

# The Brainbox

BY G. G. DESMOND

WE fill a jar with peas till it will not hold another. Then we can fill the spaces between the peas with sand till it will not hold another grain of sand. Then we can fill the spaces between the grains of sand with water and the spaces between the molecules of water with gas. Possibly then we could remove the gas without disturbing the water or the sand without disturbing the peas. We could not take out the peas without stirring the sand; still less could we take out the bottom pea or the farthest grain of sand without moving a great number of other particles.

A shopkeeper may have in a small warehouse a great number of different articles, and, if he is very gifted, may have a wonderful knowledge of where each article is to be found. The brain will, in fact, hold all that the room holds, but in a miraculous order. In the room the old things farthest from the door will take a long time to get out and many things must be disturbed to get at them. In the brain the thing demanded is always at the top, and comes forth almost without commotion among the other vast and wonderful contents. Not entirely so. We can scarcely take out a treasure without one or two things clinging to it by "association of ideas," sometimes preceding it and leading to its discovery, sometimes suggested by its delivery. "Clover" brings "bee," or "cow"; "gun" brings "part-ridge" or "spaniel," and so on. We can turn over the simplest idea and find it incrustated with values, historic, economic, philosophic, poetic, flocking to it from all parts of the warehouse in which it has been stored.

## The Cosmic Reservoir

The capacity of the largest warehouse is limited, but the capacity of the brain, with its less than a hundred cubic inches, has never been overtaken. It contains the earth and sea and all that in them is, the sun and its billion-mile-distant planets, other suns a thousand times as large and a million times more far. Minutest things, too, can be left there for fifty years to turn up fresh as ever when called for, or more often, uncalled for. It doesn't matter how often ideas acquired long ago have been overlaid by later learning, everything is equally accessible at a moment's notice, except that there is a store, and probably a vast one, that does not commonly respond at all to the waking owner, a treasure enjoyed only by the subconscious self, when we are asleep, perhaps, or in a trance. We attempt the solution of a problem by day and are baffled by the absence of some vital factor. While we are asleep and unconscious this is somehow rummaged out for us and we awake with the problem solved. We are gradually getting to know how to explore this unconscious hoard, so that nothing that enters the brain, however casually, need be lost. The author of *The Gate of Remembrance*, the most remarkable testimony to this phenomenon that I know, calls it "drawing upon the cosmic reservoir."

It is rather a book, an index of things we know about, that the brain resembles than a warehouse of actual things. It is a day book rather than a ledger. Is it written all over and over-written without any kind of order, or does everything get marshalled as soon as entered? Is it double and treble entered, so that you can get at the same idea by many different routes, or are ideas like molecules in a stream constantly rallying in new groups and dispersing? At any rate, the mind is by no means the whole brain. It is no more than the skin or bark of the grey mass parallel to the dome of the skull. But the crumbings or convolution of that skin are so many and so deep that if they could be smoothed out it would give us a surface of some four square feet. The area has doubtless grown with the ages, which seems to show that the capacity of the brain is to be measured by somewhat the same rules that govern the capacity of a slate or book to hold writing.

The brain of animals has been divided by investigators into three definite "levels." The lowest, or third level, a mere knob of the spinal cord, controls only the so-called automatic actions of the body, breathing, heart-beat, digesting. When all the rest of the brain is removed, these functions go on, as well as reflex actions, such as the closing of the eye when something is brought very near it. The second level brain is above the third and below the first level, whose wonderful crumpled surface we have mentioned. The animal that has been deprived of only the first level can hear and see, and smell and taste, and stand up and walk about, but scarcely more. It is mentally defective, as might be imagined, for if the mind resides specifically anywhere, it is in the upper level of the brain. The animal that is without its first level does not remember anything that it has learnt. The dog no longer fears the whip, though, on the other hand, it has no desire to steal, for it has forgotten the use of food. Nor can it learn these things afresh, for it has nowhere to put its learning.

Only the first-level brain, the highly crumpled cerebrum, can remember, can store the fruit of experience, can properly read the messages that come in from the outer world through the senses, can put two and two together, and take proper advantage of what the eye sees, the ear hears, the tongue tastes, and the fingers touch. When it is removed, the animal loses so much that we must say that it is in the cortex, or surface of the hemispheres, constantly endeavouring to extend itself by crumplings within the narrow confines of the skull, that the mind resides.

## Instinct or Prejudice?

Into the nose of the rabbit comes the smell of a fox; its ears, perhaps, have some other intimation of Reynard's presence; its eyes perceive the red beast crouching near. Then the first-level brain or mind comes into operation. Something is remembered about foxes not to their credit; the burrow is thought of as a safer place than the open field; legs receive an order that makes them shoot out and carry all the seeing, hearing, and smelling apparatus quickly out of harm's way.

It is necessary for the preservation of the animal that the upper brain should do more than act on what the lower brain may chance to be aware of. It must initiate inquiry, imagine desired or dreaded things to be looked for, resolve defective vision, as when the eye sees a gatepost and the brain says, "it may be a man. Look again." And so there are fibres arising from the second-level brain and piercing the hemispheres to the surface. They are of more importance as we go upward through the animal kingdom, and when we reach the monkeys, the upper brain has so far encroached on the original function of the intelligence department that on its removal the animal goes blind and deaf, as a lower animal does when both first and second levels have been taken away.

It is difficult to see how an animal could have become rational to the height achieved by man except by taking the senses under the control of the mind. We need not only to see and hear things as they crop up, but to look for them, look out for them, attend to them in spite of other distracting and irrelevant sights and sounds, to select if we can the things we are going to remember, to add our previous knowledge of the thing seen to the mere reflection it makes through the eye, to see with the "mind's eye" as we could scarcely do if the mind had not frequently taken part in the act of seeing.

At the same time, this higher control of the senses may lead us into fallacies from which the more automatic, second-level control would save us. The mind being engaged in seeing, hearing, feeling, tasting can, by anticipating the sensation it expects, imagine a cause for it when it is not there. This is commonly known in mesmerism. The patient, being

told that paraffin is syrup, tastes it and finds it sweet, and asks for more. We hypnotise ourselves into similar fallacies more often than we are aware of.

We are all ruled enormously by prejudice. We call it to ourselves God-given instinct, but it is often the result of upbringing, or of constant suggestion from the race or class atmosphere in which we live, and it may just as well be wrong as right.

"Every little boy or gal

That's born into this world alive

Is either a little liberal

Or a little conservative."

Instead of thinking a thing out, we start with a prejudice for it, and "rationalise," as it is called. Thus, the man who thinks he is a sardine, carries a piece of toast about with him to sit on. He wishes to bring everything into tune with his pet theory. That, of course, is a plain case of madness. Another man wants Protection, he knows not why, perhaps because another country has it. We must not call him mad, but we can see how he rationalises from the absurd way in which he overlooks facts. Thus, though the real object of Protection is to raise prices, he makes himself believe that the foreigner will pay, and that the thing protected will be cheaper. The mind's eye, upper level part of the brain is interfering with the intelligence department. The latter presents two and two and prejudice makes them into five. The next case of prejudice may be our own. We can only be on guard against it by continually verifying our sums. The human brain has already done much, is already a marvellous instrument, but in comparison with what it will be, it is but as a rushlight to full sunshine.—The New Leader, London.

## HERE AND NOW.

ONE thing is sure and certain, the marathon runners at the Olympic Games have no speed on the people who pass by our office looking the other way lest they have to contritely pay up that sub.

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