ensued. This cedema was due to a direct action on the pulmonary vascular walls. He now endeavors to find out if it acts similarly upon the brain. A washout canula penetrating the dura and connecting the cranial cavity with a Basch manometer, was fixed tightly in the skull, and at the same time the blood pressure was registered from the central end of the carotid, while the peripheral end was used for injection. The solution used was iodine pure 4 gm., sodium iodide 4.20 gm and distilled water 200. The control injection of sodium chloride 0.6% and sodium iodide 5% caused a slight but temporary rise in blood pressure, with slight rise in cerebral pressure, followed by rapid fall, while iodine solution caused at once a slowing of the pulse followed by a marked rise in blood pressure accompanied by a very great rise in cerebral pressure. Now while stimulation of the sciatic nerve or compression of the aorta or strychnine cause a rise in cerebral pressure, coincident with the rise in blood pressure, yet this rise does not compare with that from iodine, the latter being three or four times as great as that due to a mere overfilling of the cerebral vessels. It still causes a rise after chloral. If an opening is first made in the membrana obturatoria then the iodine may cause no rise in cerebral pressure, so that we are forced to the view that here also a transudation of fluid from the vessels occur.

THE NEUTRALIZING OF THE TOXICITY OF TOXINES BY THE DIGESTIVE JUICES.

NENCKI, SIEBER AND SCHOUMOW, SIMANOWSKI.—The neutralizing of the toxicity of toxines by the digestive juices. (*Cent. f. bakteriologie*. Abt. I, 1898, v. 23, pp. 840, 880.) While it is known that a certain dose of toxines as those from the diphtheria, cholera or tetanus bacillus and certain albumens, as abrin and ricin when injected subcutaneously cause

death, yet much larger doses may be given per os or per rectum without injury. Ransom states that 300,000 times the minimal lethal dose of tetanus toxine may be injected into the stomach of guinea-pigs without injury, and about half this amount The reports vary as to per rectum. the ability of the digestive secretions to destroy them. While acids weaken the diphtheria and tetanus toxines, yet still they are less active than normal when taken through the alkaline mucous membrane of the rectum and on direct injection into After injection of the duodenum. the diphtheria toxine into the mesenteric vein, the animal dies with all the typical symptoms as soon as after the same dose into the jugular vein, so that the neutralizing of this toxine is not due to the liver. It was suggested that the toxines pass through the gastro-intestinal tract unabsorbed, but after 100 times the lethal dose of the diphtheria toxine, the fæces filtered through a chamberlain filter did not kill, likewise the urine, even after 100,000 times the lethal dose of the tetanus toxine. Again at times even 100 times the lethal dose of the diphtheria toxine may render the animal ill. It is probable that the digestive enzymes only slightly change the toxine molecule, somewhat as they do albumen into These products derived albumose. toxines are called toxoses from or toxoids and may be absorbed. Next the walls of the stomach, small and large intestines were ground up with 0.6% sodium chloride and filtered through a chamberlain filter; these sterile filtrates on mixing with the diphtheria toxine and injecting proved to have distinct but not constant neutralizing powers. This was especially marked in the case of the extract from the walls of the small intestine, and least for those from the gastric walls. As during investigations on the cattle plague they found that mucin solution destroyed red corpuscles, they suspected that per-