

Each individual is the product of the union of what we may speak of as two organisms—of two germ cells derived from these reproductive glands, one discharged from the father and the other from the mother. The essential fact of the process of reproduction is the passage of a male reproductive cell, or spermatozoon, into the female reproductive cell, or ovum, a passage which is characterized by a very remarkable fusion of the nuclear material of the one with the nuclear material of the other, so that there results a single cell with a single nucleus. The life of the individual—nay, the individual himself—begins the moment that this process is complete, and once thus the individual existence has its origin, the cell proceeds to divide and redivide, and, in man, gaining nourishment from the maternal tissues, this new individual passes the first part of his existence in the uterus, growing rapidly.

It will be seen from this brief account that everything that is brought to this developing individual, embryo or foetus, anything which is absorbed from the maternal blood, is not really *inherited*—it is *acquired* by the individual after the individual has begun its existence. Only that is truly inherited which is a property of the conjugating ovum and spermatozoon, or which is developed during this act of conjugation, or conception, by the interaction of the one cell upon the other. Everything affecting the individual after this moment which is not conveyed from the original conjugating cells, is acquired, so that we have to distinguish clearly between truly inherited conditions and conditions which are acquired either during the uterine existence of the individual or by the individual after birth. Thus we can divide diseases into (1) inherited, (2) those of intrauterine acquirement (these we term congenital), and (3) those of post-natal acquirement.

Once we make this distinction we limit materially our subject. If, for instance, a child is born with the lesions or disturbances of active tuberculosis or syphilis, it is not right to speak of that as inherited syphilis or inherited tuberculosis until we are quite sure that the disease actually affected either the ovum or the spermatozoon, which conjugated to form the individual.

Now, as a matter of fact, every consideration points to the conclusion that this cannot be. Both these diseases I have mentioned are obviously of microbic causation—and we cannot imagine the microbes passing into, and being present in these minute cells without setting up so much disturbance that they destroy those cells and render conjugation impossible. And even if they were there, they would not be actual properties of the material of the germ cells; they would be accidental inclusions which, in an inert condition, had not acted on the