

administered in the same time.—*British and For. Med. Rev.*, from *Bulletin Gen. de Thérap.* Nov., 1836.

18. *Physiological effects of Tannin.*—M. CAVARRA has lately made some experiments on this subject. He administered the tannin in its pure state, to dogs, to the extent of 12 grains, and himself took for three days running three pills, each of 2½ grains. In both cases obstinate constipation was the only effect produced. He killed a dog to whom he had given it, and found the mucous surface of the intestines dry, and the fecal matter hard and collected in the colon, the membrane of which, when examined with a magnifying glass, displayed a remarkable closing of the pores and villi. M. C. has successfully treated with pure tannin six cases of diarrhœa, twenty-three cases of leucorrhœa, and five of pulmonary catarrh, with some cases of hæmoptysis, hemorrhage from the rectum and vagina, and a few of gonorrhœa. He administered it either in the form of pills or of a solution.—*Revue Thérapeutique.*

19. *Therapeutic applications of Indigo.*—This substance was first employed as a therapeutic agent in the treatment of epilepsy, by Lenhossek, and afterwards by Grossheim and others. Its efficacy was afterwards tried by Ideler, a Prussian physician; and among twenty-six patients, in whom indigo was experimentally tried, six individuals recovered completely; three were dismissed cured, who had after intervals of from eight to twelve months a relapse, under the operation of causes which might have induced epilepsy; of eleven patients, the condition underwent an essential improvement; and in six individuals no change took place. At first, the patients were wont frequently, though without effect, to vomit; after some days this ceased, and in its place, there took place diarrhœa, which at first caused from six to eight motions daily, and was occasionally accompanied with moderate colicky pain, but afterwards moved the bowels only two or three times daily, but with fluid motions, and continued so long as the indigo was used, but without impairing the appetite or digestion. The curative reaction of the nervous system upon the agent was principally indicated by this circumstance, that the epileptic symptoms in the first period returned more frequently, and attained a higher degree of intensity, but afterwards became less frequent, milder, and at length entirely disappeared.

Most usually the indigo was exhibited in the form of electuary, with a proportion of the aromatic powder, because, alone, it is very disagreeable to the patient. At first it was administered in the dose of one scruple; this was quickly increased to a drachm and more, so that daily from half an ounce to one ounce might be used for a series of months without difficulty.

In a paper in Graefe and Walther's Journal, entitled Contributions to Casnistics, by D. Moritz Strahl, of Berlin, are some observations on the operation of the same remedy in spasmodic diseases. In the trials made by Dr. Strahl with this agent, in ten cases of inveterate epilepsy, in which it was given in progressively increasing doses, of from one scruple three times a-day, to half an ounce daily for the space of ten weeks, it produced not the smallest effect. During its employment the stools became blue, and the urine assumed a dark green colour. Excepting slight inconvenience of the stomach, no operation of the remedy upon the organism could in general be observed. On the other hand, indigo, in four hysterical females, one of whom was already in the age of decrepitude, evinced the presence of very remarkable phenomena. In all, after about two drachms daily had been taken, violent pain in the region of the kidneys, like colic, took place; the urine assumed a deeper intensity of colouring than in male patients, and at the bottom of the vessel was observed no trifling quantity of fine indigo powder. The intense renal pain continued for four days, and at length subsided under the continued employment of an oily emulsion. In one case only did there ensue a remission of the spasms, and the patient was not entirely well three months after the cure was completed. The operation of the indigo, further, on the womb, was very remarkable, since, in two cases, an amenorrhœa was radically cured, while the spasms were throughout undiminished. In two cases of St. Vitus's dance, in a boy of 12 and a girl of 9 years, the indigo was throughout unavailing.

The different clinical trials made with indigo by Dr. Roth, furnished the fol-

lowing results. In epileptic cases, the remedy evinces almost always the same immediate operation; but its subsequent consequences are regulated by the degree of vitality of the nervous system of the patients, and the kind and duration of the epilepsy. These effects are beneficial in all idiopathic epilepsies, curative in those of this class which have not been of long continuance; and in very chronic idiopathic epilepsies, indigo diminishes the violence and the frequency of the paroxysms. Of symptomatic epilepsies, only a few are alleviated by the use of indigo, none are cured.—*Edinburgh Med. & Surg. Journal*, from *Neue Wissenschaftliche Annalen*.

20. *Physiological operation of Indigo*.—In almost all patients, the use of indigo is succeeded first by squeamishness and vomiting, though the substance itself be tasteless and inodorous. The violence of the emetic efforts appears to be regulated by the individual irritability of the gastric nerves of the patients. Females vomit more readily than males. The vomiting is at first continuous, that is, during the continued use of the agent, and often so violent that the indigo must be given up; but after several days it ceases. It has otherwise the peculiarity that the contraction of the abdominal muscles and the diaphragm is much less violent, and the debility is less considerable than after vomiting induced by other means. The contents of the stomach present nothing unusual, even in respect to taste, only they are of a very dark blue colour, and the fluid is intimately mixed with the indigo, from which it may be inferred that the gastric juice contributes very much to the digestion of the indigo.

Diarrhœa, the second physiological effect of indigo, takes place in general first when the vomiting ceases; yet from this many patients remain altogether exempt. In general, diarrhœa, when once commenced, continues as long as the patients take the indigo, and increases in intensity during the continued use of the remedy. The motions are generally soft, semifluid, and of a dark blue-black colour. The vomiting and diarrhœa are frequently accompanied with slight colicky pains in the stomach and bowels, which, however, may be so violent as to require the indigo to be given up. Those patients who are exempt from vomiting appear to be attacked with more violent colicky symptoms. By the continued diarrhœa there is formed a species of gastritis (irritation of the mucous membrane of the stomach and bowels,) with loss of appetite, headache, and giddiness, and sometimes the sense of dazzling lights in the eyes.

The third physiological operation of indigo is seen in the urinary secretion. The urine assumes a dark violet colour, deepest in the morning. On the quantity of the urine the agent seems to exercise no influence.

Dr. Roth did not observe coloration of the sweat. But it is remarkable, that one patient, after the use of indigo for several weeks, fell often into slight convulsions, similar to those which ensue on the employment of the nitrate of strychnia.

The dose of indigo is regulated by the irritability of the stomach. It is best to begin with grains, and rise gradually to drachms, or even several ounces daily. Dr. Roth gives the preference to the form of electuary, with proportional additions of the aromatic powder, or Dover's powder, as correctives. In the formula employed in the Hospital of the *Charité*, at Berlin, half an ounce of powdered indigo, rubbed up with a few drops of water, is mixed with half a drachm of aromatic powder, and one ounce of simple syrup, and to be taken in divided doses in the course of the day. Many even take from a half to two ounces, twice and four times daily for the space of several months.

In what manner indigo operates, and to what class of medicines it belongs, is very difficult to determine, and certainly cannot be inferred from its constituent parts. Probably its active principle is seated in the peculiar colouring matter. Though in many respects the operation of indigo is similar to that of tartar emetic, yet this attacks more forcibly the energy of the organism. In all the patients after the use of the indigo the spasms were at first more frequent and more intense, but shorter in duration; but after some weeks their intensity was manifestly abated, and at length they entirely disappeared. All the patients cured by indigo laboured under idiopathic epilepsy, that is, epilepsy without symptoms of organic lesion. Among those who were improved were several idiopathic and symptomatic cases. In one case of epilepsy, which ensued after a remarkable contusion of the head, after the employment of indigo, a moderately long intermission took