

**ON OVERWORK AND
PREMATURE MENTAL
DECAY: ITS
TREATMENT; PP. 2-101**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649662715

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Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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ITS TREATMENT.

BY

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LONDON:
BAILLIÈRE, TINDALL, AND COX,
KING WILLIAM STREET, STRAND.
PARIS: BAILLIÈRE. MADRID: BAILLY-BAILLIÈRE.
1876.

151. o. 361.

carried to a fearful extent. Formerly a young man had to pass through a very limited groove. Medical men were few and far between. Competitive examinations were unheard of. Examinations for degrees and diplomas required but a minimum of knowledge. It is within the memory of some of the profession even now, that a student might become a surgeon after one year's study, and many others became general practitioners, before 1815, without any examinations whatsoever. Places of trust in our hospitals were often family sinecures. India assistant-surgeoncies were reserved only for those who had friends in office. I well remember the time when two young men in a college, notorious only for their very infrequent attendance on lectures and their anything but temperate habits, after three months' cramming, passed the Royal College of Surgeons, were appointed Indian assistant-surgeons, and sent to minister to our brave troops in that empire. But now how different the state of things! A man *must* know his subjects to pass. Five years of study and hospital practice at least are required, and many appointments are open to honourable competition. So that formerly where one Sir Henry Hallford, and one Sir Astley Cooper could command, the first nearly the whole medical, the latter the whole surgical practice of London, now there are scores in London whose

knowledge surpasses that of these great men, and who consequently divide their practice. Halford made his £31,000 in one year, and Sir Astley Cooper £22,000. Now probably no one man attains the half figure. The fact is, men "go much to and fro now-a-days, and knowledge is increased." Interesting, however, as such general details and propositions may be, I have to consider the effects of all this toil and overwork upon the mind; and I think the conclusion we must come to is that it induces premature decay, but fortunately this in many cases is remediable.

In the first edition of this essay I restricted myself more closely to the results which follow overwork in those who study and work hard mentally both for themselves and others. My object was to prove that such overwork invariably gave rise to premature old age and mental decay; but I felt unwilling to treat the subject more broadly by extending my observations to allied kinds of overwork, which might bring about similar results. Then, again, I confined my remarks to these specified limits, because I felt the subject had already been ably handled by my friend, Dr. B. W. Richardson, and I did not feel disposed to tread too closely upon his steps; but the subject has grown popular, and I have been asked to speak more fully and freely. This, therefore, must be my

excuse for doing so on the present occasion, and my theme for consideration may therefore be stated as "on overwork and premature mental decay," considered specially in a moral point of view; some of its varieties, causes, symptoms, and treatment.

Let me first define then what I mean by premature mental decay. This latter expression in its simple meaning is clearly a disintegration of, a defective condition, a loss of, mental powers previously known to be good and sound.

In the common course of things, it occurs after a considerable amount of wear and tear of every man's brain. It is the normal goal of old age. But it is said to be premature mental decay when it occurs in a man before the time at which his intellectual vigour should have normally deteriorated. A mind thus weakened is no longer in equilibrium. It is, in fact, bordering on insanity, but which has come on prematurely. For clearly, if we understand by insanity an unsoundness of mind which is the result of functional or organic disease, or rather of a particular class of such diseases which are known to impair, weaken, or pervert the mental faculties in various ways and in different degrees, then premature mental decay is, after all, only a progress towards, if not an allied form of, a pending although unmaturing insanity. Call it eccentricity, early old age, weak-

mindedness, impaired reasoning power—in each and every such case the mind after all is unsound, and premature mental decay comes only to be a minor degree of, or a special form of, insanity. At any rate, none will be disposed to deny that the phenomena of premature mental decay constitute the long links of a chain, or the several steps of a ladder, which terminate, if undetected, sooner or later, in insanity. This admission is, after all, a very important one, because as kindred causes will be found productive of the two forms of disease, so we are through a full consideration of these, enabled to make not only an earlier diagnosis, but also to adopt earlier remedial measures, and thus obtain a better chance of success.

A consideration, at this stage of our inquiry, of the chemical constitution of the brain itself, tends furthermore to confirm this relation and to explain how readily the one state may pass into the other.

The recent brilliant researches and discoveries of Dr. Thudichum (Public Health Reports, New Series, No. 3) have demonstrated that the brain possesses peculiarities of chemical composition, and modification, which belong to no other known chemical compound. "It consists essentially of three groups of bodies. The members of one contain five elements, one of which is phosphorus, hence termed *phosphorized bodies*. The members of

a second group contain four elements, amongst them nitrogen, but no phosphorus, hence termed *nitrogenized bodies*. The members of the third group contain only three elements, carbon, hydrogen, and oxygen, present also in the other two groups, but no nitrogen or phosphorus."

The first of these groups is especially interesting, as showing the extraordinary susceptibility of change which the brain possesses, and necessarily the mind itself which must work through the brain agency. "The phosphorized bodies are three—cephaline, myeline, and lecythine. The first possesses a tendency to be oxydized, *oxydizability*. The myelines are not easily changed by any agent or influence, and possess, therefore, *stability*. The lecythines easily fall to pieces, they are afflicted with *lability*. Water combines itself with these bodies in a peculiar manner, by which they show their character as colloids, and it afterwards dissolves them in a peculiar and imperfect manner. The reagents with which the phosphorized bodies are able to combine, and from which they are dissociated by water, are acids, alkalies, and salts. They possess alkaline affinities for acids, acid affinities for alkalies, alkaloid affinities for salts. All these affinities are overcome by water in quantity, but the affinities for water are overcome by some metallic oxides, such as those of lead,

copper, manganese, iron, and even to a slight extent by lime and potash. These latter compounds are dissociated only by strong mineral acids, and the compound can then be dialyzed out. We have therefore here a diversity of affinities *such as is not possessed by any other class of chemical compounds in nature at present known*, and the exercise of these affinities being greatly influenced by the mass of reagent and the mass of water which may be present, the interchange of affinities may produce a perfectly incalculable number of states of the phosphorized, and consequently of brain matter. It foreshadows in the chemical side the remarkable properties which nerve matter exhibits in regard to vital function. From this it also follows that nerve matter (if only characterized by the phosphorized bodies) must yield obedience to every, even the slightest, chemical influence which may reach it by way of the blood. It must take up metals, acids, salts, alkalies, and alkaloids presented by the blood. It can retain only oxides when the serum is again free from the combinants—a watery serum will waste the brain; a more watery one will make it swell, and displace mechanically within the physiological limits what it can; a still more watery one will make the brain dropsical and produce all the conditions of *mechanical pressure* on the brain. All these pro-