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For the explanation of the condition of acquired bacterial immunity, or for the production of a specific lytic serum, he elaborates his hypothesis somewhat as follows, still considering it in the light of a nutritive phenomenon. The protoplasmic molecule is provided with side chains which have two haptophore groups, one which will combine with and hold the introduced molecule, whether it be a bacterial cell or a nutritive molecule, and the other which will combine with certain ferment-like bodies which are circulating in the blood and which resemble the toxines in this respect that they have a haptophore apparatus which binds them to the side chain, and a ferment-like apparatus which enables them to destroy the molecule caught by the other haptophore group of the side This ferment-like apparatus he calls the zymotoxic portion. chain. He conceives the process which takes place during active bacterial immunization as follows: The introduced bacteria, say the typhoid bacillus is caught by the side chain, and at the same time an equivalent amount of the complimentary body, the result is that the zymotoxic portion of the compliment is brought into action on the bacillus or its protoplasmic molecule and it is dissolved ; the more bacteria are brought in the more these side chains are used up, and following the same reasoning as in the case of the toxine the side chain is regenerated. These are again destroyed and so the cell is stimulated to production and then to overproduction of side chains until these separate from the central nucleus of the molecule and so appear in the blood as the intermediary bodies or immune bodies. To the side chains which appear as the antitoxines Ehrlich gives the name of receptors of the first order. To those which appear in the blood as the intermediary bodies he give the name receptors of the third order, or from their possession of two haptophore complexes, the one for the bacterial cell and the other for the compliment, amboceptors.

It will be seen that there must be innumerable receptors of the third order as they play a part, not only in the comparative unimportant process of immunization, but also in the much more important process of cell nutrition. In regard to the complimentary bodies however there has been a difference of opinion as to whether they were few or many. The fact that the serven from many different animals could be used to reactivate a specific immune serum lead some observors to consider them as simple compounds common to a number of different animals, but the most recent investigations of Ehrlich's laboratory seem to definitely show that they must be very numerous, with varying grades of affinity for the receptors which are produced in the immunization experiments.

These theories of Ehrlich's seem so extraordinary to one who is not familiar to the results of the recent investigations in bacteriology that it