

**On the efficacy of large and frequent doses of quinine in arresting the course of continued fever / by Robert Dundas.**

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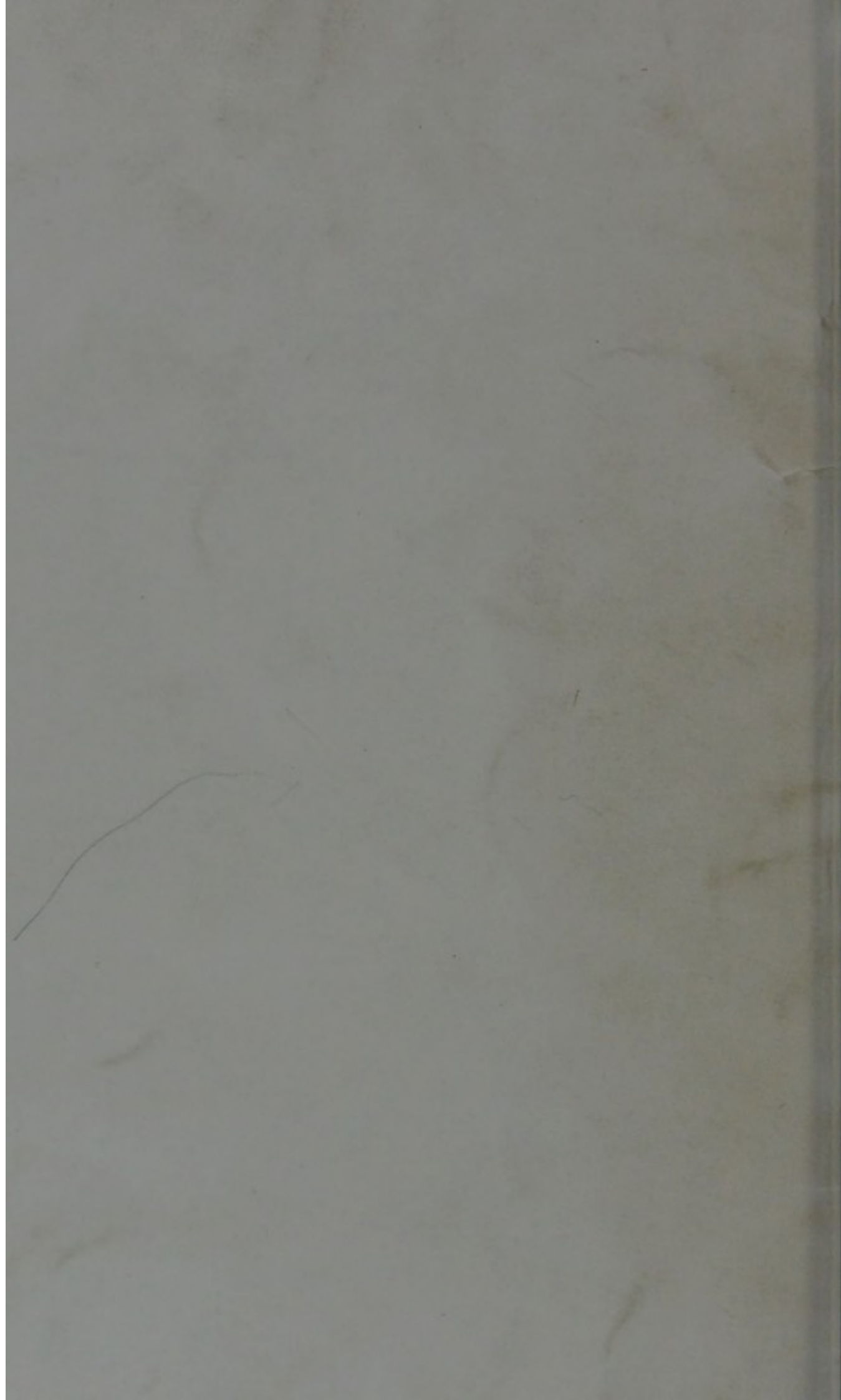
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*Professor Bennett - Edinburgh*  
*with the authors respects*

ON THE EFFICACY

(17)

OF

LARGE AND FREQUENT DOSES

OF

QUININE

IN ARRESTING THE COURSE OF

*Continued Fever.*

BY ROBERT DUNDAS, M.D.

PHYSICIAN TO THE LIVERPOOL NORTHERN HOSPITAL;  
FORMERLY MEDICAL SUPERINTENDENT (FOR TWENTY-THREE YEARS)  
OF THE BRITISH HOSPITAL, BAHIA.

[*Extracted from the Medical Times.*]

LONDON:

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1851.

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BY ROBERT DUNDAS, M.D.

LECTURER TO THE LONDON HOSPITAL, AND  
FELLOW OF THE SOCIETY OF PHYSICIANS (FOR TWENTY-THREE YEARS)  
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## QUININE IN FEVER.

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EARLY in the present year, I delivered a series of lectures on questions connected with the Brazils, and on the diseases of persons returned to Europe after long tropical residence. In the course of these lectures, I laid down certain new doctrines on the pathology and treatment of tropical fevers, embracing likewise continued fever as it appears in this country, and which I consider to be essentially the same in its nature as the fevers of tropical countries, and curable by the same agents.

As the treatment which I recommended has been tested at the Northern Hospital of Liverpool, as well as lately at the Liverpool Fever Hospital, and elsewhere, I am anxious to submit my views more generally to the Profession, in order that their truth and value may be proved on a still larger field, and under every variety of circumstance.

### TYPHUS FEVER OF EUROPE.

Acting on my conviction of the essential identity of the remittent and intermittent fever of the tropics with the typhus of Europe, and being aware of the specific action of quinine in every stage of the former diseases, I have for some time resorted to its administration in the ordinary typhus of this country, *in all its stages*, and commonly with the happiest results. In typhus, as in the remittent and in-



termittent of hot climates, the treatment by quinine will be successful in proportion to its early administration; also, as in the tropical fever, the doses should be large—ten or twelve grains,—and repeated at intervals not exceeding two hours. Three or four doses will, in most cases, be sufficient to exert the specific influence of the medicine, which is displayed by dizziness of the head and tinnitus aurium, or in the rapid subsidence of all the urgent symptoms. In the latter event, three grains of quinine, or some vegetable bitter infusion, should be administered three times a-day, and the patient supported with good beef-tea or other light nutriment, and wine, if necessary. Should the urgent symptoms return, the large and repeated doses of quinine must be again resorted to. Slops should be avoided, and purgatives also, unless obviously indicated; but an emetic of tartarised antimony, when the *prima via* is loaded, will often prove useful at the commencement, and seems to render the system more obedient to the specific influence of the remedy. Should the urgent symptoms persist, notwithstanding the administration of four or five doses of quinine; or should dizziness of the head and tinnitus aurium supervene, the medicine must be discontinued; and, after an interval of six or seven hours, small and repeated doses of tartarised antimony should be resorted to, until full vomiting is induced. The patient should then be allowed to rest for twenty-four hours, when the quinine should be recommenced as before. If the symptoms still resist, the remedies may be repeated in succession, as above stated, for a period of four or five days; and, unless the beneficial effects are broadly marked within that time, we can no longer reasonably hope for success from this treatment, and it must be abandoned. Still, in the great majority of cases of uncomplicated typhus, taken at the commencement, complete and rapid success may be calculated on; and, in all, the diseased chain of actions will almost invariably be broken—no unimportant advantage in the treatment of any malady. In the advanced periods of the disease, the results will be much less certain; but, in all stages, the large doses of quinine may



be safely resorted to, and will commonly calm the patient, cool his skin, allay the headache, and reduce the frequency, and improve the character of the pulse. It must, however, be borne in mind, (as I have elsewhere pointed out,)(a), that any vital organ being seriously involved will prove a disturbing cause to the curative powers of the remedy, which are clearly exerted on the nervous system, through which the blood and secretions are favourably modified, and often with marvellous rapidity.

In the history of typhus in this country, numerous incidental notices will be found, such as the following on the epidemic of 1819:—"The disease has simulated the recurrent type; the paroxysms were marked by distinct, and often violent rigors, which were succeeded by intense heat, and increased vascular activity, terminating occasionally in profuse sweating, but more commonly in a gradual subsidence of the exacerbation, without any relaxation of the surface. The paroxysms showed no obedience to periodicity; in some cases recurring in a few hours, and, in others, only after the lapse of as many days." (b) Now, here we are presented, clearly and distinctly, with the history of an irregular intermittent or remittent fever; yet, strange to say, this idea seems never once to have crossed the mind of the observer.

As I well know, by experience, how distasteful an array of cases commonly proves, I shall only relate two or three; but these are well adapted to illustrate, beyond all rational doubt, the justness of the principles and the efficacy of the treatment which I have just inculcated. The cases are divested of all minute detail, as I am anxious to place the broad facts clearly before the Profession, so that they may be easily impressed on the memory, and in order that they may be submitted to large and careful experiment. The two cases now to be related were received into the Liverpool Northern Hospital, one under myself, the other under my colleague,

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(a) In a work now in the press.

(b) Sheppard.—*Edinburgh Medical and Surgical Journal*, Vol. XV.



Dr. Scott. The notes were taken by our intelligent house-surgeon, Mr. Evans, and are given in his words :—

“ *Case 1.*—Cornelius Vincent, aged 26, was admitted October 2, 1850, into Ward No. 12, under Dr. Dundas.

“ October 3.—He had been ill ten days. Present state : Severe headache ; anxious countenance ; slight delirium ; skin hot and dry ; tongue black, dry, and furred ; teeth covered with sordes ; thirst ; urine scanty and high-coloured ; bowels open ; pain of abdomen on pressure ; pulse 100 ; respirations 28.

“ *R* Disulphas quinæ, gr. xxx. Divide in doses iij., quarum capiat unam secunda quaque horâ.

“ October 4.—*Convalescent.* The pain in the head and the delirium have ceased ; the abdomen is less tender ; the heat of skin diminished ; the tongue clean and moist ; pulse 90 ; respirations 24.

“ *R* Infusi quassiaë, ℥iii., ter in die.

“ No further treatment was resorted to, and from this date he rapidly gained strength, and was discharged well on 11th October.

“ It is the ordinary rule not to admit cases of typhus into the Northern Hospital, but to send them to the Fever Hospital. The above case, however, having been reported to my colleague, Dr. Scott, he resolved to give the treatment by quinine another trial. An opportunity presented itself in a few days.

“ *Case 2.*—Edward Donald, aged 23, was admitted on 25th October, 1850, into Ward 14, under Dr. Scott. He had been ill eight days. Present state : Great anxiety of countenance, and high delirium ; dry pungent skin ; tongue dry, and coated with dark fur ; sordes about the lips and teeth ; great thirst ; urine scanty and high coloured ; bowels open ; abdomen tumid, and tender on pressure ; pulse 108 ; respirations 30.

“ *R* Disulphas quinæ, gr. xxx. Divide in doses iij., quarum capiat i. secunda quaque horâ.

“ October 26.—*At the morning visit, he was found reading a book in bed!* All the formidable symptoms of yesterday have disappeared. No further medical treatment was re-



sorted to in this case, and he was discharged well on the 5th November."

The same treatment has been adopted in several other cases of fever admitted into the Northern Hospital, and with equally good success. In one case, that of Ann Dobbin, one of the hospital nurses, the effect was highly instructive. Attacked with well-marked typhus, she was treated for three or four days on the ordinary routine system, by purgatives, salines, and diaphoretics. Under this treatment, she daily became worse; the cerebral disturbance, lumbar pains, heat of skin, and thirst became gradually more intense, the pulse more frequent, the tongue dry and brown, and sordes began to appear about the teeth and lips. Ten grains of quinine were now given every two hours, with the result, after the sixth dose, of arresting all the unfavourable symptoms. The pulse calmed down; the tongue became moist and clean; the sordes disappeared; the heat of skin, thirst, cerebral and lumbar pains, all moderated, and she rapidly improved without any further medical treatment beyond the administration of a little wine.

The following valuable communication from Mr. Eddowes, the highly intelligent House-surgeon of the Liverpool Fever Hospital, requires no comment.

*(Copy of Letter from Dr. Dundas to Mr. Eddowes.)*

"Canning-street, Sept. 13, 1851.

"My dear Sir,—As I understand from our House-surgeon, Mr. Weaver, that you have lately tested, in the fever cases at the Fever Hospital, the plan of treatment which I have recommended in my lectures, and carried into practice at the Northern Hospital; and as I am about to submit this important question to the consideration of my professional brethren, I would feel greatly obliged if you would favour me with the results, briefly, of your experience of this plan of treatment in the typhus fever, as it appears in your hospital. I remain, &c.,

"ROBERT DUNDAS.

"To W. Eddowes, Esq.,

"House-surgeon, Fever Hospital, Liverpool."



(Copy of Mr. Eddowes' Reply to Dr. Dundas.)

“ Liverpool Fever Hospital, Sept. 17, 1851.

“ Dear Sir,—I most willingly furnish you, in a brief manner, with the results of the fever cases where I have administered quinine.

“ I have used it, during seven weeks, in every case of typhus, giving five grains every three hours; and the success has been most marked.

“ The day but one after its administration generally finds the patient better; the petechiæ gradually fade, and the fever leaves its unhappy victim.

“ In diet, I give milk, arrow-root, and beef-tea; also wine, if necessary.

“ The superiority of your plan of treatment consists, I believe, in the simple fact, that it either *cuts the fever short, or prevents the accession or increase of the more formidable symptoms*; while, in the ordinary treatment, (the *médecine expectante*,) the physician only interferes when death is on the point of claiming the sufferer for his own.

“ The cases in which I have used the quinine have been eruptive typhus,—not a single case of typhoid fever.

“ The quinine frequently excites vomiting of a grass-green liquid; but I do not discontinue it on that account.

“ If I have been too brief in the foregoing outline, I shall be happy to furnish any further particulars. I remain, &c.

“ To Dr. Dundas.”

“ W. EDDOWES.

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I have subsequently had two interviews with Mr. Eddowes at the Fever Hospital, when he kindly permitted me to verify the results of the practice by a personal examination of his patients; at the same time declaring, in emphatic terms, his sense of the importance of my system, and of its vast superiority over all others heretofore resorted to in the treatment of typhus fever.

It will be remarked, that the improvement in the patients at the Fever Hospital was generally apparent only on the third day from the commencement of the remedy; whilst, in my own patients, the improvement is generally established



within the first twenty-four hours. Mr. Eddowes, however, it will be observed, did not push the remedy to its full extent. He administered only five grains every three hours, instead of ten grains every two hours, as I have recommended; and this, I believe, will satisfactorily account for the slight difference in the results. He at the same time informed me—and allowed me to state the fact—that, from the high price of quinine, and the large number of patients in hospital, he was induced, by motives of economy alone, to try first the effect of the smaller doses. As regards the question of economy, very properly adverted to by Mr. Eddowes as a public officer, I am satisfied that if the plan of treatment in typhus, now laid before the Profession, be adopted by public institutions, its superiority to all those systems hitherto practised will be at once manifested; and not alone in the economy to human life and suffering, but—what is scarcely less esteemed in this economical age—by the vast pecuniary gain to the public, from the rapidity and certainty with which typhus may be arrested—CURED, *malgré* Pitcairn—and the patient thus restored to his ordinary occupation, ceasing to be a burden on the funds of the community.

Yet, we are told, on high authority, that “in the continued fevers of this country, we believe it (bark) might with great safety be erased from the list of remedies altogether.”(a) Another author of acknowledged eminence, Dr. Pereira, in his standard work on *Materia Medica*, lays down that, “in febrile conditions of the system, attended with a hot and dry skin, and a furred and dry tongue, tonics act as local irritants and stimulants, and add to the severity of all the morbid symptoms,”—p. 208; and he illustrates his doctrine by the action of disulphate of quina in fever! Again, Dr. Watson, deservedly one of the highest (as well as the most recent) authorities in medicine, adopts, in its fullest extent, the well-known maxim of Pitcairn,—“You may *guide* a fever; you cannot *cure* it.”

When these high-vouched theories are measured by the

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(a) *Edinburgh Medical and Surgical Journal*, Vol. XV., p. 595.



facts which I have just stated, all of which have also been observed by others, I feel convinced that, however distinguished the names which have sanctioned these doctrines, they will be found to be utterly unfounded. So fatal, indeed, are they, that, when we take into account the extent and mortality of fever in all its forms, in every clime, and in every class, I question whether their application to the actual treatment of human disease will not outweigh, in danger to health and life, all the advantages to be derived from the more enlightened views of modern medicine.

The cases which I have related, even if they stood alone, which they do not, would afford cogent evidence, not only in support of the treatment adopted, but of the truth of the doctrine on which such treatment is founded,—viz., the essential identity of the typhus of this country with the intermittent and remittent of the tropics, modified by climate and numerous other influences. In fact, I believe that the history of fever must, and will ere long, be rewritten.

The power of quinine in controlling the remittent and intermittent fever, (and the yellow fever also, as stated by Dr. Blair,) is now a well-established and important fact; although I totally dissent from the received doctrine of its specific action on the *several specific poisons* which originate these fevers. Moreover, I have demonstrated, that, in sufficient doses, it displays an equal power in subduing the supposed animal poison of the typhus fever.

The action of quinine is clearly not that of a tonic, in the ordinary sense of the word; its action is obviously on the nervous power, whose functions it favourably and rapidly modifies, when depressed or exhausted by any of the numerous moral or physical agencies which act in causing fever, and thus it restores to the organic nervous system its normal influence over the animal fluids and vital phenomena. Hence the curative powers of quinine in fever, and in many other apparently dissimilar maladies.

Liverpool, Tuesday, 30th Sept.

On my return from London last night, I found a letter from Dr. Goolden, the talented physician of St. Thomas's

Hospital, indicating the highly favourable results in his experience of the curative powers of quinine, as laid down above. He has kindly promised me a detail of facts, and I greatly regret that the time agreed on for forwarding this communication will not allow me at present to avail myself of them. In my work, now passing through the press, I have entered more fully on the subject of fever, and I gladly seize this early opportunity of expressing my obligations to Dr. Leslie, now of Rio, and for many years my house-surgeon at the Bahia Hospital, for numerous valuable suggestions on the present and other medical questions.



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 surgeon at the Johns Hospital, for many and valuable ser-  
 vices on the present and former editions of this work.



