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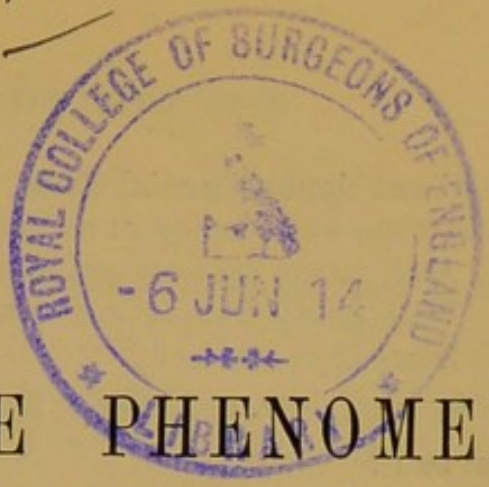

SOME MORE PHENOMENA

OF

SLEEP AND DREAM.

(*Paper read to the Psychological Society of Great Britain by the President*, Mr. SERJEANT COX, *Feb.* 1, 1877.)

O sleep! O gentle sleep!
Nature's soft nurse, how have I frighted thee
That thou no more wilt weigh my eyelids down
And steep my senses in forgetfulness?
Why rather, Sleep, liest thou in smoky cribs,
Upon uneasy pallets stretching thee,
Than in the perfumed chambers of the great
Under the canopies of costly state
And lulled with sounds of sweetest melody?
O thou dull god! Why liest thou with the vile
In loathsome beds and leavest the kingly couch
A watch case or a common 'larum bell.
Wilt thou upon the high and giddy mast
Seal up the shipboy's eyes and rock his brains
In cradle of the rude imperious surge,
And in the visitation of the winds
Who take the ruffian billows by the top,
Curling their monstrous heads and hanging them
With deafening clamours in the slippery clouds,
That with the hurly Death itself awakes?

Canst thou, O partial Sleep, give thy repose
To the wet sea-boy in an hour so rude
And, in the calmest and most stilly night,
With all appliances and means to boot,
Deny it to a king?

What is this coveted sleep that least comes when it is most courted?

Viewed physiologically, it is a collapse of the fibres of the brain, either caused by or causing (as yet we know not which) the expulsion of a portion of the blood from the capillaries with which the brain is everywhere interlaced.

Wakefulness is the direct result of the brain refusing to collapse and therefore continuing in the same turgid condition as when it is performing the work of waking life.

Natural causes of this refusal to collapse are over excitement of the whole or a part of the brain (as the leg refuses to rest after excessive walking); or an inflammatory or congested condition of the brain, as in some fevers and notably in that which is called brain fever.

And wakefulness may be artificially produced by stimulants that do the work of disease, keeping the brain fibres in forced action by blood purposely sent to them.

This sketch of the physiology of sleep teaches some useful lessons.

It explains the difficulty of forcing oneself to sleep and the futility of the prescriptions for sleep proffered to the sufferer from sleeplessness, all being based upon the notion of fixing the mind upon one subject, as counting imaginary sleep, making believe that you watch your breath, and such like. It is because the brain is in a state of excitement and will wander that the patient is unable to sleep. He cannot concentrate his mind on one thought. If he could, he would fall asleep without troubling himself to count a flock of sheep.

But what is the *mental condition* of sleep? That is the question for Psychology.

To make this intelligible and to show how it bears on the Psychology of *Dream*, I must very briefly describe the structure of the brain, which is the thing that sleeps. The Soul, or whatever you are pleased to call the Conscious Self, does not sleep, but only its material organ.

The brain is a duplex structure, that is to say, we have *two brains*, as we have two arms, legs and eyes, and each brain is in itself a distinct and perfect machine—as perfect as is each arm and each eye. The eyes, ears and other organs of the senses, all of which are duplex also, are in their normal condition so admirably adjusted to each other that we are not conscious of the duplex impression made upon the sense nerves. So in their healthy condition do the sense nerves act in perfect unison and thus convey to the *Self* the consciousness of one action or impression only. I will explain it thus, referring still to the analogous mechanism of the double organ of sight, because it is most familiar to you. We have two eyes, on each of which a separate image of the object is impressed. But the two eyes do not receive precisely the same picture, as you may satisfy yourselves in a moment by looking at any object with one eye only—then closing that eye and looking at the same object with the other eye. It will be found that the position of the pictures is changed and you see more with the one and less with the other. But when you look at it with both eyes at once, although two different pictures are impressed upon the two eyes, the mind perceives only one picture. Nor is this all. The picture perceived by the mind is not precisely the picture impressed on either eye, but a new picture constructed of both. The stereoscope is a practical adaptation of this mechanism of vision. It does before the eyes what the nerves of vision accomplish behind them.

The physical process is very interesting. The two branches of the nerves of vision which run to the eyes unite and a single nerve thread (which, however, is probably not one but the two sheathed together) joins the ganglion at the base of the brain in which all the nerves of the senses converge. Upon this ganglion rest the two brain hemispheres and thus it is that this ganglion communicates with and as it were unites the action of the two brains. Thus the impression made on the nerves of the senses are communicated to both brains and impart to the Conscious Self the sensation which we call, as the case may be, a sight, a sound, a feeling, a smell, a taste, all of which, although we are accustomed to attribute them to external objects as their cause, are only sensations in ourselves produced by the presence of those objects.

Thus it is that, although when an object of sight is presented to the two organs of vision the sensations as of two pictures are brought by the nerve to the brain, the impression made upon the Conscious Self is of one impression only. So admirably are the double organs adjusted to each other.

That so it is we discover unpleasantly when disease or accident destroys this nice adjustment. You can find it for yourselves in a moment, as I have already said, by closing one eye at a time when looking at one object. The loss, temporary or permanent, of one eye does not destroy the sight; but we see less perfectly—less roundly, as it were; the difference being precisely that of a picture seen through the spectroscope and the same picture seen without the aid of the adjusting glass.

Precisely thus it is with our two brains. They act together as do the two eyes. In health, their relationship is so perfectly adjusted that the Conscious Self is unconscious of the double action. But in abnormal conditions the two

brains cease to act together. Then the Conscious Self receives either the imperfect impressions of one brain only, or distinct and often conflicting impressions of the two brains.

This is the simple explanation of a large number of mental phenomena, the causes of which have been among the most insoluble problems of Physiology and Psychology.

It will explain, also, not a few of the phenomena of sleep and dream.

The whole brain rarely sleeps at the same time. Some parts of it, by reason of insufficient depletion of blood corpuscles, remain sufficiently excited to maintain more or less of action. Whatever it be that in our waking state sets up motion in the fibres of the brain and so gives to the Conscious Self the impressions we call emotions and ideas, that motive force continues to excite the same action in sleep, and according to the more or less of power so exercised is probably the vividness of the dream which it suggests.

But we have two brains, each having the same organs, competent to act together or separately—when they work properly together producing the most perfect mental action ; when working separately, or one working alone, producing imperfect mental action, as may be seen in hemiplegia, which is an affection of one of the brains only, and hence the impairment of one side only of the body.

Obviously in the condition of perfect sleep by the entire mental machinery of the brain there could be no dream. Such condition is rare. But it has occurred probably within the memory of all around me, as after long absence of sleep or great fatigue. Then the whole brain sleeps, or seems to sleep, and the Self has no consciousness of any impressions being received from the brain. In such a sleep, even though of many hours duration, the mind has no consciousness of time and the moment of waking seems to have followed

immediately upon the moment of falling asleep. There is no dream,—or at least, there is no consciousness of dream.

The physiology of dream, then, is a partial slumber of the brain. Some parts of it only are sleeping, other parts are more or less wakeful, that is to say, more or less in action, and brain action means the performance of the function of conveying impressions to the Conscious Self and receiving impressions from it.

But this condition is immensely complicated by the fact of our having *two* brains. Save in such rare cases as above referred to, it is not probable that the entire of both brains would be asleep together, and this brings me to the problem, what bearing upon the production of dreams has this fact of a double brain? It is a fundamental fact which has not been sufficiently recognised as an element in the psychology of dreaming by any of the numerous thinkers who have treated of this most interesting and important mental process.

If dream occurs only when a portion of the brain is waking—the question at once presents itself whether the problem of partial sleep may not be solved by reference to the double action of the two brains. It is difficult to accept as an explanation of dream that parts only of the brain are asleep while other parts are awake. Although Professor Ferrier has proved to demonstration that the whole brain is not employed in each mental act, but that different parts of the brain have different functions, we do not as yet know what are those parts, nor what are the precise functions of each part. But we know that the parts must be many and compacted together closely, and it is difficult to imagine one of these parts being asleep while its neighbours are awake, which must be the case if that be the explanation of dream. But may not the difficulty be removed by taking into consideration the fact that we have the two brains and supposing the condition of sleep to be the slumber either of

the entire of one of the two brains while the other brain is awake, or the sleep of parts of each brain, but those not corresponding parts, as the intellectual faculties on one brain, the emotional faculties in the other brain and such like.

Before we examine this, it is necessary to look a little more closely into the conditions that appear to attend the phenomena of dream.

We pass instantly from the waking state into sleep. We cannot, by any effort, note the precise moment when the change takes place. But although so rapid, what a change is wrought! Think what it is. At this instant we are masters of our minds—we are conscious of external existence—we have the power of the Will and the mechanism of mind and body is obedient to command, our thoughts are orderly, we are rational beings. In a minute all these conditions are changed. We no longer command our minds—we are unconscious of the external world—the Will ceases to control the mechanism either of the mind or of the body—ideas come without call, usually in most admired disorder—we discover neither incongruity nor impossibility in them—we believe implicitly thoughts to be things and mental imaginations to be external realities. We have ceased to be rational beings. We are in very truth *insane*.

If this marvellous change were unfamiliar to us, with what wonder and awe it would be received and with what eagerness would Science devote itself to its examination, as being certain to reveal much of the mystery of the mechanism of man and the relationship of Mind and Matter.

But hitherto, because it happens to all of us daily, it has been almost a neglected source of Psychological knowledge. The exploration of this great field for investigation is a work within the proper province of the Psychological Society

and in which it may do great services to the Science of Mind and Soul.

But in sleep the *Self* has ceased to control the body. That force (whatever it be) is suspended which in waking life enables us to distinguish between ideas and objects—between dreams and realities. What is this force that has thus suddenly ceased and by its ceasing has changed the whole character of our intelligent being? Why cannot we at this minute distinguish the shadow from the substance, the false from the true, the impossible from the possible, as we did but a minute ago?

What a curious problem is here presented to us! Although this wonderful fact has actually happened to every person in this room every day of his life, who among you has ever reflected upon its marvellousness or asked himself how such a miracle is caused?

So far as investigation has yet gone, we can trace but two distinct differences in the waking and the sleeping states. In *sleep*, the power of the Will is suspended. It has ceased to control either mental or bodily action and the brain is left to its own undirected energies. In *dream* some of the mental faculties are awake while others are asleep and hence it is that they are unable to exercise over each other that mutual check and correction, the common action of which in a healthy structure constitutes that complex whole, made up of many parts, to which is given the collective title of Mind.

The Senses are said to be locked up in sleep; but they are not so entirely. Some of them convey sensations imperfectly. Sounds are audible, touch is felt, the senses of smell and taste are not extinguished. Sight alone is wholly suspended. But we have lost the power of measuring the impressions made upon these slumbering senses. A slight sound often seems to the sleeper, whether

it wakes him or only suggests a dream, as if it was the report of a cannon. A loud sound will as often seem to him as nothing more than a whisper. This fact, familiar to all of us, proves that the senses are not the rectifiers of the mental actions, as some psychologists have suggested. Hence it may be inferred that the principal agent in the direction of the human mechanism during waking life is not the senses, for they are only partially suspended in sleep,—nor the brain, for that is running riot in all the impossibilities and incongruities of dreams—but *something* which is neither the senses nor the brain, which is independent of either, and whose control alike of mind and body is suspended in the condition of sleep. The immediate agent of this *something* is the Will. But the Will is not an entity; it is only the expression of some entity. The Will is only the force which some entity directs to some intelligent object.

What then is the rational and scientific conclusion from these facts? Is it not that, if there be such an entity, that is neither brain nor body but sometimes controls both and sometimes is severed from both, a reasonable presumption arises that this entity is the *Conscious Self*, a thing distinct from the brain and the body, from which it is then severed more or less. The proposition is plain and simple. There is a *something* which is conscious of what the brain is doing in the wild work of dream; this something is that we recognise as the Conscious Self, the I—the YOU—the individual being, of which the sleeping structure is only the machine by means of which that being—call it *Soul*, if you please—maintains its communication with the material world in which the present stage of its existence is to be passed.

I hope I am not illogical or unscientific in advancing this as another proof of the being of a non-molecular

entity as a part of the mechanism of man in opposition to the dark and debasing doctrine of *materialism*.

The subject is very large and cannot be treated in two papers, or within the limits of our ordinary discourses, and therefore I must return to it hereafter. But I purpose now to set before you some suggestions as to the effect upon dream of the action of the double brain.

The business of the two brains, like that of the two eyes, is to correct each other. With one eye we see little more than a flat surface. The mutual action of the two eyes enables us to perceive objects as we see what is a really flat surface in the spectroscope, but which, so seen, is presented in its proper proportions and true perspective. So it is with the two brains. Each supplements the other and the various mental faculties are thus made to co-operate. To take an instance or two. The mental faculty of comparison can only work by having before it the two ideas that are to be compared. But each brain can entertain but one idea at the same instant of time. The two brains supply the two ideas and thus enable the work of comparing to be done. Now comparison is the foundation of the process of reasoning, which is not one mental act, as is commonly believed, but a combination of mental actions. We reason by *comparing* two or more ideas and noting their differences and resemblances; then we compare them with a third idea in like manner, and see how they resemble or differ; and then we reason upon the result of this comparison, and say, "in such a particular A. resembles B., and, in the same particular, C. resembles B.; therefore, in this particular, A. and C. are alike or unlike." Starting from this simple act of comparison and deduction, we proceed step by step from what is known to learn the unknown. Hence it is that, as one brain alone cannot do the work of comparison, so one brain alone cannot reason.

In fact we find in severe cases of hemiplegia affecting the whole or the greater part of *one* brain, or in cases of the destruction of one brain by disease or accident, the patient is unable to *compare* ideas and has consequently lost the power of correct reasoning, although the other mental faculties, that do not require double action, and especially the emotions, continue in vigour, the one sound brain sufficing to do the work for them.

Apply this state of things to sleep and *dream* and what phenomena should we look for? If one brain be sleeping while the other is awake, we should thus be in the exact position of a person one of whose brains had been paralysed, that is to say, we should have lost the power of comparison of ideas, and, therefore, of reasoning upon them.

Is not this precisely the condition of dream? The self-produced ideas that then throng the mind are accepted by us as being not self-produced but as being brought to us by the senses. Why do we accept them implicitly as realities? Because we are accustomed to rely upon our senses and are compelled to accept their intelligence as actualities. In waking life we try such impressions by comparison and reasoning and we thus discover if they are actual or ideal, possible or impossible. But when we dream it is as if one brain had been paralysed, although it is only asleep; and as the necessary consequence we are unable to compare those ideas and, therefore, we are unable to reason upon them and try their true value, as we are accustomed to do in waking life. Hence in dream our implicit belief that the shadows of the mind's creation are substances and ideas realities; hence in dream we have no sense of incongruity and no consciousness of the impossible. We believe implicitly that the self-produced pictures presented by the brain are brought by the senses from without and then the other mental faculties deal with them

as if they were realities—that is to say, they weave them into narratives, treat them as events, and cause them to create the appropriate emotions—whether sentiments or passions. It is also to be noted that, unlike ideas, which are *imaginary*, the passions and emotions are *really felt* in dream, not imagined to be felt; another proof that all the mental faculties are not sleeping.

There is a condition nearly approaching to dream—intermediate between the active waking state and the active dreaming state, which may throw some light upon this matter, and help the inquiry so interesting to Psychology—what *dream* is? The condition to which I refer is that known as *Reverie*. In reverie we do not sleep and yet are not quite awake. The senses are not suspended, as in sleep, but they are at rest,—they take no active cognizance of external things. The attention of the mind in this condition is concentrated upon itself. We amuse ourselves with "building castles in the air," that is to say, the fancy furnishes a series of pictures which the Conscious Self contemplates with pleasure and thus far it is the process of dreaming. But the mind-history invented in reverie, however improbable of realization, is rarely a manifest impossibility and never presents the absurd incongruities of a dream, nor is ever mistaken for reality. When reverie lapses into sleep and dream, although the physiological change is nothing more than the outflow of a small quantity of blood from the brain and the involuntary instead of the voluntary closing of the avenues of the senses, and is accomplished in one moment, the entire character of the self-created pictures is changed, and that which the instant before was orderly and rational, if not probable, becomes a mass of disorder and impossibility, and the consciousness of unreality changes into a confident belief that all is real.
