Bigg has, as I have been informed by a manufacturer of surgical instruments in Philadelphia, proved a failure, and the manufacture of it has been stopped. Displacement of the toe is the obstacle to overcome. This cannot be done by violence without great suffering and distress to the patient, but can be surely and safely accomplished by gentle means. It is necessary that a large boot, shoe or slipper, made of cloth or other light material, be worn during treatment. A cot, made of muslin or some soft firm fabric, is placed upon the great toe; one or more strips of adhesive plaster are placed upon and around the heel, the free extremities of which extend towards the free end of the cot upon the toe. The ends of the plaster and cot are then connected by means of a strong rubber ribbon, and the *persuasion* of the toe to return to its natural position commences.

It is sometimes necessary to use other strips of plaster to retain the apparatus in position, one about the instep and one about the ball of the foot, while another is sometimes bound about the great toe and attached to the second, in order to keep each in proper position.

The contractile power of the external ligament and adductor pollicis pedis muscle is overcome without injury. If they do not readily yield, then they may be partially divided by the operation of tenotomy without any dangerous consequences. The danger of inflammation of the joint, resulting from the violent replacing of the toe, is avoided. The antagonistic power of the internal lateral ligament and abductor pollicis pedis muscle is once more regained. The flexor and extensor muscles perform only their legitimate functions. The horrible distortion disappears, and your patient thanks you, with a grateful consciousness that you are, like Luke of old, "the beloved physician."

PANCREATINE, AND ITS USELESSNESS.

BY E. H. HOSKIN, M.D., LOWELL.

THE following experiments, their history and conclusions, may be interesting, and possibly useful to the profession.

I am much indebted to my friend, Mr. Edward J. Moore, of the City Hospital (Boston), for assistance in these experiments, as well as in others, that, during the last two months, have been undertaken in my office, and of which you already have had one or two accounts.

The fresh pancreas of a cat, killed during full digestion, was divided in two equal portions. One part was simply digested with water, the other was digested at a temperature of 100° Fahr., in one ounce of water with one grain of Sheffer's pepsin and four drops of hydrochloric acid. Ten grains of pancreatine in powder (Hawley's make), one grain Sheffer's pepsin, four drops hydrochloric acid and one ounce

of water, at 100° Fahr. All these three were digested for seven hours, at the same temperature, with the following results. On adding equal portions of olive oil to the three samples, the simple infusion of the fresh pancreas made a perfect emulsion, which remains to this day (sixteen days thereafter). Neither of the other two produced this emulsion with the oil, thus showing, most conclusively, I think, that no good can be derived by the patient taking, when ordered, the expensive pancreatine, or any of its glyceroles, or other solutions; for in the stomach the pancreatine will be digested as would any other nitrogenous matter.

Dr. Dobell certainly recommends (in his work on tuberculosis) the giving of pancreatine, but he does not so urgently speak of it as of the pancreatised solid fat, and, in fact, I think his position in regard to that is somewhat equivocal.

I would urge, as corroborative of my views on this matter, that the gastric juice acts its part as a converter of food into peptone, solely in the stomach and first part of the duodenum. At soon as the bile comes in contact with the chyme, peptic digestion is at once totally arrested; then the pancreatic juice performs its functions in the digestion or emulsion of fat, and its other functions relative to other matters brought in contact with it.

Lehmann, in his *Physiological Chemistry*, and Dalton and other physiologists, call in question this act and property of bile, but Thudichum, in his *Chemical Physiology* (1872, page 21), says: "Bile precipitates pepsin, and when it regurgitates into the stomach, arrests digestion completely. It therefore puts an end to pepsine digestion in the duodenum, and favors the alkaline pancreas digestion."

I may also quote from Dr. Chambers's work on "The Digestions," page 106. "By this the fat is partially emulsified, and, according to the microscopic examination by Dr. Bernard, repeated by Dr. Dobell, emulsified into finer globules than by other re-agents. What, however, is of importance, is, that they do not re-unite, but the emulsion remains complete after exposure to the action of gastric juice and hydrochloric acid. It is, therefore, capable of passing through the stomach unchanged, and being supplied to the intestinal absorbents in a finely divided state."

I certainly was a little doubtful about the tenability of my position, but, on looking through Thudichum's work, was both relieved and, I may say, gratified to find that what I had previously advanced had the higher sanction of his investigation and authority.

It would appear, then, that the non-digestion of fats may depend on two conditions: when the liver does not secrete the proper quantity of bile, and at the proper time discharged; and when again the pancreas does not perform its proper functions. In both cases of disease, nutrition may be promoted by the use of pancreatine emulsion, as this form of fat will pass through the stomach, to be ab-

sorbed at the proper time and place; thus, the system being kept in a nearer approach to the normal state, will give even the affected organs increased chance to recuperate, and thus lead to restoration of the general health.

To sum up—the whole evidence would go to prove that the only proper way to make use of pancreatine, or any of its solutions, is in the form of an emulsion with fat or with some oil. The physician will be disappointed, and the patient injured in his pocket and health, as much by the use of pancreatine powder, &c., as by the use of inferior and inert pepsine.

I think it is the duty of the physician to look into the properties of the medicines he prescribes, and not be content with the assertions of those who make a business of making most *elegant* pharmaceutical preparations, but very often most *useless* therapeutic agents. The apothecary often has to take the blame for the inutility of his goods, but he has to dispense what is ordered by the physician, who frequently (especially in this present generation) knows nothing, or comparatively nothing, of how to determine the value of the compound he prescribes.

VIBRATORY OR OSCILLATORY MUSCULAR MOVEMENTS AND THEIR SIGNIFICANCE. BY C. E. BROWN-SEQUARD, M.D.—Most writers on wasting palsy give, as a diagnostic sign of that affection, the existence of undulations in bundles of muscles preceding their atrophy. They consider that such a symptom is always a sure indication that the attacked muscles are soon to waste away or are already wasting. I have seen three cases in which this peculiar vibration, occupying alternately the various bundles of some muscles (in one case nearly all the striped muscles), had existed too long for our accepting that the trouble has such a diagnostic meaning. In one case it had existed in one arm and the chest, on the same side, for several years. In a second case, in a young gentleman attacked with epilepsy, it had existed five years. When I expressed some fears to his father, an intelligent member of Parliament, the reply was that the trouble could not have the significance I attached to it. This father of my patient was a very strongly built man, nearly 53 years old at the time I saw him; his muscles were very large, hard, and strong, and his general health was excellent. He assured me that every muscle in his limbs and trunk occasionally was seized with the peculiar fibrillary vibrations usually belonging to wasting palsy, and that it had been so all his life since some time before he had reached puberty, i. e., more than thirty years. Not a day passed without his finding a great many muscles, or rather most of the muscles, being attacked. Hardly ever was he an hour without some vibration of many muscular bundles. I examined his arms and legs, and found that the movements, then and there occurring, were exactly similar to those we see in genuine cases of Cruveilhier's atrophy or wasting palsy. This symptom, therefore, has not the decisive value that it is admitted to possess in the diagnosis of impending wasting palsy.—*Archives of Scientific and Practical Medicine.*