THURSDAY, SEPTEMBER 26, 1895.

PERSONALITY.

The Diseases of Personality. By Th. Ribot. Authorised translation. Second revised edition. (Chicago: The Open Court Publishing Company, 1895.)

THE importance of a work bears little relation to its bulk, so no surprise need be felt at a masterly and very suggestive *résumé* of recent inquiries into a question of the highest interest being compressed into this thin volume of less than 160 pages of good readable type. The work itself is not new, though it is so in its present translated form. It is practically up to date, and affords an excellent study for those to whom what Tennyson calls "the abysmal deeps of Personality" are wholly mysterious, as well as to those others who have sounded them in part.

First as regards consciousness: there are two views, the old and the new. The old view regards it as the fundamental property of the soul or mind; the new view regards it as an event superadded to the more regular activity of the brain, depending on conditions as yet unknown, and appearing or disappearing according to their presence or absence. The old view fails to account for the vast substratum of unconscious mental activity whose existence is now beyond dispute, and it apparently fails to account for intermissions of consciousness, whose existence can hardly be denied even when the fullest allowance is made for the effects of forgetfulness. The new view is simpler than the old one, and much more consistent with observed facts, especially such as are obtained from the study of mental disease, which is a subtle analyser of mental functions. Many persons are loth to admit that the highest manifestations of the human mind are fugitive phenomena, subordinate to those of a lower grade; but whatever be the origin of consciousness, its value is none the less. From the point of view of the evolutionist, it is not the origin of a faculty that is of consequence, but the elevation to which that faculty attains. However consciousness may have come into existence, its first appearance on the earth must have been a fact of the first magnitude, for it is the basis of the recollections, which capitalise the past of each animal for the profit of its future, and give it new chances of survival. On the automaton view of life, consciousness changes the animal from a simple automaton into one of an incomparably higher order. The author quotes much from "Les colonies animales" of Perrier, to show the steps through which consciousness first became developed in the animal world, starting from associations of individuals that are almost independent of one another, but which, owing to their contiguity and mutual pressure, cannot be wholly unaffected by their neighbours. The next step is the appearance of a colonial consciousness, where a colony is formed of individuals in which some division of labour takes place, and the function of locomotion is centralised. But because a colony acquires colonial consciousness, it does not follow that each of the individuals that compose it loses its particular consciousness; thus the severed ray of a star-fish continues to creep, to follow, or, it may be, to deviate under conditions from a given route, and to quiver when excited, and thus to betray a consciousness of its own which, before it was severed, was subordinated to the consciousness of the whole star-fish. By degrees this colonial consciousness confiscates for its benefit all the particular ones.

The author maintains that consciousness is not like a central point from which alone feelings radiate and to which they all arrive, but that it is a complexus of separate phenomena, each of a particular class, bound up with certain unknown conditions of the brain, existing only when they exist, lacking when they disappear. Hence the sum of the states of consciousness in man is very inferior to the sum of all his nervous actions. Conscious personality is only an abstract of the vast amount of work that takes place in the nervous centres. Its basis is formed by the diffused bodily sensations which, being elementary causes, serve as a warp upon which is woven some gorgeous pattern of tapestry that corresponds to the higher feelings. The general consciousness of the organism serves as the support of all the rest, and forms, in the author's opinion, the real basis of conscious personality.

Personal identity is an unsatisfactory phrase. A man feels to be the same in his ego at different periods, because the great majority of his bodily feelings continue the same, owing to his structural sameness. The so-called identity is due to the large preponderance of unchanging elements, which characterise a healthy state; but in disease this habitual predominance may fail either wholly or temporarily, leading in the one case to a sense of a complete change of personality, in the other to that of multiple and alternating personalities. A few but adequate number of specimen cases are given. A somewhat comic instance is that by Hack Tuke, of a patient who had lost his ego (that is the one which was familiar to him), and was in the habit of searching for himself under his bed. (*Cf.* the speech of Saturn, "Search Thea, search . . ." in Keats' "Hyperion.")

The rather common cases in which a man believes himself to have become changed into a new person, are considered by the author to be mostly superficial; that is, to be due to local rather than to general disorder. I myself witnessed a case which showed that the imagined personality was not well sustained. It was at a lunatic asylum, where I went accompanied by a photographer to take specimens for composite photography. He mounted his camera in a ward, and a batch of patients were brought up. One of them was duly placed in front of the camera, the others were led to a bench behind the operator to wait their turn. It happened that one of these had the mania that he was a great commander, let us say, Alexander the Great, and he chafed internally at not having had precedence. When my photographer's head was under the dark cloth, and his body in the attitude appropriate to the occasion, Alexander the Great could restrain himself no longer, but nipped the projecting rotundity of the poor man's hinder end with his teeth. I abstain from dwelling on the tableau, or on the care with which the smarting photographer, in his further operations, squeezed himself into a corner that guarded his rear. The point is this, that a man who was thoroughly pervaded with the idea of being

a mighty conqueror, would not have made that kind of attack.

Without attempting to condense further this already condensed and very readable little volume written by a distinguished inquirer, I will conclude by saying that it well deserves a place in any general library.

FRANCIS GALTON.

SATELLITE EVOLUTION.

Satellite Evolution. By James Nolan. Pp. 114. (Melbourne, &c. : George Robertson and Co., 1895.)

IN this book Mr. Nolan discusses the part played by tidal friction in the evolution of satellites. Although the subject is one of much scientific interest, his work is hardly likely to attract the attention it deserves, because the unmathematical reader will find the reasoning hard to follow, whilst the mathematician will be repelled by prolixity, due to the author's treatment of the problem by means of general reasoning.[1] The first fifty pages of the book appear to be virtually contained in the single equation which states the effect of tidal friction in increasing the mean distance of a satellite. It might perhaps be interesting to some to discuss the various elements of the problem in detail, but those who are able to comprehend an analytical formula are not very likely to have the patience to follow such a discussion.

I shall not accordingly follow Mr. Nolan in detail, but will pass at once to the conclusion to which he tends. On p. 9 he says :—

"Though Mr. Darwin made elaborate calculations to support his theory respecting the part played by tidal friction on the evolution of the earth and moon, he seems to have dismissed the Jovian and Saturnian systems with the conclusion that their satellites, unlike our moon, could not be traced much further in than the present distances of their respective planets ; and that as the relation between the mass of the planet and satellite, or relation of rotational to orbital momentum is very different in the case of the earth and moon to that for other planets and satellites, their modes of evolution may have differed considerably. He seems to have gone something further into the possible effects of solar tidal friction on the planets revolving round the great central body, or at least has come to the correct conclusion that the efficiency of such tides would be too small to effect any appreciable change during the natural lifetime of a solar system."

He then proceeds to show that, if the earth and Jupiter rotate under the influence of tides subject to the same frictional resistance, the proportionate rate of increase of the moon's mean distance is much smaller than that of all of Jupiter's satellites, save one. In other words, four out of five of Jupiter's satellites would have their mean distances increased by, say, one per cent. in a much shorter time than would the moon. He then pursues the same train of reasoning with respect to Saturn and Mars.

It appears to me that Mr. Nolan is correct in these conclusions, and we are thus led to suppose that tidal friction may have played a much more important part in the evolution of satellites than I was disposed to allow it.[1] He points out (p. 70) that the satellites of Jupiter are probably much younger than the moon : "when the moon was younger, her relative rate of recession was faster, as now is the case for some satellites in other systems." He finally concludes (p. 78) that the majority of satellites in each system may be traced to a position corresponding with that of the rings of Saturn.

But before arriving at this result, the author has treated another problem, in which, in my opinion, his conclusion is incorrect. On p. 45, he considers the effects of tidal friction on such a ring as that of Saturn. He says :—

Tidal friction "could have no effect if the ring were perfectly even all round. When composed of individual bodies it could not be or remain so. Each individual would be unaffected by the tides of the others, and would recede at the same rate as if it were the only body in the ring. The moon recedes at exactly the same rate as she would were there no solar tides ; and if there were a second moon there would be no interference with the recession of the first . . . Then if the bodies composing the rings are 'as the sand on the sea shore for multitude' tidal friction must still effect the usual progressive change, unless each individual body be small enough to be unaffected at the distance, whether composing a ring or not. This must have a dissolving effect on the ring, or tend to shape certain sections of it into so many bodies, which, having increased their mass at the expense of the ring, finally recede therefrom, either to circle round at a great distance or be precipitated into the planet increasing its rotation speed."

It would seem that the process here sketched is an essential part of Mr. Nolan's theory of the evolution of satellites, but I believe it to be founded on erroneous premises. He omits in fact to notice the necessary condition for neglecting the effects of the tides raised by one satellite on the mean distance of another ; this is, that the periodic times of the two shall not be equal to one another. If the periodic times of two satellites are unequal, we need not invoke tidal friction to bring the two bodies near to one another. On the other hand, if four or eight satellites be equally spaced round a planet and revolve with the same periodic time, tidal friction would only influence their motions to a very small extent. I am therefore unable to follow Mr. Nolan in this part of his work.

Several other points in the early history of satellites are considered by Mr. Nolan, but I am unable to touch on them within the limits of a review.

Notwithstanding all that has been written by him and others, we are still far from a consistent theory of the formation of a satellite. In my own papers I have ventured to throw out suggestions (which have but too often been quoted as positive theories), and it still seems to me at least, that neither the present contribution of the author nor the theories of others are adequate.

This work touches on subjects of interest, and although it seems open to much criticism, I for my part welcome the extension given by Mr. Nolan to the part played by tidal friction in evolutionary astronomy.

G. H. DARWIN.

[1] The phraseology is somewhat lax, and it is not always easy to assure oneself of the correctness of the train of reasoning ; but where the conclusion is correct, the reasoning probably is so also.

[1] The arguments by which I was led to an erroneous conclusion on this point, will be found in *Phil. Trans.*, part ii., 1881, p. 524.