

in severity. In six other cases, which were of long duration, I could perceive no curative effects. In a case of general paresis, no therapeutical influence was apparent beyond that of arresting the delusions of grandeur for a few days. In a case of hebephrenia, however, occurring in the person of a young lady eighteen years of age, the effect has been most happy, the symptoms entirely disappearing in a little more than a month's treatment.

In several cases of nervous prostration, the result of long-continued emotional disturbance, and in which there were great mental irritability, dyspepsia, physical weakness, loss of appetite, and constipation, relief was rapidly afforded. In three other cases, in which the most notable symptom was functional cardiac weakness, the effect has been all that could have been desired. In these cases, it was employed in conjunction with "cardinē," the extract of the heart of the ox, made in the manner already described.

It is not my intention, at the present time, to bring before you all the points of this interesting subject, or to allude further to experiments in the treatment of other diseases, which are not yet concluded. In the near future I shall enter more largely into the consideration of the matter in all its details. I will only add now that I have used, with excellent results, in cases in which it seemed to be indicated, the extract of the testicles of the bull and also that of the pancreas of the ox, and these investigations also will be given to the profession at an early day. The first named of these—"testine"—I have found to be of the greatest efficacy in the treatment of sexual impotence, when it has been the result of venereal excesses, and in cases of too frequent nocturnal seminal emissions.

It has recently been alleged by some medical authorities, that there is no difference in the physiological or therapeutical action of medicines, whether they be introduced directly into the blood by hypodermic injections, or taken into the stomach, but it is scarcely worth while to seriously combat this assertion. For, while it may be true that some substances are not altered by the gastric juice before they are absorbed into the system, it certainly is not true of many others, and it surely is erroneous as regards those of animal

origin. Indeed it is, I think, doubtful if anything capable of being acted upon by the gastric juice, and of being absorbed into the blood, gets into the system in exactly the same form in which it got into the stomach. And I am very sure that all organic matters, without exception, undergo radical changes under the action of the gastric juice, in some cases amounting to decomposition and recomposition.

It is well known that Woorara, the virulent arrow poison used by the Indians of South America, and which is invariably fatal to animal life when injected into the blood, is innocuous when taken into the stomach, even in very large quantity. I have ascertained, by actual experiment, that the poison of the rattlesnake may be swallowed with impunity. During the course of my medical service in the army on the western plains, I have collected a large quantity of rattlesnake poison. A small fraction of a grain of this injected hypodermically, was sufficient to kill a dog in a very few minutes, while previously the same animal had been made to swallow half a drachm, without the production of any apparent result. Experiments made with the saliva of hydrophobic animals prove that it is rendered harmless by the action of the gastric juice. The vaccine virus may certainly be swallowed with impunity, as has been shown by repeated experiments upon animals.

Relative to the animal extracts to which I am now referring, I have ascertained beyond question that, if they are inclosed in capsules, so as to reach the stomach without coming in contact with the mucous membrane of the mouth, they are absolutely without physiological or therapeutical effect so far as can be perceived, even when given in quantities of a teaspoonful or more; but if dropped upon the tongue, in double the quantity used for hypodermic injection, and allowed to remain in the mouth without being swallowed—thus avoiding the action of the gastric juice—they are absorbed, and exert a slower but still decided effect, though nothing comparable to that produced when they are administered hypodermically.

Now, gentlemen, a few words in regard to the theory upon which these animal extracts exert these remarkable effects. I have thought a good deal upon the matter, and I think I have arrived at something like the truth. But, after all, a theory,