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FÆCAL VOMITING AND REVERSED PERISTALSIS IN FUNCTIONAL NERVOUS (CEREBRAL) DISEASE: A SUMMARY OF CASES AND CONCLUSIONS.

BY F. PARKES WEBER, M.D., F.R.C.P.

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Some of the older literature bearing on the question of reversed peristalsis in the alimentary canal has been collected by J. J. Woodward.[1] A. G. Guainierio[2] gave the story of a man who vomited a suppository introduced into his rectum. J. Matthias de Gradibus[3] related the case of a girl, aged 12, who not only vomited fæcal matters, but afterwards enemata, which were ejected by the mouth shortly after they were introduced into the anus. This state of things lasted three days, during which suppositories introduced into the rectum were vomited in the same manner; when it was attempted to keep a suppository in place by a string, the string broke, and it was speedily vomited. D. S. Sennert cited a case observed by J. Optheus, in which a piece of tallow candle, used as a suppository, was vomited shortly after its introduction. Diemerbroeck recorded a case in which a suppository was vomited, and likewise a case in which an enema was ejected by the mouth. Morgagni has referred to a number of similar cases.

The following case I shall narrate in some detail, as I had an opportunity of observing the patient herself during some

[1] "Medical and Surgical History of the War of the Rebellion," Washington, 1879. Part II., vol. i., p. 836.

[2] *Tractatus de Fluxibus*, Cap. 2, Lyons edition of 1534, fol. 136.

[3] *Practica, de Aegritudinibus Stomachi*, Cap. 5, *de Vomitu*, fol. 213, Venice edition, 1502.

part of the original illness[1]; moreover, she was temporarily under my care about six years afterwards for somewhat similar, but less severe, symptoms.

Rosa S., aged 22 years, a fairly healthy-looking young woman, was admitted into the German Hospital, October 19, 1896. According to the history given, the patient had been quite healthy up till the time of her marriage in 1896. On the night of her marriage her husband had hæmoptysis[2] and died not long afterwards. From this time the commencement of her symptoms must apparently be dated.

The chief of these symptoms were the following:— Vomiting (sometimes with a little blood), distension of the abdomen, and great constipation. There was no evidence that the idea of possible pregnancy had anything to do with the distension of the abdomen, which was afterwards found to disappear at once under chloroform. The vomiting persisted on and off. At one time there was undoubtedly fæcal vomiting. Actual scybala or formed fæces from the large intestine were certainly vomited on more than one occasion. At times, when an oil enema was administered, some of the oil reappeared in the vomited matter. In order to guard against imposture and to obtain an accurate diagnosis, an enema coloured with methylene blue was administered by the nurse. Some of the methylene blue appeared in the vomited matter within ten minutes after the administration of the enema. Any deception on the patient's part was altogether impossible.

This observation and the history of hæmatemesis seemed to furnish reasonable grounds for supposing that a fistulous communication between the colon and stomach or duodenum might exist. It may be noted, however, that when the gastric contents were evacuated by the syphon tube immediately after an enema containing methylene blue had been administered, no methylene blue was found to be present in the contents of the stomach. This showed that the methy-

[1] Vide *St. Bartholomew's Hospital Reports*, 1898, vol. xxxiv., p. 315, where, by the kindness of my colleagues, Dr. Port and Dr. Michels, I was allowed to give notes of the case.

[2] This part of the history was, as I subsequently ascertained, inaccurate in my original account. I have therefore corrected it here.

lene blue injected by the rectum took at least some minutes to reach the stomach. To make a long story short, it may be stated at once that during the patient's residence in the German Hospital two careful exploratory laparotomies were performed. At neither of them, however, was any abnormal condition whatever detected. One of the laparotomies was performed below the umbilicus, the other above. At the second operation the stomach itself was opened and explored. On both occasions the wounds healed rapidly and no unsatisfactory results occurred. There may, indeed, have been some temporary improvement in the general condition following the operation. The improvement, however, was certainly not permanent, and the patient's condition varied considerably at different times.

During the patient's residence in the German Hospital her temperature was found every now and then to be above the normal, and this appeared to be especially the case when she was not being closely observed. It was not, however, proved that she simulated the fever by manipulating the thermometer. Before the patient left the hospital (February 4, 1897) she looked well, had a fresh colour, and moved about quickly, but was still troubled with vomiting, constipation, and distension of the abdomen.

On February 5, 1897, she came under the care of Sir F. Treves at the London Hospital. Her symptoms there were much the same as at the German Hospital, and so convinced was he that some local disease might be present that he determined to do a third laparotomy. This was actually performed, and, though the exploratory operation gave a negative result, no evil consequences resulted, but on the contrary, the patient's condition seemed to be improved after the operation. Treves has alluded to the case in his paper on "Abdominal Section as a Medical Measure," read at the Medical Society of London on February 28, 1898.[1] The portion of his paper relating to the patient's progress after admission to the London Hospital I will now quote at length, since it amply confirms some of the points alluded to above:—

[1] *Transactions of the Medical Society*, vol. xxi., p. 224.

"Shortly after admission she exhibited definite hysterical attacks. She had, by some means, acquired the power of causing the mercury in the clinical thermometer to rise to the limits of the instrument. One medical man who had attended her wrote to say he had recorded a temperature of 110° F. No action of the bowels could be obtained. She would howl with pain for hours. All food taken by the mouth was vomited; nutrient enemata were given by the rectum, but they also were vomited. A careful investigation of this vomiting of enemata was carried out by my house surgeon, Dr. Sears, with the aid of the sister of the ward. An enema of castor oil was given; within ten minutes from the time of the introduction of this drug into the rectum the whole of the castor oil, as demonstrated by actual measurement, was vomited from the mouth, together with a small scybalous mass. A few days later, in order to further test this phenomenon, an enema of one pint of water stained a deep colour by methylene blue was injected into the rectum by the sister in the presence of the house surgeon. The whole of this enema, to the amount, that is, of one pint, was vomited by the mouth in ten minutes. I was extremely ill-disposed to carry out a third abdominal section. The only excuse for it was that, while at the previous operations the stomach had been carefully examined, an equally detailed examination had not been made of the colon. As the patient resisted all forms of treatment, vomited all she took by the mouth, vomited nutrient enemata, and had no action of the bowels, and as she was becoming somewhat alarmingly feeble, I resolved once more to carry out an abdominal section as a forlorn hope. The abdomen was opened in the left semilunar line above the level of the umbilicus. The rectum and the whole length of the colon were examined with the greatest care and minuteness, and found to be absolutely normal. Some few adhesions existed around the scar of the wound in the stomach, but, with this exception, the abdominal cavity did not exhibit any trace of disease. The patient thought fit to be very ill after the operation, her respirations at one time reaching 140; she could not be induced to speak, and she went through all the popular phenomena of dying with startling effect. As these death-bed displays were not encouraged, she took finally to screaming, and became so intolerable in the ward that she was removed to an isolated room. The absence of an appreciative audience appeared to have an immediate effect upon her symptoms, for she soon ceased to complain, the bowels acted without difficulty, the vomiting ceased, the temperature remained normal, and before

she left the hospital, on March 19th, she may be said to have been perfectly restored to health. The highest temperature she was able to develop while in the hospital was 109°. She had stated that she could produce this heroic fever by very slowly squeezing the bulb of the thermometer between her teeth. An attempt to produce this elevation of the mercury by the means indicated only led, however, to the destruction of two thermometers."

After leaving the London Hospital the patient again attended the out-patient department of the German Hospital, where, in September, 1898, I saw her again whilst doing the out-patient work for my colleague, Dr. Michels, during his temporary absence. There was no longer any vomiting, but a marked tendency to flatulent distension of the abdomen still persisted ("hysterical tympanites").

In December, 1902, the patient was temporarily under my care at the German Hospital for hysterical vomiting and hysterical tympanites. She at that time showed right hemianæsthesia (of which she was not aware until it was discovered by medical examination), hysterical contraction of the visual fields, and absence of pharyngeal reflex. As the abdomen and lower part of the thorax showed no respiratory movements the tympanites seemed to be due to tonic contraction of the diaphragm combined with relaxation of the other abdominal muscles.[1] In regard to the fever, which was present according to the chart, there was almost certainly an attempt on the patient's part to deceive us. On December 22 a thermometer was broken in taking the morning temperature and a second thermometer registered 102° F. After this endeavours were made to prevent any tampering with the thermometers, and from that date till the patient left the hospital on January 12, 1903, her temperature never reached 100° F.

[1] S. Talma (*Berliner klin. Wochenschr.*, February 3, 1902, p. 90) maintains that "hysterical tympanites" is produced, when the tympanites is general, by tonic contraction of the diaphragm combined with relaxation of the other abdominal muscles, but when the tympanites is localised (forming one kind of "phantom tumour"), by relaxation of some and contraction of other muscles. This hysterical tympanites may be removed by an anæsthetic, but when the effects of the anæsthetic commence to pass off, the diaphragm ceases to ascend properly with each expiration, and thus gradually the peculiar tympanitic condition reappears.

It would be a mistake to suppose that extreme symptoms of this kind are confined to the female sex, for this type of hysterical disorder is likewise found in men, just as most other forms of hysteria are. The following case,[1] from Professor Senator's clinique in Berlin, presents certain features in common with those of the preceding case.

The patient, A. H., was a shoemaker, aged 29. He was tolerably healthy up to the time of his military service in 1890. In this year, by some accident, he fractured one of his left ribs. Whilst in the hospital for this injury he suffered from obstinate constipation, which persisted, more or less, from that time. When he recovered from the fractured rib he was freed from liability to military service, and then visited a number of hospitals on account of his constipation. In 1893 he is said to have had fæcal vomiting, and in 1894 was supposed to have intestinal stenosis. Besides persistent vomiting, severe constipation and distension of the bowels, with pain in the lower left region of the abdomen, patient also suffered from polyuria resembling diabetes insipidus. About the end of the year 1894 an exploratory laparotomy was performed with negative results. The patient's condition, however, was temporarily improved after the operation. Later on, he had obstinate constipation for fourteen days and a second laparotomy was performed. A fibrous band was removed from the peritoneum, but the surgeon thought that the presence of this band had probably nothing to do with the symptoms. The patient's condition again improved after the second operation, and for some time he could again do his work. However, in November, 1897, he was troubled with his old symptoms. In January, 1898, the patient was admitted into the Charité Hospital at Berlin, with obstinate constipation, continual vomiting and distension of the abdomen. The bowels were made to act and the vomiting was relieved by energetic treatment, namely, lavage of the stomach, enemata, and purgatives. Morphium, to which the patient had already become ac-

[1] *Vide* Strauss, "Hysteria Virilis unter dem Bilde der Chronischen Darmstenose. Zweimalige Laparotomie." *Berliner Klinische Wochenschrift* 1898, No. 38, p. 838.

customed, was administered on account of the abdominal pains, &c. In spite of the treatment a motion of the bowels was only obtained about every four or five days. Every two or three weeks there was an ileus-like attack, with persistent vomiting and absence of any action of the bowels, not even the passage of flatus. Lavage of the stomach relieved these acute exacerbations. There was no genuine fæcal vomiting. The urine was increased in quantity, of rather low specific gravity and of pale colour, without albumen or sugar, and generally without much indican. At times there was retention of the urine, lasting twenty-four hours, when the bladder would reach nearly up to the umbilicus. This retention of urine was sometimes relieved by a hot bath, but sometimes the use of a catheter was necessary. Other occasional symptoms were dyspnœa, migraine, hiccoughing, &c. On May 18, 1898, there was a typical hysterical attack, and then the great distension of the abdomen suddenly disappeared. In the evening the bowels were opened spontaneously for the first time. After this the patient's condition was much improved; he could get about again, and his abdomen felt flaccid; purgatives, however, were still usually necessary.

Gilles de la Tourette[1] has collected a number of cases presenting analogous symptoms, including several examples of the vomiting of enemeta.

In a hysterical woman, aged 27, Briquet[2] found that an enema of coffee was partially returned by the mouth fifteen minutes after its introduction per rectum. A coloured substance was injected into the rectum to settle all doubts on the question, and twelve minutes afterwards some of it appeared in the vomit. The investigation was so arranged in this case that no deception was possible.

Jaccoud[3] records the case of a hysterical woman who suffered for some days from vomiting of fæces. Every precaution was taken to avoid the possibility of deception. Though the patient did not seem to be gravely ill, this

[1] *Hystérie Paroxystique*, Paris, 1895, vol. ii., p. 361.
[2] Quoted by Gilles de la Tourette, *loc. cit.*, p. 363.
[3] Quoted by Gilles de la Tourette, *loc. cit.*, p. 363.

extraordinary vomiting, which Jaccoud terms "buccal defæcation," continued until the eighth day, when the bowels began to act again in the natural manner. A few weeks afterwards this patient died of typhoid fever, and at the necropsy nothing was discovered to explain the fæcal vomiting. The ileo-cæcal valve appeared natural in every respect.

Tullio[1], in his paper on "Reversed Peristalsis," records a case of this kind, where the intestinal movements could be observed through the abdominal walls. The movements were noted to start from the region of the sigmoid flexure, and to pass along the colon into the small intestine. A lump then began to form in the pyloric region, and continued to increase until, the pyloric sphincter doubtless opening, vomiting took place. These intestinal movements were increased when an enema was administered, and ceased after it was vomited.

I now come to H. Schloffer's[2] excellent paper on the subject of hysterical ileus, and shall quote from an abstract I made at the time for a medical journal. According to Schloffer, Professor S. S. Rosenstein[3] noticed fæcal vomiting in a healthy-looking boy, aged 9, following attacks resembling hystero-epilepsy. The fæcal masses which were vomited on one occasion were coloured blue by some henna, which had been administered in the form of an enema. Under bromide treatment the boy recovered after several months. In this remarkable case the boy, when apparently in perfect health, would suddenly have a convulsive seizure, with severe opisthotonos, and on the attack coming to an end he would throw up formed fæces by the mouth almost at the same time as he passed an ordinary motion of similar formed fæces by the anus. Cherchevsky[4] has given the case of a nervous constipated man, aged 42, considered to be

[1] Quoted by Gilles de la Tourette, *loc. cit.*, p. 366.

[2] "Ueber Ileus bei Hysterie," *Beiträge zur klin. Chirurgie*, Tübingen, 1899, vol. xxiv., p. 392. Schloffer's article, a carefully-written critical summary of literature on the subject, should be consulted in the original by those interested, not only for the conclusions he arrives at, but also for the numerous references he gives.

[3] *Berliner klin. Wochenschr.*, August 21, 1882, p. 521.

[4] "Contribution à la Pathologie des Névroses Intestinales," *Révue de Médecine*, Paris, 1883, p. 895.

suffering from a spastic neurosis of the bowel; during one such attack a formed piece of fæces, eight centimetres long, was vomited. For a short time after this the patient was faint, but one and a half hours later his bowels acted easily and copiously. In J. B. Murphy's[1] case the patient was a man, aged 40, who had previously suffered from attacks of lead colic; a laparotomy was performed on account of persistent constipation and signs of intestinal obstruction. A piece of intestine, eight inches long, was found contracted like a solid cord (see the illustration in Murphy's paper), and during the operation was seen to relax. Within three hours after the operation there was an action of the bowels. W. von Leube[2] observed fæcal vomiting in a girl, aged 19 years, and a hard cord could be felt in the abdomen along the whole colon from the cæcum to the sigmoid flexure. This could no longer be felt twenty-four hours later on, but ten days afterwards a similar attack occurred. P. Sandoz[3] has noted a case of tabes dorsalis where hiccough and ileus followed a gastro-intestinal crisis and lasted during days, and then disappeared after free action of the bowels. L. Heidenhain[4] thinks that worms, &c., may cause reflex spasm of the intestines, and thus give rise to symptoms of intestinal obstruction. In one case a laparotomy was performed, but no obstruction could be found. A round worm, however, could be felt in the small intestine (which was otherwise empty and collapsed or contracted). Several doses of morphine were given, and the bowels acted three and a half days after the laparotomy. A. Voisin[5] records that a hysterical girl twice recovered from the symptoms of intestinal obstruction under antispasmodic and purgative treatment, but died during a third attack, and the necropsy pointed to mere spasm of the bowel. According to A. J. Hoorweg, a woman, aged 26, who had already had severe hysterical attacks, suffered from fæcal vomiting, anæsthesia,

[1] *Journal of the American Medical Association*, January 4, 1896, p. 20.

[2] "Ueber Ileus Spasticus," 70 *Versammlung deut. Naturforscher und Aerzte zu Düsseldorf*, 1898, Zweiter Theil, II. Hälfte, p. 64.

[3] *Correspondenzblatt für Schweizer Aerzte*, Basel, 1887, p. 41.

[4] "Beiträge zur Pathologie und Therapie des acuten Darmverschlusses," *Arch. für klin. Chirurgie*, Berlin, vol. 55, p. 211, and vol. 57, p. 1.

[5] Referred to in the *Gazette Médicale de Paris*, 1876, No. 51, p. 609.

psychical disturbance, &c. On washing out the stomach in the morning, remains of the evening meal were found, and in the evening the stomach often contained fæcal masses. Cousot[1] has published a case of fæcal vomiting following long constipation in an hysterical woman with hemianæsthia and concentric contraction of the fields of vision. Slajmer performed a laparotomy in the case of an anæmic hysterical woman, aged 26, with fæcal vomiting and symptoms of intestinal obstruction. Nothing abnormal was found except that a portion of the small intestine was firmly contracted. This contracted portion became relaxed during the operation. Next day the bowels acted. Similar intestinal symptoms later on could often be relieved by simple antihysterical treatment. A married woman, aged 28, who had previously had hysterical symptoms, as well as hæmoptysis and hæmaturia, without definite signs of organic disease in the lungs or urinary organs, was operated on on account of fæcal vomiting. The results of the laparotomy were negative, excepting that portions of the small intestine were found firmly contracted. The patient, however, was given to understand that the operation had been successful. Five days later the bowels acted after enemata, and the patient recovered. Wölfler operated on a woman, aged 31, with fæcal vomiting and symptoms of chronic intestinal obstruction. The small intestine was found to be closely contracted at certain spots between portions containing scybalous masses. A few days after the laparotomy normal motions occurred, but the patient still had often to employ laxative drugs.

Schloffer also quotes the case recorded by Desnos of a man who fell from a wall against some scaffolding, striking his abdomen. After the accident apparently he had no normal action of the bowels, but every day, at about six o'clock in the evening, he got rid of his fæces by the mouth. The man seems to have been hysterical, and Schloffer suggests it may have been a case of hysterical fæcal vomiting, but further evidence would be desirable in regard to such a very extraordinary case.

[1] *Neurol. Centralblatt*, Leipzig, 1893, p. 50 (abstract from *Bulletin de la Soc. de Médecine Mentale de Belgique*, September, 1892).

I will now go on to the papers by M. Sander[1] and G. Langmann,[2] again making use of abstracts which I wrote at the time for a medical journal. Sander records the case of a hysterical man, aged 23, with neuropathic family history. In December, 1894, about two months after commencing his military service, he began to suffer from attacks of abdominal pain, meteorism, and unconsciousness, with epileptiform movements. The pulse, when observed in May, 1895, was found to vary in the course of twenty-four hours between 60 and 100. There was diarrhœa alternating with constipation. In November, 1896, the patient was in the Frankfurt Hospital, with variable abdominal symptoms and occasional evening fever. He was supposed to have appendicitis, and laparotomy was performed. The vermiform appendix was found slightly injected and removed. Soon after the operation there were again attacks of meteorism and pain, with evening fever to 101·6° F. Improvement followed in December, 1896, but there was an attack of eructation, salivation, grinding of the teeth, and twitchings of the limbs. In January, 1897, there was again meteorism, with abdominal pain (chiefly in the umbilical region) and occasional vomiting. Sometimes there was fever, and on one day itching of the whole body. There was generally constipation, and blood and mucus were noted in the motions. On account of a suspicion of intestinal obstruction a second laparotomy was performed on January 14, 1897. On January 29 the patient jumped through the window and ran about barefoot in the snow, so that he had to be removed to the lunatic asylum. In the asylum, amongst other troubles, he had much vomiting, and in consequence lost strength, but suddenly, on February 19, 1897, he began to improve in every way, although a certain tendency to vomit persisted. Not long after leaving the asylum he was reported to have (apparently not seriously) attempted suicide.

A second case, reported by Sander, is that of a hysterical woman, aged 24, whose father had been addicted to alcohol.

[1] *Deut. Med. Wochenschrift*, 1899, No. 36.
[2] *Festschrift A. Jacobi*, New York, 1900.

She had had hysterical trouble of the right hip joint, factitious erythema, &c., before she suffered from abdominal pain, vomiting and apparent fever in 1895. At different times gastric ulcer, appendicitis, and peritonitis were thought of. From September, 1897, to September, 1898, laparotomy was performed on four occasions with negative results. She was then transferred to the lunatic asylum, where her psychical condition commenced to improve. There was a certain amount of right-sided anæsthesia.

Langmann[1] describes the case of a young woman, aged 21, who was admitted to the German Hospital in New York, in 1889, for vomiting and hæmatemesis. Four years previously the left leg had been apparently paralysed (hysterical paralysis?) for nine months after an injury. Since that time severe pain along the spine (hysterical rachialgia?) was occasionally felt. During the two years before admission the patient was said to have had attacks of peritonitis, vomiting, and hæmatemesis, and had habituated herself to hypodermics of morphine. In the hospital the patient sometimes vomited fæcaloid material, sometimes actual hard formed fæces. Scybala, an inch thick, were at one time thrown up. A fistulous communication between the stomach and colon was suspected, owing to repeated hæmatemesis and circumscribed pain in the gastric region. Indigo administered with an enema was ejected, together with fæces, from the mouth in less than fifteen minutes. An exploratory laparotomy was performed, but nothing abnormal could be discovered except a darning needle, which was impacted in the anterior wall of the stomach between the serous and mucous coats. The wound healed well, and the vomiting ceased. About thirty-three days after the operation, however, nausea with vomiting of mucus and blood recommenced. Afterwards, hard fæces were brought up again. About six weeks after the operation the stomach was washed out, and tepid water containing indigo was injected into the rectum. The patient was carefully watched, so that deception could be excluded, and yet nine minutes after the enema was administered

[1] *Loc. cit.*

she vomited a fæculent mixture of milk coagula with indigo. A week later some hard fæces wrapped in paper were found under the patient's pillow. The patient left the hospital soon afterwards, and was detected in some tricks at another hospital. She was then lost sight of. Langmann believes that the stercoraceous vomiting was genuine and spontaneous, and could not be brought on by will, and that only after perceiving on what point the medical interest centred did she try to imitate a symptom which had created so much sensation.

L. E. Bregman[1] reported the case of a servant girl, aged 23, admitted to the hospital with symptoms of intestinal obstruction. There was a history of absolute constipation for ten days. She had vomiting and tympanites, with abdominal pain, but under an anæsthetic the tympanites disappeared. The vomiting was the most prominent symptom. There was sometimes ordinary vomiting after food, sometimes hæmatemesis, sometimes fæcal vomiting. Bregman, who was often present during the attacks, was able to exclude trickery. The fæcal vomit had the colour and odour of fæces and contained solid fæcal particles, or occasionally larger fæcal masses. Intestinal irrigation sometimes brought away fragments of fæces or scybala, but often the water was returned merely coloured. The symptoms varied in severity from time to time, but finally there was general improvement. The case was, however, complicated by prolapse of the rectum, which was treated by operation. Headache, backache, amenorrhœa and dysuria were complained of, and there were some other troubles, such as attacks of aphonia. The tendon reflexes were increased and the conjunctival and pharangeal reflexes diminished.

Debove[2] gives the case of a Jewish patient, aged 36, who had symptoms of complete intestinal obstruction, with tympanites, severe abdominal pains and retention of urine, following an attack of influenza with great constipation. Though the symptoms were alarming, yet the general con-

[1] "Ueber Kothbrechen bei Hysterie," *Neurologisches Centralblatt*, Leipzig, October 1, 1901, page 882.

[2] "Pseudo-étranglement interne d'origine névropathique," *Presse Médicale*, Paris, November 22, 1902, p. 1119.

dition remained relatively good, and ultimately the bowels acted spontaneously and fæces with an enormous quantity of gas were discharged. No evidence of any organic disease could be found in the patient. A valuable point in favour of delaying operation in this case was the definite history furnished by the patient's brother (a medical practitioner) of the patient having previously had similar attacks of various degrees of severity which had not necessitated operation. Mental excitement, chill, and certain articles of food seemed to induce an attack.

Sander's and Debove's cases, though not examples of fæcal vomiting, serve capitally to illustrate the subject of neurotic intestinal obstruction, that is to say, of symptoms resembling those of intestinal obstruction, occurring in functional nervous cases. In this place I shall not enter further into the literature of such cases nor of the majority of cases (with or without neurotic vomiting, but without any fæcal vomiting) which have been recorded as "hysterical pseudo-ileus," "hysterical spurious gastric ulcer," "hysterical pseudo-appendicitis," or "hysterical pseudo-peritonitis," many of which cases have led to exploratory laparotomies. At present I am concerned with the subject of (neurotic) actual fæcal vomiting, and from a study of the cases to which I have referred it is possible to obtain an idea of the general sequence of events in this rare symptom-complex, which I shall subsequently point out is intimately allied to ordinary attacks of hysterical vomiting.

Typical history of an attack of hysterical fæcal vomiting. The patient, generally a young woman, but sometimes a man or a child (of either sex), may seemingly be in blooming health before the attack. Some distressing mental emotion or other physical or psychical shock is followed by a period of great constipation, and this constipation is accompanied or followed by meteorism (hysterical tympanites) and abdominal pains. There may be severe attacks of vomiting and even some hæmatemesis. The constipation becomes absolute and the other symptoms get worse, and finally the condition of "hysterical ileus" is reached. Then everything

taken by the mouth is returned. The vomit becomes fæcal in character and even pieces of formed fæces may be ejected by the mouth. Enemata and suppositories may likewise be vomited. Hysterical symptoms, such as hemianæsthesia and concentric contraction of the visual fields, are likely to be found if sought for, and there may be occasional hysterical fits or attacks of hystero-epilepsy. The ejection of fæces by the mouth in one case (Rosenstein's) used to follow convulsive seizures resembling hystero-epilepsy; in another case (Senator's) a typical hysterical attack preceded the disappearance of the abdominal distension, &c. The onset of the attack may sometimes be more acute than I suppose it to be in typical cases. Once started the symptoms may continue for weeks or months, with irregular remissions or intermissions, and then gradually or rapidly subside, either spontaneously or under bromides, strict isolation and antihysterical treatment; an exploratory laparotomy perhaps sometimes, but certainly not always, exerts a slightly favourable influence by suggestion. Recurrence after a longer or shorter interval (which, however, may not be quite free from minor hysterical troubles) is to be expected, and other severe hysterical conditions, including the mental state leading to "hysterical malingering," are not unlikely at some time or other to show themselves.

Evidence of Reversed Intestinal Peristalsis (Antiperistalsis) and of the Passage of Fæces backwards through the Ileo-cæcal Valve.

Many experiments have been made and a good deal has been written on this subject. Dr. Arnott [1] said long ago:—
"From an erroneous opinion that what has been called the valve of the cæcum acts as a perfect valve, allowing passage downwards only, few practitioners have ventured to order much liquid to be injected for fear of overstretching or bursting the lower part of the intestines; and the possibility of relieving disease above the supposed valve has scarcely

[1] Quoted by Woodward (*loc. cit.*) from J. Scott, *Commentaries on the Use and Necessity of Lavements, &c.*, London, 1829.

been contemplated. It is now ascertained, however, that fluid may be safely injected, even until it reaches the stomach." Oskar Kraus,[1] who has carefully studied the structure of the human ileo-cæcal valve, comes to the following conclusions:—that the valve is mechanically imperfect in new-born children, but becomes a perfect valve in early life; that the valve can be rendered incompetent by excessive distension of the colon; that in cases of insufficiency of the valve the insufficiency may be either due to persistence of an infantile condition or may have been acquired in later life; there is a possibility that the nervous system may have some influence in regard to the opening of the valve. In dogs and cats,[2] and other lower animals, the ileo-cæcal valve is rather a muscular sphincter, like the pylorus, than a purely mechanical valve, and therefore, as Kraus points out, experiments on animals are not of much value for investigating the action and value of the mechanical valve found in human beings.

It is possible that in cases of fæcal vomiting the backward passage of the intestinal contents through the ileo-cæcal valve may be due (1) to acquired incompetency resulting from forcible distension of the colon, or (2) it may be due to congenital incompetency, the valve having retained its infantile type (like the muscular sphincter of lower animals), or (3) it may be due to opening of the valve by muscular action connected with antiperistaltic movements in the colon. On the one hand, Dr. A. E. Maylard[3] refers to a boy who died of peritonitis and who vomited enemata before his death; linseed oil injected per rectum appeared on the surface of the material vomited. The necropsy showed absence of a proper ileo-cæcal valve, and the preparation by William Hunter is preserved in the Hunterian Museum of Glasgow.

[1] "Noch einmal: Zur Anatomie der Ileocöcalklappe," *Wiener klin. Wochenschrift*, 1902, No. 19. See also Max Herz, "Ueber die Insufficienz der Darmklappe," *Wiener Ges. für inn. Med.*, February, 1902. Kraus points out that the structure of the normal human ileo-cæcal valve and its perfect valvular action were accurately described in the anatomical lectures of Archangelus Piccolomini, printed in 1586.

[2] T. R. Elliott (*Journal of Physiology*, May, 1904), comes to the conclusion that the junction of the small and large intestine in cats is controlled by a muscular sphincter, not by a mechanical valve.

[3] *British Medical Journal*, December 31, 1892, p. 1451.

On the other hand, in Jaccoud's case, already alluded to, the post-mortem examination is said to have shown a perfectly normal ileo-cæcal valve. Whatever may be the exact explanation, it is certain that, in cases of fæcal vomiting, the contents of the large intestine do somehow pass backwards through the valve.

It is also certain, in spite of what surgical text-books say, that the most typical cases of fæcal vomiting are due, not to organic obstruction in the large intestine, but to intestinal contraction and antiperistalsis of nervous origin. Leichenstern and Nothnagel regard the presence of formed fæces in the vomit as one of the greatest rarities in cases of ordinary intestinal obstruction, and Schloffer[1] thinks that the vomiting of formed fæces would rather point to a case being one of functional nervous origin. In the so-called "fæcal vomiting" of organic obstruction the vomited material is generally only fæculent, that is to say, there is only sufficient admixture of fæces to give the vomit a smell of fæces.

Nor is this surprising if one pictures to oneself what probably takes place. When there is organic obstruction in the large intestine the gut above the obstruction is likely to become distended and the ileo-cæcal valve insufficient,[2] then it needs merely ordinary contraction of the gut and of the abdominal walls to make the contents of the small intestine fæculent if not actually fæcal; formed fæces, however, are unlikely to be passed back through the ileo-cæcal valve in such cases.

Violent antiperistaltic movements are probably required before pieces of formed fæces can be passed up from the colon through the ileo-cæcal valve, and violent movements

[1] *Loc. cit.*

[2] For support of Haguenot's "overflow" theory of fæcal vomiting, see Prutz and Ellinger, "Ueber die Folgen der Darmgegenschaltung," *Arch. für klin. Chirurgie*, Berlin, 1904, vol. lxxii. In this connection it may be pointed out that a localised intestinal paralysis could probably (as Heidenhain and Schloffer have suggested), give rise to the symptoms of obstruction ("ileus paralyticus"), just like a localised intestinal spasm can. This might explain the symptoms of intestinal obstruction noted in some cases of embolism of mesenteric arteries, the sudden arterial ischæmia leading to a state of "ischæmic cramp" or "ischæmic paralysis" (followed by actual necrosis) of the portion of gut dependent for adequate blood-supply on the obstructed artery.

are more likely to occur in a gut with normal muscular walls than in a gut weakened by disease and over-distension; in fact, violent antiperistalsis sufficient to produce the passage of formed fæces through the ileo-cæcal valve is more likely to be due to nervous derangement than to organic disease or obstruction of the gut. The experimental evidence as to the occurrence of antiperistalsis is somewhat conflicting, but Nothnagel[1] showed that coloured salt solution injected per rectum could be carried by antiperistalsis through the ileo-cæcal valve into the small intestine, and Grützner[2] thought that small particles of charcoal, when injected as an enema suspended in salt solution, could under favourable circumstances reach the stomach within a few hours. Grützner's results have, however, been called in question. W. B. Cannon,[3] who studied the movements of the intestines in animals by the help of bismuth food and Röntgen rays, found that part of the enemata (containing bismuth for purposes of radioscopy) passed the ileo-cæcal valve apparently simply owing to antiperistalsis in the colon. He never saw "food material pass back from the colon so far as the stomach; but once, about ten minutes after an injection of 100 cc. of warm water, the cat retched and vomited a clear fluid resembling mixed water and mucus. In the fluid were two intestinal worms still alive." Dr. A. G. Jacobs[4] obtained evidence in two girls who were being fed by nutrient enemata (one on account of severe hæmatemesis, the other on account of persistent vomiting in early pulmonary tuberculosis) that at one time some of the material used for the enemata must have found its way by antiperistalsis to the stomach. Jacobs goes further and explains the possibility of complete absorption of large enemata by supposing that part of the enemata is carried upwards into the small intestine, and that absorption is thereby greatly facilitated. R. Saundby[5] says that when he was administrator of anæsthetics at the General Hospital, Birmingham,

[1] *Beiträge zur Phys. und Path. des Darms*, Berlin, 1884.
[2] *Deut. Med. Wochenschr.*, 1894, No. 48.
[3] *American Journal of Physiology*, 1902.
[4] Ueber Rectalernährung," *Festschrift Julius Lazarus*, Berlin, 1899, p. 185.
[5] *British Medical Journal*, 1892, vol. ii., p. 1140.

a very emaciated youth had his thigh amputated at the hip-joint for disease. The operation was rather long, and he vomited up bile-stained mucus for some time. After disarticulation, a large nutrient enema of hot milk and brandy was given, the last part of the operation being suspended for the purpose. The patient afterwards began to throw up uncurdled milk, evidently derived from the enema.

I think it is quite clear that the upward passage of fæces in genuine cases of nervous fæcal vomiting is due to active antiperistalsis. Even in ordinary severe vomiting there may doubtless be a certain amount of antiperistalsis in the upper portion of the small intestine, as the vomit is frequently greenish from the presence of bile.[1] In some cases of simple and bilious vomiting during exclusive rectal feeding, such as H. D. Rolleston and Jex-Blake[2] recorded in 27 per cent. of ninety-six gastric ulcer cases, the vomiting may probably be regarded as the equivalent of antiperistalsis in the stomach (with or without actual antiperistalsis in the duodenum), excited in sympathy with the antiperistalsis in the colon, which, according to the experiments of W. B. Cannon,[3] seems to be normally set up by the introduction of nutrient enemata into the rectum.

Diagnosis.

In the diagnosis of cases of fæcal vomiting due to functional nervous disease there are several points for consideration. The presence of a *fistulous gastro-colic communication* may be at first suspected, and such a suspicion may be strengthened by the previous history of abdominal pains and hæmatemesis, a history which is not rarely obtained in cases of severe functional nervous vomiting. Indeed, laparotomy has been performed in several cases of nervous fæcal vomiting owing to the symptoms

[1] The presence, however, of bile in the vomited matter, when there is repeated vomiting from any cause, may also merely be due to temporary slight relaxation of the pyloric sphincter and to suction action of the stomach dependent on the vomiting movements.

[2] "On the Occurrence of Vomiting during Rectal Alimentation," *British Medical Journal*, 1903, vol. ii., p. 68.

[3] *Loc. cit.*

being thought to point to the presence of a gastro-colic fistula. H. D. Rolleston,[1] however, referring to these two affections, points out some important differences in the symptoms. He refers to the writings of Bec[2] and Bouveret[3] on gastro-colic fistula. According to Bec's collection of sixty-two cases, a fistulous communication between the stomach and colon is usually due to cancer or ulcer of the stomach, and Bouveret and Tournier believe that when gastric carcinoma is the cause, the carcinoma is generally, if not exclusively, one which has developed in an old ulcer. Bec's sixty-two cases show that among the chief symptoms of gastro-colic fistula are fæcal vomiting, vomiting of enemata, abundant diarrhœa, fæcal odour of the breath, thirst, and rapid wasting. Whereas free diarrhœa is generally a marked feature in cases of fæcal vomiting due to gastro-colic fistula, in the functional nervous cases constipation is the general rule. Moreover, cases of the functional nervous class are unlikely to be accompanied by such rapid wasting and anæmia as are characteristic of true gastro-colic fistula.

In *fæcal vomiting due to organic obstruction* of the bowel (organic ileus) there is of course constipation, but the other symptoms differ considerably from those characteristic of functional nervous cases. In the latter cases the general aspect of the patient is not nearly as bad as one would expect, whereas the extreme gravity of the typical surgical cases is quite apparent. Moreover, as has been already explained, the vomit in organic obstruction can generally only be recognised as fæcal or fæculent by its odour, whereas in some of the functional nervous cases actual formed fæces, evidently from the large intestine, may be thrown up.

In the functional nervous cases *symptoms of hysteria*, such as hemianæsthesia, concentric contraction of the visual fields, absence of pharyngeal reflex, hysterical aphonia, hysterical palsies, hysterical local spasms or hysterical general convulsions, may aid the diagnosis.

[1] *Practitioner*, London, August, 1899, p. 199.
[2] *Thèse de Lyon*, 1897.
[3] *Révue de Médecine*, Paris, April 10, 1899, p. 324.

In regard to *pain* as an aid to diagnosis I believe that, in spite of the work of Head and others on pain and hyperæsthesia in visceral disorders, pain is still often misleading in cases with abdominal symptoms. Very many persons have doubtless undergone dangerous and useless operations owing to their constantly complaining of pain incorrectly supposed to be due to some organic disease.

The vomit in cases of *organic nervous diseases* may occasionally, though rarely, be more or less fæcal or fæculent in character. In the gastric crises of tabes dorsalis the vomit not rarely contains bile from the duodenum, but in pure tabes it hardly ever, if ever, becomes fæculent. In the case of a tabetic man recorded by Paviot,[1] after a period of constipation and persistent vomiting, the matter thrown up from the stomach was at last fæculent. A laparotomy was performed, but the intestines appeared not to be diseased, and this was confirmed by the subsequent necropsy, at which, however, the presence of a cerebral tumour was detected, namely, a psammona at the floor of the fourth ventricle, compressing the vagus nucleus. In cases of fæcal vomiting, supposed to be due to functional nervous disease, it would therefore always be advisable to examine thoroughly for signs of cerebral tumour (optic neuritis, &c.) and other organic nervous diseases.

In endeavouring to settle the functional nervous origin of a case of fæcal vomiting it may be very hard to exclude *simulation*, which, however unnatural it may seem, especially in the absence of any intelligible motive, has sometimes certainly been practised. Hysterical patients, like insane persons, are known to have swallowed fæcal masses before vomiting them, or to have placed fæces and enema material in their mouths and then pretended to vomit them. Mickulicz[2] recorded the case of a woman, aged 51 years, who had been operated upon five times before she was detected placing fæces in her mouth, and this detection saved her from a sixth operation. In a case of J. D. Bryant,[3] of New

[1] *Société Médicale des Hôpitaux de Lyon*, October 13, 1903.
[2] *Deut. Med. Wochenschr.*, Vereins-Beilage, 1895, No. 13, p. 84.
[3] "Report of the Fourth Laparotomy on a Hysterical Patient," *Medical Record*, New York, December 24, 1902, p. 726.

York, four laparotomies were performed, the last because a communication between the stomach and colon was suspected. The patient, a young hysterical woman, aged 22, was afterwards discovered to have placed fæces and coloured enema material in her mouth in order to pretend to vomit them. In the discussion on Bryant's case Dr. A. H. Smith narrated the case of a woman with fæcal vomiting who had already had a laparotomy performed for the cure of a supposed gastro-colic fistula. A handkerchief full of fæcal matter was found concealed in her bed ready to be placed in her mouth or swallowed. Such cases belong to the class of *hysterical or neurotic simulation.* The patients seem often to have no intelligible motive for their deception, unless to become objects of interest or sympathy, and they seem rather to invite than fear the big surgical operations[1] that are likely to result from mistakes in diagnosis. They belong

[1] A remarkable case of "hysterical malingering," narrated by A. A. Bowlby in the *Clinical Journal* (London, February 24, 1904, p. 292), illustrates the strange willingness of such patients to undergo operations. A young woman, about 30 years old, had previously had her left lower limb amputated near the hip-joint for supposed elephantiasis. She was under Mr. Willett's care at St. Bartholomew's Hospital for apparently a similar condition in the remaining (right) lower limb with which she said she had constant and extreme pain, and she was willing to have the limb amputated. The upper edge of the abnormal swelling was, however, very sharply defined, and one night the sister of the ward suddenly turned down the bed clothes and found a handkerchief twisted tightly round the limb like a tourniquet. The whole condition had evidently been artificially produced in this way by the patient herself. Latzko showed a woman at the Vienna Medical Club (abstract in *Muenchener Med. Woch.*, November 27, 1900), who, he thought, was feigning severe abdominal pain in order to have a laparotomy performed for the fourth time. It seemed that the first laparotomy had been performed for grave symptoms resembling those of gastric ulcer, but the operation showed nothing abnormal in the abdomen. The second laparotomy (of which no authentic account could be obtained) was declared by the patient herself to have been for nephrectomy. The third laparotomy was performed owing to ileus-like symptoms, and a left ovarian tumour was found and removed. Though the ovary was adherent to the sigmoid flexure no real obstruction to the passage of the contents of the gut was found.

Both "hysterical malingering" and functional nervous affections without malingering have given rise to striking instances of repeated surgical operations on the abdomen and elsewhere. Thoinot (*Société Médicale des Hôpitaux*, Paris, January 29, 1904), in a case of hysterical tympanites with right hysterical hemianæsthesia, explained the sequence of events as a result of suggestion. The patient it was known had undergone three laparotomies on the suspicion of tuberculous peritonitis. Thoinot supposed that the first operation relieved symptoms by suggestion, so that the patient at every relapse had energetically demanded another operation, and thus at the time was actually demanding a fourth operation, to which, however, Thoinot was not at all inclined to assent.

to the same class of patients as the young women sometimes detected in producing hideous eruptions or frightful ulcers by painful applications to their skins, apparently merely for the purpose of deceiving or of interesting their doctor and their friends.

The difficulty in regard to the possibility of simulation is rendered still greater owing to the fact that persons with functional nervous symptoms sometimes afterwards simulate their old symptoms. This seems to have happened in Langmann's case already alluded to. In that patient, owing to the careful tests by coloured enemeta, &c., it can hardly be doubted that the fæcal vomiting was at first genuine, and, as the exploratory laparotomy showed nothing wrong with the abdominal viscera, the fæcal vomiting was apparently due to functional disease. Yet there was likewise simulation and hard fæces wrapped in paper were afterwards found under the patient's pillow. It seems indeed as if the wish to simulate all kinds of frightful diseases and court dangerous surgical operations depended on an abnormal condition of the nervous system similar to those neurotic states which lead to genuine hysterical vomiting, &c. It seems also as if the interest excited by their illness amongst those around them sometimes acts as an inducement to neurotic patients to simulate symptoms which originally were genuine, especially those symptoms on which the medical interest obviously centres. The incessant cross-questioning and suspicion to which such patients are often subjected may sometimes, by making them think of the whole matter, indirectly furnish them with the suggestion to simulate. In the case of Rosa S., which I have given at some length, there can hardly be a doubt that, although the fæcal vomiting was genuine, the patient tampered with thermometers, not only at the time of the fæcal vomiting, but also years afterwards when she was in the hospital under my care, and it is likewise possible that some of her "hysterical tympanites" was wilful.

I think it is quite clear that in the vomiting of fæces and enemata simulation can only be excluded by careful observation, that in some cases simulation has been detected, and

that in others the precautions taken were not sufficient to exclude all possibility of deception. *Where, however, the requisite precautions can be taken, it is possible, by the use of coloured enemata, &c., to absolutely exclude all chances of simulation and render the diagnosis certain.*

I will conclude these remarks on diagnosis by adding that some cases supposed to be examples of *ordinary hysterical vomiting* ought really to be regarded as on the borderland between hysteria and malingering, and I will explain my reason for this belief. There certainly are some persons, especially young women, who, even whilst they are in their ordinary state of health and quite flourishing in appearance, have a really marvellous facility for vomiting.[1] Not only does the slightest temporary gastric upset cause them to throw up their food, but they have only to look at certain articles of food and think of the associated smells and tastes (for which they happen to have an aversion) in order to be able to vomit. This facility for vomiting may obviously be cultivated by mental processes, and may be temporarily greatly increased by causes which disturb the general health or the mental equilibrium. In fact, one must admit that some persons, at certain times at least, possess the power of voluntarily vomiting, that is to say, they can vomit merely as the result of a psychical condition, which they can themselves induce at will. It is therefore easy to see that great difficulties may arise when one has to deal with hysterical patients gifted with this power of vomiting, and at the same time desirous, as hysterical patients often are, of attracting attention to themselves by malingering if they cannot do so by other means.

[1] It is of course well known that just as one race of animals differs from another by its facility for vomiting or the reverse, so in the human race some individuals vomit easily at the slightest cause and others only with difficulty. The cause which most readily produces vomiting in one individual is not necessarily the same as that which has most effect in another. In a conversation on the subject with my friend, Dr. H. Devine, he suggested that extreme facility for vomiting is comparable to the power of rumination occasionally possessed by human beings. I do not know whether the facility for vomiting is ever a family peculiarity, like rumination may be (*vide* "Bericht über eine Weiderkäuerfamilie," by Dr. L. R. Müller, in the *Muenchener Med. Wochenschrift*, August 5, 1902, p. 1293), but it would be interesting to find out whether it sometimes is so or not.

What portion of the Nervous System is chiefly at fault in cases of Fæcal Vomiting of Functional Nervous Origin?

S. Talma[1] observed that by irritation of the cœliac ganglion violent movements of a cramp-like nature in the intestines could be produced. The intestines sometimes remained contracted in many places, so that the lumen was quite obliterated. These cramp-like disturbances would pass off and then reappear again, and the direction of the movements was sometimes upwards and sometimes downwards.

In vomiting of functional nervous origin it is more probable that the main site of the disturbance in the nervous system is the brain. We know that violent vomiting is frequently a result of organic disease (tumours, &c.) and injuries (involving concussion) of the brain, and that vomiting of cerebral origin often occurs in the absence of any gross change in the brain (for instance, in simple concussion and in ordinary sea-sickness, and as a result of certain drugs, such as the anæsthetics chloroform and ether, which act on the cerebral cortex), and may even be due to purely psychical causes (such as ideas connected with disagreeable smells and sights, the sight of blood and surgical operations, and various mental emotions). Now, patients with functional nervous vomiting mostly exhibit characteristic signs of hysteria, and it is generally recognised, I believe, that the main symptoms of hysteria, such as hysterical hemianæsthesia, hysterical monoplegias and hysterical spasms, owing to their characteristic distributions, &c., are of cerebral cortical origin,[2] just as much so as the mental symptoms of hysteria are.

There is a good deal of special evidence pointing to the great influence of psychical states on digestive processes and

[1] *Deut. Arch. für klin. Med.*, Leipzig, 1892, vol. xlix., p. 206; quoted by Schloffer (*loc. cit.*).

[2] *Vide* S. J. Sharkey's summing up (BRAIN, Spring, 1904, p. 4) of the main reasons why the brain, *i.e.*, cerebral cortex, is to be considered the part chiefly at fault in hysteria. Sharkey suggests that the reason why patients with hysterical hemianæsthesia are not usually conscious of their loss of sensation is that the cortical centres are the parts affected, whereas in hemianæsthesia due to gross brain disease the sensory fibres in the internal capsule are generally diseased and the cortical centres are sound, so that the patient perceives his anæsthesia.

movements of the alimentary canal. Everyone knows that mental conditions can have a great effect on appetite, and Professor J. P. Pawlow's [1] experiments on animals have shown the influence of the mere idea of food on the secretion of saliva and gastric juice. Parbon and Goldstein,[2] in their critical summary of the results of investigations regarding visceral representation in the brain, agree that not only are the gastric and salivary secretions influenced by cortical centres but that movements of the large intestine, rectum, &c., and other visceral functions, are to some extent represented in the cerebral hemispheres. Anger, fear, and other emotions have been proved to influence peristaltic movements in the alimentary canal of cats and dogs. W. B. Cannon,[3] whose investigations on antiperistalsis by the aid of bismuth food enemata and Röntgen rays have already been alluded to, observes that "there is no doubt that many emotional states are a strong stimulus to peristalsis, but it is equally true that other emotional states inhibit peristalsis." By his methods he was able to note that emotions such as anxiety, distress, or rage, caused a total cessation of the movements in the stomach and large and small intestines of the cats experimented on.[4]

If the almost physiological cerebral disturbances corresponding to ordinary fear or anger can thus influence the movements of the alimentary canal, how much more, I would ask, may the very pathological cerebral disturbances corresponding to the psychical states of hysteria be expected to do so? The intense functional disturbances of the brain occurring in

[1] "The Work of the Digestive Glands." English translation by Dr. W. H. Thompson, London, 1902.

[2] *Révue Neurologique*, Paris, 1903, vol. xi.

[3] *Loc. cit.*

[4] In regard to the influence of the brain on contraction of the muscular walls of the alimentary canal, the effects of drugs acting on the cerebral cortex, such as the anæsthetics chloroform and ether, may be borne in mind—not only the ordinary vomiting following the use of anæsthetics, but also the acute dilatation of the stomach (and possibly some of the grave cases of intestinal paralysis) occasionally noted after operations at which anæsthetics have been employed. W. Braun (*Free Meeting of Berlin Surgeons*, June 13, 1904) found that when he forced air through a previously established gastric fistula into the stomach of an anæsthetised dog great dilatation resulted, whereas the stomach of an animal not anæsthetised could not be dilated in this way because the air injected through the fistula was immediately expelled through the mouth by eructation.

hysteria are obviously never likely to be reproduced experimentally in animals. Experiments, however, as I have pointed out, do, to a certain extent, support the views expressed in regard to antiperistalsis of functional nervous origin.

I regard fæcal vomiting of functional nervous origin as simply a rare and extremely exaggerated form of ordinary hysterical vomiting, and I consider that hysterical vomiting is as much due to a functional disorder of the brain as the attacks of vomiting in a case of cerebral tumour are due to an organic disease of the brain. In regard to the violence of the symptoms in the functional cases it may be noted that in certain hysterical and neurasthenic individuals without organic disease the knee-jerk may be at times quite as exaggerated as in individuals with sclerosis of the lateral columns of the spinal cord. But why the vomiting in functional brain disease should be sometimes actually more violent and severe (fæcal vomiting) than it is in organic cerebral disease (fæcal vomiting practically never occurs in organic brain disease) I cannot understand, unless it be that disturbance of function can show itself in a more pronounced form in a brain without any gross organic disease than it can in a brain the finer mechanism of which has already been impaired by severe organic disease, such as cerebral tumour. In connexion with such a supposition one may remember that a delusion is apt to be less stable and not so well "organised" in a general paralytic, whose brain is the site of grave organic disease, than in a monomaniac, whose brain, could it be examined, would probably show no obvious organic changes.

Treatment and prognosis.—The best treatment is probably that by temporary isolation, together with the careful use of sedatives (bromides), lavage of the stomach, and by the mental and other treatment for hysteria in general, including fresh air, ordinary personal hygienic measures and the persistent avoidance of alcohol, tea and stimulating drinks, and of too stimulating and meaty foods. There is, of course, the usual danger of drug habits (especially morphinomania) becoming developed.

It has been said that the subjects of the gravest forms of hysteria sometimes end by becoming inmates of an asylum. Doubtless they may sometimes become inmates of asylums like the man and the woman whose cases Sander (*loc. cit.*) described.[1] The patient, Rosa S., however, when I saw her six years after her laparotomies, though again suffering from some of her old troubles, had apparently during the interval been able to earn her own living and give satisfaction in domestic service.

Main Conclusions.

(1) Functional nervous vomiting, like the hemianæsthesia, palsies and spasms of hysteria, must be regarded as due to an abnormal state of the cerebral cortex, and is just as much a symptom of functional brain disease as the vomiting in cases of cerebral tumour is of organic brain disease.

(2) Fæcal vomiting of functional nervous origin is merely a rare and extremely exaggerated form of ordinary hysterical vomiting.

(3) The vomiting in functional brain disease may sometimes be more violent and severe than it ever is in organic cerebral disease, since fæcal vomiting is scarcely known to occur in cases of cerebral tumour, &c. Some light is thrown on this point by the fact that a delusion is apt to be more stable and better "organised" in a monomaniac whose brain, could it be examined, would probably show no obvious change, than in a general paralytic whose brain is the site of grave organic disease.

(4) For the occurrence of fæcal vomiting of functional nervous origin active intestinal antiperistalsis is absolutely necessary. But it is not certain that antiperistalsis necessarily always plays a part in the fæcal vomiting known to surgeons as a symptom of organic intestinal obstruction (organic ileus).

[1] "Hysterical Malingerers" are, of course, not unlikely at some period of their career to get shut up in an asylum, or even in a prison or penitentiary. *Cf.* the discussion on the case recorded by Dr. J. D. Bryant, of New York (*loc. cit.*). Malingerers, hysterical or not hysterical, who from quite intelligible motives are willing to undergo grave surgical operations (though they do not court them), are, naturally, occasionally to be found amongst both sexes in prisons, and even amongst soldiers in countries where conscription exists.

(5) The fæcal vomit in organic obstruction of the bowel is seldom, if ever, more than "fæculent," that is to say, having the odour of fæces without containing obvious (visible) fæcal particles or masses. Vomiting of formed fæces, in the absence of malingering and gastro-colic fistula, practically only occurs in functional nervous cases. This may partly be accounted for by remembering that antiperistalsis, if it occurs at all, is likely to be more forcible when the muscular walls of the gut have not been previously weakened by over-distension or gross organic disease.

(6) "Hysterical Malingering" is of course apt to develop in the same (hysterical) class of patients in whom fæcal vomiting occurs, and the possibility of genuine fæcal vomiting occurring side by side with simulation must be kept in mind.