

# The Midwife.

## MIDWIFERY AND HEREDITY.

Every student of the Science of Midwifery should be seriously interested in the study of Heredity, and it is with a view of stimulating midwives to study this very fascinating and rapidly developing subject that this article is written. It is only possible to lightly touch upon some of the many points and questions which particularly bear a relation to Midwifery.

Never before was there more widespread interest in Heredity. It is only within recent years that an attempt has been made to formulate laws and to suggest hypotheses to account for its phenomena. The rapid advances in the study of biology, bacteriology and pathology have made this possible, but there still abound misleading and unauthenticated generalisations as to its bearing on the issues of individual life. It is only those who seriously study the subject who realise that as yet the facts are meagre, that the modern fates—heredity, function and environment—closely interact and complicate deductions, and that the subtle processes in the development of the germ are still to a large extent wrapt in mystery.

Scientists and philosophers are alike baffled and at variance as to the relative importance of the influence of Heredity upon the human organism.

In the first place it is essential to define what the term means to the biologist; it refers usually to the phenomena of "like begetting like." Thomson puts it thus: "Every living creature arises from a parent or parents more or less like itself. This reproductive relation has a visible material basis in the germinal matter (usually egg-cell and sperm-cell) liberated from the parental body or bodies. By inheritance we mean all the qualities or characters which have their initial seat, their physical basis, in the fertilised egg-cell."

The fertilised human ovum has the potentiality of a new living creature, but it depends on a complex environment whether this potentiality be realised or no. Development and peculiarities due to environment and to nurture are inextricably associated with the hereditary qualities of the germ-plasm. Compare a child with his parents; it is evident that he is at once like and unlike, both a reproduction and

an original. Are the differences inherent in the germ-cells—a hark back to ancestors—or due to environment? Is "race everything," as Disraeli said?—or are life conditions as potent or more potent in determining the individual? Facing facts, one is bound to modify the statement "like begets like" to "like tends to beget like." Whence does the marked variation spring? Biology teaches us that the embryo has a dual inheritance. Recent discoveries confirm the prophecy of Huxley, made in 1878: "It is conceivable that every part of the adult contains molecules derived both from the male and female parent, and that, regarded as a mass of molecules, the entire organism may be compared to a web of which the warp is derived from the female and the woof from the male." But the inheritance is more than dual, since the two minute organisms represented by the fertilised ovum are the complex products of a long line of ancestors. This may rationally account for many of the variations in the offspring. The child inherits partly from its parents, partly from its ancestry. This inheritance is, as it were, a mosaic to which many generations have contributed.

Many characteristics may be latent for long periods; in other cases they find expression in successive generations, as in cases of albinism, or absence of pigment, and in certain cases of physical peculiarities. Farabee gives details of a family many of whom had all the fingers and toes two-jointed, like the thumb and big toe. In a family tree of 69 there were 36 with this abnormality. Certain other abnormalities, such as hare-lip, cleft palate, spina bifida, also occasionally recur in a family, but it is a question as to whether this arrested development is not to be attributed to the inheritance of "deficient developmental vigour" rather than to the inheritance of the actual defect. One of the most evident heritable abnormalities is hæmophilia. Curiously enough, it is usually the male members of the family who suffer. Although the females are exempt, their male offspring are affected—*i.e.*, hæmophilia lies latent in the female.

Modern observations have tended to reduce the number of hereditary diseases. Parents suffering from insanity, nervous disease, tubercle, gout, etc., are likely to beget descendants with hereditary tendencies or pre-

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