device than this candlestick (Fig. 1). The electric light here pictured might prove convenient (Fig. 2). Through the proctoscope (Fig. 3), by means of forceps and spoon, without anesthesia and without manual contact with the rectum's contents, the patient may be relieved.

CASE 1.—The first case which I report is that of a woman, 33 years of age, of Canton, Ohio, who had recurrent attacks of fecal impaction as often as once or twice a year. The only way in which the obstruction could be prevented was to secure daily a liquid stool. With much labor and by means of general anesthetics and irrigations her previous attacks had been relieved. Digital examination discovered an obstruction situated about 1 1/2 inches above the levator ani muscle of more or less diaphragmatic form and having a circular aperture. The patient was put into the knee-chest position, the proctoscope introduced, the obturator withdrawn, the field commanded illuminated by means of the candlelight and the obstruction observed. This was seen to be a congenitally malformed valve; it presented a drumhead appearance, and in its right half a circular aperture through which could be observed the impacted feces. This malformed valve was now divided and the feces removed by means of the forceps and the lithotomy spoon.

CASE 2.—I was requested by Dr. B. to see a woman of 40 years of age, at her home, on the evening of Oct. 9, 1898. Digital examination discovered fecal impaction of the rectum, from which 2 1/2 pounds of scybalous feces were removed, as in Case 1, after breaking up the masses by means of long-handled scissors. The cause of the obstruction in this case was a fibroid uterus of such size as to extend from the perineal body above the sacral promontory, thus effectually preventing the downward and backward excursion of the anterior rectal wall, which is an essential feature of voluntary attempts at defecation.

CASE 3.—In October, 1901, Dr. C. asked me to see his aunt, aged 62 years. I was told that some five or six weeks previously this patient had been operated on for the removal of sarcoma of the tongue. Her obstipation, pelvic and abdominal distress and the presence of a mass, led her physicians to suspect a rectal metastasis. Examination revealed fecal impaction. The mass seemed to occupy the whole pelvic cavity. Inquiry disclosed that the woman had been subsisting on a milk diet exclusively. The feces were of an impalpable, putty-like consistency, and weighed about 3 1/2 pounds. This patient was relieved as were Cases 1 and 2.

CASE 4.—I was called by Dr. B. to see a woman, 32 years of age, who reported that since an operation for ventral fixation of the uterus his patient had shown need for laxative medicines. This patient's rectum was impacted and obturated by the presence of scybalous masses, which weighed 3 1/2 pounds. I believe that in this case the ventral fixation of the uterus anchored the anterior rectal wall immovably in such a degree of suspension that the woman could not effectually bear down. Without distressing her the rectum was readily emptied.

Recurrence is to be prevented largely by the removal of the mechanical cause: In Case 1 by division of the obstructing valve, Case 2 by hysterectomy; in Case 3 there was no organic or mechanical cause; and in Case 4, where the obstructation was the result of the ventral fixation of the uterus, it was inadvisable to resort to surgery. The physical obstruction having been removed, in this class of cases the patient's diet should be limited to meat, fruits and those vegetables which contain but little starch. Albolin should be given daily, the patient required to drink quantities of water and to employ the enema frequently. Proper bathing, massage and open-air exercises should be insisted on. Cathartics are to be condemned.

I believe the report of these cases calls attention to an obviously simple method for the relief of rectal impaction of feces, and I believe that the more general practice of proctoscopy will render obsolete the employment of irrigation and chloroform or other in the treatment of this condition.

THE BROAD TAPEWORM IN MINNESOTA
WITH THE REPORT OF A CASE OF INFECTION ACQUIRED IN THE STATE
W. S. NICKERSON, S.D., M.D.
Assistant Professor of Histology and Embryology University of Minnesota.
MINNEAPOLIS.

In the last edition of his text-book Osler says concerning the broad tapeworm of man (Dibothriocephalus latum). "So far as I know it has not been found in the United States except in a few imported cases." Max Braun, in describing the distribution of this species.

1. Sixth edition, p. 29.
2. "Die Thierische Parasiten des Menschen," 1903.
throughout the world, quotes one case as having been reported from North America (Philadelphia). Ward3 puts it also among the species "recorded from man in N. America, but probably acquired elsewhere." These citations give a fair epitome of the opinion of the best authorities in both medicine and helminthology on the occurrence of this species in America. I believe, however, that in this part of the country, which has a considerable Scandinavian, Finnish, Polish and German population, the worm is very much less rare than is indicated by the opinions quoted. Three cases in Minnesota have come to my knowledge in the past year, all occurring within one year in one town and in the practice of one physician. The worms were secured in all cases and sent to the University of Minnesota, where they are preserved, so that there remains no room for doubt in regard to the species involved.4

Dr. Owen W. Parker, Ely, Minn., has not only forwarded these specimens obtained by him to the university, but has very kindly furnished me with all the clinical facts obtainable concerning the cases and given me free permission to make use of such facts for publication. I wish here to make full recognition of my indebtedness to Dr. Parker's courtesy in this matter and to give him full credit for all the clinical facts recorded.

The patients in two of these cases were Finlanders, and the third case occurred in a child of Finnish parentage, who was born in Minnesota and had never been out of the state. This latter case is of exceeding interest, since there can be no question that the infection occurred in Minnesota, and it therefore demonstrates the fact that the broad tapeworm now has a foothold, at least locally, in this country. The facts of significance in the history of the case are as follows:

CASE 1.—Family History.—E. P., male, was born April 25, 1902, in Ely, Minn. His parents were born and reared in Finland. The father came to this country in 1891. Three years after coming from Finland he passed a tapeworm (Dibothriocephalus). He had been ill for a year before, had lost in weight, become anemic and suffered from abdominal pain. After the expulsion of the worm he quickly recovered his health and has since been well and has shown no symptoms of infection.

History of Case.—The patient's health began to fail in February, 1904. He did not thrive or gain in weight, became anemic and gave frequent indications of abdominal pain. In August, the mother noticed segments of tapeworm in the child's stools and called the physician who successfully treated him. The child has since been perfectly well. The worm expelled Aug. 9, 1904, measured 7 feet in length and is a typical specimen of Dibothriocephalus latus. The scolex was secured and measures 1.75 by .9 mm. The parents say that the child had eaten many times of fish caught in the lakes about Ely and had also eaten salt fish, probably from Lake Superior, but deny his ever having eaten any imported fish.

Infection by the broad tapeworm occurs through the ingestion of the larva (placocercoid) embedded in the flesh of certain fresh-water fishes. No less than ten different species of European fishes are known to serve as intermediate hosts, and any of these may therefore transmit the infection. The remote possibility that the infection of the child might have come from eating some imported European fish seems to be ruled out by the statement of the parents that he had never eaten any such fish. I am informed also by dealers that all of the fish which is imported and eaten by the Scandinavian peoples is salt-water fish. The infection could not have come through imported fish therefore, and there seems to be no possible escape from the conclusion that it was acquired from native fish, caught probably in one of the lakes near Ely or possibly in one of the Great Lakes.

It may be idle perhaps to speculate at this late date and in the absence of any detailed knowledge of the facts in regard to this patient's father. One or two suggested inferences may, however, be pointed out. As Dibothriocephalus latus is the most common tapeworm among the Finns it is probable that it was the species present in his case. As he had been in this country three years and had complained of being unwell only one year, and Dibothriocephalus latus is a very rapidly growing worm, the average rate of growth being as shown by various experimental infections of man not less than five to nine c.m. per diem, it would appear improbable that he could have become infected before leaving Finland and not have felt any symptoms within two years after arriving in this country. Without the case of the child's infection—which was surely acquired in Minnesota—this inference would have little significance, but in view of that case, this becomes somewhat more worthy of attention as indicating the probability that the infection of the father may have been acquired in Minnesota.

Concerning the two other Minnesota cases the following data may be given:

CASE 2.—History.—A. K., Finlander, male, aged 22, farmer in Finland and woodsmen in Minnesota, was in the habit of eating much fish, often not thoroughly cooked. He had already begun to be unwell before leaving Finland, two years previously, and had gradually grown worse. His symptoms, when admitted to Shipman Hospital, Jan. 5, 1904, were headache, anemia, accelerated pulse, marked weakness so that he could not climb stairs, and palpitation. His appetite was good and he had no abdominal pains or other abdominal symptoms. He was muscular and well developed, not emaciated. The mucous membranes were pale, and the skin was of a peculiar lemon-yellow, very suggestive of pernicious anemia. There was hemie mucous membranes and pulsation of jugulars. Blood counts 1,000,000 erythrocytes, leucocytes not recorded; polikloitoysis. "In fact," writes Dr. Parker, "the blood specimen looked identical with one of pernicious anemia." After some observation and study of the case, the patient was put on anthelminthic treatment and the worm expelled. His recovery was rapid; in six weeks, when he left the hospital, he had regained his strength and color and his blood count was nearly normal, erythrocytes 4,500,000. No further record of patient has been obtainable since his discharge from the hospital. The worm (worms?) expelled Jan. 23, 1904, consisted of many (nearly 30) short pieces of a total length of 31 feet 7 inches. The scolex was not found.

This case is very interesting from the medical viewpoint, since it illustrates so well the pathologic effect resulting in some cases from dibothriocephalus infection and the necessity in all cases of apparent pernicious anemia of examining the feces for tapeworm eggs, since the segments of the worm are voided in rather long chains at infrequent intervals and may thus easily be overlooked.

CASE 3.—The remaining Ely case furnished a very incomplete history. Patient was a Finnish woman, aged 35, somewhat anemic and complained of colicky pains in abdomen at times and some hyperpyrexia. After expulsion of worm her health improved and abdominal pains ceased. The worm (worms?) expelled Oct. 25, 1904, was in pieces, having a total length of about 20 feet, but no scolex was obtained. In this case we have no data which in any way indicate whether the

3. "Precision in the Determination of Human Parasites." THE JOURNAL A. M. A. 1905, p. 703 et seq.
infection occurred in this country or before her immigration from Finland.

A question which is at once suggested by these cases is whether the general freedom from the broad tapeworm enjoyed by native Americans is to be regarded as evidence of the absence of the parasites from our country, or whether such freedom should be credited chiefly or solely to the American methods of preparing fish for food, being such as to destroy any larve which they may harbor. For the production of infection it is necessary both that the fish eaten shall contain the larval worms and that it shall be eaten uncooked or only partially cooked. The American methods of preparing fish for food make it possible therefore to have infected fish and yet no resulting infection of man. In fact, larve of Dibothriocephalus do occur in American fishes. I have obtained them from fish caught in the Great Lakes, but without feeding experiments to rear the adult worm from the larva it is impossible to determine the species of Dibothriocephalus and the probability is in favor of such larve being of some species other than latus—the possibility of many.

It is, however, naturally impossible that there shall be larval worms in American fish without the presence also of the adult worm living in the vicinity in its definitive host. So far as we know the adult Dibothriocephalus latus is extremely rare in man in America generally, and there are no reports of its being found in American dogs, cats or foxes—the other animals which are known to serve as definitive hosts for the parasite. Unless the adult worm is much more common that we have reason to believe we can not expect the larve to occur at all abundantly or generally in American fish. The dearth of American reports regarding cases of parasitism both of man and animals leaves room for much uncertainty in regard to the accuracy of any such general conclusion as this, however, and we are by no means justified in denying the possibility that the species may be autochthonous in this country and as widely distributed as it is in Europe. On the whole, however, I regard it as much more probable that more local infection of the fishes has occurred resulting from the discharge into some of the lakes near Ely of feces from some imported case of Dibothriocephalus latus infection. That such infection should have occurred is not surprising in view of the large Finnish population of the region, the frequency of tapeworm infection among the Finns, the fact that the sewage from the town is discharged into a lake, and the large number of species of European fish which are subject to infection by the larval worms. It is unfortunate that the stringent regulations adopted by the government to prevent the introduction of objectionable species of animals and plants are by the nature of the case not capable of enforcement against intestinal parasites.

It is also to be regretted that cases of infection by intestinal parasites are not generally reported by the physicians under whose observation they occur so that they become a matter of permanent record available for statistical purposes. Although the accurate determination of the species often requires an amount of technical zoological knowledge which the physician does not have at his command, this only makes it so much more important that the specimens should be preserved and sent to some center where positive determinations can be made and recorded.6 If medical practitioners generally could be induced to do this it would be the means of accumulating much useful knowledge concerning animal parasitism in this country, a subject that has hereto-fore received far too little attention from physicians. We need to know more fully what human parasites occur in America, their frequency, their regional distribution, the sources of infection and the pathologic effects which they produce. Every case accurately determined and put on record is a contribution toward this end.

Now that it is shown that infection of American fish by the larve of Dibothriocephalus is possible and has occurred locally, it is important that all possible measures shall be taken to prevent the infection from becoming widespread. To this end the physician's influence should be exerted wherever necessary to prevent the eating of fish food not thoroughly cooked and to prevent the feeding of raw fish to domestic animals. Where a case of infection by the broad tapeworm is known to exist the thorough dissection of all fecal discharges should be carried out to prevent the possibility of living eggs being carried into any stream or lake. In cases of Dibothriocephalus infection all possible data should be gotten which may tend to show where the infection was acquired.

INSANITY AS A RESULT OF HYSTEROTOMY AND OUPHORECTOMY.

GRAEME M. HAMMOND, M.D., LL.B.

NEW YORK.

Gynecologists have generally accepted the hypothesis that the ovaries influence the development of the brain and that their removal is generally followed by consequences disastrous to that organ. Many things have contributed to this opinion. In a great many cases insanities do follow operations for the removal of the pelvic organs. Dudley1 voiced the opinion of gynecologists when he said: "It would seem as if the ovaries, and probably the testicles, add something to the system which is necessary for the individual's complete development, and by removing the ovaries or testicles you deprive the system of something that causes a perversion of nutrition."

Again, it is the belief that the early removal of the ovaries and testicles causes changes in character in man and in the lower animals. This is true in so far as the sexual instinct is obliterated, and as the sexual instinct profoundly influences the course of life, such as, for instance, the maternal and paternal instincts, the desires for pleasing the opposite sex and the battling with the world with the object of gaining a home, wife and children, the individual is changed to that extent, but there is nothing to show that the early removal of the generative organs in either sex diminishes mental vigor, intellectuality, or is conducive to insanity or to mental degeneration. The doctrine that the ovaries secrete some substance necessary for the preservation of the integrity of the brain will not, of course, hold good for the uterus, and it is well known that the same psychoses which follow operations on one follow operations on the other. Disease of the ovaries, which gradually destroy their function, is rarely followed by insanity, but the operation for the removal of the diseased and destroyed ovaries is often followed by mental disease.

Against the theory that the ovaries are necessary for the preservation of the mental faculties is the fact that

5. I will undertake willingly to receive specimens of human intestinal parasites from physicians in Minnesota and adjacent states for determination. All specimens should be carefully preserved, and as full data as possible should be sent with them.

6. Read before the New York Psychological Society.

1. A. Palmer Dudley: "The Trend of Gynecologic Work To-day," THE JOURNAL A. M. A. Dec. 12, 1903, vol. xii.