I've found no element for a scientific thesis. May the research continue? And if this is the blood, it appears there are multiple instances. The arguments by which this view are supported are entirely mysterious. I suppose that is the most that can be said of any theory on the subject.
A Short Sketch

Of the

The connexion between

Inflammatory diseases, and Mercurial Treatment.

On reviewing the history of Medicine during what may be considered the dark ages of that science we are forcibly struck with the Empyemicism which universally prevailed in the treatment of disease; other sciences could boast of great luminaries whose radiant effulgence (so bright in itself that still it dazzles the eyes of the scientific student) was in that age of darkness yet more highly enhanced by the obscurity which reigned universally around; but the
part of medical study was dark
indeed, unilluminated; as it
yet was by the reflected light
thrown on it in subsequent
times by the deductions wrought
out in its companion sciences
(in optics, chemistry, mechanics&c)
by the followers of Newton, Boyle
Reve; those mighty minds who
with precious gems of thought
delved out from the deep mines
of those great intellects with
which heaven had supplied them,
reared up the lower stories of
that splendid fabric, which
in those latter days stands
just as well worthy of that name
which universal concurs has
accorded to it as "The Temple of
Science".
Thus whilst the other sciences
had thrown aside the Thamnols
which had formed their shoulder
in the middle ages, Medicine
yet unliberated from her
funds still remained in the hands of unscientific men whose only qualification lay in the knowledge, and practice of a blind empiricism; as years wore on these men arose to whom Medicine owes as a science its very existence, stanch with the faintness of the ray of light which the knowledge of the nature of diseases threw upon their modes of treatment, they ventured by Anatomical and Pathological study to do away with the entanglement which had so long existed between these twin daughters of Asclepius.

As every coming age added to the number of these valiant laborers in the field of Medical Study the gable gleamering which at first had only served to render more obscure the surrounding gloom gradually over-
after every interval of time yet more
and more foreshadowed the coming
dawn of medical knowledge.

The early students of Physic in
selecting especially as the subject
of their labours, the pursuit of Ana-
atomical and Pathological knowledge
chose the true avenue, by fol-
lowing which they could alone
hope to raise the study of
Medicine to the rank of one of the
Excell Sciences.

But since, during such a long
period of time so many have
followed this peculiar path of
Scientific research in the study
of Medicine, a prevalent opinion
has arisen up that other, and
as leading roads are open to
the medical observer, and that
in leaving the crowded thorough-
gros of Pathological observation,
one need not prove a recluse
at the shrine of Physic, but
will find in the statement
of disease a pursuit still more important and one where newer rivals will jostle him in his prospects.

In adopting this peculiar line of investigation, the observer soon reaches a point at which once more a divergence takes place in the paths which he may follow, and is called upon to decide whether he will enter upon the study of the "Nature of Medicines themselves" or upon that of their "Application to, and mode of action in disease".

In forming a determination to pursue the latter course, one cannot but feel with what difficulties the path is beset, and with what inadequate resources of knowledge and required experience the junior student must prepare to brace his mental powers for a struggle with these obstacles; but supported by a firm conviction of the great importance of the subject,
and by the feeling which cannot but be implanted in his heart, that on this ground will be better fought the great battle which must ultimately decide whether our medical resources will ever be able adequately to cope with the ravages of disease; convinced by such feelings he will hopefully enter on the course of labor, and of mental exertion which he has chosen.

Of the many remedies, the application of which in the treatment of disease has been fraught with such important results for good and evil, there is none which involves the student in greater perplexity, when he has to decide on their absolute beneficial effects, than Mercury. Through a long series of years this remedy has held a very high rank amongst the component members of our
Pharmacopoeia, and it was only at a comparatively recent period that a distinct idea of its curative powers began largely to prevail. At one time branded as the greatest of all remedial agents it had attained the zenith of its reputation. Of late years cavilled at by many, many I would fain hope we have now reached its minimum of fame.

It has been too much the custom to form our judgement with regard to the curative properties of any drug from statistical statements of the number of cases in which it has proved beneficial or otherwise. It is now pretty generally acknowledged that of all the sources from which we derive information, medical, or otherwise, that which in an array of figures has assumed the name of Statistics is peculiarly liable to fallacy.
and it is hard to imagine that it could be otherwise, since so many different observers have to record their experience in forms of such diverse theories.

But I think we might hope to silence such talk if we could succeed in tracing the remedial effects of medicines to their ultimate cause, and the modes of their action.

Even if without arriving at this great end we can make some progress towards its attainment. I imagine that the time spent in the pursuit of such an object could not be esteemed as wasted utterly away.

Consistently with this proposed attempt to trace the remedial properties of medicine to their ultimate source from whence they derive their beneficial action, I will in the few subsequent pages endeavor carefully.
To follow out the modes in which Mercury appears to affect the system generally, and in which it acts particularly as an Antidiphlogistic agent. And as the basis of the few remarks which I may venture to offer on the subject, I will adopt a theory founded on several experiments made some years ago by a student of Medicine in the Edinburgh University, and brought under my notice by a casual allusion in Dr. Christison's able work on Materia Medica.

In his unpublished Thesis Dr. Samuel Wright, who appears to have made very careful experiments on this subject, has stated that the blood, under the specific action of Mercury becomes materially changed in its constitution, is rendered more watery, more prone to putrefaction, less charged with albumen, coloring
globules, and plasma, and is loaded
with many fatid, jellyy masses.

Now I think that these facts pointed
out by Dr. Wright furnish us with
grounds sufficient on which to build
our hypothesis. We have evidence
equidate to prove that the blood is
more or less in a morbid state,
or at least has undergone some
alterations in its constitution when
any of the various tissues of the
body have been attacked by in-
flammation. And it seems
near a well established fact
ascertained by experiments on blood
early drawn from persons labour-
ing under inflammation, that
an essential part of the disease
is an increased production of
numerous globules within the
vessels throughout the circulation,
and these exhibit a peculiar ten-
dency to coalesce into irregular
masses or Ulcers. And besides
these changes in the corpuscles
The liquor sanguinosis, or the fluid portion of the blood, possesses a remarkable peculiarity of being loaded with a greater than normal quantity of phleume, and its性质 are increased amounts of plasticity, showing the presence of solidifiable matters in larger quantity than natural; and the blood over the whole circulation gradually assumes that condition usually expressed by the term "dizziness," and shows a buttery coat after coagulation has taken place. In cases of a more violent kind of inflammation, the proportion of the phleume to the other constituents of the blood is materially increased, often to a great extent, and the tendency to the aggregation of its own particles during coagulation is also increased so as to form a pretternaturally finer, and contracted coagulum. The occurrence of these altered
conditions of the Blood, when some
inflammatory disease exists,
is I believe universally ack-
nowledged by Pathologists of
the present day; but it is a disputed
point as to how these changes
are produced, whether the allied
condition of the Blood is the
effect of inflammation or its
cause.
According to Mulder the previous
increase of the pulse is the
cause of local inflammation,
but cases have been cited where
pulsation was fully established,
though the Blood was not yet changed
in its composition or fibrin.
We find that there is a high pro-
portions of fibrin in the Blood of
pregnancy, enlarging towards the
last months and this increase
continuing for some time after
parturition. And there are
other instances of the increase
of fibrin in the Blood recurring
posterior to the inflammatory process, these latter facts showing that increased amount of phlegm in the blood is not always the forerunner of inflammation. The account which Muller and Simons give of the manner in which inflammation originates, viz., that it is by a previous increase of the oxides of protein in the blood appears to be undisputedly correct, and very likely. But the increased amount of phlegm in inflammation would rather appear to be a consequence of the inflammatory state of the tissue, which, thus giving increased elasticity to the muscles, they yield phlegm and albumen to the fluid part of the blood. But indeed as to the source of this augmented amount of phlegm the question is as yet at issue. It is supposed by Blackwel, and some to be derived from the albumen, and such as first sight would seem very probable,
considering the close resemblance which exists in the chemical composition of these two elements. But we have strong objections to this explanation of its source in the fact that albumen is not always 
renovously increased in the cases where there is an augmentation in the quantity of albumen, and in those instances where a decrease in the proportion of albumen occurs it can otherwise be accounted for; moreover we find that the proportions of albumen and albumin are simultaneously increased in acute Rheumatism.

I think it may more properly consider it as a product of an increased solution of the old diseased judging from the general fact that where the corpuscles are in a larger proportion the albumen is less and vice versa. And this augmentation in the amount of albumen may be regarded as
occurring throughout the circu-
lating system, the consequence
of the increased rapidity with
which the corpuscles disperse in the blood
of inflammation, so giving rise
to a larger supply of fluid as well
as albumen; and not occurring
in the part affected as has been
adduced by Dr. Williams.

Having now completed a general,
but very cursory summary of
the altered condition of the blood
resulting from inflammation,
we are more capable of taking
into consideration the present
mode of treatment, and will
afterwards endeavour to reconcile
this with the results of the experi-
ments of Dr. Samuel Wright.

The chief object of our treatment of
inflammatory diseases is to
obtain that favourable termi-
nation, if it may be so called,
generally expressed by the term
"resolution," which is simply a
subsidence of the disease, the affected part or organ resuming its normal state of health without undergoing any further morbid changes.

The question arises, how is this happy result to be accomplished? By antiphlogistic regimen, and remedies; the former of which consists essentially of "low diet, rest, and quietude," and this is all that is necessary in the more slight cases of inflammation. But when the disease assumes a more violent form, and especially when it attacks some important internal organs, or surfaces, we must have recourse to our antiphlogistic remedies.

It is sometimes stated that the only one of these antiphlogistic remedies on which absolute reliance can be placed is bleeding. But its indiscriminate use in practice has been much
Mentioned of late its consequence of its producing, when vigorously employed, an extreme state of depressions in the system.

I shall not at present make any further allusion to this as I shall have occasion hereafter to make some few remarks on the antiphlogistic effects of bloodletting when used in connection with Mercury as a remedial agent.

Mercury appears to be much more relied on in the practice of eminent medical men of the present day than one would be led to expect from the theoretical opinions, as expressed by many of them, with regard to its value as a remedial agent. We can, in some measure, account for this apparent inconsistency between the theory and practice of many when we consider that the early habits of practice of men now advanced in life, and holding
a deservedly high standing in the ranks of the profession, were acquired when a distinct use of mercury, but little prevailed in the various schools of physics.

As an advocate for the use of mercury, I should indeed be sorry to seek to gainsay any adventitious support for that remedy, from the fact, that its administration is still continued to a great extent even by those medical men who express as their theoretical opinion an almost universal distrust in the anthropologic, and other medicinal properties of this mineral. On the contrary, I shall rather endeavour in the few subsequent pages to point out, or rather mark the boundaries of the path, which it seems to me, should be followed by those capable of tracing the connexion between the acknowledged effects of mercury, and what are more universally
confessed to be the tendencies, in inflammatory disease, towards a curative process. At the same time and once for all I must say that in my humble opinion some weight should be attached to the favorable prestige shown by many past generations for this drug.

With regard to the nature of in-
flammations the beneficial effect
of Mercury appears to be more decided
marked in those, which have a
tendency towards the deposition of
lymph, or are of an adhesive character,
and considering as a fact, that after
the administration of Mercury the
blood is reduced to a more fluid state
than before recourse has been had to
this remedy one may I think draw the
conclusion that this induced
state of the blood is antagonistic
to the deposition of lymph, and
that such should be the case does
not appear to me to be, at least
prima facie an improbable result.
In the contents of the vessels being rendered more thin, there would not be actually propelled through the arterial system the same amount of solid matters to be yielded up to the inflamed districts, in the shape of lymph of which we treat the effusion and its consequent results.

As a direct consequence of the induced fluidity of the blood, and consequent new effusions of lymph we may view the well authenticated fact that occurs are more favourable to the immediate operation of mercury, than mucous membranes, and in the same light may we look upon the interesting exceptions which present themselves in some cases of laryngeal affections.

In respect to the state of the constitution which aid, or hinder the curative operation of mercury, this is an acknowledged fact that its use is more beneficial in inflammations
occurring in a strong, and otherwise healthy constitution, or habit of body, and that it is contraindicated as a diathesis of a dangerous character; and it appears to me that nature is furnishing us with this finger post to point out where we should give the rein to our course of mercury, and on the other hand where we should withhold this spur. To the system has enabled us, though dimly, to copy the modes in which this remedy acts in diverse states of the constitution, for whilst in a strong and healthy frame of body Mercury tends to produce a curative effect by its power in checking the deposition of lymph; on the other hand, in a weak, and corpulent system the action of this drug would merely seem further to diminish the consistence of the blood, already too dilated, and from the very nature
of which we have not to dread inflammatory danger as arising in the lymph diffusing powers of the arterial coats.

Mercury is generally regarded as contributing in two ways towards the cure of inflammation. First by constraining the morbid energy of the bloodvessels, and contracting the powers by which the inflammation is carried on, and thus it takes its place as an antiphlogistic agent in the same rank as bloodletting.

The third blood theory can I think be reconciled with this first view of the curative effects of mercury; the induced fluidity appearing to act as the cause of the constraint of this morbid energy, for the coats of the vessels, acting on their less resisting contents, are more easily able to deprive the inflamed districts of the morbid excess of blood, a tendency towards a return to a normal state being produced,
and in this result it is marshaled along side of its companion anti-phlogistic agent, 'bloodletting,' to be summoned to the field to oppose the powers of inflammation, and as the immediate result of their action producing a state of depletion in that body which they are called to protect, but as in every nightly contest employed with the ultimate hope of gaining complete victory over the aggrandizer. Secondly, mercury is viewed as aiding in the separation of parts by promoting the removal of substances foreign to them, whether fluid, or solid which inflammation has produced, and left behind. It would seem here to exert its influence on the capillaries of the inflamed parts, by dissolving, or at least in some way or other decreasing the amount of the protein compounds, and in this way contributing to the facility by which
the blood may circulate, or push out from the congested vessels to make room for another portion of a more healthy kind to flow in. In this way we can account for its absorbing power, indirectly, by relieving the capillaries of their comparatively stagnant contents whereby they regain their normal tonicity which is requisite to allow a free passage of blood through them; and we can imagine that any exudation previously infiltrated into the surrounding tissues would be taken up with great facility when the blood is excessively renewed by a more free circulation.

That bloodletting should be not only a useful, but often a necessary adjunct to the endeavors of the physicians who wishes to subdue a high state of inflammation by keeping the system under the effects of mercury, does not appear inconsistent with the theory by which we have...
endeavored to account for the anti-
philosophic tendency of Mercurialism.
In bloodletting has long been ex-
perimentally proved not only to
produce a resultant state of the
system in which the total quan-
tity of blood in the body is dimin-
ished but also accompanying this
a reduced amount of solid matter
exceeding in proportion what we might
naturally have expected, would be
the diminutiveness, considering the
duration of the Reneection or arti-
facting as the case may be.
And as either of these remedial
agents singly is often unable to
produce these happy results, which
experience has pointed out to
be as the fruit of their joint action,
we may naturally be led to expect
as the result of our inquiries a
similarity in their mode of action
and a diversity merely of degree
in the Modus Operandi of each.
And I think if we endeavor
separably, to take off the action of each of these agents on the blood. We will find that our expectations are at least not without some shadow of foundation.

Bloodletting, by decreasing the quantity of circulating fluid in the body, and by diminishing the amount of solidifiable matter in that fluid, appears to have a direct tendency towards a reduction of the general tone of the system; and by increasing the fluidity of the circulating medium, would not mercury also travelling towards the same goal? I can imagine that unchecked inflammation may have made such rapid strides as to be quite unmannerable to the action of mercurials. These drugs on their administration not being able to overtake the giant steps with which the ravages of disease have
advanced, and thus incompetent even to reach that point at which the hand to hand struggle of these mighty rivals could take place; but where his more active, yet perhaps feeblest ally, Woodletting, has been summoned to the course there is the hope of Mercury redoubled, and in a few hours perhaps through the aid of this acquired assis-
tance to the lagging mineral brought up to that critical point where on equal ground he can meet, and, as experience has often happily shown, succ-
cessfully cope with the antagonistic disease.

Not only in the action, but also in the consequences of these
Remedies (Woodletting and Mercury) there may be traced a similarity
for as their mode of action in combating inflammations seem
to be the same, differing only
in degree, so the consequences of either being pushed to extreme agree in producing ability, and ultimate Consequence in the output under treatment. And similar resultant effects in both remedies appear traceable to a like cause, viz. the destruction of the red corpuscles of the blood after the use of either of them, and the consequent pallor of the surface. Which striking coincidence, between their action, in the course of quotation from another author, has been pointed out by Dr. Watson, in his Lectures on Practice of Physic, and on recalling the cases in which these active anti-inflammatory agents have been pushed close if not actually to the verge of danger most old practitioners, we believe, will but too well remember instances in which from the very use
of dawn the complexion of the
patients have been changed
to the tinct of ivy whilst which
marks the coming snow storm.
The chief remedial power
of mercury is generally acknowledged to be that of stopping,
controlling, and altogether putting an end to the effusion of coagu-
table lymph, and of bridling adhesive inflammation, but also
in common with every other good
virtue we have been furnished by bountiful nature.
This remedy is some cachexies
when given in moderate doses,
and in all when administered
with a too lavish hand, is pro-
ductive of the most calamities,
and even fatal results.
The beneficial action of
mercury as an antiphlogistic
agent appears to be more
especially marked when applied to inflammatory
Diseases which have their seat in serous membranes. In such localities, the endeavors of the physician are first aimed towards the prevention of the effusion of lymph, or if such effusion has already taken place, to prevent its increase; the fact that mercury is the chief anchor on which in such cases he rests his main reliance, can only be accounted for by the happy results which he has oftentimes consequent on such a mode of treatment; and therefore in endeavoring to trace the mode of its operation under these circumstances we have the happy omen of successful practice to encourage us in our attempt. The induced fluidity of the blood resulting from the administration of mercury appears to be most peculiarly adapted to the
combatting of that condition which we dread. For it readily follows from the preternaturally thin state of the blood that less solidifiable makes are contained in it, and hence less of the lymphs offusing power can exist in the cells of the vessels which contains the blood. And thus we may account for the remedial action of Mercury in inflammation of serous membranes, both by its preventing offusion where none has already taken place, and also where that result which we dread has already to some extent occurred, we can by Mercury's treatment limit the evil to what has up to this time been offused, and even when the disease has pursued its course, when lymph has been offused and when we dread that lymph becoming organised and consequent adhesion between the sides of the containing one, we may
still place great reliance on Mercury, as a powerful agent in promoting absorption of the effused matter; but consistent with our theory of an induced state of thinness in the blood, Mercury would appear to act here in an indirect manner. Thus the lymph which has now its seat in the dense one is tending towards organization, our great object is to prevent this. Could we take a more effective way to do so than to cut off the supply which the Blood furnishes towards the building of new tissues? Now Mercury, by inducing an abnormally fluid state of the Blood, appears to me to place in efficiency the constructive powers of this fluid, thus dam-ing up the well spring from which the new tissues should derive their very existence.
When fluid has already passed into
a secreting one, we have again
recourse to Mercury, but now
to what may be called its uppe-
native action, to promote its
removal. Here by warming
the blood, it would seem to
act as a means of withdrawing
an excessive accumulation
of that fluid from any part
which may be the seat of an
inflammatory disorder, and
by raising the circulation
to an equalized condition
throughout every part; thus
what may be styled the partial
stagnation of the blood is, and
around the seat of inflammation
is removed, and the normal
propagation of this fluid to the
vascularity of the tissues is
restored. Throughout the region
of the region, and hence a
faster escape is allowed for
the action of the natural
powers of absorption.

The antiphlogistic and expectorating powers of mercury are acute inflammations are most clearly illustrated by its power of influence on the eye being an organ peculiarly adapted for furnishing us with ample opportunities to observe the progress of disease, and the influence of remedies on diseases.

The iris is lined by a smooth membrane, forming a thick sac and analogous in function as well as in anatomical character to various membranes of a larger extent. This similarity in the nature of the membrane supplying no with sufficient reasons to arrive at the conclusion that the action of remedies on them is precisely identical in every respect, and its adequacy I think, to remove whatever scepticism any one may have entertained.

The observation of diseases is...
This organ appears also to furnish us with evidence, that it is by
induced promotion of absorption
(i.e. by the induced fluidity of
the blood, producing an equalized
condition of the circulation, which
tends towards a withdrawal of the
stagnation of the blood in the
inflamed part) that mercury acts
beneficially as a sequestering agent
in inflammation; for whilst under
its influence the removal of the
products of inflammation disorder
is accelerated, other foreign
materials such as fragments of
cataract, exposed blood &c., which
may have found their way into
other chambers of the organ, are
just as rapidly, although not
a particle of mercury is ad-
ministered.

It is with regret
at the very incomplete manner,
in which I have been able to
accomplish the task I had undertaken,
that I now feel compelled to draw towards a close of this short attempt, to elucidate the connexion between the remedial actions of Mercury and the diseases in which it is administered, especially those of an inflammatory nature. From the limited time during which I have been able to direct my attention towards this subject and the want of practical experience with it, I feel that the few remarks offered in this thesis are but unsatisfactory in their nature, and at best but touch on those salient points which must strike the observer directed to this peculiar branch of inquiry. But whilst engaged in writing these few remarks on the action of Mercenials, I have been much struck with the road, and ample field which here lies open for the competent observer, whose previous studies and experience would enable him thoroughly, and with
the care, and attention of which the subject is well worthy, to enter on the investigations of this important, and interesting subject.

In the preceding pages I have rather endeavored to reduce to words my own incomplete ideas, and the suggestions made upon me in my previous course of study, than merely to repeat the views of others on the subject of mercinial action in inflammation, and though perhaps the latter would have been the safer course in so young, and inexperienced a writer. However, yet it is not with regret that I look back to having adopted this more original course in the formation of my thesis.

In it appears to me that the great object to be gained by essays of this sort is not so much to mere accumulation of papers in which the theories and views of preceding authors have been
copied in an altered dictio, but rather that each individual topic in medical literature by being however obscurely at something of originality might not only, perhaps, throw some faint light on subjects hitherto little investigated, but at the same time might lay in himself the foundation of a more original train of thoughts on professional subjects.

I now finally conclude this imperfect sketch in the hope, and full conviction, that hereafter as the march of modern improvement hurried on the advance of medical science, new light will be thrown on these hitherto obscure connections the disease, and its remedies.

22, Nicolson Dr.
30th March, 1854

Evan Price Williams.