

summarised; the general fact of the continuity of the germ-plasm is admitted; its complete physiological isolation is not. The various theories of the essential mechanism—from Hippocrates to Weismann—are skilfully reviewed. Professor Debierre, naturally, has his kick at Weismann's edifice of a geometrical progression of specialised determinants; but, notwithstanding, gives Weismann full value in his "conclusions."

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*Acquired Immunity.* By Dr. ARCHDALL REID. (*Lancet*, September 11th, 1897.)

No one who is a serious student can afford to ignore the writings of Dr. Archdall Reid on all questions relating to the "present evolution of man;" and this address is certainly an important contribution. In it he explicitly discards certain previous theories as disproved, or at least discredited: Pasteur's idea that the micro-organism of disease perished when it had exhausted its essential pabulum within the body; Chauveau's, that the micro-organism developed as a by-product some substance which was fatal to its own life, as yeast develops alcohol, which kills it; Behring's, that the human organism develops an antidote to the toxins of disease; and Fraser's modification of the last, that in the human body the toxins become transformed, and that the antidotes are part of the transformation. His own theory of immunity he calls a modification of Metschnikoff's general theory of phagocytosis. The addition, I gather, which is Reid's own, is that, *quoad* disease, the method of phagocytes and other cells is to secrete enzymes which can resist micro-organisms and their toxins by digestion either at a distance or at close range.

In the early part of the paper, which is more or less destructive of previous theories, we find the fallacies usual to a work which pursues the hypothetical rather than the physiological method. We find the usual weakness of asking an idea to do duty for every case instead of for only some cases. It is the habit both of exponents and of critics of any new idea to kill it by asking it to carry a burden which there is no need for it to bear. In this case, for example, though we have no doubt that Dr. Reid's account of immunity is fitted for wider application than any other, we have also little doubt that there are diseases immunity from which can be explained on Pasteur's theory, though we are told that that

has been disproved—that Chauveau's will explain other cases, Behring's others, Fraser's others, Metschnikoff's others. We may even believe that, some years hence, there will be facts brought to light which Dr. Reid's comprehensive theory will not explain. He culls facts from such various diseases as syphilis (a disease, to my mind, quite apart from all others), anthrax, rabies, smallpox, measles, scarlet fever, &c. To seek for a common ground for immunity from all these and from many more is to imply that they all kill by the same mechanism, which is an evident untruth.

Again, we have the old anthropomorphic fallacy. Despite his recognition, in his *magnum opus*, that the micro-organisms of disease have a universe of their own outside of the human body, we find Dr. Reid, in this lecture, writing as if they came into existence with an inspired intention of infesting man. He writes as if the organisms whose activities in the human body denote disease had been evolved under natural selection with special relation to inhabitation of man. On the contrary, in the light of evidence which proves another environment as normal to such organisms, we may believe that the infection of man is an accidental or incidental experience for them and not the end and aim of their existence. In short, Dr. Reid implies a teleology with man as the centre of life rather than with every life as its own centre. If we are to be anthropomorphic let us say that when organisms of the marshes find themselves confined and cabined in the human blood-stream, probably no one is more surprised than the intruders, and that we cannot judge from their activities there what they are capable of on their native soil.

But when we come to Dr. Reid's exposition of his view of the mechanism of phagocytosis in opposing disease, we cannot but be convinced of the value of his contribution. Starting from Fraser's experiments, he finds that various somatic cells are capable of secreting something in the nature of a ferment which antagonises micro-organisms and their toxins. The full development of such digestive processes constitutes the resistive power of the human organism to various diseases. If this intra- and extra-cellular digestion of the toxin-albumoses, &c., is complete, the host is immune from the attacks of the disease germs and their toxins. We have two sides to the question really, although, perhaps, Dr. Reid does not separate them with sufficient distinctness. We have what we may term the offensive and the defensive function of cells in resisting the micro-organisms of disease and their toxins.

To the mechanism of offence Dr. Reid makes a distinct contribution, in accounting for immunity as a development of the toxin-digesting function of cells. The defensive function he admits. He regards the process of habituation or tolerance as essential to the efficacy of the offensive function. You cannot hope to secure a victory if your men are killed before they use their weapons. But Dr. Reid does not contribute to the physiology of habituation. He speaks of an "increased power of physiological resistance in the cells," but that is only a statement of tolerance, and he does not give us any help in understanding it.

This distinction is vital, and the mechanism of tolerance is probably of more practical import than the mechanism of toxin-destruction. You may avoid a poison, as the teetotaler does; you may develop a ferment which will disintegrate the alcohol, let us say, and split it up into innocuous elements; or your cells may develop a habit of tolerance and not suffer from the contagion of alcohol. We should like to know Dr. Reid's views on this last possibility in the process of immunity.

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*Sulla Dignità Morphologica dei Segni detti Degenerative.*  
(*On the Morphological Value of the So-called Signs of Degeneration.*) By Dr. V. GIUFFORDA-RUGGERI. Rome: E. Loescher and Co. Pp. 117.

This recent work is divided into three chapters, as follows. The first is largely historical, and treats in a philosophical spirit of the general relationship between somatic and psychological abnormalities; then more particularly of this relationship as it obtains in the case of the insane, in that of criminals, in that of prostitutes, and of men of genius. The second chapter deals with the various anatomical stigmata; these are described in fair detail. The third chapter is concerned with three questions:—(a) What abnormal signs predominate in the male sex, and what in the female, independent of the psychosis? (b) What abnormal signs predominate in the male and female sex respectively in the various psychoses? (c) What abnormal signs predominate in the graver forms of psychical degeneration, and what in the less serious, independent of the sex? To these questions the author furnishes replies drawn from his observations made on a large number of patients at the Provincial Asylum of Rome. Some useful statistical tables, dealing with these