observe, which mark its first approach, progress, and termination.

The unhappy person fated to perish by this slow but relentless affliction, first perceives an unusual dryness and slight roughness of skin in his hands, feet, arms, and legs, which, even after violent exercise, do not transmit the perspiration readily; he begins to fall off a little in his appetite, and to be much troubled with flatulence and other signs of indigestion, but he is as yet not ill enough to be alarmed, and pursues his customary occupation; his sleep, soon after this, in place of being refreshing to him as it used to be, is disturbed by wild dreams, and he frequently during the night starts up in a fright, with a palpitating heart and sense of suffocation. About six weeks or two months from the time of his first being taken ill, his colour begins to change; if he was a rather fair man, he grows at least two shades darker, and his features lose much of their natural aspect, becoming somehow tumid and less agreeable than formerly. The dryness and roughness of skin increase, and about the end of the third month he complains of a strange numbness in his hands and feet, which he can allow to be pinched without feeling pain; his pulse, which was most likely always feeble, will, if felt, be found to be extremely languid, small, nay at times scarcely to be perceived. The aridity and unevenness of skin now extend further, reaching as high as the middle of the arm and leg; indeed, the cuticle over the whole body seems rigid, harsh, and to have entirely lost that smooth and healthy look which it had before the lepra made its primary attack. About this period many dark coloured spots and purple tubercles usually appear on the ancles and wrists, and partially on the legs and arms; they are in shape not unlike segments of ripe currants, but flatter at top, and of a singular shining and oily aspect; they are not attended however with any pain, neither are they particularly itchy,* which in truth they could not well be, when we consider that they are subsequent to the want of feeling

* Dr. Thomas Heberden, in his paper on this leprosy, says, I think erroneously, that the tubercles are attended with great heat and itching.—See *Medical Transactions of the College of London*, vol. i.

which I have above described. Some of the tubercles occasionally disappear suddenly, and return again, without evident cause; others generate a small quantity of ichorous matter, which drying, occasions a trifling scurfy desquamation. At this stage of the malady I have met with one or two cases in which glandular swellings at the upper and inner part of the thigh made their appearance, similar to those mentioned by Dr. Adams;* but, as far as I can learn, this is by no means so constant a symptom of the disease in India as it seems to be in Madeira. The leprosy advancing, the tubercles increase in size and number, and seizing on the face, render the infected person a most unsightly object. It must here be remarked, that up to this period the breast, abdomen, and back either remain tolerably smooth, or the tubercles are comparatively much fewer upon them; they are moreover smaller in size, nor ever on those parts do they occasion much white desquamation, the natural consequence of their greater vitality. About the end of the first year every symptom is much aggravated: the dryness and rigidity of skin becomes universal, is distressing in the greatest degree; the numbness has extended to above the knee, and is so great, that the poor sufferer may, through inadvertency, burn his hands or feet to the bone without perceiving it: the surface of the whole frame assumes a bright yet unctuous appearance; when narrowly examined, it looks wrinkled longitudinally, and not unfrequently feels, in those parts where feeling remains, as if stung with nettles, rising up into wide spreading irregular bumps, which come and go. The skin about the wrists and ankles, where the tubercles have scaled off, has a scurfy appearance, and here and there a raw excoriation may be perceived, the consequence, perhaps, rather of chafing than ulceration. The countenance alters still more; the cheeks grow bloated and puffy, and are studded, if I may so say, with irregular dark protuberances; the muscles of the forehead enlarged, seem as if pushed downwards; the eyebrows, thickened and swollen, hang over the eyes, which being in every instance inflamed and rheumy, and having been made to look rounder by the pressure from the neighbouring parts, resemble those of some wild animal; the lobes of the ears are rough, knotty, and misshapen; the tongue is foul, and is in some cases blistered with tubercles, which bleed; the breath is foetid; the voice sounds unpleasant; the urine is plentiful, and generally turbid, having a most

* See Adams on Morbid Poisons, page 273.

unnatural odour; the bowels irregular; the hairs of the head gradually fall off; the parts of generation shrink; the nails break and waste away; the fingers and toes seem as it were withered, the former bending inwards as if cramp, and the heels and soles of the feet are disfigured by deep fissures. The disease gradually going on, and the humours of the body becoming, from the impeded transpiration and general stagnation, daily more corrupt; the voice, which was but six months before only unpleasant, owing perhaps to tubercles on the uvula and palate, has now a most discordant, nasal, and unnatural sound; the *alæ nasi* are swelled and scabrous, and the bones themselves of that organ are in certain cases flattened, and twisted in some degree to one side, giving to the countenance a distorted look. A most offensive ichor now distils from the nose; neither rest nor food tend to refreshen or invigorate, and all carnal appetite, in place of being increased, as some authors* imagined, entirely dies away.

In this condition, with many of the grand functions which support life deranged, it may easily be imagined that existence must be a state of misery; and the conviction that there is no hope whatever of recovery, makes the wretched leper still more an object of pity.

In the advanced state to which I have brought, in description, the *Lepra Arabum*, as it appears in India, the malady will sometimes continue for several years, apparently having come to an ultimate stand; but, alas! with declining years is sure to come progressive misery: every symptom is finally rendered worse; the already ugly become loathsome; on the most trifling motion the respiration is hurried, and the dyspepsia is most tormenting, owing in all probability to the perspiration being obstructed over so great a part of the surface of the body, and the certain accumulation of morbid humours: when any exertion is used sufficient to excite diaphoresis, the only parts that perspire are the neck and a little round the waist; the face, legs, arms, and thighs are thereby merely rendered clammy, and the tubercles on them turgid. At this time a feverish attack comes on regularly every evening, which may be discovered by the increased heat of the axilla, and the eyes assume that dim but brassy appearance, so properly noticed by Aretæus;† pulsation is no longer felt any where, but

* See Sonnini's Travels through Egypt, page 559. See also Aretæus, by Moffat, page 278; also Hillary's Diseases of Barbadoes, page 322—326.

† See Aretæus, page 283.

by pressure over the heart itself; the whole frame is emaciated, the face is frightful to behold; the voice sounds hollow as if from the tomb: the hands and feet now, from long want of due nourishment, begin to give way; partially blistered-looking ulcerations taking place over their joints, they gradually drop off, and so add helplessness to misery and long-protracted calamity. Soon after this stage, comes the last closing scene; worn out by lingering and hopeless wretchedness, dead almost to every feeling of body as well as mind, the poor leper hastens to his grave: yet, cadaverous as he is, he is not deserted in his expiring moments, but finds a humane and charitable support from the more prosperous of his race. If a Pariah, he is taken care of by those of the same rank till death comes to his relief: if a Hindu or Muhammedan, he is cherished by the individual benevolence of his sect or caste; and having been conveyed to the vicinity of some pagoda or mosque, breathes out his dying prayer on what he conceives to be sacred ground!

I have been informed by my much respected friend Mr. H. T. Colebrooke, that the *Lepra Arabum* is supposed by the Hindus of Upper India to be inflicted as a punishment for sins committed in this world, and that any person dying of it is liable to a return of the disease in his next birth; an evil that may be averted by voluntary death, by which means former crimes are expiated: the sufferer is born again, clean, and no longer subject* to the same disorder.

I have so far taken a view of the malady as it appears unchecked by any medicine whatever; it however will be found to vary according to existing circumstances, to the peculiar constitution of the leper, and as it may or may not meet with any other disorder in the habit. In poor people, who are badly fed, who do not keep themselves perfectly clean, who may be perhaps during the first stages of the complaint harassed with labour, and perhaps unavoidably exposed to the vicissitudes of heat and cold—in such, in fact, whose circulation must from a combination of debilitating causes, become every day more languid, the lepra will soonest reach to its greatest height; but amongst the more affluent, whose means enable them to take greater care of themselves in regard to diet and non-exposure to excessive heat, it will prove more tardy in its progress, owing to the better preserved

* See Ward's *Hindoo Mythology*, vol. ii, book 4. chap. ii. sect. 29.

vigour of constitution: nor has it on those last-mentioned individuals by any means so unsightly an appearance; for though there are present, in every instance, the affection of the nose, the altered voice, the clouded colour, and that constant characterizing symptom the want of feeling in the extremities, yet in such cases the joints sometimes do not fall off, at all events not till a very late period of the malady; and the skin on the legs and arms does not put on the scurfy look in so great a degree, but, though rough, furrowed, and shining, is kept comparatively smooth by frequent bathings, and the external use of cocoa-nut oil.

Mr. Robinson, in a valuable paper on Elephantiasis as it appears in Hindusthan, and which may be found in the *Medico-Chirurgical Transactions*, Vol. X., has described two varieties of the disease, which he thinks are often confounded under the same name. The one he calls *Elephantiasis Anaisthetos*, the other *Elephantiasis Tuberculata*: the first, as the name implies, marked by a want of feeling in the extremities; the second, by tubercles. I cannot say that I ever was led to believe that there were two distinct varieties, though the malady no doubt assumes varying appearances in different individuals, the natural consequence of age, peculiarity of habit, mode of living, &c. &c.; and this much I can affirm, that I never met with a single case of the genuine disease, which was not equally distinguished by want of feeling in the hands and feet, and by tubercles.

In the first volume of the *Edinburgh Medical Transactions* may be seen a paper on this *Lepra* by Mr. Playfair, in which he particularly notices the virtues of the *maddar* powder,* as a remedy for it.

I have already expressed a doubt whether this lamentable disorder ought to be considered as contagious; and I at the same time assigned my reasons for believing it to be hereditary: there is, however, another question which naturally offers itself regarding it, and that is, whether it may occur independently of constitutional predisposition. I confess that I am inclined to be of opinion, that in most regions of the *Torrid Zone* it may be brought on by a particular combination of causes, which I shall soon mention, operating on a habit distinguished by certain peculiarities. Such instances, however, amongst Europeans, we may safely suppose are extremely rare; and I cannot here omit noticing a singular fact, connected with leprosy; it

* Powder of the bark of the root of the *Asclepias Gigantea*.

is this, that in every case of it I have known, in an European habit, the affected person was a German, a Dane, or a Swede, but never an Englishman: now as we learn from various accounts, that this horrid scourge is still occasionally met with in the northern* parts of Europe, though long banished from Britain and Ireland, it becomes a query, whether those men may not have brought the seeds of the disease with them from their native country.

To ascertain the true cause or causes of this leprosy would be no easy task; and I fear, as happens in the instances of many other affections to which the human frame is subject, that here little more is in our power than to offer a probable conjecture. Dr. T. Heberden, in his account of the malady, distinguishes it into two species, according to its manner of attack, *viz.* that by *fluxion*, and that by *congestion*. The first he thinks is often the attendant of crapula, or surfeits from some gross food, whereby the latent mischief may be called into action; violent† agitation of mind is supposed to be a not unfrequent cause of the disorder; and, in the female sex, a suddenly suppressed menstrual discharge by bathing the legs in cold water at an improper time. Aretæus‡ calls it, according to the theory of the age in which he lived, a refrigeration of the innate heat; or rather a congelation similar to the conversion of water into snow, and perhaps this comes as near the truth as any thing that has been said on the subject in these more enlightened days.

Some time towards the end of the year 1811, I requested Mr. Charles Stewart, a medical officer then under my superintendance, and stationed at Tranquebar, in the vicinity of which town the leprosy of the Arabians is very common, minutely to examine as many persons labouring under the disease as he could collect together, and to report to me accordingly. Mr. Stewart obeyed my instructions; and the following are the general conclusions which I drew from that gentleman's observations on fifty lepers, male and female:—

* It would appear by some late accounts, that the *Lepra Arabum* is very common in Iceland and Norway, in which first-mentioned country it is mentioned under the name of *Skyrbjugur*. See an excellent description of it, as it appears in those parts of the world, in a letter from Chevalier Bach to Dr. Trail, in Pinkerton's *Voyages and Travels*, vol. i. page 713.

† See Edinb. *Practice of Medicine*, vol. iv. page 511.

‡ See Aretæus, page 279.

1st. That women are less liable to suffer from Elephantiasis than men.

2d. That the disease is most certainly hereditary.

3d. That its being in any degree contagious is extremely problematical.

4th. That every leper, suffering from an advanced stage of the malady, doubts whether he is capable of propagating his species.

5th. That a fish diet is found to render every symptom worse.

6th and lastly. That poor living, want of cleanliness, mendicant misery, and exposure to cold and damp, are but the too constant attendants of this dreadful affliction.

Lorry, in speaking of leprosy, says, "Universum totius corporis cancrum est ut omnes medici veteres eam vocant," and seems to have believed it to be occasioned by black bile. The same author informs us, that, on opening the body of a soldier who died of the Elephantiasis of the Greeks, the liver* was found enlarged and indurated. Schilling† imagined, that the malady might be caught by sleeping in the same bed with an infected person; also from the fetid odour of the ulcers. He prescribed for it the decoction of a plant common in the marshes near Surinam, and there called *Tondin*: it is of the genus *Paullinia*. The *Lepra Arabum* is well described by Alibert in his work on cutaneous disorders (page 46), under the name of "*La Lèpre Tuberculeuse*:" he is of opinion that it is an affection of the lymphatic system, and tells us that it is sometimes to be met with at Paris. As to the mode of treatment, he speaks in rather desponding terms, and appears chiefly to have trusted to wine, decoction of bark, and aromatic fomentations.

Most authors agree that improper food, and especially rotten or decayed fish, is an exciting cause of the disease; and we know that Sir William Jones‡ informs us, that the Hindu doctors commonly ascribe it to drinking copiously of milk after eating fish. On the other hand, we learn from an account of the *Lepra* as it shows itself at the Isle of France,§ that it is to be cured by the use of turtle. That the complaint could ever be brought on by the over use of maize or millet, as Cassal supposed, is highly improbable; but such a notion it would appear prevails in the Asturias: || that

* See Alibert on Diseases of the Skin, page 94.

† See same work, page 90.

‡ See his works, vol. i. page 556.

§ See Edinburgh Medical Journal, October 1823.

|| See Alibert, page 88.

the use of pork, when the hog had been improperly fed, may do mischief on such occasions, I can more easily conceive, nay, know to be a fact.

As far as regards the more remote causes of the leprosy of the Arabians, it may, I think, be safely admitted, that hereditary taint is a prime agent, accompanied by an extremely languid circulation, and a somehow defective* condition of the skin, which prevents a free transmission of the cutaneous discharge, thereby retaining in the habit what under other circumstances would have passed away: some or all of such peculiarities being present, the disease may perhaps be produced by one or more of the following exciting causes, creating in the body a viscid, acrid, and morbid humour: unwholesome food, such as decayed salt fish, taken at the same meal with buffalo milk; the flesh of swine or fowls, which had been permitted to feed promiscuously on musty grains and certain acrid vegetables;† irregular living; fear; grief; surfeits of various kinds, particularly of glutinous fish after long and painful fasting; alternate exposure to heat and cold; night damps; want of cleanliness; the use of impure water; and mendicant poverty.

In proceeding to notice the treatment best suited for this lamentable affection, it grieves me to say, that Elephantiasis has ever been considered as one of the most difficult of all those disorders to which the human frame is liable. Aretæus, of old, tells us, in the beginning of the chapter in which he treats of this malady, "It is necessary that remedies should be more powerful than diseases, in order to overcome them; but what cure can be devised sufficient to encounter so dreadful an evil as the present." Dr. Turner,‡ in his work on diseases of the skin, declares that the Elephantiasis of the Greeks is a most dreadful malady, if at all curable. Dr. Heberden himself observes, that excepting in one patient, he never saw or heard of a confirmed case of it terminating favourably. Nay,

* Dr. Quincy supposed the cause of leprosy to be some original malconformation, in the necessity of one secreting organ doing the office of another to which it is not naturally fitted.— See his *Medico-Physical Essays*, Essay VI., on Leprosy.

† Amongst the great variety of vegetables taken as food by the Hindus, some of those picked up by the road side and eaten by the poor are of a deleterious nature, such as the *Toombay keeray* (Tam.) *Phlomis Indica*.

‡ He defines it as contagious, and calls it a cancerous *câcheria* of the whole habit, arising from some fault in the liver or spleen, and consequent *atrabilis* or adust humour.—See his work, pages 3 and 4, second edition.

Dr. Towne* in his treatise on the disorders of the West-Indies, frankly acknowledges that he had never performed a perfect cure of what he called "the joint evil."

I have already observed how certainly the *Kústam* of the Tamools has been ascertained to be hereditary; a fact which must tend most effectually to damp our hopes, when called upon to treat any case of it springing from that source. When this leprosy descends from parent to child, it appears earlier in life than in other attacks; when the malady is either acquired, or perhaps when the taint has been less powerful, it does not shew itself till a much later period; and it is in those last-mentioned instances that our chance of affording relief is the best, as the habit must be then stronger, and the patient more manageable.

In this, as in all other hereditary complaints, much good may be done by avoiding what has been termed exciting causes; a caution which cannot be too forcibly inculcated, to those who may have reason to dread a visit from this distemper. The ancient Greek physicians were in the habit of ordering bleeding at the beginning of this disease, and giving freely as a drink a decoction of the *Hiera picra*. Aretæus as well as Galen† recommended viper's flesh, with the exception of the head and tail of the animal; the latter prescribed, at the same time, emetics of the white hellebore, and purgatives of the black; sea bathing, the tepid bath, and a generous use of rich wine, he considered as powerful assistants; and advised that the diet should be of easy concoction, and such as produced good juices: he moreover enjoined exercise, and, unlike the medical men of the present day, allowed his patients to eat fish and pork.

The modern Arabian physicians seem to trust chiefly to mercury for the cure of the *Juzám*, which the reader may assure himself of by looking into a work entitled *Almaghni fi shereh al mujiz*, written by SEDID ADDÍN GAZERANG; also, *Shereh ásbáb va ilámat* (a celebrated treatise on the causes, signs, and remedies of diseases) of NEJB ADDÍN MODÍN AL SAMARCANDI, by NAFIS BEN AVIZ, dedicated to Sultan ULUGH BEG GURGÁN.

Dr. Hillary was of opinion, that all preparations of mercury except the *mercurius calcinatus*,‡ given in small doses as an alterative, with antimonials,

* See his work, page 191. See also Hoffmann, part v. cap. v.

† Vide Op. Galen, class vii. page 107, F.

‡ See his Diseases of Barbadoes.

aggravated and increased the disease ; he gave at the same time a decoction of sarsaparilla. Dr. Towne found that antimonial preparations afforded the greatest relief, and that mercury in any shape rendered every symptom worse. Pierre Campet,* in his "*Maladies graves des pays chauds,*" observes that Dr. Joseph Flores had announced a wonderful specific in cases of this leprosy, and which at Mexico, Malaga, and Cadiz had met with the greatest success ; it was the small lizards, called in the French Encyclopedia *Anollis de terre, ou Gobe-mouches* ; after having cut off the tail and head of the little animal, and taken out the intestines, it is cut into small pieces, and eaten fasting, while the parts are warm and yet palpitating : he further adds, that at Guatemala, and in Mexico, not more than five or six lizards had been required to cure the disease at the rate of a lizard a day, but that many more became necessary to produce the same effect in Europe. It would appear however, by Dr. Pearson's† account, that these animals,‡ by trials made with them by Carminati and others, have no positive medicinal effect in such complaints. Dr. Quincy§ thought that mercurials were undoubtedly beneficial in this, as well as in all other disorders proceeding from sharp saline humours retained in the body. Dr. Hugh Smith,|| on the other hand, appears to have disapproved altogether of the use of mercury in this complaint, preferring pure antimonials, with the use of the *Decoctum Ulmi* as a diet drink, in the quantity of four or five ounces twice daily. Dr. Good¶ tells us that a free use of sarsaparilla, mezerion, and guaiacum has been found beneficial, and that even the *Lobelia* has had its advocates. Dr. T. Heberden, who had frequently occasion to treat this malady at Madeira, mentions a case of it in which a perfect cure was performed, by means of an electuary composed of powdered bark, with a third part of sassafras root, inspissated with syrup ; of this, the quantity of a large nutmeg was ordered twice daily, the patient having his legs bathed in an embrocation consisting of an ounce of lixivium of tartar and two drams of spirit of sal

* See the work, pages 299, 300.

† See his Synopsis of Materia Medica, page 41.

‡ For a particular account of the use of lizards in leprosy, the reader is referred to the London Medical Review, vol. iii. pages 205, 206, where will be found observations by M. Demourande of Cadiz, and M. Delarche of Madras.

§ See his Medico-Physical Essays, Essay vi.

|| See his Formulæ Medicamentorum concinnatæ.

¶ See his Study of Medicine, vol. ii. page 859.

ammoniac, intermixed with half a pint of proof spirit. I cannot say, however, that I experienced any good whatever in prescribing the bark in affections of this nature in India; on the contrary, it appeared to heat and irritate.

In every attempt I made to combat the Elephantiasis of the Greeks on the Coromandel coast, the first thing I did, previously to ordering any medicine whatever, was to bring the general health of the patient into a better state, by nourishing diet, and due attention to exercise and cleanliness; the necessity of attention to this caution must be evident, seeing that the disorder is so frequently found amongst the mendicant poor, whose reduced habits are but ill suited to stand the operation of any powerful medicine.*

The corrosive sublimate has been given by some medical practitioners in this affection, in small doses, in conjunction with the muriatic acid and antimonial wine;† but this is a prescription I cannot recommend from my own experience.

In whatever form mercury is prescribed, great care must be taken not to push it so fast, or so far, as to bring on a weakening *ptyalism*, which cannot fail to be productive of infinite mischief; it will be necessary, however, to touch the mouth, and keep it so for some weeks. Warm bathing is frequently to be had recourse to (let the plan pursued be what it may); and when we have done our utmost by the use of mercury in one shape or other, to overcome the disorder, we must continue to support the frame by giving generous wine or other cordial.

The mineral acids are unquestionably of great service. The *tinctura guaiaci ammoniata*, as a stimulating sudorific, has been supposed to possess considerable virtues in such affections, in doses of one to two fluid drams. Of the *tinctura gambogiæ ammoniata* I have had no experience; it has been ordered to the quantity of a tea-spoonful or two, night and morning. The *vinum antimonii compositum* of the *Pharmacopeia Chirurgica* is a valuable medicine in this, as well as other cutaneous complaints.‡

From what I have said under the head of the exciting causes of this malady, it need scarcely be observed, that the diet ought to be generous.§

Hindu medical writers reckon no less than eighteen different kinds of *Kústam* or *Lepra*, the two worst are called in Tamool, *Vén kústam* or scaly

* See Note A.

† See Note B.

‡ See Note C.

§ See Note D.

leprosy, and *Carin kústam*, or black leprosy; the first corresponding with the *Lepra Græcorum*, the last with the *Lepra Arabum*. These, AGASTYA, in his celebrated work entitled *Vaidya Acerum*, and also in his *Pérnúl*, informs us, descend from father to son, and may, he adds, be hastened by the following causes:—

1. By drinking milk* after eating glutinous fish to excess.
2. By eating food which is of a windy nature.
3. By eating (when urged to it by great hunger) victuals of a disagreeable taste or odour.
4. By worms in the body.
5. By eating too much *yellow* (seed of the *sesamum orientale*).
6. By checking vomiting, so retaining in the body what ought to have been ejected.
7. By habitual costiveness, by which means morbid humours are pent up.
8. By the union of a morbid, gastric (hypochondriacal) humour and vitiated bile.
9. By a viscid acrid humour in the blood (serum).

Certain varieties of *kústam* (leprosy), he is of opinion, are occasioned by the bites of different noxious animals of the beetle kind.

Others again, the same author tells us, are brought on by the bites of snakes and venomous lizards.

There are a great many medicines in use amongst the Hindu practitioners, which are supposed to possess virtues in leprosy affections. They have for ages past considered the white oxide of arsenic as a powerful remedy in the *Kusht'ha* (Sans.), and as such it may be found noticed by ATHAR ALI KHAN, of Delhi, in the Asiatic Researches, vol. ii. page 153. I have had occasion to prescribe this medicine in several cases, but I am sorry to say not with any marked good effect; and I perceive that Dr. Bateman† had no better success in administering the same remedy for the malady in question.

The root of the plant called by the Tamools *Eraporel* (*mimosa scandens*), is ordered for this leprosy in the form of decoction, to the quantity of half an ounce, twice daily. An extract prepared from the leaves and tender

* I perceive this cause of the disorder is noticed by Sir William Jones.—See his works, vol. i. page 556.

† See Bateman's Practical Synopsis of Diseases of the Skin, page 311, note.

shoots of the plant called *Mārudāni* (Tam.) *Lawsonia Spinosa*, is also sometimes given, to the extent of half a spoonful, twice daily.

The kernel of the nut called in Tamool *Niredimdtú*, is, with other medicines, prescribed in the form of electuary, to the quantity of half a tea-spoonful, twice daily; I believe the plant to be a species of *Jatropha*. Different preparations of mercury are recommended by the Tamool physicians in leprous cases, as may be seen by turning to the *Materia Medica* of *Hindustán* (pages 106, 107). In the Tamool *sástram* entitled *Pérnúl*, written by AGASTYA, will be found a prescription which has great repute in lower India in cutaneous affections; it is a distilled oil prepared from a combination of nineteen different plants, chiefly aromatic; it is given in the quantity of two gold fanams weight, twice daily, in conjunction with a little sulphur: the same oil is also recommended as an external application for the ulcerated joints. But of all the alterative and deobstruent remedies employed by the native practitioners of India in this complaint, none is of equal repute with the concrete milky juice of the plant called by the Tamools *Yercam* (*Asclepias Gigantea*); it exudes from the leaves and tender shoots on being pricked, and has at first somewhat the appearance of cream; but on drying becomes a little darker coloured, and has a rather nauseous and acrid taste: the dose is about a quarter of a gold pagoda weight, given twice daily, together with a little sulphur, and continued for some weeks. The plant is termed, in Sanscrit, *Arca*, also *Vásuca*, and *Pratápasa*.* In the Canarese language it is *Yécáddá*; in Hindustáni it is named *Madár*;† in Dukhíni, *Akré*; in Javanese, *Wádári*; and in Arabic, *U'sher*, according to Avicenna (233), though it would appear that in Arabia Felix, the *Asclepias Gigantea*‡ has got the appellation of *Oshar*, which, however, may be a corruption of the same word. In the *Materia Medica* of Hindustan, above cited, which I published at Madras in 1813, will be found (page 128) some account of the *ycrcam* plant (*asclepias gigantea*), and its use amongst the Hindu doctors; also some notice of what has been by some considered as a variety of the same plant, and termed in Tamool *Vállerkú*; but I have since had reason to believe that this last is of a

* The *Arca* or *Vásuca* is the rosy variety; the *Pratápasa* or *Alarca*, is the white sort.—H.T.C.

† From the Sanscrit, *Mandára*.—H.T.C.

‡ The reader will find farther notice of this plant in Springel's "*Rei Herbariæ*," vol. i. pages 252, 253; also in "*Abu Hanifa abud Serap*," cap. 50; also in "*Alpinus' Egypt*."

different genus altogether, and what was named by the late excellent Dr. Klein, of Tranquebar, *Exacum Hyssopifolium*, and is in all probability that which is said to be often confounded with the true *asclepias gigantea*, in the upper provinces of India, and there called *Akand*.* I have said, that the dried milky juice of the *asclepias gigantea* was considered in southern India as powerfully alterative; and late accounts, which I have received from that country, tend the more to convince me of it: I should therefore venture a query, whether, as such, it might not be tried in cancer, that most intractable of all maladies. The bark of the root of the *asclepias gigantea*, as it appears in the bazaars of lower India, is of a pale colour, and has a bitter, and somewhat nauseous and pungent taste: the natives consider it as alterative; also as a gentle stimulant, taken in decoction to the quantity of two table-spoonfuls twice daily: and Rheede, in his *Hortus Malabaricus*,† where the plant is mentioned under the appellation of *Ericu*, says, that a decoction of its root is given in intermittent fever, and in those swellings of the limbs which women sometimes have after confinement. The powder of the bark of the root of the *asclepias gigantea*, called in Bengal *madár* powder, has been highly extolled of late as a valuable remedy in lues venerea, leprosy, and cutaneous diseases in general. Mr. Playfair, in a paper already mentioned, and which may be seen in the first volume of the Edinburgh Medical Transactions, goes so far as to say that it is one of the most useful medicines hitherto derived from the vegetable kingdom; and it would seem, by an excellent paper‡ on “*Elephantiasis as it appears in Hindustan*,” by Mr. Robinson, that he also bears witness to its powerful effects as a deobstruent and sudorific, in almost all cutaneous eruptions; the dose of this powder is from three grains to ten.

Dr. Good, in his Study of Medicine,§ notices two other species of Elephantiasis: one common in some parts of Italy, and termed *Elephantiasis Italica*; the other as occurring occasionally in Spain, which he calls *Elephantiasis Asturiensis*; but, as I have already observed, respecting Mr. Robin-

* In the *Hortus Bengalensis*, published by Dr. Carey, from Dr. Roxburgh's MS., *Akand* is given as the *Hindí* name of *asclepias gigantea*.

† See *Hortus Malabaricus*, part ii. page 55.

‡ See *Medico Chirurgical Transactions*, vol. x. See also Dr. James Johnston's most valuable work on the influence of tropical climates, page 268.

§ See work, vol. ii. page 856.

son's *Elephantiasis Tuberculata*, and *Elephantiasis Anaisthetos*, I consider them as the same disease in every instance, only differing a little in the symptoms in different habits, owing to age, mode of living, peculiar state of the body, &c.

The appearances of the body on dissection do not throw much light on the peculiar nature of the malady, further than that I have observed in such cases the heart to be usually small, and the arterial system altogether shrunk and collapsed: the liver I have in one or two instances found indurated, and the gall bladder for the most part distended with viscid and very dark coloured bile; the contents of the abdomen had, generally speaking, an unusually pale and wasted appearance; the bones, when laid bare, were dry and brittle; the testicles, in one or two instances, were almost entirely obliterated; and, on opening the head, it has appeared to me that there was a more than ordinary determination of the blood to the membranes of the brain.

Besides the *Lepra Arabum*, there are several other cutaneous or leprous disorders but too common in India. The *Lepra Græcorum* is much less frequent, however, than that which we have made the subject of this paper: the Hindus of Lower India term it *Venkústam*, also *Shevutay cuday mayghum*, from a notion that it is occasioned by the bite of a small red reptile with numerous legs; it is often to be seen in the Malay countries, and there has the name of *Sakit Bercúdis*, or scaly disease.

The *Elephas*, or Barbadoes leg, I have already had occasion to mention.

The *Leuce* of the Greeks ($\Lambda\epsilon\upsilon\kappa\eta$) is the *Vallay kústam* of the Tamools, and the white *Baras* or *Beres Abéz* of the Arabians; in *Dukhni* it is *Sufaid khóre*; and in Tellinghoo, *Tella kústam*. Haly Abbas has exactly described this affection in his *Theoria* (cap. xvi. lib. 8). It is but a trifling evil compared with the *Elephantiasis* of the Greeks; and does not appear to have called forth much attention amongst modern medical writers. Celsus* has placed it under the same head with *Alphos* and *Melas*, considering the three affections as different species of *vítligo*: though certainly the *Leuce* bears no resemblance whatever to the other two, which are nothing more than slight and innocent desquamations of the scarf skin; the one called *alphos*, from its white colour, the second *melas*, from its black. The first of

* Vide Celsus, lib. v. cap. xxviii.

these two is the *Vallay Taymble* of the Tamools; the *Alázah* or *White Bohák* of the Arabians, and the *Sufaid Saim* of the Muhammedans of India. The last, the *melas*, is the *Carin Taymble* of the Tamools, the *Kala saim* of the Muhammedans of India, and the black *Bohák* of the Arabians.

What are called *Albinos*, or white Indians, are often met with in the more inland tracts of the Peninsula. It is no place here to enter minutely into the singular affection which distinguishes those miserable beings. *M. Blumenbach*, of Gottingen, *M. Ruzzi*, a surgeon of Milan, and *Saussure*, in his "Voyages dans les Alpes," have given us much curious information regarding them: in Tamool they are named *Ven Pandoo*; in Tellinghoo, *Tella Pandoo*; and by the Muhammedans of Lower India, *Góra lóke*. Their colour is that of a dead European of a very fair complexion. They are almost blind till brought into some dark or shady place, so painfully susceptible are they of the common light of day. Their constitutions are extremely delicate; they are for the most part timid and irresolute; and are seldom known to live to an advanced age: the females rarely bear children; but, when they do, their offspring is of the natural colour of the tribe to which they belong.