It is to furnish instruction in this subject, not in psychology or psychotherapy, but in psychopathology, the rational basis of knowledge of morbid mental states and their treatment, that Dr. Prince proposes to give this winter a course at the Tufts College Medical School. This course, I may say, is intended for medical students, though like other courses it may be opened to students of other departments interested in the subject who can demonstrate their fitness to profit by attendance upon the course.

Very briefly I wish in closing to touch upon a recent development of psychical methods of treatment of functional nervous disorders which is spreading through the country. I refer, of course, to the so-called "Emmanuel Movement." If I have given you any clear idea to-day of what I consider to be the processes in psychical methods of treatment, I think you will understand my serious objection to this so-called "movement." I do not wish to be understood as opposing the broadening of the work of any church, in this or in any other sociological direction, as I feel that this is a question for the churches to decide according to their individual needs and situations. It seems to me, however, that the moral bearings which arise in certain cases of functional nervous disease are better treated by the physicians than by the clergymen, just as the moral bearings of venereal diseases and the sexual relations can be and are better handled by the physician, as they are being handled in the broadest and best way by many conscientious Christian physicians every day of their lives. The introduction of religious sentiment, not to say sentimentality, in the treatment of psychic disorders is distinctly harmful. Finally that the careful individual study required for the proper selection of the method best adapted to the cure of the particular case precludes their being treated and handled in numbers in classes. In pointing out what I consider to be very real dangers in this movement I pass over the obvious danger to which most forms of mental healing sooner or later succumb, that of attempting the cure of conditions unsuited for psychical methods, since this is fairly easy to guard against by the co-operation of careful medical men in the movement. What personally I feel, however, is that all methods of treatment of disease are with greater safety left in the hands of medical men and that by co-operation with clergymen in the future, as in the past, the often perplexing moral and religious questions that may arise in these curious functional nervous disorders can be best met. This presupposes, however, that medical men, at least those fitted for the work, shall interest and inform themselves of methods of study and treatment of such cases, or, like other neglected chronic cases, such as cancer, tabes and many others, they will fall into the hands of quacks and pretenders to treat, and because of their possibility of cure by suggestion and other psychic means will probably prove to be the cases which spread the fame and prolong the activity of this ignorant and unscrupulous class.

ACUTE INTUSSUSCEPTION. ITS EARLY DIAGNOSIS AND TREATMENT, WITH A REPORT OF FOUR CASES.*

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This is a subject concerning which much has been written, but about which too much cannot be said. To the general practitioner its importance cannot be over-estimated, because he, as the family physician, is the first to see the case, and upon his readiness in recognizing early the seriousness of the condition depends a successful issue. This is my apology for adding my name to the already long list of contributors.

Our knowledge of pathological abdominal conditions is comparatively recent and that most common of all, appendicitis, is but a contribution of our own generation. Intussusception, however, belongs to the ancient history of medicine, for it has been recognized for centuries as a common cause of intestinal obstruction. Long before Christ it was known to Hippocrates, to whom it was probably handed down from times still more remote.

In this paper it is my purpose to discuss the early diagnosis and treatment of this condition and to present, because I feel that they are of interest and may be a help to my colleagues, a report of four cases of intussusception in children that I have had in private practice within the last few years. As an aid to early diagnosis the importance of the history of these cases cannot be too strongly emphasized, and I venture to say that if the history of every attack of acute abdominal pain in a child were carefully inquired into, more cases of intussusception would be correctly diagnosed and saved and fewer cases of it would be wrongly diagnosed as colitis and lost. We are called to see a healthy baby who has had a sharp attack of abdominal pain. The mother tells us that the child suddenly screamed, turned pale and perhaps vomited, but in a short time seemed to recover completely. The period of freedom from distress did not last long and soon the child became uneasy, crying out at intervals with severe attacks of griping pain. After a few hours, perhaps, some blood-stained mucus appeared on the napkin. Now with such a history it is well to be on guard and to consider ourselves in the presence of a grave condition, even if the patient looks well. A few hours after the onset no great damage may have resulted, but forty-eight hours later may find us confronted by all the signs of the violent disturbances which accompany acute obstruction. This we want to avoid if we would be true savers of lives, and in the hope that my small experience may help others to avoid this danger, I take pleasure in presenting my cases:

My first dates back to July 10, 1905. It was a male child of seven months, breast-fed and always well. About 2 p.m. it was placed upon the floor by the mother. A few minutes later it was heard to scream and was found lying on its back. In a short time the screaming

*Read at the semi-annual meeting of the South Middlesex Medical Society, held at the Boston Medical Library, Oct. 14, 1908.

suddenly ceased, only to be renewed in about fifteen minutes, and these periods of crying at intervals continued until evening, when I was first consulted and told the story just related. At noon the child had had a normal movement. There had been no vomiting. Temperature and pulse were normal. At the time I gave no definite opinion. The night was passed restlessly in spite of small quantities of paregoric. On my morning visit the child did not appear so well, there was some pallor and the face appeared drawn. Physical examination was negative, save that on a careful examination of the rectum the finger brought away a small amount of bloody mucus. At the time I considered this the result of traumatism on my part, but during the day it began to dawn upon me that I was possibly dealing with an intussusception. I was unable to see the child again until about 10.30 that evening, when I learned that at seven it had vomited. An injection of warm salt solution was returned with no trace of blood. I could feel no abdominal tumor. The child was worse, the pulse was up, and the temperature 101.5°. I told the family my fears, but it was decided to wait a little longer. In the morning I was telephoned to that the child had just had a large bloody stool and that the parents were willing that I should go ahead. Forty hours after onset, operation.

CASE II. January, 1906. Male child, five months, bottle fed. Mother stated that at 3 P.M. the child awoke vomiting and turned "perfectly green." During the afternoon he cried with pain at fairly regular intervals. I first saw him at 7 P.M. on this same day, but could find nothing on physical examination. The pulse and the temperature were normal. A provisional diagnosis of acute indigestion was made, milk was omitted and barley water substituted, which was taken in small quantities and retained. At seven o'clock the next morning the vomiting recurred and about the same time a few hard pieces of feces were expelled with great force, followed by a small bloody movement. On my second visit at 10 A.M. a round soft moveable mass was found in the right hypochondrium. The diagnosis was evident. A laparotomy was done at 3 P.M., twenty-four hours after onset.

CASE III. February, 1907. Female child, six months, breast fed. Always well. Awoke, crying, early in the evening and later vomited. She passed a poor night, crying out at intervals, but nursed occasionally. In the morning she vomited again. On the previous night the mother on retiring had noticed a slight amount of blood on the napkin when she changed it. The next forenoon a large bloody movement was passed, followed by four others. During the day the child refused food and grew progressively weaker. I saw her for the first time at 5 P.M. The diagnosis was evident, although I could find no tumor. Operated at 7 P.M., twenty-three hours after onset.

CASE IV. April, 1907. Male child, eighteen months, breast fed. At 7 A.M., thirty minutes after a natural movement of the bowels, the child began to complain of a stomach-ache. I was telephoned to and gave directions for an enema, to be repeated in thirty minutes if the pain was not relieved. As the pain recurred at ten-minute intervals, a second enema was given, which was returned with a trace of blood. There was no vomiting. I first saw him at 9.30 A.M., at which time he was walking about the dining-room. On palpation I could find no tumor, but here again on careful examination of the rectum the finger brought away a small amount of blood-stained mucus. Pulse and temperature were normal and there was no apparent facial change or other evidence of serious trouble. A diagnosis of intussusception was made and the patient was operated at noon, five hours after onset.

In summing up briefly the prominent features of my cases, I would point out (1) the sudden onset in children in perfect health; (2) intermittent paroxysmal pain and distress, to me a constant and almost pathognomonic sign; (3) the blood-stained mucus sometimes discovered early by rectal digital examination. Vomiting was not important. In one case it did not occur at all; in one it occurred late and in two, early. A tumor was detected in only one of my cases before the child was etherized.

In reviewing the recent literature of this subject, after my own though somewhat limited experience, I feel that most of it deserves to be criticised for an undue prominence given to certain signs and symptoms, which is misleading. The various modern textbooks ordinarily in the possession of the medical man go at length into the probable causes and explain carefully the different varieties of intussusception, but they describe briefly, indeed, in the most meager way, its symptoms. For instance, all that the "American Textbook of Surgery" has to say on the important matter of diagnosis is as follows: "In the diagnosis of this affection the greatest weight should be placed on the existence of an elongated swelling, tenesmus, colicky pains and the presence of mucus and blood in the discharge from the rectum. Another important symptom which distinguishes invagination from other mechanical causes which produce obstruction is the absence of complete constipation, gas and liquid feces, finding escape through the narrow lumen of the intussusceptum."

Again, this is Da Costa's brief account in his "Modern Surgery." "A sausage-shaped tumor can usually be felt in the right iliac fossa, tenesmus exists and bloody mucus is passed. The abdomen is rarely distended or tender."

Butler, in his "Diagnostics of Internal Medicine" (1903), states that the onset is acute, that tenesmus and bloody mucus stools are present and that a palpable sausage-shaped tumor is felt in the right iliac or umbilical regions and occasionally by rectum.

Roche, in his "Diseases of Children," says that the chief diagnostic points are the occurrence of discharges of blood, vomiting and abdominal pains and the detection of an abdominal tumor usually on the left side of the abdomen. He further adds that in these cases a careful rectal examination should always be made, for a tumor can often be found in this way where an external examination has failed to detect it.

Müsser, in his "Medical Diagnosis" (1899), speaking of abdominal palpation, tells us that the tumor in intussusception is often detected in the right lower quadrant or to the right of the navel; generally distinct, of the shape of the bowel, not very tender and harder than the tumor of appendicular inflammation. For symptoms and signs, he gives as the most prominent tenesmus, with the passage of blood and mucus, a tumor, and a constant desire to defecate.

Osler, in his "Practice of Medicine," 1901, says that this condition is of all forms of internal

obstruction the one most readily diagnosed. The important factors are the presence of a tumor, tenesmus and bloody stools. The tumor is usually sausage-shaped and felt in the region of the transverse colon.

Holt, in his "Diseases of Infancy and Childhood," speaks more at length of this condition, laying stress upon the initial symptoms of pain and vomiting. Moreover, he says that one of the most important signs of diagnosis is the presence of a tumor, which he feels is usually found.

Fischl, of Prague (1908), in his "Intestinal Diseases of Childhood," states that bloody stools may appear for the first time very late in the illness and thus be of little or no diagnostic importance.

Now the impression that one gets from nearly all these authorities is that a sausage-shaped tumor found in nearly every region of the abdomen is the one diagnostic sign of intussusception, and I venture to say that this is a memory that goes back to our student days, when we conceived the idea that this sausage-shaped tumor could even be discerned through the bed clothes. Not so, however.

Dr. Charles P. B. Clubbe, of Sydney, Australia (1907), in the most brilliant article ever written on intussusception, does not unduly emphasize the presence of a tumor, but says clearly that it seldom resembles a sausage, since it is not oblong, but more often rounded and varying in size. Moreover, it may be found anywhere in the abdomen and more often than not requires anesthesia for its discovery. C. H. Fagge¹ also says that the tumor is rarely sausage-shaped.

Clubbe, in reviewing his 140 odd cases, states that the general appearance of the child is frequently the cause of mistakes in diagnosis. Children in the early hours do not look sick. He advises men to pay particular attention to the mother's story, to the sudden screaming, with sudden pallor and perhaps vomiting, with later the passage of blood, with or without tenesmus. Especially does he call attention to the intervals free from pain. With these facts confronting him, the doctor should strongly suspect intussusception. Speaking of the rectal tumor as a diagnostic sign, he says that as an aid to early diagnosis it is valueless because the mass rarely reaches the rectum within twenty-four hours after the onset and is but a trap to catch the unwary who await its appearance.

Treatment.—The history of the treatment of this condition is interesting and deserves some special consideration. Inflation of the bowel from below, which is advocated by many men to-day, was known to Hippocrates. Praxagoras is said to have recommended opening the abdomen. Cupping of the abdomen, all sorts of purgatives, the administration of emetics, the swallowing of mercury and balls of lead were some of the many methods of treatment recommended. It was a favorite theme of students who were candidates for degrees in medicine. One named Felix, in a Latin thesis written in 1769, tells us that Barbette, who was a surgeon in Amsterdam, in the latter

half of the seventeenth century, recommended opening the abdomen. Felix says that he considers this a daring procedure, but adds that such an operation is said to have been performed with a most happy result on a very noted woman by a young and bold surgeon. Who the bold surgeon was he does not say, but Trousseau, in his "Clinical Lectures" (Lecture on Intestinal Occlusion), states that it was done at the suggestion of Nuck, the expert anatomist, in the last part of the seventeenth century.

To-day there are left two methods of treatment, — inflation of the bowels and laparotomy, — both of which I shall consider. It may be noted here that most of the modern textbooks, in the face of facts which are unanswerable, still recommend laparotomy as only a forlorn hope. Nearly all advocate injection of the bowel first. This method of treatment as practiced by Clubbe, who still uses it as a preliminary measure, is as follows: The child is anesthetized and placed on a warm water bag. With the buttocks raised, one pint of warm olive oil or normal saline solution at 100° F. is given with an ordinary syringe. In case a fountain syringe is used, it should not be over three feet above the patient. Fagge, on the other hand, does not use this method for three reasons, which I believe are sensible and ought to be readily accepted: (1) An injection through the rectum cannot reach the small intestine. (2) You cannot be sure of reduction. (3) There is danger of rupture from distended or gangrenous gut. "While ready," he says, "to admit that recovery has followed inflation with air or injection of fluid through the rectum, yet I am strongly convinced that the ideal treatment is a prompt laparotomy."

Munro, writing in 1899, said that inflation of the bowel by air, gas or liquid might be employed during the first twenty-four hours, with all preparations for operation made. He urged against it the danger of rupture and the difficulty of reducing the final inch of the invagination; but his true opinion of it is expressed in the statement, with which he preceded his opinion of this palliative measure, that all cases of intussusception should be considered in the interest of the patient to be surgical from the beginning.

Clubbe's attitude in the matter is curious. He has always insisted on preliminary irrigation. He recognizes its limitations and admits that he has been successful in only 13 out of 138 cases. Out of 16 cases sent back to the ward without opening the abdomen, 3 recurred. He realizes that you cannot be sure of complete reduction and confesses that it has cost him 1 case. He also quotes Mr. E. Owen,² who says, "I deem it nothing less than a calamity that physicians have every now and then managed to chase back a piece of intussuscepted bowel by using an enema."

To Clubbe, of course, irrigation is but a step in the operation, taken, as he says, because he "feels that by this means the intussusception is reduced to a certain extent and in the best and gentlest possible way, thereby lessening the shock of the

Practitioner, London, 1906.

²Brit. Med. Jour., London, September, 1901.

coming operation, because less manipulation of the intestines is required." This I believe is open to argument, and I personally feel that the treatment by injection should be religiously avoided by the general man.

Laparotomy. — The other method of treatment is prompt laparotomy. In 1871 we have the first successful laparotomy recorded by Jonathan Hutchinson. In 1877, in this country, Dr. H. B. Sands read before the New York County Medical Society³ his paper, "On the Treatment of Intussusception by Abdominal Section, with a Report of a Successful Case." In that paper Sands showed himself to be far in advance of his time, for he says, "The operation to be successful must be performed at a very early period, probably within twenty-four hours after the invasion of the disease." Moreover, he adds that in infancy the operation is the more justifiable because during that period there is hardly any tendency toward spontaneous recovery after sloughing of the intestine." In the same paper we get an idea of the feeling in our own community thirty years ago, from the opinion quoted by Dr. Sands of Dr. Jackson, Professor of Pathology at Harvard, who in a meeting of the Suffolk District Medical Society said that he considered opening the abdominal cavity for intussusception with a view to withdrawing the invaginated bowel a foolhardy procedure, since it would usually tear before it could be withdrawn even in comparatively recent cases.

Since Dr. Sands' time there has been a slow but steady march toward surgical treatment, not so much in our own country as abroad.

In 1906, C. H. Fagge published the results of 19 cases with 15 recoveries. The four lost were operated too long after the onset. The mortality here was 21%. He also mentions 16 cases by Wallace, with a mortality of 19%. Clubbe's record, of course, stands alone. At the time of the publication of his paper he had operated 124 cases with 46 deaths, a mortality of 32%. In his last 24 cases he had but 3 deaths. His series dates back to 1893, and every year since he has reduced his mortality. Clubbe must be given unstinted praise for his exceptional surgical skill, but no surgeon, even in the largest medical center, can show such a large number of cases without important underlying reasons, which are obvious. About Clubbe, in general practice, must be a group of skillful men to whom he has preached the gospel "of prompt laparotomy for intussusception," and who, as results show, have done credit to themselves and their teacher. In our own country, Dr. Robert C. Coffey, of Portland, Ore., and Dr. Elsworth Eliot, Jr., of New York City, have recently shown, by their statistics, the wisdom of prompt surgical treatment.

In a late article by Dr. James Stone, of this city, I find that in the last five years there have been 8 cases operated at the Children's Hospital, and at the Infants' the same number of cases in the last ten years. In each group all but one died, making 2 recoveries and 14 deaths. "A poor record," as he well says.

³ Reprint in N. Y. Med. Jour., June, 1877.

In my own cases the results were more satisfactory. Out of 4 cases operated, I had 3 recoveries and 1 death.

CASE I. Operation by Dr. F. B. Lund; I assisted.

Forty hours after onset. Under ether an irregular tumor felt in right hypochondrium. Incision in median line. Intestines prolapsed through wound. An invagination, ileo-cecal in type, was reduced and wound closed by interrupted silk-worm sutures. On eighth day stitches removed; wound apparently healed by first intention. Four hours later I was called and found the wound open and the intestines strewn about the bed. This unfortunate result had followed a visit of the mother to nurse the child. Under ether, bowels were replaced and wound sewed up. Child made an uneventful recovery. Fagge and Clubbe both report similar accidents.

CASE II. I operated twenty-four hours after onset. Median incision. Tumor plainly felt to right of umbilicus; intestines prolapsed through wound. Ileo-cecal invagination reduced. Wound closed by interrupted silk-worm gut sutures. The patient died in three hours of what I believe was surgical shock.

CASE III. I operated twenty-three hours after onset. Under ether tumor was felt in region of transverse colon. A median incision was made. Double invagination found and reduced with considerable difficulty. Inflated bowels replaced in abdomen only after twice puncturing and sewing up with Pagenstücker. Recovery uneventful.

CASE IV. I operated seven hours after onset. Under ether small tumor made out above the umbilicus. Median incision. Ileo-cecal invagination fairly easily reduced. Uneventful convalescence.

In Cases 1, 3 and 4, the condition of the patients was so good that time was taken to do an appendectomy. In Cases 1 and 3 the mothers nursed their respective babies twelve hours after operation, and in all the living cases the bowels moved naturally within twenty-four hours.

In conclusion, I would like to impress the importance of early recognition (1) by the mothers' story; (2) by the paroxysms of sharp abdominal pain; (3) by the early discovery of blood-stained mucus on digital examination of the rectum. (This last, as far as I know, is not mentioned by the authorities I have consulted.)

After the difficulty experienced in reducing my invaginations, especially the final inch or two, I confess that I am very skeptical as to the remedial effects of a pint of warm water or oil introduced into the rectum. As Dr. Murphy of Chicago says, "There is no palliative or conservative treatment for this condition. Criminal procrastination is the proper term for this so-called treatment."

I wish to express my thanks to Dr. A. F. Downing in the preparation of this paper.

THE COMPOSITION OF SMALL CURDS IN INFANTS' STOOLS.

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In the past few years there has been much discussion as to the composition of curds in infants' stools. There are two main contentions, the one that curds are composed of casein and the other