

**LECTURES ON DISEASES OF THE  
NERVOUS SYSTEM. THIRD SERIES. THE  
BORDER-LAND OF  
EPILEPSY. FAINTS, VAGAL, ATTACKS,  
VERTIGO, MIGRAINE, SLEEP SYMPTOMS,  
AND THEIR TREATMENT**

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**SIR WILLIAM R. GOWERS**

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# THE BORDER-LAND OF EPILEPSY

FAINTS, VAGAL ATTACKS, VERTIGO,  
MIGRAINE, SLEEP SYMPTOMS,  
AND THEIR TREATMENT.

BY

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## PREFACE.

FOR many years I have kept a special list of all cases which seemed to be in the border-land of epilepsy—near it, but not of it. Many were so placed by their features and character; others because they had given rise to an erroneous diagnosis. When these cases were collected and classified, their comparison and study revealed a large number of unfamiliar facts and many instructive lessons, throwing light on the nature of the affections, on their relation to epilepsy, and on questions of practical diagnosis. The most important of these facts and conclusions are given in the following pages. Although most of their substance has appeared, as lectures, in the 'Lancet' and 'British Medical Journal,' the importance of the facts seemed to justify their collection in a more permanent form. For this purpose the following chapters have been largely re-written. An account of some sleep symptoms has been added, and to the description of each border-land malady a section on treatment has been appended.

The unfamiliarity, to most persons, of many of the facts and conclusions made it desirable to describe the evidence on which they rest. This has been done as briefly as possible. Although only the essential details of the cases

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are given, they may make a hasty perusal less easy. But the method has the advantage of bringing the facts more vividly before the careful reader, and of aiding their retention in the memory. It also facilitates their use when a need arises for their practical application. For the most part they will be found to have a wider importance than their mere relation to epilepsy would suggest.

W. R. GOWERS.

QUEEN ANNE STREET, LONDON;  
*October, 1907.*

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# THE BORDER-LAND OF EPILEPSY.

## CHAPTER I.

### FAINTS AND FAINTING.

A GENUINE "faint" bears a close superficial resemblance to an attack of minor epilepsy, and hence cardiac syncope is a convenient starting-place for a survey of the borderland of epilepsy. The resemblance often entails a difficulty in diagnosis, and even involves problems regarding this nature of the two conditions, a consideration of which is instructive.

Familiar as fainting is, adequately as we seem to know it, there is much in it that we do not know. Our knowledge is enough to obscure our ignorance. The most obtrusive feature of complete cardiac syncope is the loss of consciousness which results, evidently due to the failure of the action of the heart which precedes and attends it. But the loss cannot be the direct effect of the cardiac failure, because consciousness is not the result of the circulation of the blood. To say this is to state an obvious truism, for the two are totally different in nature. The loss must be immediately due to a state of the nerve elements of the brain produced by the change in the circulation. We are apt to overlook this when we think of the process of fainting, but its recognition is of great

importance because consciousness may be lost from other causes. It is the most common feature of the epileptic seizure. Not long ago it was thought to be a constant feature; without such loss an attack was said not to be epileptic. We now know that minor attacks are common in which consciousness is only dimmed; sometimes hardly a ruffle on its surface attends the sensation which constitutes the slightest form of attack. Still, in the pronounced form of each condition, in fainting and in epilepsy, loss of consciousness is a dominant feature. The fact is of practical importance in diagnosis, because it often makes their distinction difficult, and sometimes causes a mistake. For another reason, also, the loss of consciousness is important. We do not know in either malady the nature of the process in the nerve elements on which the symptom depends. We do not know whether it is the same in the two or is different. If we can trace any relation between the affections it will constitute some evidence on the question, evidence at least suggestive. For this reason also the study of fainting in relation to epilepsy is important.

Recognising that a change in the nerve elements underlying the loss of consciousness results from the failure of the circulation, another question presents itself. How is this nerve change brought about? Perhaps the first explanation that would occur is that the heart's failure entails a diminution in the supply of nutrition to the brain, incompatible with the maintenance of its highest functions. A little consideration will make us doubt the adequacy of this mechanism. The renewal of nutrition of the nerve elements, the supply on which their metabolic processes depend, is from the plasma about them, derived from the blood, but for the time extra-vascular. At any moment the amount of this must be adequate to maintain the metabolic changes, and the function that depends on