

vals is against man being for most purposes a good subject for investigation. In the course of a long life the investigator can but study the characters of three, or it may be four, generations in one family, while influences acting upon the susceptible *fetus in utero* in man, as in all mammalia, introduce complications. The basal facts of heredity have to be made out in the lower animals, in which generations succeed each other with fair rapidity and in which the eggs are fertilized and from the first developed outside the body.

Unfortunately, too few of us are trained biologists; the curriculum of the past, as of the present, laying too little stress upon the value of a broad biological training as an aid in preparing us to discuss those special biological problems which constitute medical study. Thus the medical world in general has to depend upon the biologists proper—upon the zoologists and botanists—for its views upon heredity, and the pure and simple biologists have run riot in their lucubrations upon this subject. Do not think that I mean to belittle them or to indicate that we do not owe much to all the investigations and all the writings of the biologists of the last twenty or thirty years. The facts which they have elicited have been of the highest value. Without these facts we would be nowhere, but the contending theories elaborated by them (perhaps I should be the last to make any such criticism) have been fearful and wonderful, have started from morphological rather than physiological conceptions, and as a result have assumed shapes which would not disgrace the schoolmen of the Middle Ages. While they have appeared to collate and harmonize the facts known at a given moment, new facts have caused them to need modification, and the successive attempts to utilize the old bottles for the new wine, where they have not burst the bottles, have led them to assume most grotesque shapes. In fact there has been developed such a muddle that no amount of midnight oil and wet cloths bound around the temples permits the ordinary mortal to disentangle and follow the course of one theory.

This being the state of affairs, it is little wonder that we have passed by on the other side and have been unwilling to apply the theories of the biologists to the problems of medicine—and this all the more because the trend of these theories has been in apparently strong opposition to medical experience. Of all the workers of late years Weismann has had the most influence upon biological thought, and his theory, if not accepted by all in its entirety—and if, indeed, now found unacceptable—has, nevertheless, profoundly affected the general consideration of this subject of heredity. That theory is very complicated, and with Weismann's successive publications has not by any means become easier to follow or to epitomize in language devoid of technicalities. Still, if