"On the Pathology and Etiology of Elephantoid Disease,"

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My last scene learning Alma Mater having been cast in China, I have come to the following pages to utilize the opportunities thus enjoyed of studying the recent rapid advances made in our knowledge of the Pathology and Therapy of Elephantiasis, leprosy, and allied diseases. The interesting communications made to the Chinese Imperial Medical College Medical Reports from time to time by my Professor of Anatomy, taking them just to the eye, making my attention, and hence have been employed in initiating myself into the knowledge of this, and ulcers, etc., and certain complications with leprosy therein arrive at, in my own practice. Elephantiasis, leprosy is not very prevalent in China, or immediate neighborhood. Majority of cases presenting themselves are brought for treatment, come from country towns and villages from time to time thousand miles distant opportunities for studying the disease are afforded by a native hospital having an average annual attendance of about 4000 male and 5000 out patients.

under the somewhat ambiguous term "Elephantiasis disease" it is proposed to include the general affection of Elephantiasis of leg and foot, leproma, varicose veins, glands and chloroma. In doing so, I accept all evidence which latter or shall be denied to prove that these several diseases are but clinical manifestations of the pathological condition, their difference being merely one of site and degree of involvement. I learnt for a Greek scholar the selection of a happy term to express in brief. "Disease endemic in certain tropical countries.
Resume of Literature on Hypnotherapeutics
occurred by obstruction to lymph circulation in localized lymphatic areas.

"Buerger's disease, elephantiasis Anatomica; Thrombosis leg, Ecdema leg, Phlegmasia;" Dr. T. of the old Arabian physicians has been a recognised pathological condition for centuries. Not to commence with Lymphatic Thrombus or Phlegmasia, which have only been separated from the component parts of disease within the past thirty years. To Mr. Anson's Jameson, the credit of recording the first case of lymphatic Phlegmasia of the Medical and Physical Society of Bombay, 1861.

"Clinical Surgery in India," by W. Haygar, 1866.
Clinical description of 'Lymph Pustule'.
he expressed the belief that the disease was but "a terrestrial form of
Elephantiasis." In 1870 Dr. J. Lewis, of Calcutta, by his discovery
of 'Elephantis Dermae memini' gave new interest to the study
of the whole range of Elephantiasic diseases. Dr. Menon of
Army recognized the disease for first time in his native practice,
in 1871. Unaware of previous descriptions he records his cases
under the name of 'Lympho Dermae.' This name I think, is
a good one, not only as supplying a key to the pathology of the
disease, but to anyone who has seen lymphatic cases, the peculiar
mucinous, crenated, plastic appearance of the lymph lateral tissue
of Dermae well accounts for the term of 'Lympho Dermae.'
Cases of Lympho Dermae, in my opinion, afford by far the
most valuable field for the elucidation of the true pathology
and etiology of Elephantiasic diseases. The following
Clinical sketch of the disease, is drawn from my study of
its in France:

A male, farm hand of poverty, in enjoyment of
good health, perhaps subject to attacks of malarial fever;
after exposure to cold and wind, or without such exposure, is seized
with fever, headache with chills, pains in back and general
malaise. The fever after lasting from a few hours to perhaps one
or two days, is followed by pain, redness, and swelling of Dermae.
Inflammation of lymph at same time becomes enlarged but are soft
as a rule painless. The inflammation of Dermae may be very
severe, be complicated by occurrence of abscess in cellular
tissue, and compel patient to keep, his bed for many days,
or even longer. Many be so obliter as to but slightly merely
remembrace him whilst continuing at his daily work.

With the onset of inflammatory symptoms a portion of the skin
properly aloes, and the general constitutional disturbance is
resolved into a local inflammatory affection. If pain be
the same as this acute stage we should find, and above
inflammatory swelling, pronounced gorged lymphatic vessels
emerging to surface. In a few cases, a marked density surface
of dense vessels may occur in this primary attack and escape
of a serous viscous fluid results with marked relief to pains
and swelling. As a rule however, the swelling subsides
without a few days, the inflammation subsides, and
patient appears perfectly well. This first attack of these
in a few cases proves also the last, subsequent history of
consisting in a gradual development of vessels on
surface of portion, gradual increase in swelling above
surface of vessels and discharge of lymphatic with
temporary relief to symptoms. In great majority of cases
however, the first period of dense vessels but the presence
of many. At irregular intervals varying from many
times a year to once every one or two years, pain occurs,
and all the phenomena of first attack are repeated in
gradually diminishing degree of density; pain returns
decreasing with lasts subsequent recurrence, while swelling
increases. Skin of portion gradually becomes
thickened, and after repeated attacks of face gorged
and tortuous lymphatic vessels are found winding their
way over entire anterior and most dependent part of
Physical character of a typical ‘Lymph-Person’.
neces for must here and there as period of exaggerated dilatation (probably the seat of valves). Skin of penis is very frequently involved. During the periodic exacerbations of swelling, the vessels on surface of penes are dilated, or from abrasion of clothes, rupture, and an escape of lymph. Clear, thin, columnar, or serous, or milky in character, seems with marked relief to pain & swelling. On puncturing such a vesicle the lymph at first may be seen escaping as from a small artery and dripping continually for several hours each time. If such discharges occur frequently patients general health suffers. If not he is merely inconvenience by his disease.

Examination of a typical case of lymph penesium, established for several years, will reveal the following character. Penesium is small or small its normal size. Skin is thickened and has a peculiar thin, transparent lymphoid appearance. Cutaneous surface of penesium, and frequently also of penis, in one excreta of dilated, columnar lymphatic vessels with lymph, and presenting here and there membrane like protuberances. To touch, the skin has a soft, plastic feel. Frequent glands are much enlarged and as a rule worse, having to touch a peculiar firmness of subcutaneous suggesting of an aggregation of dilated tortuous lymphatic vessels with little or no connection between.

The above description applies to patient as he presents himself at inspection after having been in strict practice for some time. Keep tube actively in Necneustas practice for 2 or 3 days.
The relation of Lampetra planeri to Eleutherobius aequalis.
and in examination will find structure much reduced in size, with scarcely any trace of mammary lymphatics or vessels to be seen on surface. Varicosities in frequent glands also, and lumps disappear.

Lympho-Pruritis may continue lymph Pruritus and nothing more than that patient persists. By far the greater majority of cases however, as far as my experience extends, merge in Elephantiasis of Pruritus. After the duration, with all the characteristic described above as typical of lymph Pruritus, has existed for a few months or years, patient will tell you the lymph discharges became gradually scantier and of less frequent occurrence, while Pruritus slowly became "more large more large." Lymph can come adিপțto escape and the character of lymph Pruritus are lost in their sequelæ to Elephantiasis Duraæceæ.

In Appendix recent cases illustrating this relation are recorded. Cases II and III† illustrate well the intimate link Appendix. Page III-IV.

A relationship existing between lymph Pruritus and Elephantiasis modern writers must regard the two diseases as but various phases of one pathologic condition. It may be well here briefly to examine the grounds for such a decision.

Dr. H. V. Carter, in his article on "Lymph Pruritus," has referred to, observe that the two diseases present certain analogies: their etiology, their occurrence in the same localities, their common root, their association with a lesion and apparently similar febrile condition, the frequent occurrence of inflammation and abscess in the course of both diseases,
The implication of the lymphatic glands in both
by Mr. Mom pets, these anatomies somewhat stating that the
lymphatic system in elephantiasis and...disease, as far as
known, is identical.
5. Causé of both diseases is similar.
6. Both sometimes occur in the same individual together or
one after the other.

Taking the history of numerous cases of Elephantiasis, one
should observe the history of lymphatic disease, even early periods of their course.
In 90% of cases, removal of the lymph nodes is necessary.
Cellulitis will proceed even in the presence of this disease, indicating some degree of
characteristic of Elephantiasis. The pathology of lymph nodes is
many observers. Variability of lymphatic vessels in a certain
area must depend on localized obstruction is lymphatic disease, resulting
an obstruction gradually developed and incomplete as remnants of protein persist
disregardment of lymphatics.

Elephantiasis, according to all modern
writers, to be a disease occurring by localized obstructions to
lymphatic circulation with consequent stasis of lymph and
organization of course, in cellular tissue of affected parts, with a lower form of tissues. Granting them a similar pathology to elephantiasis and Hypophyseal disease, how comes it that in forms we have varicose veins and lymphatic vessels with periodic discharge of lymph, and in latter a lower form of tissue developed? The answer perfectly satisfying to my mind, has been given by Dr. Manson. I give it in his own words:

"The cause of the difference between Elephantiasis and Hypophyseal disease is I believe more difficult to find. Assuming there is both there is obstruction to the circulation of lymph, I would suggest that in the case of Hypophyseal disease the obstruction is not complete, but the superficial progress of lymph, though limited is not thoroughly arrested and think it is kept check by being consumed first to circulate just as the blood is in main and remove by obstruction or perhaps the obstruction alone may be complete, but that a current of the lymph is allowed by the pustule or wound on the surface of the part."

On the other hand in ordinary Elephantiasis, I conjecture that the obstruction is complete or nearly so, and that there is no pustule or wound on the surface. The consequence of this there is complete stagnation of lymph, its concretion, and eventually becomes organized into elephantiform forms of the tissues in which to thus accumulate.

Elephantiasis might then be said to be the result of acute obstruction to lymphatic circulation, lymph pustule the result of chronic.
Chyluria.
In the first case, illustration of lymphatic disease, see Appendix Page 5. In Appendix, the nature of the lymph discharge, from punctured venule, claims attention. It was milky in appearance, resembling also in microscopic characters chyle obtained from lactating vessels or glands. The whole subject of chyle discharge has been abandoned at last years. Of 32 cases of lymphatic disease recorded by Dr. Maxime, and in which characteristics of lymph are noted, I find present 'milky' discharge of chyle, or rather ~milky lymph has been observed escaping from ulcer in elephantated legs and from other parts of body, than Scrofula. To Which, describes a case of chyle discharge occurring from a clavicle of vessels cutting the lower part of abdominal wall. Chyle in urine, or Chyluria, has been a subject of much speculative enquiry and is of special interest necessarily as affecting the field in which 'Thalamic paragonimus' remains were first discovered. Is it Caries being the cause of printing into the bone pathology of chyle discharge. Lymphatic vessels in certain areas are rendered sensitive by some localized infection to lymph circulation. One or more of the main lymphatic trunks carrying lymph from this area into thoracic duct, becomes involved; its valves are rendered incompetent and precipitation of chyle from thoracic duct is terminated. During the periodic interruptions in action of cause obstructing lymph circulation, one of the valve, and therefore weakened, lymphatic vessels yields to the exaggerate internal tension, burst, and are
Pathology of Elephantiasis Arabiae.
escape of lymphatic occurs, resulting in appearance from
association with contents of thoracic duct. In Chylinia the
affected lymphatics may be those of kidney, uterus, or bladder,
Dr. Roberts, while accepting Dr. Carter's theory of origin of various
lymphatics, does not admit the preoccupation of chyle from
thoracic duct, but supports active hyperplasia of the affected
lymphatics, and assumption by them of the properties and
functions of lacteal vessels and glands.

The Pathology of Chylinia is thus identical with that of
lymphatic fever, difference being merely one of site or
operator of cause obstructing lymphatic circulation. Through
lymphatic fever, Chylinia is also affiliated with Elephantiasis
Arabum.

Before entering on the discussion of the Pathology of
the several affections of lymphatic fever, Chylinia and
Elephantiasis Arabum, which are more apt subject to
group under the simple, though significant, name of
Elephantiasis fever, it may be interesting to glance for a
moment at the ideas formerly entertained regarding the
Pathology of Elephantiasis Arabum.

The lymphatic theory of Elephantiasis is of least
modern acceptance. Obstruction to venous return of
blood, was long regarded as Cause; hyperplasia of the
effected part, resulting from excess of arterial blood
obtained in tissues. Accordingly, ligature of the
femoral artery was the orthodox treatment of the
'Ibig' leg. Extended experience of this treatment proved
The first case of the disease on which it was based, Selden remarks, was, I imagine, this operation once performed either in India or China. Some again have held that Elephantiasis consisted of a true hyperplasia of connective tissue, a Vascularized hyperplasia leading to lymphatic obstruction. Dr. Allan Wilson in a paper on Elephantiasis Orientalis says, "Indeed the disease consists of "Indian Annals of Medical Science" (1875 April 5).

The evidence in favour of this hypothesis is as follows:

The disease, however, is clear, it consists in a proliferation of connective tissue throughout the affected skin, and the cellular tissue in the operation for removal of "lymphadenitis" is sufficient to convince the most sceptical. The minimum of injury to lymphatic vessels in the cut surface of removed part and facility of the passage of a probe. As far back as 1784 the lymphatic nature of Elephantiasis was clearly pointed out, though without due recognition. In that year Dr. J. Smith of Bath observed "The disease on the glandular disease described the case of a patient whose leg was amputated from "Lymphadenitis" proving it to be Elephantiasis and where an examination of the limb in the lymphatic region by after removal, a lymphatic vessel was found in the foot and sufficiently dilated to admit a large quills with ease."
Life history of *Humaria mocinno*.
Other lymphatic vessels were so weakened in their walls as to render them incapable of containing a quicksilver injection.

Having discussed this roughly, the pathology of elephantiasis disease and arrived at broad conclusion that its various manifestations are results of localised obstruction to circulation of lymph, one enquiring must now be directed to the immediate cause of such obstruction.

The pathology of elephantiasis disease is at present the subject of keen discussion, and theory is still considerably in advance of well established facts. Two principal theories at present await a verdict: The first and earlier, and that "the inflammation of the lymphatic, the local pain and oedemata swelling, and the subsequent deposition of albuminous matter, constituting elephantiasis, is a sequence or result of fever of a malarious origin." The second, and more modern, assigns a local origin: "Elephantiasis disease is the result of the presence at one time or other in the tissues of the affected individual of an enzyme, the Tharia Bancrofti." Before examining the evidence advanced in favour of these two theories respectively it will be desirable to give a short resume of the facts known regarding this enzyme, its life history, habitat, etc. The presence in the tissues of man was first anticipated by discovery of its embryos in their host animals by Dr. J. Bancrofti, who confers the true credit of such discovery. Earlier observations seem indeed to have been made, but from imperfect description or want of observers, and lack of confirmation by others.
attention to the subject was never obtained.

In 1848 Kleine recorded finding "worms" in the blood of a patient suffering from "esophageal disorder," by tying a rubber band around the neck of the patient. He gives no description of these "worms.

In 1866 a Dr. Wrench, of Blank, described a worm in the urine of a patient suffering from "hemato-cholesterosis." It was alive and described as "worms at one, white at the other end.

In 1868 Dr. Salterburn, in the United States, detected a small "tube," in the bladder of a patient suffering from "cholesterosis." Considering it a new species he named it "Ochroplaentica." Dr. Lewis' discovery was made in March, 1870. The embryo was found in the urine of an acute hepatic patient suffering from "cholesterosis." Repeat analyses of the urine of a large number of patients suffering from "cholesterosis" showed a remarkable association of the fibroma embryos with this disease. In 1872 while examining the blood of a patient with "cholesterosis," Dr. Lewis discovered that there were embryos there to be found present. Subsequent examinations of blood from "cholesterosis" patients showed that there, as in urine, fibroma embryos were not constantly present. Relying the blood to be the proper home, Dr. Lewis named these embryos, "Fibroma tunicarum." He supposed them to be the cause of "cholesterosis." The general attention to Lewis' discovery claimed was resulted in the naming of the parent worm. The "Fibroma tunicarum," called as by Dr. Smith, was first found in 1876, by Dr. Barcroft, of England, and Dr. Franklin, to be the only "osphagial" to the absence of a worm. A few months later Dr. Carli in India confirmed the discovery, finding the parent worm
present in fluid from lymphatics of the peritoneal coats and also as in Dr. Bancroft case from lymphatic abscess of arm.

Dr. Evans, in 1877, found 2 specimens in blood clot from a patient in whom he had operated for elephantiasis vulvae associated with various lymphatics. Dr. Bancroft, Dr. Mumma, and Mumma, have also recorded their discovery.

Filaria Bancrofti belongs to the 'Nematoidae.' It is one of the same family as the Ascaris, Strongyloides Striae, Filaria mammaries Eumina worm, Tichina, etc. The male, female worm was found by Dr. Bancroft, and described as in length 3½ in. in breadth ⅛. Dr. Mumma found the worm alive, and describes it as 'a long slender worm, of a cat gut appearance, the thickness of a medium sized horse hair.' In his case also, the set was female and the uterine tubes were found packed with embryos 'lying in their length, entangled as we see them in the blood.' The body of the mature worm was quite transparent, without any markings, and bounded rather abruptly by the simple somewhat club shaped mouth. From examination of uterine tubes Dr. Mumma decided that Filaria Bancrofti is _Trichuris._ The habitat of the patient worm is indicated in Dr. Mumma's case. The patient was not from lymphatic region, and arguing from certain findings present in case Dr. Mumma thinks it equally probable he should find the worm present in ascites. The parasite was weighed. First examination of the removed portion under ordinary light no tubercle up a second time and examining cut surface the
women were found to have weighed at least half out of an enlarged lymphatic vessel. About 2 in. of it were free and displaced. Neither unincised nor unincised, the remainder still occupied the caliber of the lymphatic. From this fluid, and also from facts, it

that Schlesinger embryos are frequently found present in lymph while blood may be perfectly free of them, and that when have been detected in the lymph, Dr. Momme concludes that the lymphatic tumors are the habitat selected by parasites.

Thus, in close neighborhood probably to a male woman, the female she changes her embryos from time to time into the lymphatic circulation. Carried through the lymphatic glands into the thoracic duct, they enter, with the chyle, the left subclavian vein and find a home in the blood.

The numbers present in the blood must be immense. No less than 260 embryos have been found in a single drop of blood. This is a reasonable estimate, which represents the presence of over 3,000,000 embryos in one of patients.

Under the microscope embryo Schlesinger present appearance of little parasites like worms wriggling about in a most vigorous manner and breaking blood capillaries about in all directions. Length 7/16 in., breadth 1/8 in. under Roman magnifying 560 diameters they appear perfectly homogeneous and indistinguishable.
it begins to taper off and soon becomes absolutely invisible in a long and narrow fissure back or tail. Dr. Lewis, who has carefully studied the development of the embryos, describes this lack as being part of a very delicate non-scarce white integument with which the embryo is provided and within which its body is entirely contained and elongated. This integument is really the chorion envelope which is not shrivelled but narrowly stretched and adapted as covering to embryo. Having thus space won within its shell, an appearance of lack so present, alternately as head or tail extending as the embryo is working backwards and forwards, I have studied the embryos frequently when movements were sufficiently languid to permit of close observation that though some failing to find back present at time of earliest home not been fortunate enough to detect its transformation to head.

More activity seems present in time of embryo, as white heart many pushes against corpuscles here and there the body is seen chasing about in a most marvellous manner. Embryos live a long time after withdrawal from body. As a carefully prepared slide Dr. Myers of Toronto observed me still alive after 8 days.

While engaged investigating the prevalence of zoonic embryos in the blood of hot hospital patients Dr. Lewis made the interesting discovery, since abundantly confirmed by independent observers, that the embryos were a certain periodicity in their appearance time. He suspects that periodicity is not observable. In short however, while
as a rule entirely absent or present only in very small
numbers, though the change, between 8 and 9, p.m., with
mealtime regularity, may appear and obviously increase in
numbers till about midnight, when they begin to fall off,
and by 9 a.m. are all gone. I have often examined blind at
about 7.30 p.m., and perhaps after long and careful search
observed none. A second slide taken half an hour or
more, late in the evening, would swarm with embryos.

Much speculation has been raised upon this
appearance and disappearance. One first
becoming aware of fact, I thought the evening appearance
might be connected with flow of chyle into blood after
the assimilation of the evening meal; punctures of legs
complete about 7 p.m. or earlier. Born in lymphatics, I
thought the embryos might be swept into blood during
the increased activity of lymphatics at later.

Observations made after the evening meal have proved
this supposition wrong; no chyle being found in blood.
While still puzzling over the unexplained fact, Dr.
Mannan came forward with a novel and interesting
observation. The mosquito, he asserts, is the nurse
of the embryos, and in obedience to a common law of
nature, the periods of activity of grip and host are
identical. The embryos leave their birthplace in
lymphatic vessels in search of further development. The
blood affords a chance of being attached to some blood
sucking animal. Within such an animal the intermediate
Stage of existence and development might be passed.
So august Dr. Manson, not directing his attention to mosquitoes,
be found his curmudge to be correct. The mosquito, he
proceeded, is to the Tiberian Bacteriologist, whose the pig is to Tiberian
soil, or even to the Tiberian Schistosomes. Many who seem
to have an electric power for Tiberian embryos, many more
being found present in their stomachs after ingestion, then in
a quantity of blood, obtained by puncture, equivalent in bulk
to that extracted by mosquitoes. A hypothesis of the mechanism
described by Dr. Manson as occurring to embryos within Tiberian
and Tiberian Schistosomes is given below. 3 stages are noted:

1st. a few hours after ingestion, transparent & apparently phialicin
embryos becomes transparent & phialicin. Intestine obstructions,
and many canonical remain about. Great movements are
noticeable. Tiberian obstruction yields to a peculiar partial appearance
suggesting or development of some vital material. 36 hours complete these changes.

2nd. Embryo enters a kind of chloritic condition. Body becomes
shorter and broader and all motion ceases except in motion that
muscles and alimentary canal developed. Towards close of this stage
anisogamy appears. chloritic, then gradually disappearing.

3rd. Continued elongation of body from 2 to about 5 in. Muscles
from lips and funnel develop. Mammals come again.
Certain papillary appendages are developed while its manner appears
may be a having appendage. Finally the Tiberian becomes
mammally active, rather to end for and appears perfectly
at home in its world, in which, after death of mosquito, it
is immersed. "This formed the animal," Dr. Manson says,
"is undoubtedly the Sarcina Sanguinis Romanus, equipped for independent life, and ready to quick it scarce the mosquito."

The further history of the embryo is a matter of speculation. Escaping into the veins in which the mosquito dies, is probably swallowed by man, and works its way to the anterior vessel, the lymphatic, through the alimentary canal.

Many interesting points with regard to the life history of this parasite remain yet to be solved. The disappearance of embryos, when not in man, is supposed by Dr. Myers to depend on a chemical destruction of embryos in the blood with production of new parasites every night.

Dr. Mansen, on the other hand, believes that the embryos during the day congregate in some internal organs, such as the lungs, and that acting on musculature they remain fixed to the walls of bloodvessels all night again comes morning, when they happen to systemic circulation. Dr. Myers view is very improbable. It is difficult to understand that embryos, which with time for 8 days after removal from body, should have an existence of three hours in blood, where they seem perfectly at home. Again, the enormous number of embryos which must be present in many patients blood militates against view of chemical reproduction. Dr. Mansen's experiments from the lungs the day existence of the embryo, are unwarranted. He killed a number of dogs through the day and certainly found that the blood from
Hathelse of pulmonary artery contained many worm embryos than that from any other organ of body. But Felaninhrnates the matured female embryos infecting the clog resides in the right ventricle, many of the worms entering into the pulmonary artery. It would be first natural to expect embryos most numerous in lungs. Felaninhrnates has its habitat in human case, Felaninhrnates in the lymphatic. In the clog embryos are found present throughout the day but became much more numerous at night. Their certainty would suggest that the evening was the select time for the female worm to discharge the embryos of her uterine tubes into the circulation. In many infected with worms, lymphatic, hepatic, gastric, urinary system, granti, and when opportunity in their intervals of absence obtaining lymph, live embryos will be found in great majority of cases, throughout the day in the lymph. It is in evening only as a rule, where the worm commences to form with the consideration that the blood is invades. Dr. Stephen. McNeice has succeeded British Medical Journal" for Oct. 22nd, 1881.
The Theory of Elephantine Disease.

Throughout the day, when general fever is present.

Facts now known render it probable that malaria takes
this same time in man, when their retreat is throughout the
day we as yet cannot kill. Many observers are come in
this field, at home as well as abroad, and we hope shouId
that what now is possible may be made plan.

We plan to now to examine the
evidence advanced in favour of the Malariain and
Parasitic Thematics respectively of the Curein选拔 of elephanthine
disease.

Is the obstruction to circulation of lymph, and
inflammation of lymphatics, a sequence and result of
fever of a malarent origin?

The exact and particular arrangements of
elephanthine disease are almost unanimously accompanied
by fever, I say almost, as many well authenticated
cases have been recorded where elephantine has been
established without any elevation of fever whatever.

In this fever, a true malaria, or does it deserve a
specific name for itself, as elephantine fever? Is it the
fons et origo mali, or merely symptomatic of a local disease?

Considerable difficulty presents itself to satisfactory
solution of these questions. Patients with elephantine
disease rarely seek advice at hospital the disease is
well established. Elephantine disease is endemic
in countries where malarism from abroad and
patients are in the habit of naming every state of
which and temperature, are accompanied by specific transtion. Fever &ague. Again, in patients who have recently suffered from ague, any local inflammatory affections may prove an exciting cause, and be complicated, or completely obscured by the recurrence of a paroxysm of malarial fever.

Reminiscence of these facts prepares us to receive in a critical spirit, the statement of 90% of our patients, that the acute and periodic manifestations of their disease were always secondary to attacks of malignant fever. The fever occurring in elephantine disease is described by patients as presenting a cold and hot phase. Little mention is made of sweating. The hot phase lasts longer for several hours or days. A history of distant intermittent, and reminiscences of failed periods of the fever of the fever, is rarely given by patients.

Dancing, but more especially arsenic, has a curative effect on the fever, but not more so than mere catatonia or then following catatonic angina fever, generally.

The irregularity observed in the recurrence of the attacks of fever in elephantine disease, plainly militates against its malignant nature. While in some cases manifest or even weekly periodicity is observed, in others equally characteristic of the disease, no periodic attack of fever only occurs, or intermissions may extend to 6 or 7 months or two years.

Certain differences, as regards effects produced in patients, exist between malarial and so called elephantine
Dr. Richard, of Balrao, records the following:

1. Anemia and Amenorrhea, common sequela of malarial fever, are rarely observed as sequelae of elephantiasis fever.

2. The limbs often exhibit typical of repeated attacks of afe, is seldom found present in elephantiasis patients.

Debilitating effects to constitution generally, are more marked after anemia fever than after elephantiasis.

Three distinctions my own experience enables me clearly to discriminate. It has been always a marvel to me, to see a patient with marked elephantiasis of legs, and history of three or four recurring attacks of severe malarial, still present a comparatively robust and healthy appearance, elephantiasis of legs with its accompanying attacks of fever may persist in a patient for years without ever rendering him unable to perform his daily routine of work. This of course is exceptional, but still the healthy appearance presented by patients of elephantiasis disease is in striking contrast to the anemia, wasted and emaciated elephantiasis patients.

Many discrepancies exist among observers of elephantiasis disease as to the predictability in time of appearance of the fever or local inflammatory symptoms in the afe and periodic recurrence of attacks of the disease. Cholera patients are not a particularly intelligent class and it is often extremely difficult to obtain accurate information. The phenomena of fever diminishes the minds of the great majority of patients. The common
History received is, that after one or two hours, or perhaps
a day, or week, pain was experienced locally in part affected,
shortly followed by redness, and by time swelling had occurred
the fever commenced to abate. Certain observers in India
however, who have made the initial phenomena of the
disease a special study, assert, that in many cases where
careful observation and inquiry were made, a history of
pain and tenderness of the glands always preceded
that of onset of fever. Are we then to accept the
fever as merely symptomatic of the local affection
of the lymphatic and glands? Clinical experience will
not justify any decided conclusion, but certainly as
far as facts go, I see no reason to suppose
elephantoid fever, other than a mere symptomatic fever.

It is easy to understand how the phenomenon of
fever dominates a patient mind as delineating the
history of his illness. Neimayer, writing on Elephantiasis
pomp, "Simeonovitch states that the local discharge is often
preceded by violent fever. This cannot be regarded as
at all singular, as in other inflammations the febrile
disturbance is generally most severe at commencement
of the attack; and attracts attention before the functional
disuse becomes apparent."

Regarding then the distinction of lymph
inflammation and inflammation of the lymphatics as
the cause, not sequela, of elephantoid fever as called
we must look elsewhere than to Malaria as our
Search for the primary cause of elephantiasis disease. Is it not more probable that obstruction in the circulation of lymph, within certain limited areas, should depend on some locally operating cause? If such, the second and more modern theory of the etiology of elephantiasis disease holds, and we must now enquire,

I. Is elephantiasis disease the result of the presence at one time or another in the body of the affected individual of an Enterobium, the Filaria Bancrofti?

Early led to suspect, from their very frequent association, that filariae and elephantiasis disease were merely as causes and effect. Dr. Lewis speculated that the latter disease was induced by blockage of the smaller capillaries and lymphatics, by the filariae embryos.

W. J. Patin, who independently discovered embryos in urine a few months after Dr. Lewis, concluded from his researches, that "the elephantiasis, and elephant or urine depend upon occasional and temporary occlusion of lymphatic glands by an accumulation in their minute vessels of the little mammaligena."

Dr. Manson, arguing from his study of the pathological and conditions produced in the dog, by its feed, the Filaria tenuis and the Filaria bancrofti, at first credited the parasites as the cause of the lymphatic disturbance in man. He supposed the worm's habitat, in man, "to be one of the lymphatics, the receptacleum chyll, or thoracic duct, or some bloodvessel in the neighborhood of these."
I conjecture, or more correctly, that as the animal is developed it becomes surrounded by an increasing number of tubes, and that this number, by pressure on the outside, or by lodging into the wall of a lymphatic vessel, causes an obstruction to, or perhaps a complete stoppage of, the flow of lymph.

Further study, however, led to abandonment of this theory. The free embryos which were distributed lymphatic vessels soon convinced Dr. Mann that blockage of one or two vessels could not materially obstruct the circulation of lymph. Such obstruction also would be gradually developed, and afford ample time for lymphatic lymphatics to enlarge and carry on the circulation. In later research Dr. Mann discarded the presence of once or lymph, each containing within it a closed-up filament embryo. He concluded from this observation, that the parent worm was a parasite, and that the worm discharged from parent worm, which larva he believed occupied some lymphatic tube similar to the glands. These were carried by the lymphatic current to the glands, and being two large lymph (500 x 500) were arrested there like hatchet. The free embryos, with channels, not greater than a lymphatic embolus, and formed of noose movements should easily be able to traverse the glands, much more likely than obstruction to the lymphatic circulation through the glands, which he believed to be examined by the larvic worm.

Subsequently, a similar manner of examining the uterine tubes of the female parent worm convinced Dr. Mann that she was a parasite. Reasoning from the undoubted fact of her firm observation of ovar, he now supposed these must
have been the result of an abortion. Dr. Lewis expresses this suggestion, as in describing the development of the embryo, he shows that the chorionic envelope is not burst but merely detached so that an embryofish escaping from the magnifying shell becomes its phætal.

Modified by knowledge of certain facts, Dr. Manson, in a communication he was kind enough to send one but not yet printed, reads his explanation of the mode in which lymph obstruction is occasioned by *Thomia rimicola*, thus,

"If from some cause or other the embryo should be broken into the lymph before the stretching of the chorionic commences, what will be the consequence to the embryo itself? In its immature condition the embryo measures 1/200" x 1/250" or 1/400", its smallest diameter is thus five times greater than that of the fully formed undisturbed embryo we usually encounter in the lymph and blood. It is not too large however to pass along the vessels, but when the lymph-stream has carried it to the glands it is immediately arrested, for there the arterial-stem breaks up into many minute branches which end in the solid parenchyma of the gland. The imprisoned embryos then have power to aid its onward progress but this takes an instant, plugging the vessels and clamping up the lymph. There will then be complete stasis of lymph in this particular vessel as far back as the first anastomosing lymphatic. Along this the current will now pass carrying with it other ones whose in their turn to be arrested."
II. Theory of parasitic origin.

<table>
<thead>
<tr>
<th>Number examined</th>
<th>Hit with found in</th>
<th>Percentage</th>
<th>Profitable</th>
</tr>
</thead>
<tbody>
<tr>
<td>670</td>
<td>62</td>
<td>9.25</td>
<td>1 in 10.8</td>
</tr>
</tbody>
</table>
at the first glance they reach, and the process of embittering, drying
of lymphatic, diminution of current into anastomoses, will go on
until the whole of the lymphatic glands, directly or indirectly linked
with the wound into which the parent parasite's cycle begins, are
rendered insensible, provided the supply of embittering is
sufficient, kept up long enough, or renewed from time to time.

This then, as first claimed by one of its most able
advocates, is the modern theory of the pathology of elephantiasis.

Let us examine more in detail the peculiar facts
announced feeling like fabric and beginning with its foundation
we must ask, is the association of filariae sanquiniostomi
with elephantiasis disease, a fact so clearly established, as to carry
connection to the mind that in some way or other the parasite
must act as cause?

To determine this point the blood of all the
inpatients of hospitals was systematically examined between
the hours of 8, and 9, p.m., by Mannoni's technique with regard
to details of examination were faithfully followed and the
following were the results obtained.

<table>
<thead>
<tr>
<th>Number examined</th>
<th>Filarias found in</th>
<th>Percentage</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2663</td>
<td>344</td>
<td>11.44</td>
<td>1 in 8.57</td>
</tr>
</tbody>
</table>

For sake of comparison to Mannoni table, made in Italy
with a similar view, is given in opposite page. His observations
were made previous to knowledge of the nocturnal habits of the
filarias embays, and thus no strict attention was paid to
Concluding the examination of the 825 only in evening, making allowance for this, and also for a certain amount of incertitude in any new table, the degree with which the general population of the Indian province of Kullu, is infected with "Plasmodium Beraneki", may be roughly estimated as 1 in 5.

The diseases, if any, presented by the 825 individuals in which Plasmodium malariae were found, are detailed below.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syphilis</td>
<td>10</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>6</td>
</tr>
<tr>
<td>Lymphatic Scrofula</td>
<td>5</td>
</tr>
<tr>
<td>Anæmia</td>
<td>4</td>
</tr>
<tr>
<td>Ulcer of leg</td>
<td>4</td>
</tr>
<tr>
<td>Granular fistula</td>
<td>4</td>
</tr>
<tr>
<td>Chronic Rheumatism</td>
<td>3</td>
</tr>
<tr>
<td>Tetanus in Ano</td>
<td>2</td>
</tr>
<tr>
<td>Cataract</td>
<td>2</td>
</tr>
<tr>
<td>Chyluria</td>
<td>1</td>
</tr>
<tr>
<td>Bruise</td>
<td>1</td>
</tr>
<tr>
<td>Nemorrhoids</td>
<td>1</td>
</tr>
<tr>
<td>Carcinoma</td>
<td>1</td>
</tr>
<tr>
<td>Neuritis of Tibia</td>
<td>1</td>
</tr>
<tr>
<td>Carcinoma of Anus</td>
<td>1</td>
</tr>
<tr>
<td>Lumbraica</td>
<td>1</td>
</tr>
<tr>
<td>Phthisis</td>
<td>1</td>
</tr>
<tr>
<td>Inflammation of foot</td>
<td>1</td>
</tr>
<tr>
<td>Healthy +</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>825</td>
</tr>
</tbody>
</table>
The table below is based on material supplied by T. Mann. He arranged his figures in another form, bringing forth somewhat different results. The principal attention made is

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number examined</th>
<th>Tumors</th>
<th>Number of manchews damaged</th>
<th>Total numbers affected</th>
<th>Proportion affected</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elephantiasis of leg</td>
<td>10</td>
<td>1</td>
<td>4</td>
<td>19</td>
<td>2.21</td>
<td>45.23</td>
</tr>
<tr>
<td>Elephantiasis of skin</td>
<td>15</td>
<td>4</td>
<td>4</td>
<td>19</td>
<td>2.21</td>
<td>45.23</td>
</tr>
<tr>
<td>Lymphatic elephantiasis of skin</td>
<td>13</td>
<td>2</td>
<td>2</td>
<td>14</td>
<td>1.40</td>
<td>6.84</td>
</tr>
<tr>
<td>Inflammatory elephantiasis of skin</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>14</td>
<td>1.40</td>
<td>6.84</td>
</tr>
<tr>
<td>Other diseases</td>
<td>410</td>
<td>14</td>
<td>14</td>
<td>43</td>
<td>1.40</td>
<td>6.84</td>
</tr>
<tr>
<td>Enlarged Varies lining</td>
<td>23</td>
<td>19</td>
<td>19</td>
<td>43</td>
<td>1.40</td>
<td>6.84</td>
</tr>
<tr>
<td>Healthy</td>
<td>195</td>
<td>10</td>
<td>10</td>
<td>43</td>
<td>1.40</td>
<td>6.84</td>
</tr>
</tbody>
</table>
Relation of elephantiasis to elephantomous omissions in shown in following table.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number examined</th>
<th>Total</th>
<th>Number of Elephantomous cases</th>
<th>Total Elephantomous cases</th>
<th>Proportion affected</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lymphedema of leg</td>
<td>12</td>
<td>24</td>
<td>5</td>
<td>6</td>
<td>1 in 4.86</td>
<td>20.65</td>
</tr>
<tr>
<td>2. Lymphedema</td>
<td>7</td>
<td>29</td>
<td>3</td>
<td>6</td>
<td>1 in 4.86</td>
<td>20.65</td>
</tr>
<tr>
<td>3. Stillman</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Diseases</td>
<td></td>
<td></td>
<td>35</td>
<td>43</td>
<td>1 in 10.93</td>
<td>9.86</td>
</tr>
<tr>
<td>Noting</td>
<td></td>
<td>430</td>
<td>35</td>
<td>43</td>
<td>1 in 10.93</td>
<td>9.86</td>
</tr>
</tbody>
</table>

The facts apparently brought in foregoing table may be

I. A large proportion (1 in 8.9) of the general population of
this part of China (Yunnan province) are infected with elephantiasis.

II. The great majority of such affected persons present an
apparent morbid condition traceable to their insect vectors.

III. Elephantiasis and lymphedema are as frequently associated
as to make it most reasonable to suppose they stand
in relationship to one another, of cause and effect respectively.

IV. The association of elephantiasis with elephantomous omissions
is not greater than can be satisfactorily explained
by mere coincidence.

From observations of 90 patients, Laverne Palmer is it has been clearly

IV. That elephantiasis, like lymphedema, is as frequently associated
with presence of elephantiasis as to establish a similar presumable
relationship of cause and effect.
Elephantoid disease is thus split into two great classes by the Sicarian line. On one side, lymphocentric, & Sicarian both are here constantly associated with presence of filariae; on the other, elephantic in which the proportion of Sicarian finds itself greater than that of genuine population. Or may we then recognize an essential difference in the etiology of these two classes? Elsewhere we have accepted Dr. Mann's argument to prove their pathological identity, here again we come forward in support of a similar etiological identity. Describing complete obstruction to lymphatic circulation through plugging of glands by Dr. Mann we say, "If the lymphatics fail to maintain their complete function of lymphatic and systemic accumulation in the tissues on the cellular side of the glands, solidification of the glands and tissues, and elephantiasis results. As embryos are found in the blood, as same can pass by the gland, and the parent worms, or worms, probably the children, so to speak, by the phlegmonous and organizing lymph, and their own young, consequently in true elephantiasis as a rule, no embryos can possibly be found in the blood or gland lymph."

According to this argument in every case of elephantiasis, the Filaria Breneri has at one time or other been present in tissues, causing the mischief and then finished in consequence of its own mischief.

I find certainly no indication that both in elephantiasis & lymphocentric obstruction to the circulation of lymph, in the past affecting the disease, may be so complete, that while lymph from certain or glands, as care may be, around with embryos,
not we can be found in blood, whether examined by night or
day. That insignificant change continues to exist and
become more marked after death of the parent worm is
easily explained. Symptomatic events, onceterminate, are
rendered permanent by infestation, and though the original
cause of the obstruction be removed, growing out and their
own weakened walls lead to constant aggravation.

The first case of lymphoceleum, detailed in Appendix, is
a most interesting illustration of this fact. The patient came
to hospital with a history of having suffered from the first
attack of fever and inflammation of peritoneum 5 years previous.
For three years after the commencement of this illness, the fever
and inflammation of peritoneum continued to recur at
intervals. About this time probably the patient went through
as no further fever or recurrence of inflammation occurred.
Symptomatic symptoms continued existing to increase,
lymphocytes became more and more numerous and
this year became so pronounced, lymph symmetrically commenced
to occur. On admission, careful and repeated examination
of blood and lymphoma from aorta and peritoneal glands
failed to discover a single embryo follicle. This pointed to
existence of spleen. Simple examination of this was
repeated. The whole of affected tissues of peritoneum was
removed. Some months after the operation patient
presented himself at hospital for inspection. The flap
company front peritoneum was found perfectly normal, but a
subsequent varices lymphatic vessels or a single vesicle could

Appendix: Case I. Page 1.
be found. No discharge of lymphatic material had occurred from ovaries, nor had there been any recurrence of fever.

But in some cases of Elephantiasis of old standing silentia embolus are found present in blood. Hence more than if the rule be that pregnant women rapidly perish? Such cases are explained by supposing several mature female worms present at different parts of lymphatic system of same individual. These particular females in beg to contain, as case may be, and from whose abortion the lymph obstructing arm perishes. The embolus present in the blood are the offspring of other females quite unconnected with the disease.

One of in Appendix indicates this well. The patient had suffered from lymphatic scrotum for 20 years. The female worm occupying the scrotum was probably reabsorbed in the scrotum when it remained undisturbed for about 10 years, when, perhaps occasioned by its death or some abnormal condition, absence of certain seminal and sperm was probably removed in the penis discharged. On evening the patient, lymph from scrotum and groin glands was carefully and repeatedly examined for silenium embolus but none were found. Blood from finger examined in evening showed numerous embolus on every slide. Scrotum was removed and after operation embolus found as numerous in blood as before.

Gaining close acquaintance to the existence probability of Dr. Mann's theory, and allowing likewise the confirming evidence advanced above, it must still
be granted that at present the theory is built more on analogy and speculation than on fact. Further research may surely supply the elucidation of fact. Still, a momentous physiological frame of mind is desirable, as we look back for proofs of other modes of causation of elephantsias disease we are most likely to confront facts which shall convince us of the truth of the parasitic theory of its origin.

Looking at the parts of body commonly affected in elephantsias, the unsupported penis, and leg in which gravity has such preponderant play, it is easy to see how, if abundant vessels be once standing impaired, the whole subsequent phenomena of consequent ulceration occur. May not the parasitic cause be that one, gradual or permanent one, of secretions capable of initiating the mischief in lymphatic solution? Now and then a case of what we might call 'spurless' elephantsias occurs in leg of an individual who has never left the shores of Britain. Reasoning from such a fact it is easy to explain a greater frequency of the disease in the East, as many more exciting causes are supplied. By far the greater majority of patients affected with elephantsias belong to the agricultural class, constantly going about with their feet uncovered, washing most of their time in stagnant pools or paunchy fields glazed with water rich in sewage. It is not difficult to understand how a foot may be attacked by a known form of cellulitis. In attention to cleanliness would leave some permanent thickening of skin and cellular tissue. The mischief done by abstracts would make recurrence
of inflammation always leads, and the lack of cooling causes being supplied, a "ferruginous" elephantiasis may result.

It neglects when the nontoxic elements picture starting point of an elephantiasis. I have seen numerous feet, the result of neglected ulcers, and where the wound thickened, though many

intercalated, obtain clearly evidenced the appearance of true elephantiasis.

The Scowl is first or second on the leg to eliminate causes of inflammation. From fact known that in two occurred at least, numerous cases have been found inhabited Scowl and Scowl as yet found on leg, we any warrant

in expecting the Scowl to be equally affected with the leg by elephantiasis, leaving a parasitic origin. In these

parts of China, cases of elephantiasis Perto are few in number compared with similar affection of leg. I have

no reliable statistics to offer, but judging from cases presenting themselves at hospital, I to 26 under 3 I think

represent the ratio "big Scowl to big leg". From this I think we are justified in suspecting that

elephantiasis is leg versus other modes of expansion, besides the Parasitic.

The answer than we would give to the question asked on page 25 is as follows.

Ruphus Scowl and Elephantia are all reasonable probability near the presence of the embryo Balanis Bancroft as their

primary cause. Elephantiasis seems in relationships to ruphus Scowl pathologically, may be thing parasitic.
On neither occasion was there any special sense of occasion of the Chinese present at moment of flight, to render it significant.
of having a similar origin. Present ascertainments place
however would suggest that elephantiasis may be the result
of one of several distinct causes, the most prominent place
amongst which perhaps may be conceded to the tubercular

We further, from lack of experience, to enter
on a critical discussion of the mode in which Dr. Burrow
and other lymphatic obstruction is produced by tubercular.

The theory is convincing, the most reasonable yet
presented, and attempts to help in the aetiology of the clinical
phenomenon of elephantiasis disease. Inorganic and the
combinations of the disease are explained by minute
discharges from parent, of nutritious etc. The facts
supporting the theory are as yet very slender. On
two occasions only have we been found to
lymph from groin glands of a patient suffering from


# 36

Chirurgical Medicine
Report for 1879

Chemical

"Read "currents."
come must be at time of aborting.

The selected part of the female worm, or common
apparatus is the same hypodermal tissues, in section a key,
as seen may be, similar to the urino-genital glands.
In advance the following facts in proof of this,
I. Embryos may be found in lymph, from a lymph path nine or
from glands in the abdomen, where the taint is perfectly free of them.
No. They have been also found in such lymph, pointing to the near
presence of parent worm and that it must have reached an
elastine side of glands.
II. Abdomen fluids of parent worm in a hypodermal remain redaction.
It is difficult to account satisfactorily for the marked variety
of glands or else must with no lymph path-nine, on the
supportive that obstruction bit the circulation of lymph in
the child and parent side. Some few may make
things the superficial femoral glands and cause them up
higher up in hypodermal system. Case ii. apparently presents
slender embryos in blood but none in the lymph from
the lymph path-nine or interior glands. But most probable
explanation of this has already been given. Another avenue
might be afforded. When the habitant of the female
worm one of the hypodermal runners, being along side of
external vein artery and inside among the lymph from
the superficial femoral glands, then the nervous gland
should be accounted for, as also the total absence of
embryos in the lymph. The worm presumably lies with
its head up stream, working its way down. The embryos

* Please check Page 33.
would be discharged into pericardial cavity of lymph and
injected into thoracic duct, and from thence into blood.

The character of the lymph discharged in cases of
lymphatic obstruction, affects a variable one. The extent to which
the lymphatic are involved. The lymph may be clear
and always colorless, it may be grayish, or it may be
ochreous. In the case in which Dr. Mann found
the patient unrest in pleurisy. The character of the lymph
is especially noticed as clear and watery, resembling
clear water. The glands also in this case were very slightly
affected. The clear watery nature of the lymph indicates
it had come from vessels of lymphatics of certain
and not originated from glands in which case
it would have been pricks in corpulence.

Bloody lymph is more difficult to account for.
Some have supposed involvement of lymphatic vessels and
glands high up, and probable regression from thoracic
duct. Bloody lymph is more difficult to account for.

Some have suggested involvement and consequent rupture of
capillaries in such cases. Dr. Mann in a recent letter
to the Lancet this idea as unnecessary in
accounting for the presence of blood. He argues that bloody
corpulence can be due to the lymph in passing through the
glands, and consequent lymph from certain simply
desperate involvement of lymphatics high up towards
thoracic duct. The subject is new to me, and has not
yet received any serious consideration. The usual theory
in lymphatic cases is that the first discharge of
lymph observed was more or less transparent in nature.
This occurring during acute congestion must early be
accounted for by expansion of some small capillary in a variance
of gland. In Case II, detailed in Appendix, however, the lymph
discharges are noted as having been a transparent as though
the cause of the discharge. Some of this bloody lymph
was collected in evening, the corpuscle carefully broken
up in morning, and careful search made for filariae.
None were found. The fact of their being present in large
numbers in blood but wholly absent in bloody lymph
collected in evening would seem to corroborate
the Wassermann test that the bloody appearance was occasioned
in lymph, not from admixture with blood from a
resupplied capillary, but from addition of red cells to lymph
in passing through the lymphatic glands. This
observation seems also to dispose the idea, I had once
entertained, that filariae embryos like blood corpuscles
make their way out of the capillaries into tissues beyond.
No exchange evidently occurs in the lymphatic glands,
and an embryo, born in certain, must work its
way through a series of glands to this new sheet and by
it until the circulation.

Much still remains to be worked out
before the parasite theory of the etiology of elephantiasis
diseases can be incontrovertibly established.

Looking forward to the progress already made
in the vast new field of study opened up by the
observing of Lewis in 1870, we have every reason for encouragement, that not only a true understanding of
the etiology of the disease may be attained at, but that also
a clue may be obtained for the effective prevention of its
further progress.

Rhinoscopy are present in many cases. The knowledge
acquired by the study of filariae is of much practical value.
When one filariae embryo exist in blood or lymph, we
may remove one elephantiasis, another to a lymphatic
condition, with perfect confidence of effecting a perfect cure.

If embryo be present in blood, but chills appear after the
operation, we know that the parent worm has been
removed into the bladder, and can be equally confident
of ultimate result. When however they are still present
without after operation, we must always remember
the probability of keep becoming involved in the disease,
or occurrence in the legs of newer parasites.
I. Hypoesthesis of 5 years duration.

Allodynia, by attacks of pain, each of one clasp duration, and recurring
from commencement of illness at intervals of about 6 days.

First escape of hypoesthesis 6 years after commencement of disease:
conquintus in Characta 2 or 3 months in recurrence;
I bly milky in Characta a discharged every few clamps.

Skin of penis, 2 months, involved in the disease.

Glands of both quins varius,

No foreign matter in either blood or lymph.

In removing the abscesses, skin of penis was untouched. Subsequent
scarring of same lasted complete removal of all affected
skin, where possible.

1 mo. after operation, patient shows himself, and no
continuing found perfectly sound.
Appendix.

A. Clinical Notes of four cases of Ruminph Leptum.

Patient's chief complaint was a pain in the abdomen. When 20 years old, had pain in the abdomen, especially in the right upper quadrant, and followed on second day by pain in the back and swelling of abdomen. Swelling of abdomen gradually increased to a week or two in the abdomen. Swelling of abdomen gradually increased to a week or two in the abdomen.

During past 6 years has had no recurrence of fever, but ascension slowly increased in size and weight. In 36th year in two occasions escaped a large quantity of bloody lymph and gave relief to the trouble, but pain in the abdomen. Swelling of abdomen in the abdomen.

During past year these attacks have been repeated every 2 or 3 days. The milky fluid dripping away for one hour or two in each occasion.

Patient's uncle has a disease similar to this one. In other members of the family and others no such cases. Skin, both of pain and ascension in the abdomen. Texture has a soft plastic feel, and its semi-transparent peculiar appearance is eminently suggestive of subcutaneous tissue.
The whole surface is one mass of varicose lymphatic vessels with numerous large vessels joined here and there, at points of exaggeration, dilatation. On pricking a vessel an escape of another fluid occurs and continues to drip away for an hour or two at a time. Under microscope numerous lymphatic corporcles are seen. Various lymphatic vessels can be felt, running in bundles, up into both groins. The distinct enlargement of inguinal glands, without a similar groin a mass of varicose lymphatic vessels can be felt.

Repeat the careful examination of both from finger and lymph from wound, fail to reveal the presence of phlebectasis.

Oct 14th. Divided portion of scrotum removed, on making incision a free escape of lymph occurred. Testicles were found normal. Large hole operation was performed. Skin of penis was left untouched. After removal the divided portion of scrotum shrunk remarkably, the emptied lymphatic vessels collapsed and very careful examination would be required to discern if otherwise than strictly normal tissue.

Nov 23rd. Dimsins well. Scrotal wound healed up nicely. Skin of penis during 2 days following operation became acutely inflamed and subsequently inflammation subsided, leaving penis to granulate over.

April 6th 1892. Patient to-day returns to hospital to show himself. Dymsis of scrotum was found perfectly normal and nowhere was perceived varicose lymphatic veins. Patient states he has been perfectly well since leaving hospital, having nothing had recurrence of fever or any appearance of discharge from scrotum. The varicose lymphatics previously found in groins are now not observable.
II. Lymphosarcoma, with incipient elephantiasis and varicose groin glands, of
4 years duration.

Onset of disease attended with fever, apparently malignant in character
and intermittently present for several months. No recurrence.

Rapid formation of edema and early discharge of purulent lymph.

Slow enlargement of edema with nearly discolored lymph,
becoming clear and albuminous.

Purulent edema present both in blood and lymphatics.
In enjoyment of previous good health, 4 years ago patient was seized with acute tenesmus, which was by rapid and intense with one or two clumps of acute inflammation of the uterus. Much swelling occurred but was relieved after a few days by the escape of a bloody fluid from the uterus. Patient states that the fever was intermittently present for several months, each exacerbation being accompanied by severe pains in the swelling of the uterus, ultimately relieved by discharge of bloody fluid. Inguinal glands enlarged somewhat irregularly with peritonitis. As part of this year patient has been perfectly free from fever, but peritonitis has slowly been becoming more large since last and discharge of clear serous column fluid thence occurred constantly as before. In history of dysuria.

Sediment, on examination, is found about 4 times its natural size. Skin is much thickened, corrugated, and of a dirty bluish colour. Its surface is covered with numerous lymphatic vessels, gray and lumpy, and many here and there protruding outside like protuberances. Skin of penis is unaffected. In both thighs inguinal—peri-glandular glands are enlarged and have a peculiar waxy feel as if composed of a bundle of various lymphatic vessels with little or no connective tissue between. When patient stands; and especially if he bends forward to strain, the glandular swelling becomes very marked. In accommodant position, a little pressure will harden glands to almost normal size.

On briskly a urin, lymph slightly tinged with blood escapes and continues dripping from perineum for over an hour. Copulation occurs in 3 line, unless premature pneumonia lymphatic lymphatic sounds. Pneumonic empyema are found uncommonly present both in the lymph and also in blood from fingers.
III. Lymphocutane with incipient elephantiasis & varicose vein glands, of 2 years duration.

Growth of chancre marked by one attack of Tinea, apparently of eczematous type, no recurrence.

Growth clean & shiny colored, first drained from certain one year after

much of discharge, recurrence at first monthly, later 3 or 4 times a month.

No Yersinia embryo found in culture fluid or lymph.
Patient is fairly nourished and enjoys average good health. In poor circumstances, his diet has always been indifferently or yearly consisting principally of rice, pulses, fish, and pickled vegetables. It has been his constant habit to drink water chlorid from well in neighborhood of his house, without previous boiling or filtration.

No ailment, as far as patient knows, suffer from any form of elephantoid disease.

May 20th. Stomach in great part removed. Much bloody lymph escaped on making incision. Tissues found normal. Examination of portion removed, reveals on cut surface many patient circlets of lymphatic vessels drawn within a few may have passed. The skin became considerably after escape of lymph but it is still much thicker than normal and cellular tissue is largely replaced by the semi-gelatious, semi-foams tissue peculiar to elephantoid disease.

July 5th. Patient claimed well. Return was uninterrupted and wound is now firmly minded. No visible or obvious lymphatics to be seen on any portion of the new parture. Numerous lymphatics still present in blood.

II. Yung king, age 41. Pleasant, native of country village near Foochow, adm. July 2nd.

Patient, his 21st to 25th year patient had been subjected to frequent attacks of acne. Remained well up till 29th year when had fever, resembling to his mind his old acne attacks that accompanied from the first by pains, patient is swelling of parture. The inflammation of parture was severe, continues for 3 days acutely and patient had to kept his bed for 20 days before swelling subsided. That had no recurrence of fever since but towards end of 40th year parture, which had been no internal chills and privity diarrhea, commenced to discharge lymph, clear 3 huge column, escaping one annum hours at a time. During 4th year...
IV. Sympathy of 20 years duration.

Graen of disease preceded by mumps; frequent recurrence at irregular intervals throughout course of disease.

Inflammation of certain nerves, giving rise to ulcers in cellular tissue.

Symptoms, occurring in character, first developed 14 years after commencement of disease.

Dipsia evident present in thirst, but not in lymph from certain glands.
numinous diseased lymph glands occurred at first monthly but lately every
week.

Disease on examination is found enlarged to about twice its normal size. All are cystic and must depend
part the skin is thickened and contains numerous varicose lymphatic
vessels and vessels. Varicose lymphatics can be traced up with cords
to the external groin, where they enter a series of markedly varicose glands.
The recurrent posterior reduces size of cystic glands markedly.
Microscopical examination of glands shows them to vessels, reveals
numinous lymph corporules but no filarum embryos. Repeated
examination of blood at 9 a.m. proved equally unsuccessful in finding embryos.
Oct. 16th. Greater portion of posterior removed. Fine escape of lymph
during operation. Many patent arteries of lymphatic vessels seen on
and surface of removed portion. Skin is considerably thickened and
with cellular tissue present. The characteristic appearance, on section
of cephalometric bone.
Nov. 20th. Dwindled well. Repeated examination of blood failed to
find embryo present.

Past illness began 20 years ago. In previous good health, he
was seized with fever in his 19th year, in autumn, which in winter
began to cold and followed a few hours after onset by inflammation of chest
with painless enlargement of lymph glands. Kept him bed for a few days
and swelling gradually abated. From Oct. to Oct. 12th years occurred
sporadically, on each occasion being accompanied by recurrent
inflammation of chest. Throughout Oct. to Oct. years remained perfectly
well. Oct. 13th to Oct. years characterized by recurrent attacks of fever.
and scrotal inflammation, three or four times each year. In 12th year after
annual doses of Sweet scrotal inflammation became more severe, confined
patient to keep his bed, and in course of two or three weeks abscess formed,
which on being opened by a friend with a pair of scissors, gave rise to
a large quantity of pus. The abscess formed in the seminal vesicles on left
side of perineum. In 2nd month wound was well again. Patient remained
uninjured from then on for 2 years. From this 3rd year till now he
has been subject to slight attacks of pain several times annually
attending on each occasion by slight mixture of swelling at perineum,
but not much pain. In second year, for first time, punctaneous
lymphs were discharged from perineum by spontaneous rupture of a
vesicle. This obtained by such discharge was so great, that once
instantaneous when perineum has again become healthy
it has been his practice to thrust a needle with his mind and
permit escape of bloody fluid. No history of Chyluria.
No relative, or any as patient knows, suffer from any form of Chyluric disease.

Chyluria in examination appears about three to one year old.
Piece of penis is involved and along with that of scrotum contain numerous
pieces and numerous lymphatic vessels. Pieces which the entire surface and
where thrusting a needle into one of these lymphs strongly tinged with blood, escape
out as from a small artery. Urine examination occurs in about 7 min. 5349. 1010.
Under the microscope numerous lymphatic corporules and red blood discos
formed. Numerous streamers of lymphs were carefully reached both in
summer and during the day but no Chyluria embryos ever found. The
lymphs was allowed to stand over night, and in morning the embryos
remaining at bottom just taken carefully removed but no embryos
embryos formed. Examination of blood at 7 a.m. revealed numerous embryos occasionally.
March 16th. Quinta portion of scrotum, and skin of penis, removed. When patient was placed on the operating table, after 24 hours strict attention to his being kept in bed with scrotum raised, little or no difference from normal, was noticed either in appearance or bulk of scrotum. Tissue of the skin surface of scrotum was removed by incision with single knife and cutting up and down. Right testicle was much enlarged, as was removed, both testicles healthy. Surgical examination of removed tissue was made, for present wound but instant success. Collapsed lymphatic vessels could be easily traced out with a probe, and slit open. The skin of removed portion of scrotum was thickened and cellular tissue in slight degree, presented appearance of chronicities.

April 12th. Wound not bad, well. Penis rapidly granulating over, slight fever for a day or two after operation, but no recurrence since. Tcinacide lymph not present, equally numerous in blood.
Coryza, of 41 weeks duration.

Some of patients presented by fever, one remained.

Meningeal signs not present, but headache, vomiting, and drowsiness were observed.

Difficulty of respiration from cough; no increased frequency.

No vomiting, dysphagia, or other visible signs; one eruption of glands.

Yelvinus; embroys present in blood, but not in urine.
B. Clinical notes of a Case of Chyluria.

Dr. E. REED. Pleasant. W. A. aged 45, on adm. Nov. 18. 1871, had for 8 years, a continuous and severe pain in the lower part of his abdomen, accompanied by nausea, loss of appetite, and general debility, but no pains. There was a history of fever, but no chills. The urine was thick and not otherwise affected until about one week after the cessation of fever, when it became thin and clear, while an increase of urine, accompanied by pain, was noticed. The urine is perfectly clear and contains albumin and a small amount of blood and casts. The urine contains a small amount of blood and casts, which are not present in the urine. The urine contains a small amount of blood and casts, which are not present in the urine.

The patient was admitted to hospital on account of the frequent appearance of the urine and difficulty experienced in passing the urine. The urine on examination immediately after being passed is creamy white and presents the appearance of rich milk. The first flow is thin but later a jelly-like clot is passed. On repetition, one half of the urine glass is occupied by a coagulum, but after standing for 12 hours all trace of coagulum disappears. The speculum was free of any discharge, and the kidney appeared normal. No embryo was found in urine, but examination of blood in evening and

No embroy was found in urine, but examination of blood in evening and evening revealed no abnormality. No evidence of chyluria was observed anywhere. No relative suffers from elephantiasis, chyluria.
I. Elephantiasis of less than 5 years duration.

Gums of ovaries preceded by regular occurrence of five thin fluid corpus.
3 or 4 times annually.

Inguino-femoral glands on both sides enlarged, and oedematous.

No fibrous embryo present, either in blind or lymph from gland. 
C. Clinical notes of three cases of Elephantiasis of Leg.


Patient states "big legs" and "big pustules" are common in his village, and
that it is the regular custom of the peasants to drink water direct from wells
and ponds near village, without previous boiling or filtration. This disease
began 9 yrs. ago. In Feb., 1876, had "fever" described as "cold, but a sweating."
The skin hardened for three days. On second day the left leg from knee
down became swollen and tender and compelled patient to keep his
bed. Swelling subsided in 10 days. Remained well till Dec. of same
year when a second attack of fever occurred, with renewed swelling
of leg. A third attack followed in May, 1878, and since then renewed
attacks have occurred two or three times a year. The left leg
has gradually increased in size, many new attacks of inflammation
leaving it a little larger than before. The thigh was gradually
enlarged by the swelling. During whole course of the disease,
with exception of a few days in bed during each exacerbation,
patient has enjoyed good general health and always been
able to perform his work. No swelling of Clavicles.
No relative suffers from any form of elephantiasis disease.
Circumferential measurements:

<table>
<thead>
<tr>
<th></th>
<th>of left leg</th>
<th>of right leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thigh</td>
<td>22 in.</td>
<td>17 in.</td>
</tr>
<tr>
<td>Leg</td>
<td>20 in.</td>
<td>14 1/2 in.</td>
</tr>
<tr>
<td>Foot</td>
<td>11 1/2 in.</td>
<td>9 1/2 in.</td>
</tr>
</tbody>
</table>

Skin of left leg is tense and smooth. Thickening not marked, felt
depthly on pressure. Punching of leg with needle is followed at first
by a few drops of blood and subsequent free escape of lymphatic
II. Elephantiasis of both legs, of 2 years duration

Onset of disease preceded by fever, recurrence several times a year
Hypertrophied cords of disease
Inguinal lymphatic glands on both sides enlarged, not varicose
The filaria embolus found in blood, or in lymph from glands.
like fluid. Glands in both and, enlarged; one specially on left side, being large of a grape egg. Into this gland the needle of a hypodermic syringe was thrust and a small quantity of clear lymph withdrawn, under microscope presented numerous nuclei and lymphocytes, but no filarial embryos. 


Present complaint began nine years ago by an attack of pains, described as "colds" and lasting from about a month to six months from one year to another. The left foot and ankle became painful, not a murmur. The patient has been in bed and dandy, a month elapsed before anything subsided. Since initial attack there have been remissions of periods over many days or three months, but lately usually accompanies each time by renewed inflammation of foot and leg. 6 months ago, after 2 days fever. The right foot and leg became also swollen and painful.

No relation exists with any form of sleep disease.

Patient is robust and well built, and does not at all present the appearance of having suffered from repeated attacks of fever.

Both feet and legs up to within 2 in. of the knees are enlarged, left leg being the greatest of the two. Plantar is much thickened, but not tendinous, is deeply felt, and on firm pressure feels.

Glands in both axillary regions are enlarged to about size of chestnut, hard and dense, not movable. The became enlarged rapidly and very will pass, but attracts little attention or attention. No chills, At age 18 had gonorrhea but made a good recovery. No syphilis.
III. Elephantiasis of right leg, of 8 years duration.

Onset of disease attended by fever; one recurrence, a year later.

A history of exposure to cold immediately preceding onset of disease.

Tumors of glands on both sides enlarged, chiefly right.

No filarial embryos within the blood or lymph from glands.
Blood from finger carefully examined at 9 p.m. but no ovarian embryos found.

Menses from enlarged glands, withdrawn by needle of hypodermic syringe and carefully examined for no embryos found present.


At age 24 patient had fever; one knee very cold than on knee very hot and paroxysms. Swimming with fever, paint was felt in right foot in ankle, shortly followed by action a swelling. Pain was very acute and patient lay until 48 hours before swelling disappeared. Desquamation of cuticle followed in the region of knee. First illness occurred in winter. The weather was very cold and patient had been walking about a great deal in the frost morning to clear of fever, rushing nights with breath, etc. Patient recovered the spring of following year when again fever and inflammation swelling of right foot and ankle occurred. Again a year well in the spring, in spring time, without any previous fever, patient felt a cold in right femoral region very acute, soon followed by swelling; red spots extended down thigh to leg until with foot and leg became much swollen. Swelling has persisted since that patient has had no recurrence of fever. Complaint now pretty of the undermining phenomena from knee to knee.

Right foot & leg are much enlarged. Skin thick and reddish, but presents no tubercles: has a fumefy blue color. Circumferential measurement of right leg:

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Right Leg</th>
<th>Left Leg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calf</td>
<td>18 1/2 in.</td>
<td>14 3/4 in.</td>
</tr>
<tr>
<td>Ankle</td>
<td>14 1/4 in.</td>
<td>10 in.</td>
</tr>
<tr>
<td>Foot</td>
<td>11 3/4 in.</td>
<td>10 in.</td>
</tr>
</tbody>
</table>

Numerous glands on both sides are slightly enlarged; hands, palms,
painless and not larger than usual nodes. In right side, just over
anterior part of breast, as large as a chestnut. This is
pointed out by patient as that in which the pain and swelling had
formerly been experienced. No enlarged glands in supraventricular
crease.

Examination of blood at 9 p.m. fails
to disclose helicid empyema. On puncturing bag with needle
a bloody serum fluid escapes and continues to ooze away
for several minutes. Conspicuous but slight. A needle
of hypodermie syringe was thrust into the parenchyma of
enlarged gland of right groin and a few drops of clear lymph
obtained. No helicid empyema found therein.
1. Elephantiasis of forearm, with chronic hydrocele, of 18 years duration.
   Swel of arm preceded by illness; repeated recurrence since.
   Scrotal and labia slightly enlarged.
   No signs of embolus in blood, or deposits from glands.
D. Clinical notes of four cases of Elephantiasis Scrota.


U p to the age of 24, with exception of occasional attacks of Hydrocele, patient enjoyed good health, as this was relieved by another attack of fever, attended in right side of Scrotum. Then in 25th year, an attack of fever followed several hours after onset by inflammation of Scrotum. Kept but for 3 days, by which time Scrotum had become swollen and painful. In summer of his 26th year since a constant inflammation recurred, which continued nine months to commence again. From 27th to 40th recurrent attacks of fever a inflammation of Scrotum recurred about three annually. Since 40 fever has ceased monthly and lasts 2 or 3 times a month. Scrotum of late has increased rapidly in size, and very thickened. He relapse suffers from elephantiasis disease.

Scrotum on examination is found enlarged to about size of an ordinaryfootball. Marked fluctuation present to double Hydrocele. The skin of Scrotum is much thickened but smooth. Presenting an appearance of varicose lymphatics, and lymphatics, and veins completely buried. Glands of both groin slightly enlarged. Bladder many times examined; no fibrosis present.


Cellular tissue of Scrotum is replaced by a fleshy white jelly-like body, which secretes semen gelatinous, remi-fibrous. Immediately beneath skin would describe tissue as fibrous but deeper down gelatinous. On cutting a section with knife, the chorionic tissue becomes empyty.

The fibrous tissue beneath skin is not muscular, but in gelatinous form concretes masses of considerable size. Upon little muscular present. Villae somewhat thickened, not preserved.
I. Elephantiasis of Penile and Prepuce of 10 year duration.

Growth of scrotum during a short illness from continued injury: numerous recurring attacks since.

Commencement of elephantiasis of left leg Three years ago.

Inguinal glands enlarged.

No Tilaris embryos either in blood or hypodermic glands.
July 23. Diminished small. Suffers a good deal from utter void of
dependence on which Diminished seems to have little contact. On one
occasion after a sharp attack of some indescribable ailments. Lived
in constant anxiety. Was successful in disputes that
were wound some perfectly healed. Attacked again examined tonight,
but no bruises found. Lymph nodes also withdrawn from the skin.
Enlarged glands but no clinical term therein.

In 25th year constant previous attacks of fever. Pain abdomen
and swelling appear in right side of stomach (Pelvis?) In summer
of following year had a severe attack of fever lasting more or less
contemporaneously. In the next 25th year no pain in belly or
unchangeable, but stomach was inflamed and became much swollen.
Between 26th and 27th years remained free from fever but stomach
continued always to increase in size. In 28th year was again
laid up for a month with a more or less continuous fever during
which stomach increased rapidly in size. 30th year no fever.
Throughout 31st year, from a severe inflammation renewed annually
lasting a day or two on each occasion and since then, frequency
of remittances has been about seven to nine times a year. Lymph nodes
enlarged simultaneously with partum but quite painless.

3 years ago left foot and leg became swollen, the skin being red
and painful. No history of Cholera.

Stomach and muscles greatly enlarged.

Hair thinning and uncollected. Pain in complete headache. No more
locating from a large abscess in the lumbar region, hypertrophied
stomach.
III. Elephantiasis, felt, of 10 years duration.

Growth of swelling proceeds by year; continuous recurring attacks.
Lymphs discharged from parotid in the first year of the disease.
Glands slightly enlarged.
No Tbcaries endures within the gland, in lymph from glands.
Inguinial glands on both sides enlarged to about size of walnuts. In right femoral region one large gland is found. Left foot and leg slightly larger than its fellow. Skin thickened but normal. Does not feel

Examination of several places of blood made but no surprise found. Scrobble from large glands in groin also examined but with equal success. On pricking Scurthum with needle the first drop of blood is followed by several of a lymph like fluid (examined for pleuric moto).

Patient states that he has abosrtation of bite which on scratching Scurthum a clear fluid escapes. During early stage of disease no discharge of lymph appearing.

Sept 21st. Scurthum is pronounced removed. Left linger was firmly embedded in the gelatinous elephantiasic tissue and was only found after long search. Scurthum was really an acute tumor in which tules were packed as apples in an apple. The portion of scurthum removed weighed 3 lbs. and its tumor was similar to that described in the preceding case.


---


10 years ago had an attack of fever, cold shot, followed on 2nd day by inflammation of Scurthum. Being among news, more or less, has had recurrence of fever and recurrent fever with a smell of Scurthum. 6 years ago, rendered dependent by his increasing ailment he took some manicure herb with a mirco tincture. A small piece 1st by a Chinese doctor, on his abdomen found effective in causing him from semi conscious state to clear head. Thence hence into. In first year of his illness
paucity and stricture. This fluid is evidently much decreased by the current and it is with difficulty any particular
water can be gathered. Pus is much enlarged and increasing
in translucent with 34½ in., in ant. part. 26½ in. Skin is
much thickened and warily in appearance. Skin of forearm in
likewise diminished pressure being uncommonly hyperemic and
likewise hypertrophied. On picking one of these many appearances
lymph statically tends with blood, escapes, evaporation of which
occurs within 4 am. glands of groin are very slightly enlarged.
Lymph from posterior and also from glands examined under
microscope but no filariae embryo found. Blot from tongue
contains no embryo.

Oct. 19th. Pus is removed. Tissues removed, no hydrocele.
Considerable vascularity of skin a cellular tissue spread and
numerosa medium sized vessels require ligaturening. Removed
portion of pus, weight 13½ lbs. Pus is removed. The usual
common glistening lymphoid tissue, especially developed around
lymph nodes, walls of several cellular tissue become fibrous after
much by lymph escaped during incising pus and after removal,
but surface shows numerous gaping ends of detached
lymphatic vessels.

Dec. 16th. Diminished well, wound healed without infection.
General health of patient much improved and mental
condition vastly better. Blot repeatedly examined for filariae
but none ever found present.
IV. Elephantiasis of Scrotum, and both Legs, of 18 years duration.

During 13 years of disease unsatisfactory, numerous attacks of fever.
Lymph discharged from Scrotum 11 years after commencement of disease, continuing to escape at intervals up to his 14th year.
Inguinal-groin glands enlarged, abscess various.
No Feticine found either in blood, or lymph from glands.
Patient affected, patient claims, began about age of 14, the tumor
grew more particularly now at exact mode of time, of swelling
of scrotum or legs. Had numerous attacks of fever but
dews not associated there with the enlargement of scrotum.
All the history he can quite is that every clay scrotum and
legs became more large, more large. When 15 years the an
enamore of lympho occurred from scrotum & this remained every
ten years since the last. Since the lympho ceased to escape
scrotum has increased inside more rapidly.

Scrotum presents ordinary appearance of
elephantiasis. Prepuce is much hypertrophied and, along
with end, surface of scrotum, marked interlaced.
Leg below the knees are enlarged to about one half
against the current figure. Skin is thickened and emerged
in folds round ankle. Glands in either side, both
inguinal and femoral, are enlarged and move is bigger
than a chestnut, form is the brick, not marble.

Blood from fingers and scrotum examined at 9 p.m. but no
insects found. Lympho albumin from punctured tubule or
scrotum, and withdrawn also from enlarged glands, examined
but no albumi found. The history of Chering.
Jan. 6th. Scrotum removed. Ordinary appearance of
elephantiasis at removed, amount which weighed 9½ lbs.
As hydrela, testicles preserved.

April 17th. Scrotum has been healed some time but slight testicle remains on left side.
Both testicles elongated during healing and discharge kept until these
Filariasis embryos present in blood, instilling constricting disease.
E. Notes of a case where filariae exist in blood without concomitant disease.

The Beng. Act 39. Hospital Assistant, Native of Aung-

This case is interesting as it is due to entrance of filariae
with patient's blood. Case he approximately fitted, being employed
as assistant in D. Aung's hospital, Aung, his blood was many
times examined for embryos, without success in finding any.
Came from Aung to Foochow 3 years ago and after assisting
in hospital there for three years, he went to Aung, to that
practice on his own account. Elephantiasis disease in all
its forms is especially prevalent in district of Aung, no
more so than in either Aung or Foochow. After
residing in Aung for about 3 mos. he was laid up
with fever, continuing with evening exacerbations,
accompanied by slight diarrhoea, much headache, backache
and pain in thighs, and by himself diagnosed as suffering
the symptoms returned to Foochow where he has since
been acting as Hospital Assistant. A febrile
after return examining his blood one night under microscope
for embryos, he was not a little surprised to find it
containing with filariae embryos.

Before this illness in Aung, he never had fever
in his life, and since has had no recurrence. Has
always suffered from a weak abdomen and chest
and has on certain occasions short breath. No
abnormal phenomena signs of Phthisis however can be made
out.

Many parent worms cannot be present in body.
and yet not a single example hitherto traceable to their presence.

I have examined the blood of many and

have always found a number of clove oil glands.

Randy found though the drop. On one occasion I found a clove
glands in bloody spots, which I rid in early morning.
The enlarged glands any where.

While living in Heng how it was the custom to drink
water in summer, drunk from the common well, of the church
he lived in, without purposely drinking or filtration.

It is a common belief, but in my experience quite an

arrows me that Chinese never drink cold water.

All the peasants I have questioned on this point, state

that it is their constant habit to drink hot or drunk from

the wells and even ponds in pasture fields where they

may be working.
The foregoing Thesis has been wholly composed
and written by one.

[Signature]

Oct. Johnson

[Signature]

Mr. B. Adams

I certify that Mr. B. Adams, M.D., F.R.C.P. (Honorary),
has been engaged in the active practice of medicine
in Stockhom, Sweden, during the last three years.

[Signature]

Oct. Johnson

[Stamp]

Apri 21st 1883.