In a recent internet release, an American doctor tells his readers how confounded he felt when one of his patients, a World War veteran, displaying all too commonly known symptoms of malaria - high fever and great splenic enlargement – failed to respond to the usual quinine treatment. The doctor retired to the office with a saddened heart to reexamine the patient's history chart.

I had not spent much time on the chart when I uncovered what ultimately led to an annual visit from a very grateful patient, who tended his farm in rural Nebraska and was the picture of perfect health when I saw him in my office. I ascribe my discovery of what led to the recovery of this patient, who was at "death's door", to my childhood interest in postage stamps and geography. Among the standard entries of this patient's medical chart was a reference to where he had been while he was in service. That section contained one word the significance of which had escaped everyone but me, the 'stamp collector', the Rand McNally devotee. That one word was 'ASSAM'! That one word told me the patient was dying from
Chapter Eight

Kala-Azar, (visceral Leishmaniasis), a fatal tropical disease endemic in what was then northern India.¹

This chapter concerns itself with the braiding of two tracks of diagnosis, or, as it were, two histories of contamination. Thinking through the history of identification of a particular disease in the colonized bodies, here we attempt to imagine a history of the identification of a colonized place with that disease. The Nebraska doctor’s prompt and almost programmed mobilization of childhood geographical images of Assam within the clinical diagnostic fold brings us back to yet another forceful scandal of colonial territoriality. For more than a century, the mere name of “Assam” has been functioning as an explanatory correlate of the said disease.² What we wish to map here is not so much the “spread” of one disease across a given territory as the unceasing vitiation of the bound, secular geographies of revenue extraction and political domination by the variable geographies of fear, fantasy and knowledge.

In this sense, contamination is at the heart of this chapter which hinges on the experience of kala-azar in the province of Assam, roughly from the eighteen eighties to the nineteen twenties, to understand the traffic between the worlds of organized medical imagination and imperial administrative concerns in a plantation province. Conditioned to a relation of continuous contamination by each other, the investigative protocols of the medical discipline and the disciplinary apparatuses of the government organized a particular way of place making. To write about the production of this vitiated geography is to resist the temptation of pitting Science against Capital. The narrative which follows is not so much about the transgression of the limits of scientifically constrained data and the disruption of their immanent theoretical logics by the demands of the state and capital as about the inescapably

¹ <http://www.azstamet.com/~jerritt/ww2.htm> [visited October 25, 2002]
² The most recent edition of Patrick Mansion’s Tropical Diseases would testify that visceral leishmaniasis is still known by the shorthand name of ‘Assam fever’, or ‘Mal accablant d’Assam’ or ‘fièvre épидémique d’Assam’. See also the Nomenclature of Disease drawn up by a joint committee appointed by the Royal College of Physicians of London (London: His Majesty’s Stationery Office, 1948), 254-255. A more contemporary definition of the disease runs: “Caused by Leishmania donovani and transmitted by sand flies, Leishmaniasis is also known as kala-azar (black fever) or Assam fever. The parasite is phagocytised by scavenger cells (macrophages, reticuloendothelial cells) and multiplies until the cells burst and the cycle is repeated. The disease usually begins slowly with a low-grade fever and malaise. This is followed by progressive wasting and anaemia, protrusion of the abdomen from an enlarged liver and spleen, and finally by death in 2-3 years. In some forms, the parasite attacks the skin. In these cases, the parasite causes severe lesions that may persist in some forms or spontaneously heal in others.” http://www.tropical-medicine.net/parasite.html. [visited October 25, 2002]

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constitutive nature of this contamination – an interrogation of the tidy exterior of the medical discourse.

Geography of Fear

The fact that kala-azar emerged in the English archive only in the penultimate decade of the nineteenth century at its epidemic height among the Garos should not lead us to believe that the discourse network within which the disease was reported and discussed was a clean slate. Unmistakable shadows of old and entrenched anxieties about the terra incognita in the northeastern frontier of the British Indian empire distinctly loomed over the late nineteenth-century medical construal of the Assam climate. In this section of the paper, we are concerned with the procedures through which – to repeat one of the first medical topographers of the province – “Assam was saddled with a name, which even to this day clings to it.”

M'Cosh published his medical topography in 1835 – forty-three years after Welsh’s expedition against the Moamarias. It was primarily through the association of premature deaths of many European officers and South Asian sepoys in these intervening years of nervous expeditions and insecure administration that the “name”, or notoriety, of the unhealthy province was ingrained in the official register. As has been pointed out, particularly after the enormous loss of white soldiers to terminal diseases during the first Burma War of 1824-6 (securing Assam’s political inclusion within the Indian empire), a sprawling series of medical topographies were thrown into circulation, each devoted to a rather systematic medical mapping of a particular region.

The striking appeal of this genre to the early nineteenth-century British administrators was tied both to the costly loss of white lives and the prospective gains from colonization in the unexplored patches of the empire. Within the interpretative grids of medical topographies, landscapes were divided into “healthy” and “unhealthy” zones, and the limits to the explorations, conquests, and revenue extractions were spelled out in markedly spatial terms.

3 M'Cosh, Topography of Assam, 99.
4 Mark Harrison, Climate and Constitutions: Health, Race, Environment and British Imperialism in India 1600-1850 (New Delhi: Oxford University Press, 1999), 119-120.
Focusing on the intrinsic qualities of soil and environment, this genre of medical writing extensively translated the memories of untimely deaths into geographies of fear. The images of a perilous climate enveloping the entire northeastern frontier drew as much from the barrack whispers as from the professional wisdom, although the latter was careful from the very beginning to leave enough room for the idea of plantation/agriculture to operate as a climatic corrective.

The representational economy of climate in the early medical discursive circuit was a reification continually rewritten by the Englishmen’s mutable entanglements with specific, on-the-ground experiences. The term was open to intervention and re-signification along many axes of interests. As a chronically unstable category in European medical discourse, climate was brought situationally—not invariably—to some form of order, shaped to some purpose, consciously or otherwise. “Some offices”, M’Cosh noted with concern, “had carried this feeling [of serving in a dangerous climate] so far as to exact a higher rate of premium on the insurance of lives in that province.” On the other hand, the promotional literatures which tried to dispel fears about the climate of Assam as part of a whole series of measures aimed at attracting European capital and settlers to the new plantation province quite systematically underplayed its “tropical” elements and highlighted its “temperate” features. In 1837, D. A. Macleod, an Assistant Surgeon of the Assam Light Infantry, recounted:

With regards to the climate of Assam great difference of opinion exists, some affirming that in point of salubrity it is on a par with any in Hindoostan, or at least Bengal, while others judging from their own cases, describe it as realizing in its deleterious nature the reports they had already heard, of its resembling closely that of Arracan.

Macleod, who had been residing in Assam for the past ten years, believed that “[a]s is usual in most cases when great differences of opinion are entertained, the truth lies between the

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5 An adventurous and commercially interested Pemberton, for example, deplored the fact that David Scott, “the Governor General’s Agent, was averse to any attempt being made, under a most mistaken and exaggerated opinion, of the unhealthy nature of the tract of country through which the exploring parties pass.” Pemberton, Report on the Eastern Frontier, 59. Emphasis added.
7 M’Cosh, Topography of Assam, 98
8 See, for example, Robert Mudie, China and Its Resources, and Peculiarities, Physical, Political, Social, and Commercial; with a view of the Opium Question, and A Notice of Assam (London: Grattan and Gilbert, 1840) and Leonard, Assam, passim.
two extremes.” The country, according to him, had its share of healthy and unhealthy zones, and although “the elements of malaria such as extensive marshes, deep jungle, and rich alluvial soil liable to inundation, everywhere abound,” the “uncultivated parts” were more specifically disease-ridden.9

For long, the image of unsown fields and unmanaged forests would remain fastened to the idea of an “enervating climate” in Assam.10 But it is perhaps important to clarify here that if there was any correspondence between the hygienic science and the plantation imperatives, it was certainly one of those “great, anonymous, almost mute strategies” of the new regime where “the logic is perfectly clear, the aims decipherable, yet it turns out that no one can have conceived and very few formulated them.”11 It is not the aim of this dissertation to merge the discrete operations in a unity of the (conspiring) colonizing subject. Rather it tries to specify the discursive elements which were shared across the boundary between state policy and professional knowledge, and reproduced on different registers. Let us consider, for example, the characteristic classification of diseases in Assam that A. McLean, the medical in-charge of Gauhati, offered in 1853:

1. Those which are produced by the position of the station and the general character and aspect of the ground occupied by it.
2. Those which have their origin in the want of any proper arrangements for keeping the station clean and in good order.
3. Those which are attributable to the general habits and modes of life of the people.

It was the “climate” – soil, rivers, vegetation and winds – which was held responsible by the first set. Everywhere the European nostrils detected “noxious exhalations” and the European eyeballs spotted “conditions most favourable to the decomposition of animal and vegetable matter.”12 The mid-nineteenth century western medicine had to accept its therapeutic limits by constantly referring to the intrinsic malarial nature of Assam. However, where it saw the possibility of effecting a change were McLean’s second and third sets of diseases, namely “lack of cleanliness and good order” and “the general habits and modes of life of people.” As M’Cosh had emphatically asserted,

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9 Macleod, Sketch of the Medical Topography of Bishnath, 13-15. For a very similar version, see Robinson, Descriptive Account of Assam, 19.
10 Shakespear, History of Upper Assam, 5
11 Foucault, Confession of the Flesh, 202.
12 A. McLean’s letter, in Moffatt Mills, Report, Appendix J, Kamrup section.
Chapter Eight

Before any material improvement in the salubrity of Assam can be effected, it will be necessary to cut down and clear away the noxious jungle, to reclaim its waste lands by cultivation, to drain its marshes, to clear out its tanks, to build the house upon the hills, to abolish the use of opium, and be guided by the laws that generate and spread malaria.13

Explaining that most of the fevers and other diseases prevalent in Assam “are consequence of miasma or malaria, generated in the decomposition of vegetable matter”, M’Cosh continued to say that no fact is better ascertained, or receives more general assent than that certain quantity, whether a gas or a vapour, or a film or an impalpable powder, is evolved by vegetable matter while exposed to heat and moisture, and undergoing the process of putrefaction, which has the property of engendering fever when brought in contact with the body. 14

At least till the mid-nineteenth century, what Alain Corbin calls “an abiding obsession with subsoil impregnated, broken up, even liquefied by the accumulation of feces, the putrefaction of corpses, and the proliferation of fissures”, formed a pivot of the medical episteme.15 It is beyond the scope this chapter to offer a map of the trajectory of the miasma theory from a medical doctrine to a social doxa, but it can be certainly said that by the early nineteenth century, for the white non-specialized metropolitan population (“for whom episteme operates its silent programming function”16), miasma became figurative of every threatening mark of the hostile “tropical climate”. And, as the experience of Assam shows, the conceptualization of miasma as an olfactory effect did not prevent the medical men to code its characters:

This miasma is generated in greater quantity in autumn and spring than during other seasons of the year; is more potent at full and new moon than at other periods; and more active between sunset and ten o’clock, than during the rest of the day. Miasma seems to possess gravity, for people that sleep on the ground-floor are more frequently attacked with fever than those who live in the upper stories…18

13 M’Cosh, Topography of Assam, 117.
14 Ibid, 100.
16 For us, as for Foucault, episteme refers to the “strategic apparatus” that determined the separation of those statements from the mélange of all possible statements which would be acceptable within the “field of scientificity”. Cf. Foucault, The Confession of the Flesh, 197.
18 M’Cosh, Topography of Assam, 100.
While nature of soil and state of vegetation were the main suspects, water and winds were deeply suspected for transmission of miasma. "In Lower Assam" — E. G. Russell, an Assistant Surgeon who had spent seven years in Kamrup, observed in 1880 — "we have all the elements for the production of malaria in an intense form."

Extensive permanent marshes form a large portion of the surface of the land; the soil is an alluvium, rich in organic matter; beds of stiff clay, close below the surface, keep the water up, on, or near, this surface; rank luxuriant vegetation, in the form of vast jungles, annually springs up and dies down into decomposition in the swamps. The marsh water is thus laden with vegetable organic matter. When, to these conditions, are added a high temperature and a moist atmosphere, it will be granted that the elements of production of malaria are abundantly present in no disguised form.19

And

There is little doubt that the air of these regions may be largely impregnated with malaria, and that the poison may be introduced into the system by respiring such air. On the other hand, it will scarcely be denied that the water of such marshes is, itself, surcharged with the malarial poison, and as, directly, or indirectly, the water, so charged, forms the main drinking supply of the inhabitants, it seems certain that the miasmatic poison must be largely introduced into the system in this drinking water.20

However, as Mark Harrison rightly points out, "few accounts of the tropics were uniformly negative. The overwhelming tendency, as in Europe, was to distinguish between healthy and unhealthy localities."21 As in many other parts of India, the landscape of Assam was sharply split into dense unhygienic jungles and high salubrious hills. The pro-settlement observers of the nineteenth century persistently referred to the fact of the "remarkably varied character of the localities throughout the province"22 and begged the ordinary Europeans not to go by the usual stories of disease and death. As a matter of fact, sanatoria for the European troops were built in the Shillong Hills by the early eighteen sixties.23 However, what provides the particular twist to our story is the agoraphobic profile of British Indian state. As we have

19 Russell, Malaria, 12-3.
20 Ibid, 14.
21 Mark Harrison, "'The Tender Frame of Man': Disease, Climate, and Racial Difference in India and the West Indies, 1760-1860", Bulletin of the History of Medicine, 70 (1996), 73.
22 Robinson, Descriptive Account of Assam, 19.
discussed in Chapter Four, somewhat beset by the revenue crisis in Assam, the authorities were keen on clearing the jungles for bringing lands under cultivation.

[Little more than the cultivation of the rich wastes around is required to make Jeypoor as healthy a station as any in the frontier, but little progress however has been made in settling a permanent population on the neighbouring pathars.]24

Cultivation, as we have seen in the preceding chapters, became an organizing trope for reclaiming wastelands, restoring lost energy of the people and reforming the climate. While forests were also seen as a possible protective wall against the harmful winds in the earlier part of the century,25 the images of miasma-ridden tropical forests increasingly gripped the medical imagination of the later years as winds were gradually exempted from the charge of transmitting miasma.26 Samuel Hannay believed that sickness is caused not so much from the “open pathars or cultivable ground ... as from the want of free circulation of air.”

Similar ground is very common Upper Assam, and probably there is not a more swampy place in it than Sibsagar, but the country being open, there appears to be no bad effects from the subsiding of the immense expanse of water which accumulates round that station in the ruins.

To assist the “free circulation of air,” said Hannay, “much of the jungle ... [required to be] opened out.”27 W. Johnston Long, the Civil Surgeon at Sibsagar, suggested that at least in his district draining the lands should precede the clearance of the jungle:

such trees as will live in the water should be planted along the outer bund of the tank, so that their foliage may entangle as it were and detain the malaria generated in the low grounds beyond, and prevent the noxious effuvia passing over to the jail buildings, the sepoy lines and the residences of private persons.28

24 F. Jenkins, Agent to the Governor General on the North-Eastern Frontier, to G. A. Bushby, Secretary to the Government of India, Foreign Department, dated Guwahatty, 17 February 1846, in Foreign Department (F. C.), 30 May 1846, Nos. 88-99 [NAI]
25 “A belt of high trees intervening between a marsh and a town is known to afford a similar exemption to the inhabitants. Numerous instances are recorded of towns being suddenly subject to fever after the cutting down of such belts of trees; and of others being benefited by having a grove of trees planted between the miasma and them to windward.” M'Cosh, Topography of Assam, 103.
27 S. F. Hannay, Commander of the 1st Assam Light Infantry, to Captain Fayan, Executive Engineer, Upper Assam, dated Jeypore, 9 January 1846, in Foreign Department (F. C.), 30 May 1846, Nos. 88-99 [NAI]
However, A. J. Moffatt Mills, to whom Long submitted his memorandum, concluded in his Report that ‘[t]he cultivators ... in Assam generally are too indolent and apathetic to extend cultivation in any considerable degree.’ In most of the contemporary official documents, for instance in the first census of Assam (1872), it was the “too sparse and indolent” population of the area that was accused of allowing large fertile tracts to have been “overrun with malarious jungle”. If in the mid-thirties M'Cosh could still demand to prohibit rice cultivation in Assam in the rainy season, fearing that it might stir up emanations from the earth, such proposals became rarer in the subsequent years. Robinson, for example, imagined agriculture to be the watershed between the healthy and the diseased population:

The Assamese in general, or those professing Hinduism, and more especially those in the upper classes, and those not engaged in agricultural pursuits, are for the most part a weak and poor race, extremely predisposed to diseases on the least alteration of the weather, whilst, on the contrary, the bulk of the agricultural population, the Kacharis and other inhabitants of the plains, who are not addicted to the same dissipated habits, enjoy remarkably excellent health. The diseases common to the natives may therefore be attributed more to their habits of indolence and dissipation, than to any pernicious effects of the climate.

Rather than reading the “medical” texts as passively reflecting the “economic” contexts of the new British Indian regime, it is possible to recognize how, over the years, cultivation was increasingly invested with a corrective force, for both climate and culture in British Assam. Variously assisting the production of “climate” within the vectors of cultivation, the conflictual body of medical knowledge, like the contemporary discourse of political economy, was never completely segregated from anthropological ruminations. As a result, distilling the medical from the constitutive heterogeneity of fear was a definitively protracted, partially open and retrospectively difficult process. The play of difference within the power of the medical was not a derivative and secondary affair. It was only by constituting and mobilizing difference that such power could operate.

A cynical Army Sanitary Commission reported in 1880, “[t]here is no “typhoid”, but this being essentially a filthy disease, it would be indeed wonderful if the people of Assam were...

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29 Moffatt Mills, Report, Luckimpore section, 6.
31 M'Cosh, Topography of Assam, 105.
32 Robinson, Descriptive Account of Assam, 21-22. Emphasis added.
really free from it." The eighteen forties Chadwick vocabulary had a much longer life in the frontiers of the empire. Cleanliness, however, was a double-edged argument: while the Assamese were derided for being "excessively careful of defilement in their manner of eating and drinking"\textsuperscript{34}, the European doctors were uniformly harsh on the everyday practice of taking dips in the river, one going to the extent of urging the government to prohibit "indiscriminate bathing".\textsuperscript{35} “[P]oor diet, bad water, scanty clothing, wretched houses, famine, fatigue, melancholy, prepare the body for seeds of fever”, announced M'Cosh, and added that in Assam all of these conditions existed in excess.\textsuperscript{36} Although the medical profession in Assam was somewhat divided on the issue of opium's relation to malaria, almost all doctors faulted the local cuisine – consisting of “[r]aw rice, under-baked bread, raw green fruits, deficiency of salt, and the inveterate practice amongst the Assamese of eating opium” – with inducing fevers.

Native system of house-ventilation, choked up drains, stagnated tanks, ill-maintained roads, burial procedures, absence of a common caste, scatological habits, "depressing passions" of the Assamese: reasons of every sort that emphasized the peculiarity of the country were churned in the etiological pot. This constant and mobile relation between the climatic source and the cultural cause of diseases – between the innately miasmatic quality of the uncultivated soil and the inherently vulgar practices of the uncultivated natives – defined the operation of the medical. The deep enmeshment of the strategy of colonizing waste lands, the logic of miasma, and the rule of difference constituted the possibilities of multiple configurations and reconfigurations of capital and science in each other's registers.\textsuperscript{37} The British state's increasing interest over the course of the nineteenth century in the details of medical discourse was tied to this moment of convergence that helped its self-understanding as an improving force in all spheres.

\textsuperscript{33} “Memorandum of the Army Sanitary Commission on the Report of the Sanitary Commissioner for Assam for 1878”, Home Department (Sanitary), June 1880, Nos. 16-7 [NAI]. Emphasis added.
\textsuperscript{34} M'Cosh, Topography of Assam, 109.
\textsuperscript{35} McLean's letter, in Moffatt Mills, Report, Appendix J, Kamrup section. See also, M'Cosh Topography of Assam, 101.
\textsuperscript{36} M'Cosh, Topography of Assam, 106-117.
\textsuperscript{37} For the commonsense view that plantation capital acted chiefly as a "constraint" on the use of science, see Walter Rodney, A History of the Guyanese Working People, 1881-1905 (Baltimore: Johns Hopkins University Press, 1981), 24. It seems to us that, on the contrary, the global spatial sequence of plantations was a crucial condition as well as site for the nineteenth-century science.
Narratives of Nosology

1882 saw a considerable expansion in the registration system in Assam. While for the first time, births began to be returned for two plain districts of Sylhet and Cachar, which previously only returned deaths, registration of both births and deaths was made compulsory in the Khasi and Jaintia Hills and the Garo Hills. It was amidst this statistical rush that a strange fever epidemic was reported from Tura, the Garo Hills district headquarter:

It begins with a high temperature, several pains in the head and body, loss of appetite, and other symptoms of general febrile conditions; fever, sometimes of an aguish form and sometimes fever without remission for many days together. The spleen and the liver enlarge, the skin becomes gradually darkened, and in advanced cases there often is haemorrhage from the nose and gums, oedema of the feet of general dropsy, is likewise common, and life ends by a combination of disordered functions known as malarial cachexy. 38

The Medical Officer at Tura accepted that, “though not observed by our officials, the disease had been known to the villagers for 20 years previously.” However, Dr. Clarke, the then Sanitary Commissioner of the province, did not consider this to be an altogether new disease. Noting that this so-called kala-azar “is so inimical to life that large tracts of hill country are being depopulated in consequence”, he reminded the authorities, “the disease is most intense where the low, densely wooded Garo Hills join on to the low-lying Central Assam plain, a position par excellence the most favourable for malarial developments.” 39

In order to understand the popularity of this opinion among the professionals, it is important to remember the grip of the category “fevers” over the late nineteenth-century colonial imagination. Practitioners in Assam very often complained about the functional inadequacy of this undifferentiated category and yet continued to use it as a shorthand term for most of the terminal illnesses in the province. As the following table, based on a calculation from the official returns of deaths in Assam between 1881 and 1885, might help to indicate, “fevers”

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38 “Memorandum by the Army Sanitary Commission on the Sanitary Report for Assam for 1882”, Home Department (Sanitary), June 1884, Nos. 91-92
39 Ibid
maintained a consistent and significant lead over cholera, small-pox, bowel-diseases or "all other causes" in claiming local lives.\footnote{Calculated from “The Sanitary Report of Assam for the Year, 1885”, Home Department (Sanitary), October 1886, Nos. 9-13 [NAI].}

<table>
<thead>
<tr>
<th>Diseases</th>
<th>Number of Registered Deaths under Main Heads</th>
<th>Percentage of Total Registered Deaths of the Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1881</td>
<td>1882</td>
</tr>
<tr>
<td>Bowel-diseases</td>
<td>9865</td>
<td>14074</td>
</tr>
<tr>
<td>Cholera</td>
<td>5010</td>
<td>21055</td>
</tr>
<tr>
<td>Fevers</td>
<td>42553</td>
<td>60218</td>
</tr>
<tr>
<td>Injuries</td>
<td>934</td>
<td>1150</td>
</tr>
<tr>
<td>Small-pox</td>
<td>3129</td>
<td>3195</td>
</tr>
<tr>
<td>All Other Causes</td>
<td>10540</td>
<td>18665</td>
</tr>
<tr>
<td>Total</td>
<td>72031</td>
<td>118357</td>
</tr>
</tbody>
</table>

One Dr. Renzy, who reported that lung diseases were often confounded with fevers in Assam, explained in 1880 how difficult it was to distinguish between “the attendant symptoms” and “the original cause” of a fever.\footnote{“Report of the Sanitary Administration of Assam for 1880”, Home Department (Sanitary), February 1882, Nos. 154-158 [NAI].} The Sanitary Report for Assam for 1881 observed with a sigh, “[t]he term ‘fever’ is so loosely used by Natives with their imperfect methods of diagnosis, that not much can be gained by discussing the statistics of the mortality attributed in this cause.”\footnote{“Assam Sanitary and Dispensary Report for 1881”, Home Department (Sanitary), September 1882, Nos. 56-61. However, for a differentiated analysis of different kinds of fever by the Lower Assam Ayurvedics, see Baidya Amar, compiled by Gangaram Das Tahsildar and edited by Srikanta Chaudhary (1910; Tezpur: Bhaskar Prakashan, 1992), 75-102.} Three years ago, much had been said in the Memorandum of the Army Sanitary Commission about the need of rearing “a superstructure of improved classification”. Suggesting that the Civil Surgeons should teach “the Assistants how to separate the fever connected with local inflammatory disease from true fever” in order that there was “little difficulty in arranging a classification suited to the sanitary requirements of the country”, an exasperated Commission had declared, “Apparently, this important work must be done in the dispensaries or nowhere, at least at present.”\footnote{“Memorandum of the Army Sanitary Commission on the Report of the Sanitary Commissioner for Assam for 1878”, Home Department (Sanitary), June 1880, Nos. 16-7 [NAI].} But
things did not appear to have improved over the years and in 1887 the authorities were once more disturbed to see that

there is a tendency to swell the numbers under the head 'fever' by including under it deaths from many kinds of inflammatory diseases which, from a medical point of view, have nothing to do with fever, and from the present report it appears that measles is apt to be entered as small-pox. All that can be done, and Civil Surgeons and their subordinates should be instructed to do this, as to test returns here and there with a view to ascertaining the sorts of mistakes likely to be made; so that we may allow something for them…

With an understandable unease the medical professionals slotted kala-azar into this nebulous group of “fevers”. But nothing else than the conflicting descriptions of its shadowy symptoms was obtainable in the early eighteen eighties to establish a secure identity of the disease. And without an identity – in the sense of Foucault’s “primary spatialization” of an illness – a disease could not be medically invested. It is not surprising, therefore, that for the couple of decades following the emergence of kala-azar in the official register, the principal academic issue regarding the disease was its nosological status, its place in the classificatory schema of modern medicine: whether it constituted a separate disease or was just a mere local name of “malaria.”

Most of the initial responses tended to favor the latter opinion. The logic of miasma, as we have already observed, continued to command much authority. Dr. Eteson, who succeeded Dr. Clarke as the Sanitary Commissioner, explicitly stated,

It will simplify the measures of relief, and the medical treatment also, if it is accepted, once for all, that kala-azar is a marsh ague in its causation, intensified through chronic lapses into a blood taint, which passes into anaemia and organic congestions; and that it is only especially fatal, because the sick Garos are left uncared for, unnourished, and exposed to continued relapses.

The onus, as always, could be alternated between an uncaring and unhygienic Garo life and an insalubrious climate. In fact, the mystery of the disease was discovered in the inaccessibility of the Garo terrain.

44 “Report on the Sanitary Administration of Assam for the Year 1887”, Home Department (Sanitary), December 1888, Nos. 1-5 [NAI]
45 See the discussion of nosology in terms of “the classificatory gaze” and “primary spatialization” in Foucault, Birth of the Clinic, 5-6: “[The classificatory gaze] is sensitive only to surface divisions, in which vicinity is not defined by measurable distances but by formal similarities. When they become dense enough, these similarities cross the threshold of mere kinship and accede to unity of essence.”
Chapter Eight

The affected localities are those where the low density wooded Garo Hills join on to the low-lying central Assam plain. It extends also to some distance into the hill country where the lower outer ranges are overtopped by higher interior ranges, but among these higher hills the disease is almost unknown. The villages where it is prevalent are often built in the midst of dense jungle which the sun cannot penetrate, and where the air cannot have access.

The Army Sanitary Commission blamed the “imperfect knowledge” about the disease on the “local prejudices of the people”, and conjectured that “this Garo fever is only an intense form of Terai fever taking place among people living under aggravated topographical and local Terai influences.” But the mortality (41.66 per thousand in 1883) was too alarming to leave the nature of the disease to speculation. Moreover, from the isolate of the Garo Hills, “it spread eastwards into the plains and gradually marched up to the Assam valley of the Brahmaputra river through the districts of Nowgong and Golaghat petering out as a serious menace by the time it reached the north eastern end of the valley in the district of Dibrugarh.” In December 1882 the Chief Commissioner directed the Civil Surgeon, Dr. McNaught, to make a special tour of enquiry into the kala-azar-ridden areas and submit a report. Drawing on this report – supplemented with some other information gathered from previous notes on the disease, and from autopsies performed by the Civil Surgeon at Dhubri – the Sanitary Commissioner offered a series of “provisional suggestions” which concluded by saying that “kala-azar is a cachexia produced by malarial fever, deriving its peculiar characteristics from the nature of the region where it prevails.”

Similarly, in 1885, one Dr. Gupta reported from the Garo Hills of his failure “to find anything by which it could well be distinguished from ordinary malarious fever”. The fever, argued Gupta, “is allowed to take its own course and develop its own complications, without

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47 “Memorandum by the Army Sanitary Commission on the Sanitary Report for Assam for 1882”, Home Department (Sanitary), June 1884, Nos. 91-92 [NAI]
48 Henry Edward Shortt, In the Days of the Raj, and After: Doctor, Soldier, Scientist, Shikari in the Private Papers of Henry Edward Shortt (British Library European Manuscripts holding no. IOR/ Mss Eur C435), 70 [OIOC]
49 Dr. Clarke suggested, “that the habit which has lately supplanted the old village sites, fixed for purposes of defense on cleared areas on the hill tops, by scattered dwellings amidst the cultivation in the valleys below, should be abandoned; that jungle should be cleared round the village areas and burnt; that attention should be paid to the water supply, running streams being used instead of stagnant pools; that drainage should be extended in the submontane tract; and that the question of the sufficiency of antiscorbutic food should be thoroughly investigated. If, these conclusions are correct, it is not probable that the depopulation of the low-lying Terai in which the disease prevails can be checked: the people must return to their comparatively barren hills if they are to continue to live.” “Report on the Sanitary Administration of Assam for 1882”, Home Department (Sanitary), September 1883, Nos. 95-99 [NAI]
the slightest endeavour on the part of the sufferer to arrest its progress by medicines and medical treatment." The infected Garo, after all, allows himself to remain in the same spot, and never thinks of changing his mode of life. His food consists of the same articles of diet, whether he is well or ill, and it is only natural that the fever, instead of taking a turn for the better, gradually sinks into a chronic form, and develops those formidable complications which ultimately prove fatal.50

Just as toponymic identifications were not only the aspiring historians' trivia, likewise nosology was also not an esoteric professional detail of the squabbling physicians. This system of disease description, which made it appear that all illnesses fit within a definitive network of disease classification, was an issue of grave concern for the British Indian state. The primary interest of the administrators was, understandably, to calculate a particular disease's relative propensity to epidemicization. And all the medical reports of this period reassured the authorities that kala-azar, like malaria, was not "contagious", despite the Garos' contrary opinion on the matter. But in Assam the nosological question was entwined with specific plantation interests. In the Memorandum by the Army Sanitary Commission on the Sanitary Report for Assam for 1883, for example, "[t]he relation of fevers to the general interest of states" was significantly discussed with an explicit Algerian analogy.51 As regards the sanitary arrangements in the Province, the government had a clearly defined priority list. The Secretary to the Government of India, Home Department, was bluntly told by the office of the Chief Commissioner of Assam:

The Government of India are aware that special and very complete measures are adopted for ensuring that proper sanitary arrangements are made in tea gardens and elsewhere where large numbers of immigrants are gathered together, and probably there is no province in India where Sanitary Regulations are more strictly enforced than they are in regard to the immigrant population of Assam. The circumstances of the indigenous population are, however, entirely different and call for no special measures; this is a very sparsely-populated

50 Quoted in "Sanitary Report of Assam for the Year 1885", Home Department (Sanitary), October 1886, Nos. 9-13 [NAI]
51 "Immigrants, in clearing the land to supply their own necessities, almost invariably suffer in the earlier years, but gradually the lands its produce; and in proportion as it dies so fever diseases decline in amount and fatality; but the contest has always to be carried on, otherwise the benefits already reaped may be lost, both as regards health and income. Algeria, in ancient times, was a granary, but under the effects of conquest and bad government it became, at least part of it, one of the least productive and most unhealthy of countries. Now, under better auspices, it has reverted to its proper position as a prosperous colony, and has regained its health standard. But the original colonists who began the work were mostly swept away by fevers." "Memorandum by the Army Sanitary Commission on the Sanitary Report for Assam for 1883", Home Department (Sanitary), September 1885, Nos. 25-26 [NAI]
province, and full of hills and jungle, and though it is undoubtedly an unhealthy part of India, this is due to causes which could not be remedied by the provisions of any Sanitary Regulation. So far as Mr. Cotton can judge, the only practical result of the enforcement of such a Regulation would be the harassment of remote villages inhabited by an ignorant peasantry, and he desires to take no part or lot in any measures for furthering its enactments.  

A predetermined prioritization defined the field of nosological investigations. When requested by the Sanitary Commissioner of Assam to ask the Government of India to depute “a special officer of tried scientific attainments” to enquire into the causes and nature of kala-azar, the Chief Commissioner remarked in 1888 that

if, as has been sometimes suggested, there were any reason to suspect that the kala-azar, like the anaemia of the coolies, is a disease resulting from the action of a parasite, the deputation of a scientific observer would be obviously the first step to be taken. But if, as now seems to be almost conclusively established, the disease is merely an exaggerated form of malarial fever, a scientific observer would, it seems to the Chief Commissioner, be hardly likely to suggest any remedy that would not occur to an ordinary medical practitioner of skill and experience. Inasmuch, however, as the Chief Commissioner proposes to ask for a scientific observer to investigate in further detail the causes of the anaemia which prevails so extensively amongst coolies on the tea gardens, he may well be employed to enquire into the kala-azar also.  

The priorities were clear. Medical inquiries could be extended to the settled districts only after the work in tea gardens was over. In 1885 G. P. Sanderson, the Superintendent of Kheddas, reminded the higher authorities of kala-azar’s “terrible havoc among the Garos” maintaining that “[t]his fever is fatal in, apparently, 75 per cent of cases”. While Sanderson accepted that “[n]othing apparently can be done for them, as probably nothing but a complete change of climate at the outset of the disease would have any effect”, he still urged the authorities to introduce “the drinking of boiling water” among the Garos as “it might have a beneficial effect.” Evidently upset by tragic deaths among “a very honest, straightforward, and frank race who do us the more important service of bringing us news of all the herds of elephants within their borders”, the Superintendent was all the more concerned because it was for the first time in 1884-85 that “[a] considerable number of them

52 “Introduction of a Village Sanitary Regulation into Assam”, Home Department (Sanitary), June 1888, No. 650 [NAI]

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joined the kheddah, and worked faithfully during the operations for 3 months. ... I have no doubt more will join next year."  

But kheddah, again, was only of a secondary importance in a plantation province, and the "Hill Garrows" formed neither a bulk of tax-paying ryots nor a body of costly wage workers. In fact, the Garo Hills had often been suspected to be one of the worst unhygienic pockets in the Province, and the ethnographers were generally not very sympathetic to the Garo "mode of life". Within the hierarchy of priorities "the Garo Fever" - a disease of an unproductive and inaccessible hill district - stood nowhere near the "Coolies' anaemia", a disease taking heavy tolls on many of the precious tea gardens of the upper parts of the Brahmaputra Valley. Nevertheless, despite the official manipulations of death statistics, as the Government Resolution on the 1884 Report admitted, "the fever had almost left the Garo Hills, but had become very prevalent in the submontane villages of Goalpara subdivision." Very soon similar deaths were reported from all over Goalpara. Sanderson insisted that

> [t]here seems no means of accounting for the visitation. There is no over-crowding among the people (even that, did it exist, should not affect a malarial disease); no decrease, increase,

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54 "Report of the Kheddah Department for 1884-85", Military Department (Table A), December 1885, Nos. 919-23 [NAI]

55 M'Cosh, for example, wrote of the area as "a country, into the interior of which no European could penetrate without the certainty of a most dangerous fever" and Jenkins had informed Moffatt Mills in 1853, "Divided as these tribes are by a climate most fatal to foreigners, we cannot exercise over them that coercion which otherwise we might as readily do as in the neighbouring Cossiah Hills, and in the absence of this power to restrain them." Jenkins's letter in Moffatt Mills, Report, cxxx.

56 See Dr. Gupta's comments cited above, for instance. See also Robinson, Descriptive Account of Assam, 416.

57 Consider this piece, "I would desire to mention also that in the weekly reports which come from the various divisions of the District and are sent to the Deputy Commissioner who forwards the same to the Civil Surgeon, thence to the Sanitary Commissioner of Assam, 'Kala-azar still prevalent in the Hills' came most regularly every week, until discouraged by myself for the simple reason that, although the disease might be present in the Hills portion, it was most improbable that it existed in such numbers as to require the term 'prevalent'. Besides the statistics of the Hills portion of the district were a blank, there being no system of registration of births and deaths returned from four fifths of the whole population of the Garo Hills District, and the diagnosis of non-professional men was therefore open to grave criticism. However, notwithstanding my objection to the term 'prevalent' as applied to kala-azar in official reports, I must emphatically state from what I have personally observed during my tours in the lower hills and plains portions of the district, that the so-called disease kala-azar, which I now regard as an intensified form of malarial poisoning, is present in fairly large numbers, both among male and female adults and also among children." G. W. Fink, "Kala-azar in Assam", Letters to the Editor, Indian Medical Gazette, February 1898, 79-80.
or alteration in the forests; no interference with drainage; no change in the immemorial system of cultivation (clearing and burning the forest), or in their like generally.\footnote{58} However, the argument that the method of “partial clearing” was responsible for the “malarial intensification” in the Hills continued to hold considerable weight. “[H]istory would have been otherwise”, said the Army Sanitary Commission, “if the Terai had been cultivated, drained, and cultivated before the people moved into it, but in its present state the best thing for the people to do would be to leave it.”\footnote{59} The prescription at any rate could not be valid for the old m\textit{ựa} districts, and the threat to agricultural revenue became apparent very soon.\footnote{60} The 1891 census, after describing the rapid spread of \textit{kala-azar} to the Goalpara, Kamrup and Nagaon districts, observed,

The mortality attending its progress has been terrible, and tracts which before its advent were covered with thickly peopled and prosperous villages have been left by it deserted and uncultivated. Whole villages have thus disappeared, and large areas of land have been thrown out of cultivation.

In a brief footnote, the census officer could not fail to groan, “[t]hree years ago, before the full effect of the disease had made itself felt, the loss of revenue on this account in Kamrup alone was estimated at more than Rs. 49,000.”\footnote{61} Meanwhile, the Government had organized special measures of medical relief, including the traveling dispensaries. But as quinine (the theory of malarial origin of \textit{kala-azar} logically entailed this treatment) proved to be of no avail, people could hardly be induced to submit to the European medication. The dejected Deputy Surgeon General of Eastern Frontier District proposed to wind up the special \textit{kala-azar} dispensary in Darangiri in 1885 saying “none but the dying are likely to come and ... provisions are difficult to procure.”\footnote{62}

\footnotetext{58}{“Report of the Kheddah Department for 1884-85”, Military Department (Table A), December 1885, Nos. 919-23 [NAI]}
\footnotetext{59}{“Memorandum by the Army Sanitary Commission on the Sanitary Report for Assam for 1883”, Home Department (Sanitary), September 1885, Nos. 25-26 [NAI]}
\footnotetext{60}{Even as late as 1899, in the debates about low productivity in Assam the defenders of the \textit{ryotwari} system in Assam ascribed the high death-rate ‘to malaria, and in some districts to the mysterious and deadly disease known as the kala azar.’ T. W. Holderness, C. S. I., Secretary to the Government of India, to The Chief Commissioner of Assam, dated Calcutta, 26 January 1899, in \textit{The Colonization of Waste-Lands in Assam being a reprint of the official correspondence between the Government of India and the Chief Commissioner of Assam, together with comments and criticisms on the scheme and its reception by the Government of India} (Calcutta: The ‘Indian Daily News’ Office, 1899)
\footnotetext{62}{“Kala-azar Special Relief”, Assam Secretariat, Home Department (Medical and Sanitary – B), June 1885, Nos. 1-4 [ASA]}

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Commissioner of the Assam Valley Division admitted somewhat bluntly, "[a]s we anticipated our well-meant curative efforts do not make much difference. As in other similar cases the only remedy is migration. If the people stay where they are they will die." He proposed a relocation of the ryots to the "the Eastern Dooars, where the people look the picture of health", a measure quite unacceptable to the higher authorities. On 28 September 1886 the officiating Secretary to the Government of India chose to console the Chief Commissioner of Assam saying that the increasing figure of deaths "is probably largely due to improved registration." But it was soon pointed out that in the two police circles of Salpara and Rongjuli, with a population of 48,000 by the census of 1881, there have been 15,200 deaths during the last four years, and only 5,700 births. In the Goalpara District generally, recorded deaths exceed recorded births by about one-fifth. Hence, after correcting the registration, there still remains an excess of about 8,000 deaths in these two thanas, which may serve as an illustration of the gradual depopulation of the country where kala-azar prevails.

It was around this time that Dr. Kynsey's pamphlet on beriberi or the "coolies' anaemia" in the Brahmaputra Valley tea gardens had renewed the official attention to the serious mortality among the costly imported plantation workers and a general enquiry into the condition of Assam disease ecology seemed the need of the hour. After some correspondence among the officials about the nature of the enquiry, in 1888 Dr. G. M. Giles, the Civil Surgeon of Hoshangabad, was deputed to "enquire into the origin and nature of the diseases called beri-beri and kala-azar." Giles submitted his final report in October 1890 claiming that kala-azar and beriberi were two different names for an identical disease, namely anchylostomiasis, a hookworm illness. He was clearly positioning his findings in the context of the wider, hundred-year old debate between the miasmatists and the contagionists, which by this time appeared to be locked in a boring, irresolvable but hardly irrelevant impasse. The government needed to know the abstract principle of the "spread" of diseases: whether it operated on a site-to-site principle.

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63 Commissioner of the Assam Valley Division to the Secretary of the Chief Commissioner, Assam, No. 1454, dated 31 March 1885, in "Migration to the Eastern Duars in consequence of the Ravages of Kala-azar", Assam Secretariat, Home Department (Medical and Sanitary – B), May 1885, Nos. 9, 11, and 68 [ASA]
64 Home Department (Sanitary), October 1886, Nos. 9-13 [NAI]
65 "Deputation of Surgeon G. M. Giles, MB. FRCS, Civil surgeon of Hoshangabad to Assam, to enquire into the origin and nature of the diseases called beri-beri and kala-azar", Home Department (Medical), September 1889, Nos. 110-125 [NAI]
or a person-to-person principle, whether it was required to vacate a miasmatic place, or it was better to quarantine the infected people. To Giles, it was "perfectly inexplicable" how a "non-communicable malady" (i.e. miasmatic, and not contagious) like malarial poisoning "should thus single out the small villages for a disproportionately large mortality, separated as they are, amongst the large ones, over all parts of the affected district." The slow and steady movement of kala-azar across the districts did not resemble that of malaria.

[I]f, kala-azar be but malarial cachexia intensified by the proximity of uncleared jungle, the habits of the people, and so forth, it is clearly incumbent on the advocates of this theory to show that these conditions and habits have been intensified in affected villages coincidentally with the outbreak of the disease, but, in point of fact, no one pretends that any such change has taken place.67

The Anthropological Calculus

"At first sight, it might appear, from a perusal of this collection of cases, that we were as ever far from being able to define what kala-azar is. It will be observed that it includes cases of the most diverse character." Giles blamed this nosological uncertainty on the classificatory imperfection: "Cases of sickness of all sorts were confounded with the epidemic cause of additional mortality, by the panic-stricken villagers," the confusion having been further "enhanced by the efforts of scientific men, who were conversant with a disease in some one country, to identify the malady they had themselves observed with diseases of other countries, of which they had no personal experience." For our Civil Surgeon from Hoshangabad, who vigorously challenged the ostensible consensus among the practitioners in Assam about the malarial nature of kala-azar, "personal experience" became a hallmark of unchallengeable authenticity:

After some stay in the kala-azar districts, I proceeded to Upper Assam, and visited the tea-growing districts, where anchylostomiasis has recently been shown to be so prevalent under the name of beri-beri. Nothing here struck me as the absolute identity of the clinical pictures

67 Ibid, 29.
68 Ibid, 62.
69 Ibid, 15 and 1.
presented by the cases of acknowledged anchylostomiasis with those I had just been seeing so much of, under the name of kala-azar. Probably, one of the reasons is that has prevented the earlier recognition of their identity is owing to the fact that no one medical officer has had any very extensive opportunities of observing both diseases.\footnote{Ibid, 15-16.} Giles did not deny that “Assam is a perfect hotbed for parasites.” There was enough room for a clandestine climatic determinism in Giles’ pronouncedly culturalist diagnosis. “It is excessively rare to find an Assamese entirely free from parasites”, noted Giles, and identified Ancylostoma duodenalis (i.e. intestinal hookworm) as the organism causing kala-azar. The doctor attributed the pervasiveness of this parasitic roundworm in the Assamese bowels “to the peculiarly favourable nature of the climate for the development of the free stages of nematodes and other parasites”.\footnote{Ibid, 121} However, the emphasis was on close bedside observation, personal experience and popular testimony: an ideal Sydenham concoction. “[T]here is no recorded or even hearsay instance of an [sic] European becoming infected”, noted Giles. He had much to say about this absence:

[A]: their climatic surroundings were the same, the source of their immunity is to be found in a difference of habits, and be it observed, that it is only among such Europeans whose habits assimilate them to the semi-civilized inhabitants of Assam that anchylostomiasis has ever spread. It is only among the lowest class of miners and brick-makers that the disease has been ever known in Europe, never among the class who migrate to Assam to serve as officials, tea-planters, and missionaries.\footnote{Ibid, 41}

He blasted the European physicians in the province for not attending to the widespread local conviction that kala-azar was a contagious disease: an illness which was communicated from one person to another, rather than from one place to another. Medical theory must not cease to learn from the “popular mind”, he said, citing the alleged convergence of the widely-held folk ideas and Robert Koch’s recent medical breakthrough in tuberculosis.\footnote{Ibid: 39-41.} How could a person-to-person infection (called “indirect contagion” in the prevailing language) so rapidly assume the dimensions of a provincial epidemic? In a letter written to the Deputy Surgeon-General, Giles pointed the finger at the garden sandars. With them constantly coming in and going out of the province for the purpose of recruiting workers for

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the plantations, he said, the contamination of the enclosed gardens would never cease. For the settled *mexas*, however, the contagion was to be explained by a cultural gap. Anchylostomiasis, said he, “is one of the most infectious of diseases” for “people in a low grade of civilization,” albeit the danger was “almost nil for Europeans, even in India.”

The mere fact of eating at a table, with knives and forks instead of fingers, is alone almost sufficient to secure immunity, and in even the most backward European towns, the system of conservancy, however badly it might be conduced, would suffice to prevent all chance of contracting the disease. Were the whole of the affected population in Assam suddenly transferred to London tomorrow, not a single case of infection could possibly occur, as long as the new-comers were forced to live under the same conditions as Londoners. Giles characteristically employed the productive trope of Assamese indolence to explain the mode of contamination. “[T]he Assamese has a constitutional objection to unnatural exertion”, remarked Giles, “as they never go more than a few yards from their own doors to perform the offices of nature, there is no difficulty whatever in finding specimens, for filthy as are Indian villages are in general, I never elsewhere have found the people so thoroughly careless in this respect as in Assam.”

His stereotypically charged reference to the practice of eating earth, or geophagy, among the patients of anchylostomiasis was very suggestive. Hookworms were known to be abundant in the surface layers of soil.

The ethnographer-doctor was however impatient with his native informants. The cultural prejudices and inbuilt indifference of the Assamese would give “discredit to the cause of European medicine.” But the case was “quite different” with the tea garden coolies:

The labourers, to begin with, come, for the most part from districts where the people have been long accustomed to the benefits of European medical treatment, and generally thoroughly appreciate it. Further, they are a great deal more under control, and can be dealt with, as far as sickness is concerned, almost in the same way as the men of a regiment…

Though suffering from acute indolence and inconstancy of imperial control, the *ryas* constituted the major repository of information for Giles. The styling of diagnosis primarily as extensive fieldwork required him to be particularly attentive to the narratives of the patients. The archive that he created out of these testimonies allowed him to articulate his

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74 G. Giles to the Deputy Surgeon-General, Assam, No. 53, Dated Dhubri, 11 March 1890, in Assam Secretariat Proceedings, Home-A, July 1890, No. 1 – 8 [ASA]
75 Giles, *Report*, 102
76 *Ibid*, 16
77 *Ibid*, 113-114
78 *Ibid*, 130
major disagreement with the theory of malarial origin of kala-azar. "[I]f we take kala-azar to be anything brought as such, kala-azar may be anything, but if we confine ourselves to the cause of the present pestilence, the reply is that it is anchylostomiasis" – a person-to-person, and not a site-to-site, contamination.\(^7^9\) However, \(\text{ex populi}\) was not \(\text{ex dei}\): the volubility of the native accounts had to be restrained by their final scientific utility.

Really, the only common character of the cases is that they believed themselves to be suffering from kala-azar, and in point of fact, it will be found in visiting a kala-azar stricken village that any and every case of illness, alike chronic and acute, will be brought out and exhibited to one under that name.

Although this was not "unnatural", said Giles, because "[e]ven the most highly civilized natives of Europe can hardly be trusted to diagnose their own diseases",\(^8^0\) the unprocessed commonsense descriptions must not be accepted too soon. The boundary between the acceptable and the incredible was the prerogative of the ethnographer-doctor. Nomenclature, here too, became an important issue, since the local name had nothing to suggest in favor of the association Giles was making. In fact, the accent on its pyretic character ("\(\text{azar}\)") was all too distinct. In an 1892 article, Giles wrote:

'Kala-azar' of course means black fever. The diagnostic powers of the natives are very limited, and he will usually tell you he has fever, whatever the matter with him, so it is not surprising. ... The origin of the epithet black is not so easy to explain. The natives will tell you that subjects of the disease get darker skinned, but I believe I am in agreement with every medical officer who has studied the disease in saying that there is no real foundation for this notion. ... I think that the true explanation of the work is that which was suggested by Dr. J. Mullane, the then Civil Surgeon of Gauhati, as far back as 1887. This is that, though the complexion is not actually darkened, the extreme bloodlessness of the skin makes the normal pigment more apparent; the dull leaden live of anaemia in fact intensifying the naturally dark complexion.\(^8^1\)

Mullane's observation, for that matter, was equally indecisive:

Among all the sick I have seen not one who is any blacker than his fellows. But nevertheless, the advanced causes have a very peculiar appearance, – that appearance produced by a very anoemic [sic] condition in dark skins. The healthy red blood is wanting, so that the natural

\(^{79}\) Ibid, 66  
\(^{80}\) Ibid, 63-4  
\(^{81}\) G. M. Giles, "Notes on Anchylostomiasis, being for the most part, a resume of a Report on the Diseases Known in Assam as Kala-azar and Beri-Beri", Indian Medical Gazette (June 1892), 170.
pigmentation of the skin becomes more evident. Although the individual may not be one whit darker than his fellows, still his appearance is remarkable and strikes one at once.\(^{82}\)

The arresting simplicity of the argument is worth studying: the disease in the tropics is not necessarily a deviation from the normal. It might as well be a return to the natural. *Kala-azar* functions as a cipher for the truth of native identity. When in 1898 E. Harold Brown was sent to Purnea to report on a similar disease known in that region as *kala-dukh*, a disease which would soon be identified as *kala-azar*, he narrated:

In some cases [the darkening of skin] has affected the entire integument so equally that none but those who knew the patient before his illness could detect the fact, and I repeatedly had to accept the statement made by patients or friends, strengthened as it was by comparison with a healthy individual who was produced for contrast, the patient and he having originally been of the same colour – generally a light copper. In other instances there was distinct evidence of darkening of the skin in patches, especially on the knees, forearms and face; whilst, in a minority of cases, I discovered that the so-called darkening was due to the accumulation of dirt, the result of the patient not having bathed for months; and in such, a liberal application of soap and water, accompanied by hard scrubbing, removed several layers of dirt and epidermis and the skin was thereby made to appear several shades less dark.\(^{83}\)

In 1897 Surgeon-Captain F. P. Maynard was given the task of examining almost three hundred and fifty coolies for emigration from Lohardaga district to Assam. Assuring the authorities that although most of them possessed "pigmented tongues" (or, in the jargon of the day, "melanglossia"), it was not anyway making the coolies more vulnerable to malaria, Maynard remarked that the fact of darkened body parts "[becomes] more common the lower the race is in the scale of civilization", adding that "[t]hese observations are principally of anthropological interest."\(^{84}\) Faced with such questions as whether the blacks could grow any darker, the disciplinary boundaries began to founder. After all, "none but those who knew the patient before his illness could detect the fact." And who could know a native, ever?

Each new explanation of the disease had to come to terms with this unusual fact and interpret the name *kala-azar* in its own favor. The miasmatics had their own take. Dr. Fink, a campaigner for the malarial theory, reported,

\(^{82}\) Quoted in "Sanitary Report for Assam for the Year 1885", Home Department (Sanitary), October 1885, Nos. 9-13 [NAI]

\(^{83}\) E. Harold Brown, "A Report on Kala-Dukh, a form of fever met with in the North-East Portion of the District of Purnea", *Indian Medical Gazette* (September 1898), 326.

\(^{84}\) F. P. Maynard, "A Note on Melanglossia", *Indian Medical Gazette* (October 1897), 364-5.
In some villages the term *kala-azar* is not known. You hear the Garo word ‘Rapungi’, meaning jungle air and water – mist in fact, – which shows that the Garos themselves recognize that the malaria of the jungle has some close connection with the disease known as *kala-azar*. The term *kala-azar* or ‘*kala-zar*’ is of more recent importation into the Garo hills and is an Assamese word. Then, again, in some places nearer the plains, you hear it called ‘Sarkari-bimari’, a term which was doubtless used with a certain amount of cunning when we first occupied the Garo Hills.85

Ronald Ross, the one-man Kala-azar Commission of 1899, put forward a more classicist explanation. While confirming the fact of an “undoubted darkening of skin”, Ross opined that

> [t]he popular use of the adjective *kala* does not appear to me to imply necessarily blackening of the skin. Perhaps the original meaning was *deadly*. It is possible that the meaning has now become transferred to the more literal significance of the adjective *black*. Thus *black death* meant only plague originally, until, the word stimulating the imagination, people saw a blackening effect in the disease which it does not possess. Just, possibly, the same thing has happened in *kala-azar*.86

Many practitioners, expectedly, insisted on the symptomatological value of darkening. As Dr. J. C. Laverine, a practitioner at Nowgong, remarked, “I have personally known cases in which it has quite undoubtedly occurred. It cannot be explained by mere dirt of the skin. The luster of the skin is generally lost, and the epidermis acquires the appearance of a grate which has been black-leaded but not polished.”87 Leonard Rogers confirmed “the fact from [his] own experience”: “I was much struck on my return to Nowgong after two months’ absence on tour, by the darkening of the face in several cases in the Nowgong dispensary, which had taken place during my absence.”88 While a standard 1918 textbook could unhesitatingly define the symptom of *kala-azar* as a “shining appearance [of the skin] somewhat like the appearance given by shading lightly white paper with a lead pencil”89, the initial observers appear to have been more ambiguous on the issue.

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87 Quoted in *ibid*, 83.
88 Rogers, *Report*, 34.
Since darkening could not be pinned as an unvarying symptom of the disease, the mystery of darkness remained open to a productive play of race, dirt and infection. But, more interestingly, the darkening question yet again exposed the practical limits to the impersonal operations of universal modern medicine. Almost all the commentators bitterly recognized that white medicine could never conclusively judge the validity of the black patients’ claim of having grown darker. As Fink acknowledged, “when the medical history is a blank, and patients are either reticent or unable to give us the information sought for”, organized medicine invariably failed to offer “early and correct diagnosis.”90 In its effort to shore up the claims of an abstract universality of the human body beyond the rule of difference, imperial medicine was only becoming helplessly entangled in the ongoing projects of anthropologizing the concrete.

Indigenous Disease, Imported Bodies

Giles’s Report, allegedly a decisive break in the received wisdom, was able to create adequate sensations. On the one hand, the new middle class of Assam was delighted to discover yet another site of self-reform in the hygienic field. In Padmanath Barua’s popular periodical Bijuli, an Assamese translation of the summary of the Report was immediately published. Typically highlighting Giles’s argument that this disease did not affect the English because they were cleaner than the natives, the translator emphasized the necessity of developing proper hygienic habits in the Assamese households.91 On the other hand, right after the publication of the Report, the Sanitary Commissioner of Assam issued detailed instructions to the managers of the tea-gardens regarding the introduction of “the simple trench system of conservancy” in the plantations, as prescribed by Giles. Specifications of the dimensions of the trench to be dug, of its distance from the nearest source of drinking water-supply, and of the way the workers were to release their faeces into these trenches were given.92

90 Fink, So-Called Kala-azar, 214-5
91 Binanda Chandra Rajguru Phukan, ‘k’ala-jwar’, bijuli, Volume 2 (1892), 238-243
92 Letter No. 446C, dated 10 March 1891, from the Administrative Medical Officer and Sanitary Commissioner, Assam, to the Secretary to the Chief Commissioner of Assam, published in the Assam Gazette of 16 January 1892.
As a straightforward note in the 1891 census put it, the value of Giles’ report came from its clear-cut anthropological accent. “It is to the habits of the people rather than to the climate that the heavy mortality is to be attributed,” said Edward Gait, the census officer who, as an aspiring historian, was also particularly interested in the habits of the Assamese people.

“Although the death rate is excessively heavy, it is due largely to preventable causes, and there is room for hope that, with the spread of education and a knowledge of the first principles of cleanliness and sanitation, a perceptible improvement will take place.

“The climate of Assam is not in itself unfavourable to health”, Gait assured himself. It was only “the people” who by “neglect[ing] the simplest precautions” and “ease[ing] themselves either in the immediate neighbourhood of their houses, or [near] ... their water supply” facilitated the spread of the disease.93 Control was the answer to contamination. The planters did not need to change the garden sites. Nor should the government vacate its revenue-paying districts.

The anthropological sword, however, was double-edged, and nowhere were the veiled implications understood better than in the office of the Chief Commissioner. In a long, scathing review of Giles’s Report, P. G. Melitus, the Secretary, pointed out that

Dr. Giles has altogether failed to appreciate the influence of climate, that is to say, of change of climate or acclimatization, on the immigrant sickness and mortality; and secondly, that he has considerably over-estimated ... (a) the prevalence and increase of anchylostomiasis on tea-gardens consequent on defective sanitary arrangements and (b) the influence – great as it undoubtedly is – of this disease on the immigrant sickness and mortality. He appears in fact to have transferred to the case of beri-beri on tea-gardens the destructive results and the process of gradual but certain extension which have actually been observed in the case of kala-azar in the villages, without however explaining how beri-beri in its passage from garden to garden has happened to skip the villages on the way.94

Looking at the magic mirror of statistics, the British Indian state discovered that during the 5 years 1886-90 the death rate among Act laborers (in which class the new immigrants were included) had been 5.89, 5.72, 6.29, 6.35, 5.56 per cent respectively, while among adult non-Act laborers, who were mostly old immigrants, the death rate during these years has been 2.95, 2.58, 3.02, 3.56, 2.88 per cent respectively. Quinton inferred in his Special Report on

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94 “Report on ‘Beri-beri’ by Drs. Leslie and Giles Respectively”, Home Department (Medical), August 1892, Nos. 90-95 [NAI]
coolie health that the cause of this difference was not so much the inaccurate registration of the non-Act deaths as “(1) the larger proportion of unacclimatized coolies among Act labourers, many of who may be members of ‘bad batch’ unfit to stand the Assam climate; (2) the larger proportion of Act labourers on unhealthy gardens; (3) the fact that in many cases new labourers bring up the germs of disease with them.” The essential point of any medical enquiry into *kala-azar* was, Melitus reminded Giles, to find out whether the said disease had been an “indigenous disease” or an “imported” one:

*Beni-beni* prevails chiefly in Upper Assam and the Surma Valley. It attacks chiefly immigrants on tea-gardens, and among these chiefly newly-arrived immigrants. It has not spread to any extent worth speaking of to natives of the Province or to the villages. It is known to be readily curable, if taken in hand before the advanced stages; and notwithstanding that cases are freshly imported every year by new coolies brought up to tea-gardens, it has not increased in prevalence or caused increasing mortality.

The *kala-azar* of Lower Assam is essentially an indigenous disease, and the theory of importation cannot be applied to explain its origin or any part of its development. It attacks all classes, immigrants as well as natives of the Province. It has been peculiarly fatal; it has taken firm hold of whatever places it has reached and it has spread and is still steadily spreading in the plains districts from its original center, causing terrible mortality wherever it goes. It has not yet appeared (at any rate in a recognizable form) in those distant districts in which *beni-beni* is known to prevail among immigrants.

In other words, the amalgamation of the “Assam Fever” and the “anaemia of coolies” by Giles had a jeopardizing insinuation against the priorities of the government. The logic of improvement, as we have seen in Chapter Four, was seen indistinguishable from the logic of plantation in Assam. Carrying coolies to the gardens of Upper Assam and the Surma Valley was the bedrock of that logic. In shifting the onus from the soil to the people, Giles had inadvertently laid bare the whole issue of state-directed mobility. If we remember the standard arguments of the British Indian bureaucracy, tea gardens were considered complementary, and not antagonistic, to the interest of agrarian development. Coolies brought health and happiness to the province, not disease and destitution. But the principle of person-to-person infection would cast a doubt on this credo. That was why Fink disliked

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96 “Report on ‘Beri-beri’ by Drs. Leslie and Giles Respectively”, Home Department (Medical), August 1892, Nos. 90-95 [NAI]
the nickname of the disease current in the Garo hills — *sarkari bimtri* ("government’s disease"). It was not a fault of the government, but an innate problem of the locality.

In the course of his fieldwork, Giles had explicitly written, “The general balance of opinion amongst those I have consulted was that the disease was rarely or never imported, and I was accordingly somewhat surprised to find that this is far from being the case.” Examining the “Uriyas from Ganjam”, the “Bengalis from Hazaribagh” and the “Janglis from Chota Nagpur”, he argued that

> whether the disease was originally introduced into these districts from Assam by returned coolies, or whether it, in the first instance, came to Assam from some one or more of them, is now a matter of but little moment, and which probably cannot now be determined. The fact that my observations here make certain, and which will have to be dealt with, is that at present the disease must be constantly carried to and fro between Assam and the recruiting districts.\(^{97}\)

What was an indefinite connection for Giles became an unequivocal truth for his followers. Hayman Thornhill, a Senior Medical Officer in the Ceylon Medical Service, was an early convert within the profession to Giles’s theory. According to him, Giles’s research clearly demonstrated that *kala-azar* in Assam “is an instance of the occurrence and spread of ankylostomiasis following on the introduction of the Indian coolie in large numbers into a country where apparently these cases, characterized by extreme anaemia and dropsy, were before his advent unknown.”\(^{98}\)

The question became increasingly simple, and Melitus had anticipated it: does the “Assam climate” devastate the tea gardens, or do the coolies ruin the local health? Displaying complete insensitivity to such erudite questions, the disease continued to “spread” from one district to another. In Darrang, as a survivor later described, “there was not a single family which had not lost some of its members to *kala-azar*” in 1892-93.\(^{99}\) Several lives were lost. Even greater numbers fled. Populous settlements in Darrang, Kamrup, Goalpara, and particularly Nagaon became practically abandoned. The survey and settlement operations

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\(^{97}\) G. Giles to the Deputy Surgeon-General, Assam, No. 53, Dated Dhubri, 11 March 1890, Assam Secretariat Proceedings, Home-A, July 1890, No. 1 – 8 [ASA]


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were at a loss. Railway works suffered severely. Timber trade fell. And, most importantly for the government, there was a massive drop in revenue. In 1897 the *tahsildari* balance in Nagaon was no less than Rs. 31,707 — amounting to about 15 per cent of the total revenue demand. In 1899 many mauzadars of Nagaon sent a signed petition requesting the remission of land revenue for the previous three years (1895-8) stating that "*kala-azar* is making life and property uncertain."102

The decrease between 1893-94 and 1900-01 was 23 per cent. The arrears of revenue in 1900 amounted to 20 per cent of the demand, and by 1900-01 a sum of Rs. 46691 was written off as irrecoverable. The census of 1901 revealed a deplorable state of affairs in that the population decreased by 25 per cent. On the representation of the Local Government, the Government of India granted an abatement of revenue to the extent of 1 lac of rupees, and all the 1st and 2nd class villages were reduced to the 3rd and those in the 3rd reduced to the 4th class with the rates in force prior to 1893 (i.e. *busti* — Rupee 1, *rupit* — annas 10, *farit* — annas 8). By the application of reduced rates alone the revenue demand was brought down from Rs. 510246 to Rs. 415767, i.e. 18 per cent, actual demand standing at Rs. 404665.103

In Kamrup, between 1891 and 1901, population in the south bank was calculated to have "declined by about 5 per cent" while the "hilly mauzas of Dimuria, Panbari, Beltola and Barduar recorded a reduction of over ten per cent."104 The effects of the 1897 earthquake only added to the damage. Giles’s discovery had no solution to offer. Moreover, as Dhubri’s Surgeon-Major Dr. Dobson came to make the findings of his silent four-year research on anchylostomiasis available, great doubts were thrown on the validity of Giles’s argument.105

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101 An unconvinced Henry Cotton (the Chief Commissioner), however, thought that “There is too great a tendency to explain everything by reference to *kala-azar*, but, after all, the number of people who have died or left their homes from this disease is altogether insufficient to account for [such] a reduction in the revenue demand…” H. J. S. Cotton, Chief Commissioner, Assam, “Nowgong Inspection Note”, in “Entertainment of Applications for Mutation by Tahsildars and Mauzadars in Assam Valley Districts”, Proceedings of the Chief Commissioner, Revenue Department, May 1897, Nos. 145-9 [ASA]

102 “Land Revenue Administration in the Assam Valley Districts”, Revenue and Agriculture Department, October 1899, Nos. 9-13 [ASA]

103 S. N. Dutta, *Report on the Resettlement of the Nowgong District during the years 1926 (October) to 1932 (January)* (Shillong: Assam Government Press, 1933), 20


105 See Rogers, *Report*, 15-16 for a summary of Dobson’s findings. A circular order of the Deputy Surgeon General of Assam was issued in 1891 “asking the opinions of certain Civil Surgeons on Dr. Giles’ theory.”
It was this context that the neo-malarialists gathered their strength in the kala-azar debate. J. F. Evans had already proposed in 1892 that the forms of malaria “vary with locality”, alternating between kala-azar and paludism. In 1894, Stevens argued that though slightly different from malaria, kala-azar was not an altogether different disease. Comparing the reports of the “Lower Bengal epidemic fever”, commonly known as the Burdwan fever, with those of “the present Assam epidemic”, Leonard Rogers, the medical in-charge of the 11th Bengal Infantry, declared in 1897 that these two were essentially the same. According to him, both were caused by “an intensification of the ordinary fever” of the “very malarious” localities “by means of extraordinary physical causes” such as geomorphological change or “abnormal variations in the rainfall.”

The message was clear: if the disease was just a “local” form of malaria, and not a type of anemia, then it did not require the coolies to introduce an intense fever epidemic to a malarious country like Assam. Rogers, who was deputed to make a second enquiry into the nature and causes of the Assam Fever within six years of Giles’s mission, did not disappoint his employers:

_kala-azar_ began in, and was for at least the first 8 years of its spread, entirely limited to parts of Assam into which no coolies from India were ever imported, while, on the other hand, it is still more than 20 years after its start, absolutely unknown in the upper part of the Assam Valley, which is precisely that into which the largest number of coolies have been imported from India. Again the disease _kala-azar_ has never been known to spread from a tea garden to a neighbouring village, although the reverse has taken place. … In short, it may be said that, as far as the epidemic has yet spread, _kala-azar_ has been prevalent in precisely the inverse ratio to the number of coolies that have been imported into the districts it has traversed.

The government officials could not have expected a stronger endorsement from the men of science. _Kala-azar_ had nothing to do with the plantations. It was a disease of the unreformed landscape. The local European doctors, usually attached to various tea gardens, were happy too. When Dobson published his results, demonstrating that the mere presence of

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Proceedings of the Chief Commissioner of Assam, Home Department (B), November 1891, File Nos. 220-222 [ASA]. Unfortunately, I could not locate the civil surgeons’ responses to this circular.

106 J. F. Evans, “A Note on the Pathology of Kala-azar or Beri-Beri in Assam”, _Indian Medical Gazette_, December 1892.

107 Cf. Arun Kumar Mukhopadhyay, _kālā-jwār cikitsā_ (Calcutta: Manasi Press, 1924), 6

108 Leonard Rogers, “The Lower Bengal (Burdwan) Epidemic Fever Reviewed and Compared with the Present Assam Epidemic Malarial Fever (Kala-azar)”, _Indian Medical Gazette_, November 1897, 407.

Anchylostoma duodenale in the digestive tract did not explain the origin of kala-azar, an editorial in the Indian Medical Gazette commented that “he appears to be supported by the whole weight of Assam medical opinion”, and affirmed in turn, “kala-azar is not a disease sui generis, but a malaria – parasitic cachexia.” The old miasma theory was given a new lease of life:

The shores of the Brahmaputra are daily washed by the waters which are disturbed by steamer traffic, and eaten away year by year. I believe that if the history of kala-azar be enquired into on such lines, it will be found that it is clearly traceable to the increased exposure of malarially impregnated soil. The direction of wind currents and the adjacency of a town, hamlet or village to the exposed areas would cause an unusual number of cases, which might almost assume an epidemic form. The presence of malaria in India for so many generations is true; but the exposure of malarially impregnated soil in fresh additions to the already malarious tract exposed is sufficient to account for the disease breaking out in so violent a form as to create a panic, it is with redoubled force.

With Leonard Rogers beginning to publish his findings, the new idea of “communicable malaria” began to gain a wide currency. For the earlier generation of miasmatists, it was only commonsensical to hold that malaria, fastened to the innate qualities of soil and water, could not travel from one site to another. But for some reason, said Rogers, Assam presented an opposite case. Trying to make the best use of Pasteur’s discoveries in his own favor, Rogers opined, “in the case of traveling epidemics of malarial fever, the germs have become intensified, as it were, in Nature’s laboratory, by unusually favourable conditions, until they attain to the power of being communicated from one person to another, either directly or indirectly, after passage through soil.” While such a formulation could not, admittedly, explain the so-called “intensification” of germs and folded back etiological research to incalculable climatic conditions, it surely exonerated the plantation sector from the charges of wrecking the Assam ecology.

In his reply to Roger’s Report, Giles expectedly dwelled long on the point that must have struck most of the contemporary physicians. It was absurd, said Giles, that Rogers simultaneously acknowledged the contagiousness of kala-azar and made a case for its fundamentally paludial nature. “An ordinary man would indeed see at once that such a position is untenable, but Dr. Rogers, like a medical Alexander, cuts his Gordian knot by

111 Fink, So-Called Kala-azar, 215.
112 Rogers, Report, 197.
announcing that Assamese malaria is infectious.” However absurd and indefensible it might have appeared to the contemporary doctors, the Chief Commissioner of Assam had already communicated to the Deputy Secretary to Government of India the necessity of making kala-azar as “a separate cause of death and not on a sub-head of Anchylostomiasis, which should have a column to itself” and of omitting beri-beri altogether from the return of the vital statistics. The case was lost for the Gilesians.

In 1892, when clearly outlining the trajectory of argument that the British Indian state would have liked to hear from the medical investigators in the frontier, Melitus had emphatically declared, “Kala-azar is undoubtedly an indigenous disease and cannot be accounted for by immigrants.” What demands our attention here is the strange reverberation of this expectation in Rogers’s research. Melitus had conjectured,

If beri-beri is imported, and if new coolies chiefly suffer, and if old immigrants enjoy comparative immunity, and if the disease has not spread to the indigenous population to any great extent worth speaking of in the more important tea districts, then a doubt suggests itself whether, although there may be anchylostomiasis in both cases, there is something more in kala-azar, which gives it its specially fatal character. This has to be worked out. If it is found that ancylostomiasis prevails in other Provinces as much as or more than in Assam and is brought up to Assam and developed there on the tea-gardens, then the theory that kala-azar (a disease special to Assam) is anchylostomiasis would seem to be weakened.

This was exactly what Rogers would try to demonstrate. Arguing that anchylostomiasis or anaemia was “very uncommon among the indigenous inhabitants of Assam, who had not worked on tea gardens,” the doctor went on to underscore the local distinctiveness of the Assam Fever (its communicability). If there is a scandal in this blatant reproduction of a bureaucratic diagram in a commissioned research, it is certainly not one of professional fraud. Rogers, like his adversary, arrived at his truth only after meticulously examining and interrogating hundreds of patients in Assam. The embarrassment, if there is any, is one concerning the frame of the world of science. Where did the extra-medical begin?

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114 Home Department (Medical), 15 June 1898, No. 296. See also “Report on Kala-azar in Assam by Surgeon-Major Rogers, IMS”, Home Department (Medical), June 1898, Nos. 291-297 [NAI]
115 “Report on ‘Beri-beri’ by Drs. Leslie and Giles Respectively”, Home Department (Medical), August 1892, Nos. 90-95 [NAI]
116 Rogers, Report, 17.
Thornhill, the undying Gilesian, very soon drew attention to the giant leaps of faith in Rogers's logic and the practical difficulties in agreeing to his prescription. He pointed out that Rogers's citation of Pasteur's artificial and Haffkine's retrospective intensification of rabies and *choreus vivir* as a theoretical parallel was rather misleading since malaria was a protozoan and not a bacillus.117 Most importantly, said Thornhill, quinine did not work in the *kala-azar* cases. Rogers's consciously metaphorical description of Assam as "Nature's laboratory" carried a defense in itself: since Assam was not a laboratory in reality, said Rogers, it would always be "impossible to scientifically demonstrate" the proposition of communicable malaria. The principle would work if everybody agreed to pretend that it worked.

"We cannot admit this," said Thornhill, "for the infectiousness, if it existed, could have been, and can still be experimentally proved, for experiments could be made with monkeys and other animals not immune to malaria." Moreover,

> A few rupees would procure any number of perfectly healthy coolies or Assamese (I stipulate that they be proved free from anchylostoma) to directly inhale the breadth of a *kala-azar* case, or to live for a week in the house, and with a houseful of *kala-azar* cases, or one or half-a-dozen *kala-azar* cases could be brought to a district where there was no *kala-azar* or severe malaria, and be put to live for a week in a house with similarly perfectly healthy people.118

No such scheme was undertaken at the government's initiative at that time, although quite a similar method of procuring "human volunteers" for testing the worth of the urea stibamine treatment for the *kala-azar* cases was secretly employed in Assam in the nineteen thirties.119 Assam could become a laboratory as and when it was so required. Receiving indirect support from no less an authority on malarial fever than Ronald Ross,120 Rogers continued to occupy

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117 This point was also stressed by, among many others, Dr. Stephens, the Principal Medical Officer and Sanitary Commissioner of Assam in 1897. See "Report on *Kala-azar* in Assam by Surgeon-Major Rogers, IMS", Home Department (Medical), June 1898, Nos. 291-297.

118 Hayman Thornhill, "A Criticism of Dr. Rogers's Report on *Kala-azar*", *Indian Medical Gazette*, February 1898, 51-52


120 While insinuating that malaria is an indirectly communicable parasitic disease, Ross never directly called the miasmatic assumptions (and statements) of Rogers into question. In "particularly malarious localities", said the discoverer of the mode of malarial infection, "the specific virulence of the variety of parasite concerned" might increase from time to time, without, however, explaining the details. As far as the sanitary measures were concerned, the Ross Commission (1898) mostly confirmed Rogers's propositions. Ross, *Report*, 64-5.
the position of being the final authority on the Assam fever. The vernacular middle class now turned to his Report for drawing the usual moral lessons:

Rogers sahib has proved that all the Europeans who were infected with kala-azar in the Assam tea gardens had received it from the coolie women. Those coolie women were used to spend the nights at the bungalows of the sahibs. The authorities happily put into effect his recommendation of a more thorough isolation of the coolies from the indigenous population and stiffer control over non-state-directed mobility in the province. The tea garden owners were pleased to be given the liberty to dispense with the services of affected workers and the right to expand the garden's settlement.

The medical opinion, however, was far from unanimous. C. A. Bentley, for instance, argued that kala-azar was not an exclusively Assamese version of malaria, but rather a variation of the Malta fever:

The fact that when once the disease was introduced into Assam, it was the indigenous population who suffered the first and the most severely, and that after them, it was old and long acclimatized coolies who had settled down away from the gardens, who were the next to suffer. These people introduced it among the old coolies on the tea gardens, and so the disease gradually spread. This history is altogether different to what we know of the incidence of malaria. In malaria-infected countries, such as Assam was known to be, before, the occurrence of kala-azar, the indigenous population and acclimatized inhabitants possess a relative immunity to the attacks of paludism, and it is the new comer who suffers severely. Can we imagine that this experience would be reverse for one small part of one malarious country in the world?

Arguing that "practically ever since malarial fevers have been differentiated, it has been remarked that the inhabitants of malarious countries did not suffer from the disease like new

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121 Mukhopadhyay, kâlā-jwar cikitsā, 115
122 Rogers, Report, 234.
123 Rogers, Report, 219. The earlier practice in the gardens had been to burn out the infected coolies' houses completely "so that only the four bare walls remained", and to rebuild the huts on the same site. Under these conditions, it was thought, no germs could survive. L. Everard Napier and Ernest Muir, Kala Azar: A Handbook for Students and Practitioners (London: Humphrey Milford, Oxford University Press, 1923), 25. But Rogers, who repeatedly argued that kala-azar was a 'site infection' and that soil was the reservoir of the germs, recommended the placing of all new coolies in new lines, evacuation of the whole 'line' to a distance of 300 yards during the cold-weather months when "the fever is at a minimum" and removal of the infected "line" to a distance of 300 yards (together with the sick and contacts). Rogers, Report, 217-23
124 Chas. A. Bentley, "Epidemic Malta Fever in Assam - A Short Preliminary Notice of Certain Recent Discoveries relating to the True nature of Kala-azar", Indian Medical Gazette, September 1902, 339.
Bentley also underscored kala-azar's notorious resistance to quinine, the extraordinarily irregular temperature chart and unusual nature of "communicability". His hypothesis was that it was probably "first introduced into India" by the British soldiers returning from Crimea. The sparseness of population in Assam determined its slow communicability as compared to Burdwan and Rungpur, where, according to Rogers and Ross, kala-azar was prevalent too.

Rogers aggressively defended his own position in the face of Bentley's criticisms and vehemently disputed Bentley's blood sample proofs. The issues of the Indian Medical Gazette became, once again, packed with replies and counter-replies on the nosological status of kala-azar. Before the debate could be conclusively exhausted, there appeared a small insertion in the "Letters to the Editor" column of the Gazette, signed by one C. Donovan, which declared that some parasites — "genus Piroplasma, species new" — have been discovered by the writer in a case of peculiar fever in the Government General Hospital at Madras that "tally very closely with [the symptoms] of kala-azar". Donovan requested the concerned Medical Officers in the kala-azar endemic areas for samples.

What followed was, as the textbooks say, history — but certainly not as smooth as they would have it. While accepting the scientific validity of the claims of Donovan and Leishman, both Bentley and Rogers maintained that their earlier positions were not too far from the discovery. Rogers dryly observed that the new discovery would have to speak to "the very successful segregation measures" in Assam because "the finding of a form of a protozoa differing from the malarial parasite will not per se throw much light on the matter." The victory of the abstract — the graduation of the Assam Fever into visceral Leishmaniasis — could be complete only when it emerged safe out of the trial of the concrete. Rogers was right in a way. Between 1900 and 1910, "one quarter of the [Nagaon] population perished and one third of the agricultural land went out of cultivation." The south bank of the Goalpara district, the north bank of the Kamrup district, the Mangaldai and Tezpur subdivisions of the Darrang district, the Golaghat, Jorhat and Sibsagar subdivisions of the

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125 Chas. A. Bentley, "Malaria and Kala-azar", Indian Medical Gazette, December 1902, 461
126 Leonard Rogers, "Note on Serum Reactions and the temperature Curve in Chronic Malaria including Kala-azar", Indian Medical Gazette, October 1902, 377-379.
127 Later Rogers himself softened his stand in Recent Advances in Tropical Medicine (London: J & A Churchill, 1928), Ch. I
128 Leonard Rogers, "Leishman-Donovan Bodies in 'Malarial Cachexia' and 'Kala-azar'", Indian Medical Gazette, April 1904, 158
129 Shortt, In the Days of the Raj, 70
Sibsagar district, and substantial areas of Lakhimpur were recognized as particularly endemic. It was reported in the late twenties that in the south bank of Kamrup, an area considered relatively free from the disease, "kala azar has found a home in the hilly areas among the Kacharis, Rabhas, Mikirs and Lallungs." As more and more people were encouraged to move to the Upper Assam districts to work in the heartland of tea imperialism, the theoretical scope of person-to-person infection was increased. Given the history of medical inquiries that we have discussed, it was absolutely unsurprising that no professional was eager to explore this connection.

As one expert later recalled, "[t]he causative organism of kala-azar was known but how it was transmitted from one person to another remained a complete mystery." Bed bugs, mosquitoes, hookworms, fleas: several insects were tried as possible transmitting agents, "but all these failed to be incriminated in transmission experiments." Another, in charge of the preventive operations in the nineteen twenties, said,

In the great unresolved puzzle of kala-azar transmission, and among the many theories that have been propounded to explain it, one group of facts remains unchallenged. It appears as if an infected person cannot infect a healthy individual until some cycle of events, conveniently designated "site infection", has been established or around the house in which they live; furthermore, it appears as if the infected person ordinarily acquires his infection from vesting an infected site, and that the village infection thus imported is reinforced in potency by the infection of others.

"This being the case," said McCombie, "it follows that the evacuation of an infected site should prevent further infection." In spite of the alleged field-displacement in theory, the focus of government regulations and sanitary measures continued to be fastened to the enduring force of the miasma theory. Removal of the "infected family", burning of the "infected house", segregation of the patients, and maintaining "a close watch" over local mobility: the "preventive operations" showed such a stern disciplinary bend that the

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130 Detailed (often thana-wise) statistical accounts for the first decades of the twentieth century are available in T. C. McCombie, Kala-Azar in Assam: An Account of the Preventive Operations, 1910 to 1923 and Notes on the Epidemiology of the Disease in Assam and India (London: H. K. Lewis & Co., 1924), Ch. II

131 "The Assessment Report of the South Bank Group, District Kamrup, by S. P. Desai, Settlement Officer of Kamrup" (c. 1927), in Report on the Reassessment of the South Bank Group of district of Kamrup (Title page missing in the copy consulted in the Secretariat Administration (Record and Library) Department, Guwahati), 11

132 Shortt, In the Days of the Raj, 72

133 McCombie, Kala-Azar in Assam, 20.
Director of Public Health actually "marvelled why we didn't get our heads broken in the course of these surveys." The landscape of Assam was irreversibly invested with a miasmatic content. The professional logic of early nineteenth-century medical knowledge disappeared from the disciplinary binds only to reappear in the nationalist common sense to inscribe Assam as an innately diseased land. The 1905 agitation against the proposed "partition" of Bengal bore ample testimony to this tropological career of the Assam fever. But that is perhaps another story. We shall come back to it in the Coda. Meanwhile, other stories are awaiting us: stories which were told and retold in the metropolis over a longer period of time about other, more incurable diseases of the frontier identity.