

description of which we have omitted for brevity's sake, as already stated. We will only state, with regard to Ehrlich's experimental investigations of hemolysis, that they have been crowned by most positive and unequivocal results. They show that under the necessary precautions a chemical union takes place between the immune-body and the red blood corpuscles; also between the immune body and the "addiment"; but not between the red blood corpuscles and the addiments before the immunity body is added. The three ingredients (1) the immunity-creating body (viz., blood cells, bacterium, toxin, etc.), (2) the immune body, and (3) the addiment, forcibly remind one, by the way, of Schmidt's theory of the formation of fibrin by the combined action of also three substances, viz., fibrinogen, fibrinoplastin, and fibrinferment. In the latter instance a solid body is formed, while in the former a solid substance is converted into a solution.

By the immune-body, then, the digesting ferment is gathered from the blood serum in which the percentage of digesting ferment is very small and transferred in relatively very large quantities to the erythrocytes, so that its concentration and therefore activity in these is very much greater than in normal blood. It is possible, nay probable, that in normal blood very few, perhaps only one single body, exists which has digesting properties, but that a great many different kinds of specific immune-bodies may accumulate in this fluid, as has been suggested by Gruber and others. According to Ehrlich, it will be premised that in different immune-bodies only that group of atoms differs (in chemical structure) by means of which the immune body has a specific affinity for the immunity-creating substance, but that all immune-bodies have one group of atoms in common by which they combine with the digesting substance—the addiment. From this standpoint the otherwise so obscure origin of the lysins is readily explained by Ehrlich's side-chain theory. According to Ehrlich's definition, the side-chains are the groups of atoms which are bearers of definite atomcomplexes that are capable of attaching to themselves certain groups of atoms and to enlarge thereby the molecule of protoplasm. As early as 1885 Ehrlich pointed out that these, by the side-chains of protoplasm assimilated atomcomplexes by their entrance into the living protoplasm, more readily undergo oxidation, and thus form the nutritive material *kat' exogen*. The study of immunity has widened this view considerably, and has taught that the different antibodies represent detached side chains, and that the process of immunization