Thesis

If the experimental investigation of diseases be of interest, it value to the Pathologist, much more must be the interest, value, and advantage, of the study of the natural life of history of diseases to the Clinical Physician. Hence, even to the present, the importance of which we hold the writings of the ancients, in diseases, from these few of observation enabled them to give so faithful a picture of duration of diseases as that, despite the help of modern science, we still regard it quite them as among our highest classic authorities.
Hence following their example it will be my endeavour in this thesis to contribute a few thoughts from independent observation upon the nature, from a clinical point of view, of Acute Rheumatism. To fortify my position by brief reference to the pathology of the disease as well as by its modern therapeutical treatment.

The commonly received is for the most part in challenge, opinion concerning Rheumatism is that it is a blood disorder. that the circulatory fluid contains a heterogeneous matter, that writers have identified the particular element that has given to it a definite and a name - lactic acid - the highly acid fluid of the secretion as the brains, sweat, of the, at least occasionally, of the secretion by the saliva lends considerable color to the belief.
But on the other hand it is not to be supposed that the lactic acid theory is universally admitted even in this country. Whilst indeed it has received little support here the controversy, especially in Germany, has been advanced the view has been followed by Richardson in experiments upon dogs. It is that these animals are it is well known but slightly susceptible to the disease. In the best part therefore it may be said that experimental investigation in this direction has proved a failure.

Then again the practically universal cause of the disease is exposure to cold, especially when associated with wet. Sudden checking cutaneous transpiration is so interfering with the elimination of effete products. Let the above suffice to
indicate the basis for the direction of commonly accepted views.

The known fact is that doubtless both Climate and Season are important etiological factors, nevertheless here are three causes of this failure, to be influenced facts in regard to the geographical distribution of the disease. It is uncommon both in cold and hot countries, whilst born in temperate regions its distribution is most irregular. In England, the proportion of cases of Acute Rheumatism to the same total of disease varies very considerably, the Western counties, Isle of Wight, and Channel Islands favouring most favourably with Middlesex, Essex, Cambridge, and others—both with regard to the influence of climate and the maximum prevalence of the disease, in best both
between November & March, but it is a curious fact that the mean annual mortality for successive
quinquennial periods, from 1850 to 1870 has been a
gradually increasing one, as follows. 101.8, 104.4,
106, 116.6, 125 to every 1,000,000 persons living
(with the improve cultivation of land, drainage, im-
provement in construction of dwelling houses, & other
sanitary measures which may be ascribed to
antiseptic treatment in tendency, I am here forced to
ask what counter influence may have been fostered by higher education, mental strain,
Oxidase have power in the competition & struggle
for life; hence a adverse agencies in the
Causation of unstable forces Climates ?).
I now submit certain facts in support of the opinion
that Rheumatism may be also situated to be classed
among the Nervous - but before proceeding in detail
I would take leave to refer to the preceding
causes of that Rheumatism to refer for a moment to
those which in my judgment may fairly be held to occupy arbaleon ground, by which I
mean such factors in etiology or pathology as may
directly affect the nervous centre, or on the other
hand, produce effects capable of different influence.
Reference has been made to sudden chill, but it is a
well recognized admission fact that theperia
influence of damp and cold is especially intensified
if suferring upon bodily fatigue...
Skin of course we have a nerve state specially prone to attack, but a, the skin is the terminus of the blood-stream here. Why is it less, Kravatske to assume the direct result of sensory impression than it is to accept, the commonly received opinion? The bulk is the way in which chill produces rheumatic, rheumatic is not rightly known. This question is one which worthy of further inquiry — Vide Zebrasen, vol xvi. page 25. — xxx Nocius & Constable uses the atropicul affections as the result of a disturbance of innervation consequent a peripheral irritation set up by a chill. To bring this theory into agreement with the present state of pathology, we must suppose either that the abstraction of heat affects the trophic
and from motor nerves of the joints directly, hence exciting inflammation at distance in them, or else that it operates as a constant upon a variable number of the peripheral expansions of centrifugal nerve fibres, though which the irritatation is conveyed to the vas motor trophic nerve centres, exciting them to abnormal action. 

The latter hypothesis, which assigns a central origin to the joint burning, has here in its favor than the former one.

It agrees better with the fleeting character of the disorder and the possibility of an irritatation in the central organs of the nerve system being suddenly propagated to the central origin of nerve supplying the most discussion, is supported by analogy. Take, for example, the observation, which has been rapidly accumulating of late years as to the dependence of certain joint affections on chronic inflammation changes in the spinal cord (cf. Brodie, degeneracy). Take again, the varicose hemorrhage data which lead us to infer that the chains of sympathetic were deeply with irritatation inflammations.
of peripheral nerves, than what forms, 10 be suffered.
On the other hand, our knowledge concerning trophic nerve-
function is still too uncertain to allow us to view them as anything more than a hypothesis — though a
hypothesis not in contradiction with any known fact.
Age is another element in the predisposition to this
disease, and the young are especially susceptible. The
instability of the great nerve centers, in early life, to
adolescence is a liability too obvious for mention. S.
Shafter records a case of Acute Rheumatism in a young
lady following closely upon acute emotional disturbance
(Fig. 1)
Also as first regard Acute Rheumatism from a clinical
aspect to as seen in a patient with so-called
influenza joint, accelerated pulse, heightened
temperature, general constitutional disturbance.
Now what is the peculiar feature to tendency of
Rheumatic inflammation? Notoriously its fragility, leaving one joint to remarkable briefness without indication seems to appear suddenly in another. Have we anything in true inflammation at all comparable or even reconcileable with this? So far as I am aware we have not. But are the local manifestations specific to the disease? Dr. Gravet declares they are not. He states that he has seen instances of persons who having undergone attacks of genuine acute rheumatism did afterwards experience florid symptoms strictly resembling in character, in intensity, in duration those which they had previously suffered, although from first to last not a single joint was inflamed.

It would indeed under no circumstances be sufficient answer to my point to reply that from time to time the products of true inflammation are the result of the
So called 'thrombotic inflammation'. For we know that pathologically speaking, inflammation signifies 'inflammation' or that it 'is the main element' in intensity together with the nature & structure of the tissue involved determine the change which occurs. I am now concerned to show the stages of the inflammatory process - it suffices my present purpose to say that modern physiologic investigation, go to prove that the initial step in the phenomenon of inflammation is the dilatation of blood vessels, acceleration of the flow of blood in the consequence of the impression conveyed by the sensory nerve, being reflected by the brain motor centre to the vessels. Familiar illustration of the influence of sensory nerve disturbance upon circulation may be seen in neuralgia of the 1st division of the 5th in the production of conjunctivitis, or again
in intercostal neuralgia in the causation of herpes.

Mr. Hilton used to mention this in his Surgeons Lecture

so that there can be no reasonable doubt as to the

importance of the part played by the nerve centres

upon the phenomenon of inflammation and distillation.

In reference to the fleeting character of the joint

inflammation, Stalen suggests it may be explained


--- we may suppose that some physiological

matter situated both a special tendency for the

joint to obtain some membrane, and with a special

tendency to cause distillation of serum, fluid, are introduced

into, or generated in, the system intermittently. Or we may

imagine that various trophic centres, specially related to

particular joints, are successively affected.
Now as to increase pulse rate thought is temperature we have abundant experimental & clinical proof to show that these states are brought about by interference with the inhibitory power of the pneumogastric ganglionic nerve reflexes. The heat producing & heat retaining centre are however as yet but very imperfectly defined or understood - and we have I think considerable ground for belief that his spinal cord plays no unimportant part in, if I may so speak a heat regulator. In support of this view I give the following illustration. A young man - a farm labourer, fell from a load of straw upon the side of his head & neck - he was picked up unconscious. He remained so for 3 days - he kept his bed a week - then got up & walked about more or less for a fortnight - during this time he felt pain & weakness in his arms, nevertheless
he returned to his book he actually continued it for a week - he was then however obliged to give up his return to his bed. The pain & weakness in the arm increased & to these symptoms was added a sense of numbness - he now began to feel rapidly worse and at the end of two months from the time of his accident were absolutely paralysed in both motion & sensation from the clavicle downwards. His head was perfectly clear to the muscles of his face tongue & neck were unaffected. He lived in this state about 10 days - his temperature with about 24 hrs before his death was normal when it gradually rose to 105.6 in six hours before death suddenly ran up to 109.4. He died consequently.

On post mortem examination there was found a subluxation between the 5th & 6th cervical vertebrae. The cord showed the 4th 5th 6th & 7th cervical vertebrae were inflamed.
suture it so swollen as to completely fill the theca.

Incidentally the nerve fibers had become

integrated, the nerve cells were undergoing a

degeneration. Furthermore, so-called Stadeater

corpora were first to be seen.

I now proceed to instance the remarkable clinical

connexion between Rheumatism & Thoraia: So frequent

is this, that I consider the etiology & pathology of

the two diseases might be advantageously studied

together. It is no uncommon thing to see Rheumatism

& Thoraia alternating in the same individual: I

have on more than one occasion seen the two diseases

present at the same moment; and it is far from

an uncommon thing to find Thoraia attacks

one member of Thoraia another member of the same family.
This interchangeability is a striking feature, and I interpret it in favour of Rheumatism being chronic among the diseases of the Nervous System.

Again, nearly 30 per cent of patients suffering from Chorea are the subjects of Heart Murmurs. In persons suffering from Acute Rheumatism about 40 per cent have Cardiac Complications. In no other form of disease is the similarity or frequency to be noted; so I submit this pathological tendency is highly suggestive in regard to the causation of the two diseases.

I must here, however, acknowledge in regard to this question that different writers have given widely different estimates of the relative frequency of cardiac complications in the two diseases: whether atmospheric
or telluric conditions, or whether individual predispositions in a given number of persons affect their family statistics question I submit but feel unable to decide —
(Vide Emerson, Phil. xvi. page 449).

Further I would point out the influence of heredity both in Rheumatism and Neurotic disease.

This is speaking generally on a large and fertile subject and full of interest to the clinician — it is also appealing to the theorist, but with the exception of the brief mention of a few illustrations I confine myself here to mention of the fact; although it is one upon which I lay great stress. The illustrations I would mention particularly are instances of the interchanging nature of the aetiological forms of the neurones among themselves.
Reference to the Rheumatic Deafness — I have already instance the relationship between Rheumatism and Chorea, and both diseases in their similar influence upon heart condition — The common intimate connection between Rheumatism & Neuralgia will afford another example — Again Rheumatic asthma not unfrequently alternates with Rheumatic and Neuralgic attacks — Further I have recently seen a diabetic man whose mother had a strongly marked Rheumatic Deafness, and who died at the age of 40 years of acute Rheumatism — (Further observation on two diabetics in whom the prolonged administration of lactic acid invariably produced the disease (acute Rheumatism) in a perfect
characteristic form, the symptoms always subsiding
when the medicine was discontinued. I quoted in
further support of my views, though I assume to
have it conceded that diabetes is probably a
nerve disorder—British Medical Journal, Dec. 25, 1871.)

The interchangeability of the true nerveless among
themselves is so common and generally recognized
that I need hardly do more than refer to the fact:

Familiar examples are seen in parents who themselves
epileptic, choleric or hysterical transmit there or
another nerve disorders to their children. May we
not often see that psychological disorder as
insane choleric, hypomania, and speaking in more
general terms mental unsoundness is often the
outcome of the grosser and more obvious physical
With reference to any auxiliary support which the above views may obtain for therapeuticists I need only refer to the great changes which have resulted during the past 20 years in the treatment of Rheumatism. Formerly local and sometimes general blood-letting, together with powerful purgatives at the use of often heroic doses of the salts of the alkaline bases was the universally recognized custom. I do not succeed what may be termed the "iron age" and the medical journal were replete with reports of cases under the plan of treatment. Subsequently quinine was vaunted almost as a specific and the most recent experience of experiment has shown to be how important an influence this drug.
It has an antipyretic by its profound effect on the nervous system - at first perhaps infrequent on the ground of rational empiricism, the more recent introduction of the thermometer into clinical medicine has given the use of this remedy a more secure basis in science. It will not be challenged that continued high temperature in any form of disease strongly adds, per se., to its danger - how in the form of acute phrenatism or distinguish from some other form of fever, whether primary or symptomatic, there is a disposition shown to the maintenance of a high temperature. In direct proportion therefore is the safety of a patient's recovery, first by the positive and general state of cardiac paralysis,
Second, by the specific risk attendant upon the matter

The last, as it is the most modern therapeutic apart —

which I shall refer to Salicin — this drug, the
active principle of the willow bark, is a well known

thing in this country, little used commonly, in the

treatment of disease — it is however extensively

employed in Spain and Portugal in the treatment of

intermittent — it is however within the past

two or three years only that Salicin has advanced

into special nostrums in the treatment of rheumatism.

Its success in the control of this disease, both

from accumulated evidence, it would be difficult
to dispute — but whether this is due to any specific
antagonism, or whether to its remarkable properties as an antipyretic is as yet undetermined.

The profound effect of this alkaloid in large doses upon the heat controlling centres is however the point I now more particularly wish to insist upon. Its therapeutic value in this direction stands uncontroverted.

From a state of hyperpyrexia in doses of 2½ to 3½ every hour for 3 or 4 successive hours the temperature falls as many (or more) degrees. In rheumatic cases pain disappears pari passu. This results in the use of a drug whose only known effect is as a nervine tonic, anti-periodic, & protecting in these forms of fever.
Characterized by periodicity it, I submit, an additional and important fact in favour of the belief in the neurotic character of Acute Rheumatism.

In conclusion I may be permitted to say that in writing this thesis I have not aimed to prove the nerve origin of Acute Rheumatism, but to submit certain facts in clinicæ medicine, in pathology, and in therapeutics in support of that belief. Further observation and investigation may throw additional light upon this question. Meanwhile I endeavor to bring forward my own views in an inquiring and suggestive spirit.

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M. O. D. Taylor