

two forms, and the offspring from two birds with differently coloured tails have their tails affected.

The various tissues of the body plainly show, as many physiologists have insisted,⁴⁹ an affinity for special organic substances, whether natural or foreign to the body. We see this in the cells of the kidneys attracting urea from the blood; in curare affecting certain nerves; *Lytta vesicatoria* the kidneys; and the poisonous matter of various diseases, as small-pox, scarlet-fever, hooping-cough, glanders, and hydrophobia, affecting certain definite parts of the body.

It has also been assumed that the development of each gemmule depends on its union with another cell or unit which has just commenced its development, and which precedes it in due order of growth. That the formative matter within the pollen of plants, which by our hypothesis consists of gemmules, can unite with and modify the partially developed cells of the mother-plant, we have clearly seen in the section devoted to this subject. As the tissues of plants are formed, as far as is known, only by the proliferation of pre-existing cells, we must conclude that the gemmules derived from the foreign pollen do not become developed into new and separate cells, but penetrate and modify the nascent cells of the mother-plant. This process may be compared with what takes place in the act of ordinary fertilisation, during which the contents of the pollen-tubes penetrate the closed embryonic sac within the ovule, and determine the development of the embryo. According to this view, the cells of the mother-plant may almost literally be said to be fertilised by the gemmules derived from the foreign pollen. In this case and in all others the proper gemmules must combine in due order with pre-existing nascent cells, owing to their elective affinities. A slight difference in nature between the gemmules and the nascent cells would be far from interfering with their mutual union and development, for we well know in the case of ordinary reproduction that such slight differentia-

⁴⁹ Paget, 'Lectures on Pathology,' p. 27; Virchow, 'Cellular Pathology,' transl. by Dr. Chance, pp. 123, 126, 294. Claude Bernard, 'Des

Tissus Vivants,' pp. 177, 210, 337; Muller's 'Physiology,' Eng. transl., p. 290.