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APPENDICITIS;

WITH ORIGINAL REPORT AND ANALYSIS OF ONE HUNDRED AND FORTY-ONE HISTORIES AND LAPAROTOMIES FOR THAT DISEASE UNDER PERSONAL OBSERVATION.

Read before the Pan-American Medical Congress.

BY J. B. MURPHY, M.D.

CHICAGO.

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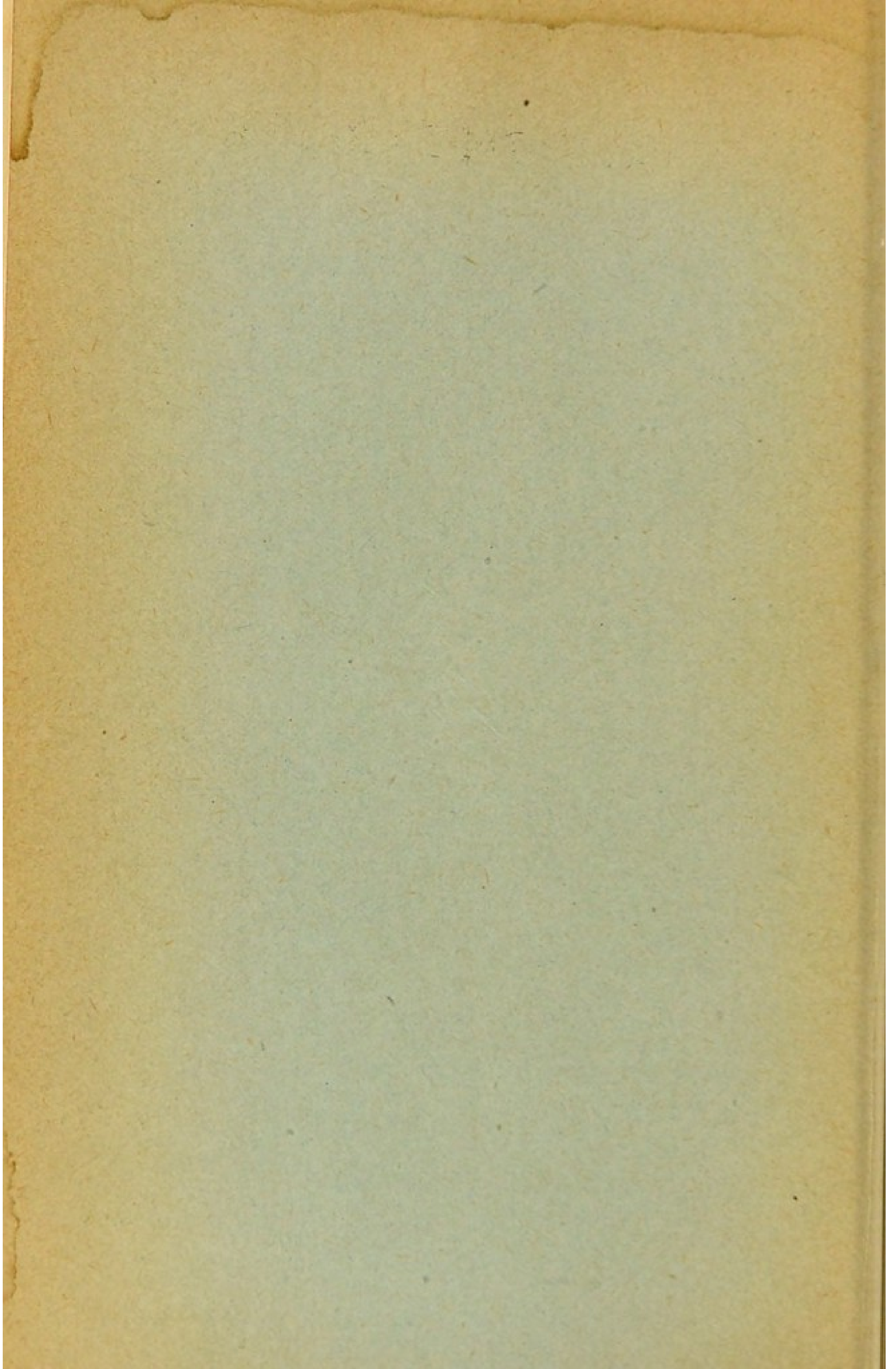

APPENDICITIS; WITH ORIGINAL REPORT AND ANALYSIS OF ONE HUNDRED AND FORTY-ONE HISTORIES AND LAPAROTOMIES FOR THAT DISEASE UNDER PERSONAL OBSERVATION.

BY J. B. MURPHY, M.D.
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It might seem necessary to offer an apology for presenting a subject that has been so thoroughly discussed at medical associations and so voluminously considered in medical literature in the past four years. But I will offer none for presenting this subject, as many of its important relations to the physician and patient are still mooted questions. There is probably no subject in abdominal surgery on which the profession is so divided and on which such opposite views are entertained. Gynecologists are fairly well agreed on what the procedure should be in cases of pyosalpinx, ovarian cysts, and even now on fibroid tumors, but at every medical meeting in which the subject of appendicitis is discussed we find the physicians almost equally divided for and against operative procedure. The question presents itself, Why are they thus divided? The answer is, They are divided because they have different views, or better, because they are not informed on: 1, the pathologic conditions that exist; 2, on the probable course or clinical history of the patients suffering from these pathologic conditions unaided by the surgeon; 3, on the comparative results to the patient by

the aided and unaided methods. I will not consider the anatomy of the appendix, nor treat of the various positions in which it may be found. The excellent paper by Dr. Joseph D. Bryant fully elucidates that subject.

Pathologic Conditions.—Let us first consider the pathologic conditions that exist. The inflammatory or infective lesions of the appendix for a scientific discussion of their relations to the comfort and life of the patient, should be divided into the following classes, because each class has advantages and disadvantages peculiar to itself, and in considering the effects of these lesions upon the patient a fair idea of the percentages can not be obtained unless the classification is carefully carried out, so that the degree of jeopardy may be uniform. The lesions of the appendix and their effects on the surrounding organs and peritoneum should be divided into:

1. Simple catarrhal appendicitis.

2. Ulceration of the mucous membrane without perforation; *a*, pressure atrophy with infection; *b*, simple ulceration with purulent accumulation; *c*, typhoid ulcer; and *d*, tubercular ulcer.

3. Ulceration of the mucous membrane or ulceration of the appendix with perforation.

4. Gangrene of mucous membrane of appendix; *a*, local; *b*, general.

5. Gangrene of appendix complete; *a*, with perforation; *b*, without perforation.

6. Infection of peritoneal cavity; *a*, *without* perforation local and general; *b*, with perforation local and general.

7. Peritonitis; *a*, local peritonitis without limiting adhesions; *b*, circumscribed abscess; *c*, general peritonitis.

The scope of this paper does not include the neoplasms, traumatisms, nor herniæ of the appendix. I include in this paper the cases occurring in the practice of my partners, Drs. E. W. Lee, F. S. Hartmann, and H. R. Wittwer, as the cases were all treated on

the same basis, and had equal chances of recovery. Though the operations were performed by

Dr. E. W. Lee	20 cases	with 5 deaths.
Dr. H. R. Wittwer	4 cases	with 0 death.
Dr. F. S. Hartmann	9 cases	with 1 death.
Dr. J. B. Murphy	108 cases	with 10 deaths.
Total.	141	16

Mortality in my own cases, 9.2 per cent.

Etiology.—The pathologic lesions above mentioned are produced by certain causes which we will classify as:

1. Simple pus-infection, producing the catarrhal variety; *a*, without retention; *b*, with retention.
2. Extensive infection of wall by the amœba coli or pyogenic microphytes, producing gangrene of a greater or lesser portion of the appendix.
3. Pressure atrophy with infection of appendix; *a*, fecal concrement; *b*, foreign body.
4. Specific infections, as typhoid, tubercular, etc.
5. Retention accumulations; *a*, from cicatricial contraction; *b*, from occlusion by enterolith or foreign body.

I have found in the report of 465 autopsies of this disease that perforation of the appendix from various causes had occurred 324 times, or in 70 per cent. In our 141 cases the appendix was removed 58 times during the active stage of the disease, and perforation was present 39 times, or in 67 per cent.

The simple catarrhal variety of appendicitis without retention is seldom brought to the surgeon's attention, more frequently, and still not often, to that of the physician's, as it usually accompanies a catarrhal enteritis, and has no symptom peculiar to itself except a slight tenderness in the right iliac region. Of this class, we have not operated on or seen a single case.

Catarrhal inflammation with retention is a very different condition; it presents a serious train of symptoms, producing a pulse as high as 130, temper-

ature of 105 degrees, as can be seen by Cases 83 and 116. This form is frequently brought to the surgeon's attention. It is accompanied by severe symptoms both local and general, and endangers the life of the patient much more than the preceding form. There were three cases of this variety operated on, all recovered.

Of the 141 cases operated on, the appendix was found completely gangrenous and not perforated in 4 cases, with 4 recoveries. In this form of appendicitis the appendix is usually surrounded by bowel or omentum without a pus infection of the peritoneum. Case 19.

Pressure atrophy of the appendix with perforation was considered in former times to be due in the majority of cases to foreign bodies that had passed into it from the alimentary canal. This was erroneous. Later observations show that only a very small percentage is due to foreign bodies, such as seeds, cherry stones, etc., passing into the appendix in that manner, but the great majority of pressure atrophy perforations is produced by fecal concretions (enteroliths). Number of foreign bodies in our cases, five, 3.5 per cent.; number of fecal stones, forty-three, 30 per cent. This does not represent all, as many of the appendices allowed to remain undoubtedly contained them.

The specific infections seldom produce obstruction of the appendix or special symptoms. Of our cases, we had one of the typhoid variety. Mrs. B., Case No. 46, operated; recovered. Of the tubercular variety we had one case, and the patient recovered from the immediate effects of the operation, and died of a general tuberculosis eighteen months later.

Retention accumulations in the appendix from cicatricial contraction occur where an ulcer has previously existed in the appendix, and the contraction so occludes the caliber of the base of the appendix that the secretions in the cavity of the appendix accumulate, produce distension, bring on attacks of

pain, fever, and local tenderness, and finally rupture. The only cases of this kind were Case 101, twelve attacks in two and one-half years, and Case 126, five attacks in eight months. The effects of the obstruction of a foreign body or concrement at the base of the appendix is the production of a gangrene of the appendix: 1, by infection and gangrene, not by restriction of circulation, as the appendix receives its blood supply from the side, not from the end; 2, by retention of contents; and 3, by strangulation from swelling of mucosa. The cases of this kind will be considered under the head of gangrene of the appendix.

Pathologic Lesions.—Simple recurrent catarrhal appendicitis is considered by physicians to be a frequent disease. The course of this disease is supposed to be an inflammation of the appendix and an accumulation within the appendix of the products of inflammation, with the subsequent escape through the opening of the appendix into the cecum. That recurrent appendicitis is not of this variety, I am convinced. Recurrent appendicitis in the cases that we have operated upon is due most frequently to a foreign body in the appendix (Case 42), and next in frerequency is due to cicatricial contraction (case 119), and these recover not by the passage of the products of inflammation through the neck of the appendix into the cecum, but by ulceration from without inwards through wall of cecum from a circumscribed suppuration about the appendix at the seat of the foreign body. These cases are misnamed by some authors, cecitis or pericecitis. Matterstock, in 146 autopsies for perityphlitic abscess, found the cecum perforated from within out only twice. Number of cases of this class diagnosticated recurrent catarrhal appendicitis, and operated on by us, 3; all showed rupture of wall and opening into cecum, and recovered. (See Cases 28 and 35.)

A simple ulcer of the appendix produces symptoms in two ways: 1, by occlusion of the appendix from a swelling of the mucous membrane, and the

tension produced on the serous coat; 2, by an infection of the peritoneum through the wall of the appendix, or along its mesentery. In the literature on this subject we are led to believe that a pus infection of the peritoneum only occurs with perforation. This is erroneous, as in a number of our cases with simple ulcers of the appendix we had: 1, an infection of the mesentery and peritoneum, as shown by the presence of yellow flakes of purulent material (see Case 67); 2, accumulations of a quantity of pus in the peritoneal cavity without perforation (see Case 143). This is very important, for in ulcerations of other portions of the alimentary canal such pathologic conditions are reported as occurring; and why should the mesentery of the appendix not be infected, or why should the peritoneum not be infected without perforation of the appendix by simple ulceration, as in other portions of the alimentary canal? There is no reason, and while it has not been previously noted, I have found it nevertheless a common pathologic condition.

That simple ulceration of the appendix with perforation should produce a serious, if not fatal, peritonitis, is to be expected the same as perforating ulcers of other portions of the alimentary canal. When a perforation first takes place, the rule, to which there are many exceptions, is that adhesions are formed about the appendix, but as the accumulation outside of the appendix increases, these adhesions are ruptured and the contents of the abscess cavity escape into the peritoneal cavity, with the results to be considered under general septic peritonitis.

Partial gangrene of the appendix is produced in three ways: 1, mechanical compression by foreign bodies; 2, by accumulated fluid; 3, by infection of its wall; *a*, biotic; *b*, toxic. The latter was the most frequent condition.

Complete gangrene of the appendix; *a*, with perforation; *b*, without perforation. In complete gangrene of the appendix, either from compression at

its base by a foreign body or by infection of its wall, destroying the vitality of the tissue, or by contortion, shutting off its circulation, if an early operation is performed the appendix will be found black, non-adherent, surrounded by omentum, which is adherent to the wall of the bowel, and without pus infection of the peritoneum. It looks as though it were a miniature gall-bladder with extremely thin walls. The dangers of this variety with early operation before it has perforated, one can readily see would be small, as the cecum can be lifted into the wound, the appendix ligated, excised in the absence of pus in the peritoneal cavity, with very little danger of subsequent infection. When the appendix has perforated, as in subdivision *a*, the contrary is the case. A greater or lesser accumulation of the products of infection and gangrene of the appendix, the microphytes, pus, etc., are liberated into the peritoneal cavity. These produce a peritonitis which may become localized by the formation of limiting adhesions; or, in the absence of the latter, a general peritonitis may result, with a tendency similar to that found following gangrenous destruction in other portions of the body from infection, in which there is an absence of the effort of limitation and a non-restricted advancement of infection.

Peritoneal Infections.—The first variety of infections without perforation I have mentioned under the head of ulceration of the mucous membrane. The second variety is the most common in diseases of the appendix, a small circumscribed abscess as a result of perforation. The effect of this abscess in its subsequent course depends on: 1, whether there follows necrosis of the wall of the adherent intestine which protects the peritoneal cavity and the admission of the contents of the abscess into the intestine; or 2, whether the abscess is retained within the constantly dilating sac, producing a large accumulation always separated from the general peritoneal cavity, which can be treated surgically by a lateral incision without

opening the unaffected portion of the peritoneal cavity; or 3, whether the abscess suddenly ruptures into the peritoneal cavity; or 4, whether the abscess opens into other of the neighboring viscera or cavities, as kidney, bladder (Case 82) or pleura.

The local, circumscribed peritoneal abscess is a source of danger: 1, from absorption; 2, from necrosis of the bowel forming part of its wall, followed by hemorrhage which may prove fatal (Case 54); 3, danger of rupture into the general peritoneal cavity (Case 108); 4, thrombo-phlebitis, secondary abscesses. (See Cases 10 and 26.)

General Suppurative Peritonitis—as a result of disease of the appendix is produced: *a*, by a direct perforation and emptying of contents of the appendix into the peritoneal cavity (many cases); *b*, by a rupture of a small circumscribed abscess that had previously formed around the appendix (Case 108); *c*, by infection through wall of appendix (Cases 85 and 86), and also through the wall of an unruptured abscess (Case 134); *d*, by a rupture of gangrenous appendix into peritoneal cavity. The result of the infections of the peritoneum, or general suppurative peritonitis, depends upon the pathologic changes produced by the infection on the surface of the peritoneum. We have, 1, a dry septic variety of peritonitis with more or less complete exfoliation of the endothelium of the peritoneum, which terminates fatally in a very short period of time, as in Cases 25 and 43. We have, 2, where the quantity of pus is considerable, a ptomaine poisoning from the immediate absorption of the quantity of pus poured into the peritoneal cavity, where the patient at the end of four to twelve hours after the rupture will die with the most profound symptoms of collapse from toxines. (See Cases 102 and 104.) We have, 3, an escape of a quantity of pus into the peritoneal cavity, generating a suppurative peritonitis. Of this variety there were thirty-six cases, with twelve deaths. In all of these the patient had no immediate manifes-

tations of collapse; in many the pulse was not above 90, temperature not above 100 degrees at the time of the operation, even in cases in which the surface of the bowel in one-half or three-quarters of the entire abdomen was covered with pus. This condition can exist four, five, six, or even seven days without producing the symptoms of collapse which are recorded in our text-books as occurring *immediately* from *infections* or *ruptures* into the peritoneal cavity. The symptoms of collapse come on in these cases *only after an absorption of the products of inflammation*, never primarily, and when they do come on the patients die within a very few hours after their onset. The symptoms of collapse in these cases always surprise the attending physician, as his patient before their onset is considered to be very far advanced in convalescence, if not cured, and this explosion surprises him like a thunderclap from a clear sky.

I will not go into the details of the clinical history of the many varieties of lesions and their sequences which I have now related, as you can readily understand how the course in the various pathologic conditions would differ. There is probably no disease in the abdominal cavity that produces such a multiplicity of manifestations, pathologic conditions, and variety of dangers as that of lesions of the appendix. In comparing the operative with the non-operative treatment all these pathologic conditions must be considered separately, otherwise we can draw no reliable conclusions as to the merits of various procedures. In order to do this, the symptoms of each lesion must be so distinctly and separately outlined that the lesion can be recognized by the medical man without operating, as well as by the surgeon operating. We will, therefore, now consider the symptomatology of appendicitis.

SYMPTOMATOLOGY.

Can we recognize the various pathologic conditions by the symptoms? Can we say from the symptoms, this is catarrhal appendicitis; this is peritonitis?

Emphatically, no. What are the symptoms of acute catarrhal non-obstructive appendicitis? They are the symptoms of enteritis, with slight local tenderness over the appendix; this condition is usually found accompanying enteritis. What are the symptoms of suppurative appendicitis with obstruction, that is, with retention of the products of infection within the appendix? Sudden attack of pain in the abdomen, either localized to the right iliac region, or general, shortly followed by nausea and very frequently vomiting. Tenderness most frequently local, occasionally general, extreme tympanites, a pulse of from 120 to 130; temperature of from 104 to 105½ degrees; in fact, the classical symptoms of peritonitis, and still no peritonitis present. (See Cases 83 and 116.) The symptoms of ulceration of the mucous membrane without perforation are just the opposite to the preceding ones in intensity, being as a rule the same symptoms, but very mild; and with specific ulceration as typhoid and tubercular, they are also practically the same as the latter (Case 46).

In ulceration with perforation, we have, 1, a sudden attack of pain; 2, followed always by nausea and frequently vomiting; 3, localized tenderness in right iliac region; and 4, a temperature of 102–103 degrees. These symptoms continue for three days. They may be accompanied by extensive tympanites and general tenderness. If the abscess remains circumscribed they will gradually subside, and at the end of a week the temperature will be 99½ to 100 degrees, pulse 90, absence of general tenderness, absence of tympanites, and only local tenderness present. But still there may be an abscess in the peritoneal cavity.

Gangrene of the mucous membrane has no special symptoms different from those just mentioned with ulcerative perforation, and can not be determined until the abdomen is opened and the appendix examined. There are following a perforation of the appendix no special symptoms, except a possible

exacerbation of pain and an increased area of tenderness.

We have now considered the leading symptoms of the varieties of appendicitis, per se, without its complications, and we recognize four cardinal symptoms within the first forty-eight hours in every case: 1, sudden pain; 2, nausea and vomiting; 3, local tenderness over the appendix; and 4, elevation of temperature. These symptoms occurring in a healthy individual are pathognomonic of this disease and all that is necessary for its recognition. They are most marked and characteristic within the first forty-eight hours; therefore the diagnosis is most readily and positively made at that time. I will not mention the many other manifestations presented by this disease, but refer you to that most excellent article on "Some Points in the Diagnosis of Appendicitis," by Dr. Geo. F. Shrady, *Medical Record*, Jan. 6, 1894.

Special care should be exercised in excluding females with history of genito-urinary infections.

The infections of the peritoneal cavity without perforation have no additional immediate symptoms to those of appendicitis without infection of peritoneum. *Infection of the peritoneum with perforation has immediately following the perforation no special symptoms above a circumscribed peritonitis, or a simple lesion of the appendix without perforation.*

The constitutional symptoms of a circumscribed abscess, in the neighborhood of the appendix, immediately on its formation are usually pain and vomiting,and elevation of temperature approximating 103 degrees. This continues for four or five days, subsides to 99½, or even 99 degrees, as long as the abscess remains circumscribed and does not open into the peritoneal cavity, or into the retro-peritoneal cellular tissue. Locally tenderness and induration are present.

General Peritonitis.—What are the symptoms of general peritonitis? If the members of this Congress were to answer that question from our text-

books, or cases reported in our journals, they would say: *Immediately*, that is within a few hours after the infection, symptoms of tympanites, intense pain, collapse, particularly the latter would be present. I desire to call your attention to the symptom of collapse as a manifestation of peritonitis because it is misleading. We are taught in our text-books that the patient has *immediately* following a rupture into the peritoneal cavity of one of the viscera, or an abscess, particularly the latter, the manifestation of collapse. *I will state now that that symptom does not occur except under special conditions*, and I would warn the doctor who relies on the symptom of collapse as an immediate manifestation of perforation, that he is in error, except in cases of sapremia, as before mentioned, and that his erroneous idea on this subject will cost him the lives of many of his patients. The manifestations of rupture into the peritoneal cavity depend upon: 1, the character of the material entering the peritoneal cavity; 2, the quantity of material; 3, the pathologic changes produced within the peritoneum by various substances; and 4, resistance offered by peritoneum. Examples of the first, when the substance admitted into the peritoneal cavity is chemically irritating or poisonous, are gastric juice, fluid from hydatid cysts, or cysts of the kidney, etc. As a result of these admissions into the peritoneal cavity, we have immediate manifestations; pain, tenderness, collapse. Examples of the second, where the quantity of material cuts an important figure; if the quantity of material be small, as of the substances mentioned in No. 1, as well as the admission of pus or the rupture of small abscesses into the peritoneal cavity, which we see in everyday practice, the immediate manifestations of their presence may be very limited and transitory. While if a large quantity be admitted, the rapid absorption by the peritoneum of their toxines or ptomaines, produces rapid collapse and death without waiting for inflammatory reaction, the same as if a poisonous alkaloid

were injected into the peritoneal cavity, as in Case 102. Examples of the third, where substances small in quantity but particularly septic in their nature, cause a peritonitis of greater or lesser severity, which may assume the dry fulminating form so dreaded by all laparotomists, is fortunately of rare occurrence but not amenable to treatment; or it may assume the slow variety in which there is an accumulation of sero-purulent material, which gradually increases in quantity and spreads over the surface of the bowel, producing but slight disturbance for a number of days until such time as the rapid absorption of the products of inflammation takes place, and then the patient suddenly collapses and dies. The pus is guided in its advancement on the surface of the intestine by the position of the coils, as shown by formation of secondary abscesses on the opposite side of the abdomen and in the neighborhood of the kidney.

Errors in diagnosis occurred four times.

1. A perforating round ulcer of the stomach caused peritonitis (Case 49).

2. An extra nephritic renal calculus on right side (Case 40).

3. Rupture of a psoas abscess (Case 69).

4. Gangrene of entire mucous membrane of colon (diphtheritic colitis, Case 125).

All cases, except the last, demanded immediate operation. It will be further noted that in every one of these four cases there was an absence of some of the cardinal symptoms.

In order to determine the advisability of operative interference, we must ascertain as near as possible: 1, what percentage of the cases terminate fatally that are not interfered with surgically? 2, what percentage of the same class of cases terminate fatally that *are* operated upon ? 3, what are the additional dangers of the operation per se? It is estimated on good authority that from 27 to 30 per cent. of all cases treated medicinally terminate fatally sooner or

later, if not operated. On that point I can not furnish statistics of my own as I operate on all cases. The percentage of deaths in our cases was 11 per cent., or 16 deaths in 141 cases.

In the first 100 cases we had a mortality of only 7 per cent. Since that, I lost three consecutive cases in as many days. The causes of death in our cases were:

1. Pyemia.	1. Septic pneumonia. 2. Septic phlebitis. 3. Multiple infarcts.
2. Ptomaine poisoning.	Rupture of large abscess into peritoneal cavity at time of operation.

3. Septic peritonitis. In 36 of the 141 cases operated upon, septic peritonitis was present at the time of operation, 12 of these terminating fatally.

I consider the dangers of the operation comparatively nil in competent hands.

What operation should be performed? In early cases the lateral incision over the most common seat of the appendix in the right iliac fossa, should be given the preference. In late cases the incision should always be over the most prominent portion of the induration. In this class of cases the appendix is removed only when it presents itself palpably in the wall of the abscess and can be removed without rupturing the adhesions which separate the abscess from the uninfected portion of the abdomen. In early cases always remove the appendix, as it is the only certain means of preventing recurrence. I had eleven cases of recurrence in which the appendix was not removed at the primary operation; six of these were re-operated upon early in their first recurrence, appendices removed, all recovered. We never use irrigation of any kind in the peritoneal cavity, pus or no pus.

Upon what cases should we operate? Upon every case of appendicitis, or better, upon every case where we have present the four cardinal symptoms:

Date of Operation.	Number of Case.	Name of Patient.	Operator.	Foreign Body.	REMARKS.
3-21-89	2	L. Z.	M		
3-25-89	4	L. G.	M		
4-10-89	5	Mr. X.	M		
5-5-89	6	T. B.	W		
5-16-89	7	D. L.	W		
6-23-89	8	D. R.	M		
8-9-89	9	Mrs. N.	M	Bone	Mrs. N., Spicula of bone in appendix.
10-1-89	11	S. W.	H		
8-16-89	10	F. F.	M		
12-17-89	12	J. D.	W		
1-16-90	13	D. L.	M		
1-26-90	14	R. H.	M		
2-28-90	15	T. McC.	M		Hemorrhage; gangrene of bowel.
3-11-92	45	Mr. F.	L		
6-20-92	54	E. B.	L		
3-20-93	83	R.	L		
11-9-93	1	L. E.	M		
3-27-90	16	N. LeB.	M		
6-25-90	18	Miss W.	M		
7-15-90	20	Mrs. B.	H		
6-26-90	19	Rev. G.	M		
7-24-90	21	N. C.	L		
8-2-90	22	F. McG.	L		
9-6-90	24	J. W.	L		
9-15-90	25	F. W. H.	L		
6-11-90	17	W. H.	L		
11-9-90	26	M. P.	L		Had pyemia at time of operation.
11-15-90	27	O. P. P.	L		
2-14-91	28	R. S.	L		
3-9-91	29	McC.	M	Seeds	
5-19-91	30	O. F. P.	L		
6-4-91	31	J. C.	M		
6-9-91	32	F. F.	M		
6-25-91	33	D. M.	M		
7-28-91	34	J. A.	M		
8-5-91	35	A. H.	M		
8-10-91	36	F. D.	M		
8-22-90	23	C. P. A.	L		
9-14-91	37	G. A.	M		
11-13-91	38	Miss B.	L		
12-14-91	39	Miss F.	M		
12-91	40	H. F.	M		Renal calculus.
1-19-92	41	F.	H		
1-26-92	42	J. J. G.	M		
2-20-92	43	Miss W.	L		
3-26-92	44	L. J.	L		
4-3-92	46	Mrs. B.	M		
4-5-92	47	A. K.	M		
4-5-92	48	M. N.	L		
4-21-92	49	D. M.	L		Gastric ulcer perforation.
5-10-92	50	C.	M		
5-11-92	51	F. H.	M		
5-14-92	52	J. B.	M		
5-18-92	53	Miss B.	M		
6-25-92	55	R. N. W.	M		
7-9-92	56	S.	M		
7-16-92	57	H. W.	M		
7-28-92	58	Miss R.	M		
8-27-92	59	A. M.	M		
9-16-92	60	J. McC.	M		
9-5-91	35	A. H.	M		
3-22-93	3	M. O'D.	M		
10-11-92	61	H. S.	M		
3-9-93	84	B.	H		
12-9-92	74	J. F.	M		
10-15-92	62	Miss F.	M		
10-27-92	63	S.	M		
7-28-93	106	J. M.	M		
10-28-92	64	F. M.	M		
10-28-92	66	H. G.	M		
10-29-92	65	C. F. B.	M		
11-2-92	67	Miss G.	M		Pneumonia.
11-3-92	68	W.	M		
11-14-92	70	Mrs. S.	M		
11-11-92	69	Miss F.	M		
11-26-92	71	K.	M		Tuberculosis of vertebra.
11-30-92	72	Mrs. E.	M		
12-7-92	73	Miss S.	M		
12-16-92	76	A.	M		
12-16-92	75	M.	M		
12-22-92	77	H.	M		
1-28-93	78	K.	M		
2-17-93	79	R.	M		
2-17-93	80	W. C.	M		
3-12-93	82	W.	W		
4-6-93	85	B. L.	W		
4-6-93	86	Mrs. S.	M		
4-9-93	87	Miss W.	M		
4-21-93	88	Mrs. I.	M		
5-6-93	89	R. C.	M		
5-13-93	90	H. S.	M		
6-3-93	91	K.	M		Herpes zoster in right iliac region.
6-4-93	92	C. H.	M		
6-5-93	93	P. H.	M		
6-16-93	94	F.	M		
6-16-93	9	T. McG.	M		
7-24-93	101	F. S.	M		
7-8-93	96	W. F.	M		
7-12-93	97	Miss B.	M		
7-18-93	98	Mrs. N.	M		
7-18-93	99	I. D.	M		
7-25-93	100	Mrs. C.	M		
7-28-93	103	T.	M		
7-25-93	102	J. H.	M		
7-27-93	104	M. O'C.	M		Rupture occurred five hours before operation and was noticed by patient.
7-26-93	105	F. O.	M		
7-31-93	107	A. J.	M		
8-5-93	108	R. W.	M		
8-8-93	109	J. J. D.	M		
8-17-93	110	R. S. B.	M		
8-22-93	111	A. K.	H		
8-25-93	112	F. H. C.	M		
8-29-93	113	P. McG.	M		
8-30-93	84	M. L.	M		
8-28-93	114	C.	M		
8-31-93	115	R. H.	M		
9-19-93	116	C. E.	H		
9-21-93	117	H. C.	M	Grape seed	
9-24-93	118	K. S.	M		
9-27-93	119	W. McK.	M		
9-28-93	120	F. B.	M		
10-2-93	121	E. G. W.	H		
10-12-93	122	Ed. B.	M		
10-14-93	123	M. S.	H		
10-25-93	124	M. O'B.	H		
10-23-93	125	N. E.	M		
11-1-93	126	J. C.	M		
11-2-93	127	Bro. L.	M		Death twenty-four hours after; postmortem. Gangrene of entire mucous membrane of colon. Pneumonia complication.
11-4-93	128	T. D.	M		
11-9-93	129	N. R.	M		
11-10-93	130	W. M.	M		
11-21-93	131	LaP.	W		
11-25-93	132	C. B.	M		
11-28-93	133	T. S.	M		
12-19-93	134	Miss W.	M		
12-20-93	135	Mrs. E.	M		
12-25-93	136	O. S.	M		
12-31-93	138	J. L.	M		
1-4-94	139	C. H. M.	M		
1-4-94	140	L. B. C.	M		
1-1-94	141	C. G.	M	Seeds	
1-20-94	142	L.	W		
2-4-94	143	J. M.	M		
2-9-94	144	A. W.	M		
12-29-93	137	Mrs. G.	M		
2-12-94	145	E. P.	M		

1. Sudden attack of pain over appendix.

2. Always nausea, frequently vomiting.

3. Elevation of temperature.

4. Local tenderness in the position occupied by the appendix.

In every case in which the above symptoms were present, including every case on which we operated, except those mentioned as errors, we found pus, gangrene, or proof that these had previously existed within or about the appendix. In one case, in which elevation of the temperature was absent, the mucous membrane of the appendix was ecchymotic. The operation should be performed at the earliest possible moment after the onset of the symptoms: 1, because, at that time, the inflammation is limited; 2, the appendix is easily located and removed; 3, the time for rupture into the general peritoneal cavity has not occurred; 4, gangrene of the bowel has not taken place; 5, Matterstock states that upwards of 50 per cent. of the mortality from disease of the appendix occurs before the sixth day. It is therefore evident that the operator who waits to operate as late as the sixth day will lose 50 per cent. of all the cases that would terminate fatally without operation. I desire to urge upon you: 1, that you operate on all cases; 2, that you operate early, so as to prevent the disastrous effects of a rapidly spreading disease in the peritoneal cavity, and save yourself the humiliation of performing an antemortem operation.

Case 1.—Date of operation, Nov. 9, 1885. Operator, Dr. J. B. Murphy. L. E., aged 24 years; male. Cook County Hospital. History: Two weeks before operation, patient began to feel pain in right iliac region and in lower part of abdomen; nausea, vomiting and elevation of temperature. He noticed a swelling in right iliac region which gradually increased in size up to the time of operation. Operation: Incision over highest point of induration; drainage of abscess cavity; general peritoneal cavity not opened. Appendix was not removed. About twelve ounces of pus escaped. Patient made a rapid recovery.

Case 2.—Date of operation, March 2, 1889. Operator, Dr.

Murphy. L. Z., aged 19 years; male, Cook County Hospital. History: Patient has been sick for three weeks with the usual symptoms of appendicitis, at the time of entrance into Hospital. Some induration present. Temperature 99 degrees. Diagnosis: Appendicitis with perityphlitic abscess. Lateral incision directly into the abscess. General peritoneal cavity not opened. A fecal stone the size of a bean escaped in the pus. The appendix firmly imbedded in a mass of induration was not removed. Recovery.

Case 3.—Date of operation, March 22, 1889. Operator, Dr. Murphy. Mrs. O. D., aged 35 years; female. History: Typical attack began March 1. Severe symptoms of peritonitis were manifested on the 7th. Patient had fever, sweats and evening elevation of temperature until time of operation. Abdomen greatly distended; induration extended from right side beyond the median line to the left. Abdomen tympanitic over induration which was explained by presence of gas in the abscess cavity. Operation: March 22, three weeks after onset of attack. Lateral incision; about two quarts of very offensive pus escaped. The bowels were covered with a thick layer of fibrin. Drainage (rubber tube); recovery.

Case 4.—Date of operation March 25, 1889. Operator, Dr. Murphy. L. G., aged 14 years; female. History: On the 18th patient complained of pain in the right iliac region followed by vomiting. Temperature 102 degrees. March 19 temperature 99½ degrees, pulse 90. Tenderness increased in right iliac region; vesical tenesmus. These symptoms continued without an elevation of temperature above 99½ degrees until time of operation. The induration was about the size of a hen's egg. Operation: Lateral incision into abscess. General peritoneal cavity not opened. Appendix not removed. Drainage; recovery.

Case 5.—Date of operation April 10, 1889. Operator, Dr. Murphy. Mr. X., aged 55 years; male. Case occurred in practice of Dr. Hicks of Burlington, Wis. Patient had a typical attack of appendicitis six weeks ago. Since then has been confined to bed with fever, sweats, pain and tenderness in right iliac region. Dr. Hicks pronounced the case one of perityphlitic abscess, and on the following day Dr. Murphy assisted by Dr. Hicks performed the operation. Operation: Lateral incision; general peritoneal cavity not opened; large quantity of very offensive pus escaped. The abscess extended down into the pelvis. No foreign body, no fecal stone. Drainage; recovery.

Case 6.—Date of operation May 3, 1889. Operator, Dr. Murphy. T. B., aged 13 years; male. History: April 25, 1889, patient came to my office complaining of pain in right iliac region. Examination: On examination no swelling could be detected; no elevation of temperature. He pre-

sented himself again May 3, with pinched anxious expression of countenance; pain, swelling and tenderness in right iliac region. No fluctuation, no symptoms of phlegmon in the abdominal wall. Temperature 102 5-10 degrees, pulse 128. Diagnosis: Perforated, perityphlitic abscess. Operation: Lateral incision; the induration had lost its resistance under the anesthetic; peritoneal cavity opened; an abscess found in the retro-cecal region. Fecal stone size of a Lima bean. The appendix had been amputated at its base by an ulcer; the body of the appendix retained its vitality by adhesions to the cecum; removed, drained. May 4, temperature 99 degrees, pulse 120, vomiting constantly. May 5, temperature 101.4 degrees; pnlse 136; still vomiting, countenance pinched and anxious; delirious; very tympanitic over entire abdomen. Died same day. General septic peritonitis.

Case 7.—Date of operation May 16, 1889. Operator, Dr. Lee. D. L., aged 19 years; male. Patient's attack began May 10 with severe pain in right iliac region accompanied by nausea and vomiting; these symptoms continued and constantly increased until May 13, when the pain extended all over the abdomen, but the greatest sensitiveness was in the right iliac fossa. Induration could be felt there without the signs of fluctuation or phlegmon. May 16, general amelioration of symptoms, pulse 84, temperature 99 degrees. Operation: Lateral incision, no infiltration of sub-peritoneal tissue. Intra-peritoneal abscess opened, drained; appendix adherent its entire length along the wall of cecum. Drainage; recovery.

Case 8.—Date of operation June 23, 1889. Operator, Dr. Murphy. H. R., aged 26 years; male. On June 18 patient was seized with pain in right iliac region; nausea; vomiting; constipation. At the end of twenty-four hours the symptoms became those of general peritonitis. Examination: On the third day distinct induration could be felt in right iliac region extending half way to umbilicus. No induration from rectum. Operation consented to on fifth day. Operation: Lateral incision. When the peritoneal cavity was opened, to my great surprise it appeared perfectly healthy. No adhesions to anterior abdominal wall. The large induration which before operation seemed to extend to the umbilicus had disappeared. A careful examination revealed an indurated mass close to the spinal column to the left, just below the level of the umbilicus. The adhesions were gently separated, and an abscess opened; inserted drainage tube, packed about with iodoform gauze; recovery. This case illustrates how deceptive the sign of induration may be in the acute stage. It appeared to be in this case close to the abdominal wall in front and when the peritoneal cavity was opened it was found located at the posterior wall. The

induration always appears larger than it actually is. This difference being most marked in the first few days of the attack.

Case 9.—Date of operation Aug. 9, 1889. Operator, Dr. Murphy. Mrs. N., aged 56 years. History: Patient had complained of pain and discomfort in right iliac region two weeks previous to Aug. 4, 1889. At this time pain became very intense, and a doctor was called at midnight to relieve her. Nausea, vomiting, great abdominal pain and tenderness and depression. These symptoms continued for four days. A consultation was held and an operation decided upon. The patient was extremely obese; no induration could be detected either from without or from the rectum. Operation: Lateral incision, directly into abscess; about an ounce of pus (very offensive) escaped and with it a small fragment of bone. General peritoneal cavity not opened. Rapid recovery.

Case 10.—Date of operation Aug. 16, 1889. Operator, Dr. Murphy. F. F., aged 56 years; male. Case occurred in practice of Dr. Volini. History: On August 16 patient was seen in consultation with Dr. Volini who had made a diagnosis of perityphlitis and gave the following history: Three weeks ago patient was attacked with severe pain in abdomen followed by nausea, vomiting and high fever. Pain rapidly extended over entire abdomen and the patient became very tympanitic. The tympanites and general abdominal pain subsided in four or five days, but the sensitiveness and induration remained in the right iliac region up to time of operation. The patient's temperature was then 99 degrees (in the morning), but the attending physician stated that in the evening the temperature was very high and followed by sweats. The patient was very much emaciated and presented all the appearance of a typhoid in the third week. Diagnosis: Peri-appendicitis (circumscribed abscess). Operation: Lateral incision, general peritoneal cavity opened, circumscribed abscess evacuated; drainage,

Aug. 17,	temperature	99½	degrees,	
Aug. 20,	"	100½	"	
Aug. 20,	"	102	"	
Aug. 21,	"	100½	"	
Aug. 22,	"	99½	"	
Aug. 26,	"	101½	"	
Aug. 27,	"	101	"	
Aug. 28,	"	102	"	
Aug. 29,	"	100 8-10	"	evening.
Aug. 30,	"	99 8-10	"	morning.
Aug. 30,	"	101 8-10	"	evening.
Aug. 31,	"	102	"	morning.
Aug. 31,	"	103½	"	abscess burst through.
Sept. 1,	"	normal		A. M.
Sept. 1,	"	103½	"	P. M.

Sept. 1, temperature midnight chill.
Sept. 2, " $102\frac{1}{2}$ degrees.
Sept. 2, " 102 "
Sept. 3, " $102\frac{1}{2}$ " A. M.
Sept. 3—3 P. M. died.

A second abscess was opened postoriorly on the 29th of August. Patient had chill Sept. 1, with pulmonary symptoms; from that time he continued to sink and died Sept. 3. Autopsy revealed embolic pneumonia of lower lobe of right lung. Sero-purulent fluid in right pleural cavity. Lungs otherwise normal, heart and liver normal. Remains of primary abscess in neighborhood of vermiform appendix which was opened in the first operation. Down in the retro-peritoneal cellular tissue a second abscess cavity was found which had been opened in the second operation; from this abscess he received his fatal pyemia. No peritonitis; no infarcts in any of the other organs. Head not examined.

Case 11.—Date of operation Oct. 1, 1889. Operator, Dr. Hartmann. S. W., aged 10 years; male. History: Patient was taken sick with a typical attack many months before; the abscess was aspirated and finally external fistula formed. The patient improved, was up and about, but a mucus discharge continued from the sinus. Operation: A laparotomy was performed; peritoneal cavity opened; fecal stone at the base of the sinus was removed from the appendix which was adherent to the abdominal wall and cecum; the appendix was not removed but its mucous membrane was curetted. Uneventful recovery.

Case 12.—Date of operation, Dec. 17, 1889. Operator, Dr. Lee. I. D., aged 22 years; male. History: About Dec. 3, 1889, patient was taken suddenly ill with pain in right iliac region accompanied by faintness and vomiting. These symptoms continued for two weeks together with fever and sweats. On examination a large circumscribed induration was found in right iliac region. Temperature 102 degrees, pulse 120. Operation: Fourteen days after onset. Lateral incision. Peritoneal cavity opened, contained a serous fluid and was very much congested. Large mass of adherent intestines could be seen. On separating these, a pus cavity was opened and drained. Pulse and temperature rapidly fell to normal and patient made a speedy recovery.

Case 13.—Date of operation, Jan. 16, 1890. Operator, Dr. Murphy. D. L., aged 20 years; male. History: Had an operation in May, 1889, for drainage of a perityphlitic abscess. Present attack typical; local pain, vomiting, fever, tenderness and induration. Operation: Fourth day after onset. Drainage of a circumscribed abscess. Appendicisectomy. Recovery. (See history Case 7, May 16, 1889).

Case 14.—Date of operation, Jan. 26, 1890. Operator, Dr.

Murphy. R. W., male; aged 26 years. Occurred in practice of Dr. Devlin. History: Patient's sickness commenced with a typical attack January 19. January 20, temperature 101 degrees; symptoms continued. January 21, temperature 102 degrees; induration detected in right iliac region. Operation advised. From January 22 to 24, temperature ranged from 101 degrees to 102½ degrees; pain and tenderness increased and induration extended to above the crest of the ileum. January 25, temperature 103½ degrees. January 26, operation: Lateral incision into pus cavity; general peritoneal cavity not opened. Appendix not removed. Half a pint of pus evacuated; drained. January 27, temperature normal and remained there; recovery.

Case 15.—Date of operation Feb. 28, 1890. Operator, Dr. Murphy. T. McC., aged 29 years; male. Patient has had twenty attacks previous to this. History: One week prior to operation patient had a typical attack of appendicitis. Symptoms continued accompanied by a temperature of 103 degrees up to the time of operation. Pulse 120. Operation: Lateral incision; a large pus cavity opened, without opening the general peritoneal cavity: About twenty ounces of pus escaped. Appendix not removed. Second day after operation fever had permanently disappeared. This case recurred but was not operated.

Case 16.—Date of operation, March 27, 1890. N. La B., male; aged 26 years. Operator, Dr. Murphy. Cook County Hospital. When patient was admitted to Hospital a slight induration could be felt in right iliac region. There was great tenderness in the region of induration. Patient says he had a similar attack about three years ago. Temperature at time of operation 100 degrees. Operation: Five days after beginning of attack. Usual incision. Appendix found encircled and adherent to omentum. Appendix loosened from adhesions and amputated; it was large and swollen, the size of a man's little finger. The stump was cauterized and top sewed. No pus in peritoneal cavity. Iodoform gauze packing. Pus was found in appendix; recovery.

Case 17.—Date of operation June 11, 1890. Operator, Dr. Murphy. Wm. H., aged 20 years; male. Cook County Hospital. Patient was transferred from medical side of Hospital to surgical side for operation. Operation: Typical incision. The appendix was located, ligated and amputated; the stump top-sewed with silk. The abdominal cavity was closed without drainage. The appendix contained enterolith and pus. Patient made a rapid recovery.

Case 18.—Date of operation June 25, 1890. Operator, Dr. Murphy. Miss W., aged 27 years. Presbyterian Hospital. History: For the past four years the patient has had recurrent attacks of severe pain in abdomen which came on suddenly, continued for several days and were followed by

a soreness of some days' duration. Present illness, patient was taken sick on May 12, 1890, with an attack far more persistent than any previous one. Operatlon: typical incision; drainage intra-peritoneal abscess. Recovery.

Case 19.—Date of operation June 26, 1890, Operator, Dr. J. B. Murphy. Rev. G., aged 40 years; male. On June 23 patient was seized with griping pains in right iliac region which gradually increased, accompanied by vomiting. Pulse that evening 120; temperature 102 degrees. Localized tenderness; induration; general tympanites. Operation: Appendicisectomy. Appendix non-adherent, gangrenous, not perforated. The serous coat of the appendix was stretched over the gangrenous débris of the mucous membrane and pus; it was not protected by adhesions except by omentum at base, and rupture was imminent. There was no infection of peritoneum. How different the condition would have been twenty-four hours later; the appendix would have been ruptured, a septic peritonitis developed as there were no protecting adhesions, and the patient's life would have been greatly jeopardized if not sacrificed. Rapid recovery.

Case 20.—Date of operation July 15, 1890. Operator, Dr. F. S. Hartmann. Mrs. B. Typical attack; pain, vomiting, temperature and slight induration over crest of ileum, posteriorly. Operation: The operation was performed two weeks after onset of attack. Incision over crest of ileum, posteriorly; drainage of a circumscribed abscess. Appendix not removed. General peritoneal cavity not opened; recovery rapid.

Case 21.—Date of operation July 24, 1890. Operator, Dr. E. W. Lee. N. C., aged 34 years; female. Present sickness commenced July 16; complained of chills, fever, vomiting, and abdominal pain, latter more pronounced in ileo-cecal region. July 18, pulse 120, temperature 103 degrees. Slight tenderness in ileo-cecal region. July 21, pulse 124, temperture 102.5 degrees. Great pain over whole abdomen. Tenderness over ileo-cecal region marked and induration present. Operation: Appendicisectomy. Appendix large, swollen, and tortuous; no perforation. Appendix contained enterolith in which was imbedded a small spicula of bone. There were no adhesions around the appendix. Peritoneal cavity opened. No abscess. Pus in the appendix around the enterolith. Gauze drainage. Temperature fell to normal immediately after operation; recovery.

Case 22.—Date of operation Aug. 2, 1890. Operator, Dr. Lee. H. McQ., aged 10 years; female. Present illness of patient began July 27 with pain in ileo-cecal region and diarrhea. August 1, pulse 130, temperature 103 degrees. Tenderness in right iliac region; induration. Operation: Drainage of circumscribed abscess; general peritoneal cav-

ity not opened. Appendix not removed. No foreign body found. Temperature fell to normal within twenty-four hours after operation; recovery.

Case 23.—Date of operation Aug. 22, 1890. Operator, Dr. Lee; present Dr. Bridge, Cook County Hospital. C. P. A., aged 21 years; male. Patient had a similar attack five years ago. Three days previous to operation, patient was seized with sudden pain in right iliac region, temperature 102.2 degrees; temperature August 20, 103.3 degrees; temperature August 21 100.8 degrees. Examination: Abdomen moderately distended, tympanitic. Dulness in right iliac region and marked tenderness over appendix. Tongue slightly coated. Operation: Incision over induration, escape of pus and two enteroliths. Drainage; recovery.

Case 24.—Date of operation Sept. 6, 1890. Operator, Dr. Lee. J. R., 16 years; male. Case occurred in the practice of Dr. McCarthy. Patient's present sickness began August 29 with acute pain in lower part of abdomen; diarrhea. Temperature 101.8 degrees, pulse 112, August 30; temperature 101.3, pulse 106 on August 31; on September 1, temperature 101.1 degrees, pulse 100; on September 2, temperature 101 degrees, pulse 98. Tenderness on pressure over lower part of abdomen which gradually became localized in right iliac region and induration developed. Operation: Incision and drainage of intra-peritoneal abscess. General peritoneal cavity opened. Appendix not removed. Temperature fell to normal inside of forty-eight hours; recovery.

Case 25.—Date of operation Sept. 18, 1890. Operator, Dr. Lee. F. W. H., aged 25 years; male. Case occurred in the practice of Dr. McCarthy. Present illness commenced suddenly September 14 with intense pain in right iliac region, persistent vomiting and diarrhea. General abdominal tenderness, more marked in the right iliac region. Tympanites. Patient lies with knees drawn up and bears a distressed look, temperature 102.2 degrees, pulse 116. September 15, temperature 102.6 degrees, pulse 122. Nausea, singultus. Tenderness and tympanites general. Slight induration in right iliac region. September 16, temperature 102.2 degrees, pulse 126, induration more marked and extensive, tenderness increased. Dr. Lee called in consultation. Diagnosis: Rupture of appendix with intra-peritoneal abscess. Operation: Typical incision; no induration to be felt after incision; dry septic peritonitis; appendix perforated; small abscess around base; drainage. *Exitus lethalis* on third day. Postmortem: General dry septic peritonitis; perfect adhesions around gauze packing.

Case 26.—Date of operation Nov. 9, 1890. Operator, Dr. Lee. Cook County Hospital. Mrs. M. P., aged 32 years. Patient has had several attacks of same nature as present one in last three years. One week before admission to Hos-

pital, present attack began with fever, chills, sweats and pain in right iliac region. Patient presents appearance of a grave typhoid, tongue and teeth heavily coated, lips covered with a herpetic eruption. At time of admission patient had a temperature of 104.6 degrees and had severe septic symptoms. In right iliac region, three and one-half inches from anterior superior spine of ilium is an induration. Operation: Incision over tumor into abscess; pus and feces escaped; packed with iodoform gauze. Death from pyemia, which was present at time of operation, three days later. Temperature reached 106 degrees several times. Frequent chills. No septic peritonitis.

Case 27.—Date of operation Nov. 15, 1890. Operator, Dr. Lee. O. P. P., aged 31 years; male. Patient had sudden attack; severe pain in right iliac region, chills, fever, temperature 103 degrees, vomiting, general abdominal tenderness, more marked in right iliac region where induration could be felt which was dull on percussion. Operation: Incision, drainage of an abscess without opening peritoneal cavity. Appendix not removed. Fecal fistula. Recovery. Patient subsequently had recurrent attacks and was again operated. (See history No. 30.)

Case 28.—Operation Feb. 14, 1891. Operator, Dr. E. W. Lee. R. S., male; aged 28 years. History: For past two years patient has been subject to frequent attacks, beginning with pain in right iliac region, generally accompanied with nausea and vomiting. Attacks usually lasted from a week to ten days. During past six months patient had an attack about every three weeks. Examination: Induration in right iliac region. Operation: Appendicisectomy. General peritoneal cavity opened. The vermiform appendix was found perforated near the base which communicated with an abscess cavity that had opened into the cecum. A probe could be passed through the opening into the cecum. Enterolith. Drainage; recovery.

Case 29.—Date of operation March 9, 1891. Operator, Dr. Murphy. Miss McC., aged 23 years. History: First attack of pain in 1889. Sudden pain in right loin followed by fever, tenderness and vomiting. The swelling gradually increased in loin and was seen by several physicians in the next year, all agreeing that it was a sarcoma of the kidney. It finally was opened in the back and a small quantity of pus escaped. Two fecal stones escaped from the opening after some months; this was followed by the discharge of berry seeds for several months, no other material escaping. At the end of about a month, I operated to close the fistula in the cecum. This was done by suture and was successful. The history of this case extends over a period of three years. Recovery.

Case 30.—Date of operation May 19, 1891. Operator, Dr.

Lee. P. O. P., aged 31; male. Cook County Hospital. Patient had a primary operation for appendicitis in November, 1890. An intra-peritoneal abscess was drained but the appendix was not removed. In April, 1891, a laparotomy was performed for removal of the appendix, but on account of the extensive adhesions this was impossible. Patient was seen three days after onset of present attack and by an operation the appendix was amputated; two enteroliths were found in it; a rubber drain was inserted and the abdominal incision partially closed. Patient made a rapid recovery. There remained a small sinus leading down to the iliac fossa for several weeks.

Case 31.—Date of operation, June 4, 1891. Operator, Dr. Murphy. Cook County Hospital. J. H. C., male; aged 27 years. Patient was seen five weeks after onset of attack. His illness commenced with pain in right iliac region. Examination: Hard tumor in right iliac region, not movable, seemingly attached to ilium. Percussion dull over tumor, otherwise normal. Temperature 101.2 degrees. Operation: Incision into pus cavity. The appendix which was difficult to locate was drawn into abdominal incision, ligated near its base and amputated. Drainage; recovery in three weeks. The appendix was perforated near its base.

Case 32.—Date of operation June 9, 1891. Operator, Dr. Murphy. Alexian Brothers' Hospital. F. F., aged 18 years; male. Patient had a typical attack and entered the Hospital five days after the onset when he showed symptoms of a circumscribed suppurative peritonitis. The operation was at once performed and a large abscess drained. The appendix was not removed. Recovery.

Case 33.—Date of operation June 25, 1891. Operator, Dr. Murphy. D. M., male, aged 19 years. Alexian Brothers' Hospital. This case was operated on four days after the onset of a typical attack. A circumscribed abscess was opened; a fecal stone escaped. The appendix was perforated and was removed after simple ligature. Recovery.

Case 34.—Date of operation July 28, 1891. Operator, Dr. Murphy. J. A., age 56; male. Alexian Brothers' Hospital. History: Patient entered Hospital fourteen days after onset of a typical attack. A large induration in right iliac fossa to be felt. Operation: Incision into large pus cavity. Appendix not removed; drained. General peritoneal cavity not opened; circumscribed abscess. Recovery.

Case 35.—Date of operation Aug. 5, 1891. Operator, Dr. J. B. Murphy. Cook County Hospital. A. H., aged 30 years; male. Had an attack six months previous similar to the present. Typical attack July 27. Induration in right iliac region. Operation: Lateral incision. General peritoneal cavity opened. Peritoneum very much congested. Appendix situated along the lower border of ilium. Appendix

perforated; one side surrounded by a mass of granulations where it was adherent to the cecum. The probe could be passed through a small opening into the cecum showing where the abscess had emptied. The appendix was ligated and removed. There had been a local gangrene, the defect now in process of cicatrization. Recovery. This is one of the cases that is classed by some authors as cecitis, but the opening in the cecum was made from without inward by an accumulation of pus around the gangrenous appendix.

Case 36.—Date of operation Aug. 10. 1891. Operator, Dr. Murphy. Cook County Hospital. F. D., aged 32 years. Patient was always healthy up to present illness. He was taken ill with severe pain in the umbilical region; fever and vomiting. The pain increased rapidly and at time of operation was diffuse and uniformly severe. Examination; Pulse rapid and small; legs drawn up; percussion shows abdomen full of fluid nearly up to umbilicus; abdominal walls tense: tenderness diffuse. Operation: Median incision; escape of a large quantity of sero-purulent fluid with fecal odor. Drainage after irrigation of abdominal cavity. Appendix adherent. Patient died on following day. Postmortem: Appendix adherent to under surface of cecum except about one-half inch of tip which was free. At base of appendix was an ulcerated perforation. At side of perforation, enterolith, size of cherry stone. No evidence of a previous abscess cavity. General suppurative peritonitis which had developed before adhesions could take place. The peritoneum of the abdominal and intestinal walls was eroded of endothelium.

Case 37.—Date of operation Sept. 14, 1891. Operator, Dr. Murphy. G. A., male. History: Typical attack. Operation: A circumscribed intra-peritoneal abscess was opened and drained with iodoform gauze. A fecal stone escaped with the pus. Abscess extended deep into back. Recovery.

Case 38.—Operation Nov. 13, 1891. Operator, Dr. E. W. Lee. Miss B. aged 16 years. Sickness commenced with sudden pain in right iliac region; vomiting. Sudden rise of temperature (103 degrees) and pulse. Induration in right iliac region and tenderness more marked in this locality. Operation: Drainage of a large circumscribed abscess. Fecal calculus. Appendix not removed. Recovery.

Case 39.—Date of operation Dec. 14, 1891. Operator, Dr. J. B. Murphy. Miss F., aged 17 years. History: Typical attack. Operation: Performed on fifth day after onset. Intra-peritoneal pus cavity opened. Fecal stone removed. The appendix was gangrenous and perforated; amputated. Abscess cavity packed with iodoform gauze. Recovery.

Case 40.—Date of operation Dec. 19, 1891. Operator, Dr. Murphy. H. F., aged 24 years. History: For the past three years has had repeated attacks of pain in the right iliac

region. With these attacks he occasionally had vomiting; always great tenderness in right side. Status Præsens: Patient is emaciated, has evening elevations of temperature and night sweats. For the last three days has suffered from great pain in right iliac region. Examination: Heart and lungs normal. An area of dulness in right side extending from Poupart's ligament to within two inches of the margin of the ribs and as far forward as the linea semilunaris. The induration extended behind from the crest of the ilium to the margin of the ribs. It was most sensitive and approximated the surface more closely an inch to the right and a little below the anterior superior spinous process. No induration could be felt from the rectum. Urine normal. Diagnosis: Recurrent appendicitis with extensive infiltration of the cellular tissue. Operation: Lateral incision an inch to the inner side of the spinous process. The cellular tissue was found infiltrated and indurated a quarter of an inch from the skin. This induration was perforated with the handle of the scalpel until an abscess was reached one and one-half inches below. A small quantity of thin odorless pus escaped. It was found on exploration with the finger that only a sinus had been opened. This sinus was followed upward and backward, and at the lower end of the right kidney was found a renal calculus the shape of a Maltese cross, the bars being one inch in length and three-eighths inches in diameter. It was broken with a heavy forceps and extracted. It had escaped completely from the kidney, and the opening closed, as no urine escaped at time of operation or subsequently. The closure of this opening accounts for the absence of pus in the urine at the time of examination. Patient made an uneventful recovery.

Case 41.—Date of operation Jan. 10, 1892. Operator, Dr. Hartmann. F., aged 9 years; male. Patient was seen one week after a typical attack; had quite a high temperature with a distinct induration over appendix. Operation: At time of operation temperature 105 degrees. An intra-peritoneal abscess was drained; the appendix was not removed. Recovery.

Case 42.—Date of operation Jan. 26, 1892. Operator, Dr. J. B. Murphy. Alexian Brothers' Hospital. J. J. G., aged 26 years: male. During past two years patient has had about a dozen attacks of appendicitis. Operation: (intermediate stage). Appendicisectomy. Appendix was adherent to cecum and showed many cicatrices from previous perforations. Enterolith. Recovery.

Case 43.—Date of operation Feb. 20, 1892. Operator, Dr. E. W. Lee. Miss D., aged 25 years. Sudden attack of pain in right iliac region. Vomiting. Diffuse abdominal tenderness. Temperature 105 degrees, pulse 130 at time of operation.

Operation: third day after attack. Usual incision. Drainage of an intra-peritoneal abscess which had previously ruptured and caused a general dry septic peritonitis; no limiting adhesions. Enterolith removed. Symptoms of peritonitis continued and patient died in forty-eight hours. Autopsy not allowed.

Case 44.—Date of operation Feb. 26, 1892. Operator, Dr. Lee. Cook County Hospital. L. J., aged 19 years; female. Patient was admitted to the gynecologic ward of the Cook County Hospital, probably on account of an induration in the roof of the pelvis. The diagnosis of appendicitis was finally made. She was not operated upon until three weeks after beginning of her attack. The operation consisted of incision into abscess, irrigating and packing (with iodoform gauze); general peritoneal cavity not opened. Complete recovery in four weeks.

Case 45.—Date of operation March 11, 1893. Operator, Dr. E. W. Lee. F., 18 years; male. Patient felt perfectly well up to February 28. That day, while riding on a bicycle, the pedals of which were too low, he over-reached with his right foot, and felt a sudden pain in right lumbar region. Fever soon developed and vomiting occurred several times. Bowels constipated. He suffered from great pain above and behind the right anterior superior spinous process of ilium. Excessive tenderness over right side of abdomen, especially in the region of the right anterior superior spinous process. Abdomen very tympanitic; under anesthetic induration was felt which was not apparent before operation. Temperature 103 degrees. Drainage of circumscribed abscess, removal of enteroliths. Appendix not removed. Later fecal fistula developed, which closed spon taneously. Recovery.

Case 46.—Date of operation April 3, 1892. Operator, Dr J. B. Murphy. Mrs. B., aged 52 years. Typical attack. Nausea, vomiting, local tenderness. No induration. Operation: Third day after the attack. Temperature 102 degrees. Appendicisectomy. Base of appendix very much distended. No adhesions of appendix. A large typhoid ulcer in appendix. Drainage forty-eight hours; recovery.

Case 47.—Date of operation April 5, 1892. Operator, Dr. Murphy. A. K., age 26; male. Case occurred in practice of Dr. Davey. Patient was seen seventh day after attack. A large abscess was drained without opening general peritoneal cavity. The appendix was not removed. A foreign body was found loose in abscess cavity; recovery.

Case 48.—Date of operation April 5, 1892. Operator, Dr Lee. Cook County Hospital. M. N., aged 52 years; female Patient's trouble commenced with chills, fever, vomiting general pain in abdomen which gradually became localized in right iliac fossa. The diagnosis of appendicitis was

made and a circumscribed abscess drained. The appendix was not removed. No foreign body present. Patient had parotid abscess, otherwise an uneventful recovery.

Case 49.—Date of operation, April 21, 1892. Operator, Dr. Lee. Cook County Hospital. D. M., aged 28 years. History: Patient's present illness commenced with a sudden attack of severe pain, vomiting and great tenderness over the epigastrium. Had previous good health and no symptoms of pain and distress after taking food. The pain became very intense after a few hours and tympanites set in. The abdomen was uniformly sensitive. No induration could be felt on account of the distension. Temperature 101 degrees, pulse 96. Anxious expression. Diagnosis: General peritonitis from appendicitis. Operation: Lateral incision; general suppurative peritonitis. The appendix was found inflamed in common with the other tissues; not removed. Cause of peritonitis not ascertained. Death twenty-four hours after. Autopsy: General suppurative peritonitis produced by small round perforating ulcer of stomach. It will be noted in this case there was absence of increased local tenderness in right iliac region and the pain was located in the epigastrium, also *absence of history of ulcer of stomach.*

Case 50.—Date of operation May 10, 1892. Operator, Dr. Murphy. Occurred in the practice of Dr. Oswald. C., age 23; male. History: Sickness commenced with sudden pain in right iliac region, vomiting and nausea. Examination: large induration over appendix. Operation: Five days after attack. Incision into abscess; escape of a large quantity of pus with enterolith. Appendix not removed. Abscess cavity packed with iodoform gauze. Recovery. Had one recurrence since; very light; not operated.

Case 51.—Date of operation May 11, 1892. Operator, Dr. Murphy. T. H., age 46; male. Case occurred in the practice of Dr. T. J. Conley. History: Typical attack. Induration. Operation: Drainage of a large circumscribed abscess containing four ounces of pus. No foreign body. Appendix not removed. General peritoneal cavity not opened. Recovery. Three recurrences since operation. (Not operated.)

Case 52.—Date of operation May 14, 1892. Operator, Dr. Murphy. Alexian Brothers' Hospital. B., age 28; male. Typical attack. Operation several days after attack. An extra-peritoneal abscess was opened; the appendix removed, also enterolith and the abscess drained with iodoform gauze. Recovery.

Case 53.—Date of operation May 18, 1892. Operator, Dr. Murphy. Miss B., aged 24 years. Present attack commenced May 13, 1892, with general abdominal pain, nausea and vomiting. Induration. Operation: Five days after

attack. Drainage of intra-peritoneal abscess containing about two ounces of pus. Recovery. Recurrence July 12, 1893. Operated. (See History No. 97.)

Case 54.—Date of operation June 20, 1892. Operator, Dr. Lee. E. B., aged 50 years; male. Seven days before operation patient was suddenly attacked with pain in the abdomen after having partaken of a heavy dinner. A few hours afterward he vomited, and fever set in (temperature 103 degrees.) Abdomen became rapidly distended and tender over the entire surface, more pronounced over the right iliac region. Patient seen on third day by Dr. Lee. Operation advised. Consultation the following morning resulted in postponement of operation. Symptoms continued the same except temperature, which fell to 101 and remained so. Further consultation on the seventh day, operation agreed to. Pulse 90, temperature 101 degrees at time of operation. Usual incision. General suppurative peritonitis present, result of rupture of a circumscribed abscess around appendix. No limiting adhesions. Bowel at seat of circumscribed abscess black and gangrenous. Appendix not removed. Second day after operation feces discharged freely through the wound. Pulse and temperature good. Third day. Escape of intestinal slough. Patient in good condition. Fourth day. Conditions improved. Fifth day. Profuse hemorrhage both from wound and rectum. Patient pulseless. Remained in bad condition and died on seventh day. Autopsy not permitted.

Case 55.—Date of operation June 25, 1892. Operator, Dr. Murphy. W. R., aged 17 years. Alexian Brothers' Hospital. History: Typical attack four weeks before operation. Continuation of fever and sweats with rapid emaciation and tenderness in right iliac region. Status Præsens: Induration extending half way to the umbilicus, tense and tender. Dull on percussion. Operation: Lateral incision. Opened a large circumscribed abscess. General peritoneal cavity not opened; appendix not removed; drainage with iodoform gauze; recovery. This case was re-operated on during a relapse. (See Case 108.)

Case 56.—Date of operation July 9, 1892. Operator, Dr. Murphy. Mr. S., aged 36 years. Case occurred in practice of Dr. Hoelscher. History: Typical attack. Examination reveals induration and dulness on percussion far beyond median line to the left. Operation twenty-eight days after attack. Lateral incision; about a quart of pus escaped; no fecal stone; appendix not removed; general septic peritonitis; recovery.

Case 57.—Date of operation July 16, 1892. Operator, Dr. Murphy. Cook County Hospital. H. W., 22 years; male. Typical attack. Operation four days after onset. Drainage of a large accumulation of pus (intra-peritoneal.) General

suppurative peritonitis; appendicisectomy. Local gangrene of appendix; no foreign body; recovery.

Case 58.—Date of operation July 28, 1892. Operator, Dr. Murphy. Miss R., aged 10 years. Case occurred in practice of Dr. Cotton. History: Typical attack, nausea, vomiting, operation eighth day after onset. Lateral incision; escape of about six ounces of pus from an intra-peritoneal abscess. No foreign body; appendix not removed; recovery.

Case 59.—Date of operation Aug. 27, 1892. Operator, Dr. Murphy. A. M., age 22; male. Alexian Brothers' Hospital. Typical history of appendicitis. Operation: Lateral incision. Circumscribed abscess opened. General peritoneal cavity not opened. Appendix not removed. Drainage; recovery. This case was operated upon twenty-four hours after admission to Hospital.

Case 60.—Date of operation Sept. 16, 1892. Operator, Dr. Murphy. J. McC., aged 11 years; male. Case occurred in practice of Dr. P. H. Conley. History: Typical attack. Operation fifth day after attack. Operation: Incision, general peritoneal cavity opened. Pus found extending over bowels beyond median line. Escape of fecal stone with pus. Appendix not removed. Temperature at time of operation 99½ degrees; pulse 98. Facial expression good. Recovery in three weeks. Fecal fistula closed without operation in ten days.

Case 61.—Date of operation Oct. 11, 1892. Operator, Dr. Murphy. H. S., aged 34 years; male. Admitted to Hospital five days previous to operation. Patient gave a typical history of appendicitis; small induration, temperature 101 degrees. Operation: Lateral incision; drainage of circumscribed abscess without entering peritoneal cavity; recovery.

Case 62.—Date of operation, Oct. 15, 1892. Operator, Dr. Murphy. (Case occurred in the practice of Dr. Hoelscher.) Miss F. aged 16 years. History: Typical attack. Operation: Three days after attack. Drainage of circumscribed abscess. Appendicisectomy. General peritoneal cavity was opened. Appendix was perforated, gangrenous and contained enterolith. Recovery.

Case 63.—Date of operation Oct. 15, 1892. Operator, Dr. Murphy. S., age 37; male. Case occurred in practice of Dr. McCarthy. History; Typical attack, nausea, vomiting. Operation: On sixth day. Large abscess containing about a pint of pus. General peritoneal cavity not opened. Appendix enlarged and gangrenous; ligated, amputated. A fecal stone removed. Abscess cavity packed with iodoform gauze. Recovery.

Case 64.—Date of operation Oct. 28, 1892. Operator, Dr. Murphy. Alexian Brothers' Hospital. F. R., aged 18 years. History: Attack typical. Operation: Several days after on-

set. Lateral incision. General suppurative peritonitis. The appendix and a fecal stone removed; a large quantity of pus escaped. Drainage with iodoform gauze. Recovery.

Case 65.—Date of operation Oct. 28, 1892. Operator, Dr. Murphy. Occurred in practice of Dr. Hoelscher. C. F. B., aged 18 years. Patient was seen eight days after onset of typical attack by Dr. Hoelscher. The temperature was 105 degrees, the pulse 130. Extreme tympanites and general tenderness present. Patient in a profoundly collapsed condition at time of operation. Operation: Drainage of abdominal cavity; a very large amount of pus escaped (about one quart). Death twelve hours after operation. General suppurative peritonitis at the time of operation. Patient also had pneumonia.

Case 66.—Date of operation Oct. 28, 1892. Operator, Dr. Murphy. Alexian Brothers' Hospital. H. G., age 26; male. Typical attack. Operation: Lateral incision. General suppurative peritonitis. Appendix perforated, gangrenous, non-adherent; appendix removed; drainage; recovery.

Case 67.—Date of operation Nov. 2, 1892. Operator, Dr. J. B. Murphy. Miss G., aged 14 years. History: Sudden attack on Oct. 30, 1892, two days before operation; nausea, vomiting, and sudden rise of temperature. Examination. Temperature 102 degrees, pulse 80, local tenderness, tympanites. Operation: Lateral incision over region of appendix into peritoneal cavity. Appendix adherent to side of cecum and covered with flakes of pus; mesentery also infiltrated with pus. Appendix ligated and amputated. Appendix found enlarged, adherent; no perforation, but ulceration of mucous membrane present. Recovery. Remarks: This case is very interesting, as it shows a purulent infection of the peritoneum and mesentery from an ulcer of the mucous membrane of the appendix without gangrene and without perforation. Peritoneal infection has been reported from ulcers in other portions of the intestinal tract without perforation, but this is the first case on record where such a condition is reported as occurring from the appendix without perforation or gangrene.

Case 68.—Date of operation Nov. 3, 1892. Operator, Dr. Murphy. W., aged 36 years; male. Case occurred in practice of Dr. O'Malley. History: Attack typical. Examination revealed a large area of superficial dulness. Operation eighth day. Incision and removal of appendix. General peritoneal cavity not opened. About a pint of pus escaped, also a fecal stone. Packing of abscess cavity with iodoform gauze. Recovery. Pathologic conditions: Appendix completely gangrenous and free in abscess cavity, nothing being left of it but its peritoneal covering.

Case 69.—Date of operation Nov. 11, 1892. Operator, Dr. Murphy. Miss F., aged 26 years. History: Ten days ago

patient became very sensitive in right iliac region, and noticed there a hard swelling. There had been no perceptible swelling previous to that time. This increased rapidly in size, and when admitted to the Hospital extended up to the margin of ribs and could be felt distinctly behind. There was no deformity in back, nor was there a history of trouble in the spine. Urine normal. Diagnosis: Appendicitis. Operation: Laparotomy. Lateral incision; abscess opened without entering the peritoneal cavity. Cellular tissue of abdominal wall very much infiltrated; this was due to a rupture of the abscess into retro-peritoneal cellular tissue by an exertion the day before onset of pain. Pus was odorless, which immediately caused doubt as to the etiology of the suppuration. Exploration of the abscess cavity revealed a sinus leading up to the third and fourth lumbar vertebræ which were tubercular. Rupture of the psoas abscess into the cellular tissue accounts for the sudden onset of symptoms, and the location of and limited disease of the vertebræ accounts for the absence of scoliosis or lordosis. Recovery.

Case 70.—Date of operation Nov. 14, 1892. Operator, Dr. Murphy. Case occurred in practice of Dr. T. J. Conley, Mrs. S., aged 24. History: Typical attack; induration, resonant on percussion. Operation: Fourth day after attack revealed intra-peritoneal abscess and perforation of appendix with enterolith. The appendix was amputated, the abscess cavity drained with iodoform gauze. Recovery.

Case 71.—Date of operation Nov. 26, 1892. Operator, Dr. Murphy. K., aged 14; male. Case occurred in practice of Dr. O'Shea. History: Typical attack. Operation seven days after onset. A large abscess was opened, which contained quite a quantity of blood. After pus escaped, a profuse hemorrhage took place which resembled that of aneurism, which was suppressed by packing with iodoform gauze. A fecal stone was removed; appendix not removed; recovery.

Case 72.—Date of operation Nov. 30, 1892. Operator, Dr. Murphy. Mrs. E., aged 22 years. Case occurred in practice of Dr. T. J. Conley. History: Typical attack. Operation on fourth day: Appendicisectomy. A large circumscribed abscess was present. The appendix was gangrenous and had perforated. Fecal stone. Recovery.

Case 73—Date of operation Dec. 7, 1892. Operator, Dr. Murphy. Miss S., aged 12 years. Case occurred in practice of Dr. Graves. History: Typical attack. Operation on the fourth day of sickness. Intra-peritoneal abscess, containing two ounces of very offensive pus was opened; the appendix was found to be partly gangrenous and perforated, and was removed. The cavity was packed with iodoform gauze. Recovery.

Case 74.—Date of operation Dec. 9, 1892. Operator Dr. Murphy. J. F., aged 25; female. Hospital. History: Pa-

tient had frequently complained of pain in right iliac region and occasional,y had pains in back. Present attack began two weeks ago with classical symptoms of appendicitis. On examination a considerable induration was found in the right iliac region which appears to be near the surface. No induration could be felt from rectum. Superficial dulness on percussion. Operation: Lateral incision; circumscribed abscess; appendix not removed; general peritoneal cavity opened. Drainage; recovery.

Case 75.—Date of operation Dec. 16, 1892. Operator; Dr. Murphy. St. Joseph's Hospital. M., aged 28 years; male. One year previous to operation the patient had three attacks of local peritonitis. During the last attack Dr. F. S. Hartmann saw the case and advised operation. The last attack simulated intestinal obstruction very much,so that there was doubt as to the actual diagnosis. Operation: Appendicisectomy. General peritoneal cavity opened. There was present a perforation of the appendix with a circumscribed abscess in region of umbilicus. The wall of the cecum enveloped the appendix. Drainage; patient made a good recovery.

Case 76.—Date of operation Dec. 16, 1892. Operator, Dr Murphy, Case occurred in the practice of Dr. Wittwer. A., aged 26; male. Alexian Brothers' Hospital. Patient was seen several days after onset of attack and showed severe symptoms of general suppurative peritonitis. Operation: The usual incision was made, and a large quantity of pus escaped, which covered the bowels for an area of several inches. Slow recovery.

Case 77.—Date of operation Dec. 25, 1892. Operator, Dr. Murphy. H., aged 15 years; male. Case occurred in the practice of Dr. Mott. Two weeks previous to first operation, patient had a typical attack accompanied with pain, nausea, vomiting and tympanites. On examination a dulness on light percussion over entire abdomen below the umbilical line. Deep percussion resonant. Operation: Lateral incision, large quantity of pus all over the bowels; appendix not removed. Temperature dropped for three days and then rose again to 103 degrees. January 2, in consultation with Dr. Mott, it was found that left side of abdomen was not draining properly. Circumscribed adhesions had formed around an accumulation of pus in that region. The abscess was drained; it was found that this abscess extended into the pelvis. Patient made a rapid recovery.

Case 78.—Date of operation Jan. 28, 1893. Operator, Dr. Murphy. K., aged 22 years; female. Sickness commenced with sudden pain and tenderness in right iliac fossa. At operation, which was performed four days after onset of attack, a large extra-peritoneal abscess was found, and was packed with iodoform gauze. The appendix was not removed.

Two weeks after the operation a lobar pneumonia set in, which was followed by a hydrothorax; aspiration; recovery.

Case 79.—Date of operation Feb. 17, 1893. Operator, Dr. Murphy. R., aged 32 years; male. Case occurred in the practice of Dr. Turk. Ten days previous to operation sudden attack of pain and tenderness in right iliac region. Difficult urination: no induration. Operation: Lateral incision and removal of appendix; general peritoneal cavity opened. The appendix was adherent to its surroundings; a fecal stone was found and a perforation of the appendix had taken place. Local gangrene of appendix. Gauze drainage; recovery.

Case 80.—Date of operation Feb. 17, 1893. Operator, Dr. Murphy. Cook County Hospital. W. C., aged 16 years; male. Recurrent appendicitis; three attacks previously. Typical attack; no induration. No temperature at time of operation. Operation: Lateral incision, general peritoneal cavity opened. Appendix situated in the retro-cecal fossa, adherent, very much enlarged and edematous; ligated and amputated. No pus in peritoneal cavity. Drainage; recovery. Pathologic conditions: Mucous membrane ulcerated; very much swollen around the ulcer. Tension on serous covering great.

Case 81.—Date of operation March 9, 1893. Operator, Dr. Hartmann. B., aged 9; male. Patient's illnes began one week previous to operation. Sudden attack of abdominal pain, nausea, vomiting, diarrhea, fever. Abdominal tenderness more pronounced locally; induration. Operation. Drainage of an intra-peritoneal abscess; recovery.

Case 82.—Date of operation March 18, 1893. Operator, Dr. Wittwer. W., aged 8; male. Case occurred in private practice of Dr. Hicks of Burlington, Wis. About two weeks before operation, patient commenced ailing, with an irregular temperature, sweats, occasional vomiting and later on, pain in lower part of abdomen, with a tendency to localization in right iliac region. Examination of urine revealed pus. Induration. Diagnosis: Large, circumscribed perityphlitic abscess with rupture into bladder. Operation: Median incision two inches above symphysis pubis; a large quantity of pus escaped which had involved the whole right iliac region. Two large rubber drains inserted. Complete recovery in four weeks. Appendix was not removed.

Case 83.—Date of operation, March 20, 1893. Operator, Dr. E. W. Lee. R., age 13 years; male. Case occurred in the practice of Dr. P. B. Hayes. Onset sudden, vomiting, pain in right iliac region, extreme tympanites, no induration. At the time of operation temperature 105 degrees F., pulse 124; had been so for three days. Typical typhoid condition. Operation: Appendicisectomy; drainage; no

peritonitis. Appendix unusually long and swollen; contained blood and pus; not perforated. Mucous membrane ecchymotic and ulcerated. Temperature fell promptly after operation to 102 degrees F. On the third day patient became deeply jaundiced; rapid recovery.

This is a particularly interesting case, the temperature keeping above 105, and the pulse 134 from the beginning of the attack up to the time of operation. Abdomen enormously tympanitic and tender. He presented all the so-called classical symptoms of general septic peritonitis. Note the pathologic conditions; no peritonitis, simple infection with retention in appendix. How could a diagnosis of the pathologic conditions be made by these symptoms?

Case 84.—Date of operation March 30, 1893. Operator, Dr. Murphy. M. L., aged 22 years; male. Cook County Hospital. History: Patient was transferred from medical division of Hospital after having been sick for five days. Five days previous to operation patient was taken with severe pain in right iliac region. Large doses of morphin were necessary to control the pain. Bowels moved as usual. Patient had noticed no swelling. On examination abdomen tympanitic, severe pain on slight pressure over the appendix; no tumor visible nor palpable; no difference in percussion resonance. The pain increased constantly from the beginning. March 29, 1893, pulse 120, temperature 103.4 degrees, respiration 42. March 30, A.M., pulse 132, temperature 102.2 degrees, respiration 36. Operation: Lateral incision; peritoneum opened; packed around seat of operation. Retrocecal abscess, one ounce of pus; appendix amputated; no foreign body or calculus. Sutures inserted, but not tied. Drained with iodoform gauze. In twenty-four hours pulse had subsided to 96, temperature 97.6 degrees, respiration 28. Subsequent convalescence uneventful.

Case 85.—Date of operation April 6, 1893. Operator, Dr. Murphy. M. S., age 30 years. Onset of typical attack April 2, 1893. A temperature of 103 degrees and a pulse of 92 were present at the time of operation. Increased local pain and general tympanites. Operation: Lateral incision; appendix invaginated in a fold of the cecum; a couple of drachms of very offensive pus around it; appendix was ligated near its base; amputated. Drainage; recovery. Appendix had no perforation. An ulceration was the cause of the infection. The mesentery was infiltrated with pus, and there were flakes of pus on the surface of the bowel in the region of infection. This is another illustration of local suppurative peritonitis from ulcer of the appendix without perforation. Patient had a temperature of 103 degrees every day after operation for three weeks, without any other symptom of sepsis or local trouble; as she expressed it, "one of her regular bilious attacks." It annoyed me very much, but no

other explanation for temperature could be given. Recovery.

Case 86.—Date of operation April 6, 1893. Operator, Dr. Wittwer. B. L., age 10 years; school girl. History, as given by Dr. Wittwer: Patient was brought to my office two days before operation. Mother gives the following history: For the last two weeks child has been ailing; complained of pain all over body, principally in abdomen around the umbilicus. Child gradually lost flesh, her appetite failed, she had some diarrhea, occasional vomiting, so that finally a physician was called who treated her several days for rheumatism. When I saw her she had some temperature, cheeks flushed, walked into office like a case of hip joint disease. Right leg drawn up in recumbent position. Examination revealed a narrow induration about three inches long in the right iliac region. An operation was made two days later. Typical incision; appendix easily located and found adherent to surrounding tissues; some flakes of pus could be seen on outside of appendix, but no distinct accumulation of pus had formed. Appendix was ligated and removed, suture left in wound, and latter packed with iodoform gauze. Pathologic conditions: Fecal stone. No perforation of appendix. On opening appendix it was found that one-half of mucous membrane towards the cecum was thickened and infiltrated, but not gangrenous, while the distal portion of mucous membrane had become gangrenous and presented the appearance of a diphtheritic patch, ulcerated, with a dirty, thick, grayish, yellow base. There were present in appendix a few drops of pus; recovery.

Case 87.—Date of operation, April 9, 1893. Operator, Dr. Murphy. Miss W., aged 12 years. Case occurred in practice of Dr. T. J. Conley. Typical attack. Examination: Induration with resonance on percussion, tenderness general. Temperature at time of operation 99 degrees, pulse 96. Operation: Lateral incision into general peritoneal cavity, escape of about one quart of pus. No foreign body to be felt. Appendix was not removed; general suppurative peritonitis. The coils of intestines were covered with a thick layer of fibrin, which, I believe, accounts for the absence of absorption and toxic symptoms; recovery.

Case 88.—Date of operation April 21, 1893. Operator, Dr. Murphy. Mrs. I., aged 24 years. Case occurred in practice of Dr. Heartler. Present illness commenced with sudden general abdominal pain and vomiting; fever. Examination revealed tenderness over appendix; induration. Operation on fourth day after attack. Lateral incision into peritoneal cavity; circumscribed intra-peritoneal abscess. Appendix removed; drainage; recovery. An extensive gangrene of the appendix was present, but no perforation.

Case 89.—Date of operation May 6, 1893. Operator, Dr.

Murphy. R. C., aged 13 years; male. Case occurred in practice of Dr. McKee. Patient was sick one month before seen by operator. Onset typical. Examination: Large induration extending over lower half of abdomen; tympanites; tenderness. Patient very much emaciated and cachectic. Temperature normal. Operation: Abdomen opened at most prominent point of induration, which was to the left of the median line; appendix not removed; drainage; recovery. A general suppurative peritonitis was present. The intestines were covered with a layer of fibrin.

Case 90.—Date of operation May 13, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. H. S., iron worker, aged 26 years. Patient had first attack about two and one-half years ago, which came on suddenly while riding in a street car; the sudden pain commenced in the right iliac fossa and soon spread over the entire abdomen. Patient has always had more or less tenderness over the appendix since this time, and has had quite a number, twenty-four, similar attacks in intervals of five or six weeks. The attacks consisted of pain in right iliac region, vomiting, nausea, slight chills and fever. Bowels have always been kept regular by use of cathartics. During the attacks there has been a desire to micturate which persisted until attack subsided. This attack has been more severe than any other. Herpes zoster in right iliac region. Operation: Appendicisectomy and drainage. Time, four and one-half minutes. Temperature after the operation remained below 100 degrees. Recovery.

Case 91.—Date of operation June 3, 1893. Operator, Dr. Murphy. Mr. K., aged 22 years. Was operated upon five months previous. Recurrent attack; patient sick five days. Operation: Lateral incision; intra-peritoneal abscess. Appendicisectomy; enteroliths; drainage; recovery. Appendix was perforated and showed local gangrene.

Case 92.—Date of operation June 4, 1893. Operator, Dr. Murphy. C. H., male, aged 28 years. Patient was taken sick May 31, 1893, with moderate pain in abdomen which gradually became worse and localized in lower half. Nausea, vomiting. On the second day pain became localized in the right iliac region and gradually increased. In the evening of the third day he experienced a sudden severe pain accompanied by a sensation as if something had ruptured within the abdominal cavity. Examination: Tenderness, induration and dullness in right inguinal region. Operation: Appendicisectomy. Intra-peritoneal abscess incised; fecal stone escaped with pus. Fecal fistula followed operation which lasted for ten days. Temperature ranged up to 101.5 degrees after operation. Recovery. Subsequent examination showed protrusion of abdominal wall; a small hernia.

Case 93.—Date of operation June 5, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. P. H., aged 30 years, male. About six years previous to operation, patient was attacked with severe pain in the abdomen, followed by nausea and vomiting. The pain was very intense for five hours, then the fever set in. He has had a dozen similar attacks since; felt drowsy and sleepy the day before each attack. Had chills and fever each time. Examination: Induration, increased local tenderness; tympanites. Operation sixth day after onset. Lateral incision; general peritoneal cavity opened; appendix adherent, removed; fecal stone. Drainage; recovery. For twelve days after operation temperature remained below 100 degrees. On the 16th rose to 103 degrees, but fell to normal shortly.

Case 94.—Date of operation June 16, 1893. Operator, Dr. Murphy. F., aged 18 years; male, Woodstock, Ill. Case occurred in the practice of Dr. L. C. Waters. Sickness began five days ago with a typical attack. Examination: Induration, local tenderness, temperature 99.5 degrees at the time of operation. Operation: Lateral incision, intra-peritoneal abscess; appendix adherent, removed. Drainage; recovery. Pathologic conditions: Fecal stone, local gangrene of appendix, perforation.

Case 95.—Date of operation June 16, 1893. Operator, Dr. Murphy. Th. M. G., aged 13 years, male. Case occurred in the practice of Dr. P. H. Conley. Illness began June 9 with sudden pain and tenderness in the abdomen; this was soon followed by vomiting and fever. This condition lasted until time of operation. General tympanites, circumscribed induration in right iliac region, local tenderness; temperature before operation 102 degrees F., pulse 110. Operation: Lateral incision, large intra-peritoneal abscess; appendicisectomy; no foreign body; appendix ulcerated, not perforated. Recovery.

Case 96.—Date of operation July 8, 1893. Operator, Dr. Murphy. W. F., aged 16 years, male. Case occurred in the practice of Dr. W. H. Bouton. Commenced with sudden attack of pain in right iliac region, extending all over abdomen. Fever, slight induration, which was more pronounced under anesthesia, and under the influence of the latter, appendix could be outlined. In attempting appendicisectomy the ligature, which was tied around the base of the appendix cut through; no further attempt at ligation was made; intra-peritoneal abscess at seat of operation drained. Appendix slightly adherent, adhesions easily separated, owing to a complete gangrenous condition of appendix, which also accounted for the ease with which silk tore through in attempting ligation. Appendix not perforated. Fecal fistula on third day, which closed in

thirteen days. Temperature subsided immediately after operation; recovery.

Case 97.—Date of operation July 12, 1893. Operator, Dr. Murphy. Female, 26 years of age. Patient had a typical attack on the 9th of July, 1893, three days before operation; had pain, tenderness, vomiting, temperature and slight induration. Operation: Incision and removal of appendix; about an ounce of pus escaped, which was of a very offensive nature. Drainage; recovery. The appendix showed a perforation on its side near the base. No foreign body. Cicatrix showing seat of previous perforation. This case was operated upon May 1, 1892. Simple drainage of abscess.

Case 98.—Date of operation July 13, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Hoelscher. Mrs. N., aged 24 years. Present illness began five days before operation, with severe vomiting and slight pain in right iliac region. The vomiting persisted up to the time of the operation regardless of treatment. *No induration, no local tenderness, no temperature*, pulse 120, anxious expression. Operation: Lateral incision; general peritoneal cavity opened; no peritonitis. Cecum drawn over towards uterus, and firmly held there by the appendix, which was adherent to the uterus and produced intestinal obstruction. Appendix removed; twenty-four hours drainage; rapid recovery. Appendix very much elongated; contained no pus; ecchymotic at the end where it was adherent to the uterus.

This case is very instructive as the symptoms corresponded exactly with the pathologic conditions, and did not suggest acute appendicitis, but intestinal obstruction, and is the only case in which there was an absence of pus or cicatrices showing the previous existence of pathologic conditions.

Case 99.—Date of operation July 18, 1893. Operator, Dr. Murphy. I. D., aged 56 years, male. Alexian Brothers' Hospital. Four weeks ago patient experienced a sudden attack of severe pain in right half of abdomen. Progress of disease characterized by a dull, heavy, aching pain in right groin and hip. Patient jaundiced since commencement of attack. Stools normal; difficulty in micturition; great tenderness on palpation over right iliac region; induration. Patient is unable to completely extend right thigh. Operation: Drainage of a large circumscribed abscess containing about three pints of pus. Appendix situated behind cecum; not removed. Recovery.

Case 100.—Date of operation July 23, 1893. Operator, Dr. Murphy. Mrs. C., aged 25 years. Patient was attacked on July 19 with severe pain all over abdomen; the pain was more severe over right side. It was accompanied with nausea and vomiting, which continued up to time of operation. Temperature July 19, 103 degrees; pulse 96; 20th, the

same; 23d, 10 P.M., temperature 102 degrees, pulse 90. Abdomen enormously distended, dull over lower half. Operation: Lateral incision; a quart of fluid of sero-purulent nature escaped from the general peritoneal cavity, which covered the bowels to a great extent. Drainage; recovery.

Case 101.—Date of operation July 24, 1893. Operator, Dr. Murphy. T. S., aged 25 years; male. Alexian Brothers' Hospital. Twelve recurrent attacks during the past two and one-half years, lasting from three to ten days. Appendicisectomy in immediate stage; drainage; recovery. Appendix extensively adherent; mucous membrane ecchymotic. A marked stricture in middle of appendix, resulting from cicatricial contraction of former ulcerations.

Case 102.—Date of operation July 25, 1893. Operator, Dr. Murphy. J. H., aged 14 years; male. Case occurred in practice of Dr. Quine. Patient had a typical attack of appendicitis two weeks previous to the operation accompanied by fever, local tenderness, induration. The temperature subsided on the tenth day to normal, and remained so for three days when it gradually began to increase and by the thirteenth day reached 102 degrees. The area of induration increased rapidly and was somewhat tender. On the fourteenth day there was a large induration in right iliac region. Pulse and temperature both good. Operation: Lateral incision directly into an abscess. General peritoneal cavity not opened. There was no gush of pus when the abscess was opened as is usually the case, showing an absence of tension in the abscess. There was considerable fresh blood in the abscess cavity. Two fecal stones. No effort made to locate or remove the appendix. Drained. After recovering from the anesthetic the patient complained of intense abdominal pain and vomited persistently. Tympanites rapidly set in; patient collapsed, and died fourteen hours after the operation. The course of this case after the operation indicated that the abscess ruptured between the coils of the intestine and the pus emptied into the peritoneal cavity before the incision was made, explaining the reason why pus did not escape when abscess was opened, as well as the hemorrhage into the abscess. This opening was not detected at the time of operation, nor could it be seen that the pus escaped into the peritoneal cavity, as that was not opened beyond the line of adhesion. This also accounts for the collapse of the patient, for the symptoms were those of a fatal sapremia.

Case 103.—Date of operation July 26, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Rohr. F. O., aged 43 years; male. A week before operation patient was suddenly attacked with pain in right iliac region, followed by vomiting, nausea and tympanites. Pain and tenderness

all over abdomen, especially in lower half. Temperature 99½ degrees at time of operation; pulse 100.

Operation: Lateral incision. General peritoneal cavity opened. A general dry septic peritonitis present. Appendix situated behind cecum, very difficult to locate; the adhesions around the same were loosened and the appendix removed. The appendix was large, gangrenous and showed perforation through which a fecal stone projected. Iodoform gauze drainage.

I desire to call yonr attention especially to the fact that this patient was not collapsed at the time of operation, that his temperature was 99½ degrees, and his pulse 90, notwithstanding that he had a general septic peritonitis involving all of the abdominal viscera, and had it for some time previous to operation. Death 24 hours after operation.

Case 104.—Date of operation July 27, 1893. Operator, Dr. Murphy. M. O. C., aged 22 years; male. Patient suddenly attacked with pain in region of right kidney. Extreme tenderness over appendix extending high up above crest of ilium and up to margin of ribs behind, but not in front. No tympanites until the morning of operation. At 4 A.M., on day of operation patient felt the abscess rupture; he described a sudden bursting in his abdomen, followed by great pain and depression. Operation four days after attack. Incision; appendix difficult to locate; an abscess cavity was found and the appendix formed a part of its wall; it was gangrenous, had ruptured and located behind cecum. Two fecal stones were removed. There was present a dry septic peritonitis, the result of a rupture of the abscess the morning of the operation. The intestines were denuded of their endothelium and flakes of pus and some sero-purulent fluid rested between the coils. The operation was refused forty-eight hours preceding the rupture of the abscess, and the delay sacrificed the patient's life. Death thirty-six hours after operation from sapremia.

Case 105.—Date of operation July 28, 1893. Operator, Dr. Murphy. T., aged 18 years; male. Case occurred in practice of Dr. Berry. Patient complained of abdominal pain and vomiting on the night of the 24th. Called the doctor on the evening of the 25th, temperature at this time was 103 degrees; pulse 120. July 26, A.M., temperature 102 degrees, tympanites increased, pain diminished. July 27, P.M., temperature 101 degrees, pulse 100, very little pain. July 28, temperature 101 degrees, pulse 100. Operation: Lateral incision, circumscribed abscess, general peritoneal cavity not opened. Fecal stone escaped with pus. Appendix not removed. Drainage; recovery.

Case 106.—Date of operation July 28, 1893. Cook County Hospital. Operators, Drs. Murphy and La Count, House Surgeon. J. M., aged 32 years; male. Patient's trouble

began twelve days before entrance to hospital, with severe pains in abdomen, accompanied by vomiting. Later on a dull aching pain developed in the right iliac fossa which was persistent; vomiting continued a little every day until day of operation. Could keep nothing on stomach. Bowels moved daily. No chills; no fever. Later on an induration became visible in right iliac region. Operation: Usual incision: general peritoneal cavity not opened; escape of eight to ten ounces of purulent, fecal smelling pus. Digital examination of pus cavity detected sacculated condition which was broken down and made into single cavity. Packed with gauze. Upper part of wound sutured with silk. Patient made rapid recovery.

Case 107.—Date of operation July 31, 1893. Operator, Dr. Murphy. A. J., aged 22 years; female. Case occurred in practice of Dr. P. H. Conley. Patient had a previous attack about a year before operation, but not as severe as present one. Sudden attack July 24, 1893; pain in right iliac region, nausea, vomiting, tympanites, induration, dulness on percussion. Operation: Lateral incision; extensive suppurative peritonitis extending into Douglas pouch and up behind the cecum and colon to the kidney; drainage; recovery.

Case 108.—Date of operation Aug. 5, 1893. Operator, Dr. Murphy. R. W., aged 18 years; male. Alexian Brothers' Hospital. Patient had had previous attack June 25, 1892, for which he was operated; simple drainage (see Case 55). Had a second attack in August, 1892, which only lasted a few days. The present attack (third) began with sudden pain in the abdomen caused by straining himself while working at his lathe. The pain and vomiting were so severe that he was compelled to go to bed. At first, pain was located in right iliac region, but in a few hours it extended over the entire abdomen. Examination: The temperature reached 102 degrees, fifteen hours after onset, and he presented himself for operation sixteen hours later. Temperature 99.7 degrees; pulse 80. Tympanitic, general abdominal tenderness; dulness on superficial percussion over lower half of abdomen. Operation: Lateral incision; general peritoneal cavity opened; found full of a thin purulent fluid. The wall of an old circumscribed abscess was seen in which was detected a small opening. On opening this wall extensively half of the appendix was found to protrude into it. The appendix was very much enlarged, thickened, and at its tip an enterolith protruded. This condition had existed for a long time, as could be seen from the pathologic condition of the opening. Although the peritoneum of the intestine and omentum was congested, it still retained its gloss, and was not eroded of its endothelium. Appendix ligated, amputated. Recovery.

REMARKS.—The cause of the peritonitis in this case was the rupture of a circumscribed abscess that had existed since the previous August,

or the time of the second attack. The wall of the abscess was very firm. It will be noted that while a general suppurative peritonitis was present at the time of the operation, and had existed for thirty-one hours, the patient was not collapsed; his temperature was only 99.7 degrees, and his pulse 80.

Case 109.—Date of operation Aug. 8, 1893. Operator, Dr. Murphy. J. J. D., aged 23 years; male. Present attack began July 28 with sudden pain in the region of the umbilicus, which rapidly localized itself in the right iliac region. Marked induration over appendix. Temperature 102 degrees day before the operation. Has vomited several times since the onset of attack. Temperature on morning of operation 100 degrees. Operation: Lateral incision, general peritoneal cavity opened; circumscribed abscess found which contained half a pint of pus. Appendix amputated. Drainage; recovery. Pathologic conditions: Appendix enlarged, local gangrene with perforation. No foreign body.

Case 110.—Date of operation Aug. 17, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Pigall. R. S. B., aged 33 years; male. Post-Graduate Hospital. Patient was kicked on July 31 in the right side by a man. The same night, at 2 A.M., he was attacked with sudden pain in right iliac region, followed by fever, tenderness and tympanites. These symptoms continued up to the time of operation. Examination: Large tumor in right iliac region, extending almost to umbilicus; no fluctuation could be detected; no edema or redness of the wall; dull on percussion, both superficial and deep. A differential diagnosis was made between rupture of kidney, rupture of cecum and appendicitis in favor of the latter. Operation: Lateral incision; abscess wall adherent to anterior wall of abdomen; general peritoneal cavity not opened. Abscess circumscribed; drained; appendix not removed; recovery.

Case 111.—Date of operation Aug. 22, 1893. Operator, Dr. F. S. Hartmann. A. K., aged 18 years; female. Primary attack. Sickness began August 17 with colicky pains in region of stomach, followed by nausea and vomiting. Later, pains extended to lower part of abdomen. The following day fever appeared and the pain increased. Two days later patient felt practically well, and went about as usual. During the afternoon of this day a second severe attack developed with pain, nausea and vomiting, etc. The following day she felt perfectly well again, but a third similar attack occurred later in the day. She was first seen on this day. Temperature 104 degrees, pulse 114. Large induration in right iliac region. Operation on fifth day. Drainage of intraperitoneal abscess containing about three ounces of pus; three fecal stones removed; appendix not located; gauze drain; fecal fistula; recovery.

Case 112.—Date of operation Aug. 25, 1893. Operator, Dr.

Murphy. F. H. C., Buffalo, aged 28 years; male. Case occurred in the practice of Dr. J. C. Cook of Hyde Park. Appendicitis began on morning of 24th at 7 A.M., with sudden attack of pain in right iliac region, followed by nausea and vomiting. Tenderness all over abdomen; very sensitive on deep pressure in right iliac region. Abdomen tympanitic; induration.

9 A.M.	August 25,	Pulse, 96,	temperature,	98.3 degrees.
8 P.M.	"	" " 100	"	102 "
11 P.M.	"	" " 120	"	103 "

Operation 11:30 P.M. Lateral incision; peritoneal cavity opened. No adhesions to anterior wall. Appendix situated in front of cecum, surrounded by omentum. Appendix gangrenous; showed no perforation. Two drachms of pus outside of the appendix, which was amputated. Enterolith in appendix. Drainage; recovery. Remarks: Instructive in showing purulent infection of peritoneum (two drachms of pus) without perforation.

Case 113.—Date of operation Aug. 28, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. P. McG. P., aged 27 years; male. Patient was taken with typical attack three days before operation. In spite of the very severe pain he worked the whole of the first day. The pain at first was general, but gradually became localized in right iliac region. There was marked muscular resistance, but no perceptible induration over appendix. Temperature at time of operation 100.3 degrees. Operation: Lateral incision, appendix situated two and one-half inches below the umbilicus and near the median line. Small circumscribed abscess; no adhesions to anterior wall; adhesions to omentum. Appendix perforated; fecal concretion; appendix excised; simple ligature of base; drained; recovery. Temperature at no time after operation exceeded 100.4 degrees.

Case 114.—Date of operation Aug. 28, 1893. Operator, Dr. Murphy. Mrs. C., aged 52 years. Occurred in practice of Dr. T. J. Conley. Attack began six days before operation with typical symptoms. A general suppurative peritonitis existed before operation. The operation showed that a circumscribed abscess existed and had ruptured. Operation: Temperature at time of operation 104 degrees, pulse 120. An incision was made and the abdominal cavity drained. Appendix removed; gall-bladder elongated and adherent to abscess wall. Patient died three days after operation, of sapremia. No autopsy.

Case 115.—Date of operation Aug. 31, 1893. Operator, Dr. Murphy. Male, R. H., aged 16 years. Case occurred in practice of Dr. J. C. Cook. Patient was suddenly taken sick at Waukegan (August 29) with nausea and vomiting; severe pain in right iliac region; had been eating grapes the day before. Temperature August 31, 101 degrees. Operation

thirty-nine hours after onset of symptoms. Lateral incision. Appendix completely surrounded by omentum at least one and one-half inches thick, except at tip, where only the thin gangrenous peritoneal wall of appendix separated the pus in the appendix from the peritoneal cavity. This whole mass was ligated and amputated; a drain of iodoform gauze inserted. Patient made a rapid recovery. Silkworm gut was used to ligate the appendix; this had to be removed as it did not slough off or was not absorbed.

Case 116.—Date of operation Sept. 19, 1893. Chas. B., aged 11 years; male. Post-Graduate Hospital. Operation by Dr. Hartmann. Patient was taken sick on the morning of Sept. 16, 1893, with dizziness and headache. Went to bed at noon, slept, and on awaking at 3 P.M. dizziness and headache had increased and he had developed a fever and backache. Diarrhea and griping present. The following day (September 17) 6 P.M., pulse was 150, temperature 105 degrees; typhoid condition; abdomen somewhat tympanitic; general tenderness. September 18, A.M., pulse 135, temperature 105 degrees; general condition same; abdominal tenderness more marked in right iliac region; no induration, but slight nodules could be felt in this region, which at time of operation proved to be swollen mesenteric glands. Operation: Appendicisectomy; small iodoform gauze drain; sutured; appendix was non-adherent; external appearance normal except the end, which was somewhat swollen, was of rather unusual length, and upon being opened was found to contain a grape seed, and was ulcerated. Recovery. Ventral hernia; latter resulted from wound opening during a severe attack of typhoid fever which immediately followed the operation.

Case 117.—Date of operation Sept. 24, 1893. Operator, Dr. Murphy. K. S., aged 50 years; male. Case occurred in practice of Dr. Venn. Patient has had a number of previous attacks. Present attack began about seven days ago with severe local pain at umbilicus, nausea, vomiting, fever, tympanites. *Status præsens:* Large induration in right iliac region, dull on superficial percussion, resonant on deep percussion. No edema of wall. Temperature 101 degrees, pulse 90, at time of operation. Operation: Lateral incision; abscess opened without opening the unaffected portion of peritoneum; abscess circumscribed; appendix not removed. Drainage: recovery.

Case 118.—Date of operation September 24, 1893. Operator, Dr. Murphy. H. C., aged 22 years; male. Case occurred in practice of Dr. O'Malley. Date of attack September 13, beginning with pain in umbilical region, followed a few hours afterwards by vomiting. On September 15 temperature 103 degrees. On September 16 temperature normal, and remained so up to day of operation. Sept. 24, 1893, 8 A.M., pulse 104, temperature 99 degrees. The induration extended

to the median line as high as umbilicus and within three inches of ninth costal cartilage. Resonant on deep percussion and flat on light percussion over that area. Operation: Lateral incision; abscess circumscribed, i.e., the abscess was opened directly through the abdomen without disturbing the uninfected portion of the peritoneum. Appendix not removed; drainage; recovery.

Case 119.—Date of operation Sept. 27, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. W. McK., aged 15 years; male. Six months previous, patient had been operated upon for general suppurative peritonitis following appendicitis. The abdomen had been drained; appendix not located. The wound healed nicely, but has opened and discharged pus three times since the operation. The present operation was performed for the purpose of removing the sinus and determining the cause of the same. Operation: Incision two inches to the inner side of the opening. Peritoneal cavity opened. Cecum found adherent in the iliac fossa and to the lateral parietal peritoneum. Appendix imbedded in adhesions adherent to wall of cecum and parietal wall; the end was considerably distended. The cavity of the appendix was shut off from the cavity of the cecum by a large cicatrix. There were three openings in the appendix. The cicatricial occlusion of the base of the appendix accounts for the recurrence of the attacks. Appendix removed. The opening in the side of the appendix was connected with the opening in the abdominal wall. Drainage; recovery.

Case 120.—Date of operation Sept. 28, 1893. Operator, Dr. Murphy. F. B., aged 35 years; male. Case occurred in practice of Drs. McKee and Pigall. During the night of Sept. 21, patient was attacked with severe abdominal pain. This was shortly followed by nausea and vomiting. The following morning patient's temperature was 102 degrees. Vomiting and pain continued during the following seven days. The patient became very tympanitic and rapidly lost strength. Examination Sept. 28. Patient's facial expression bad; skin cold; gulping every few minutes; abdomen extremely distended. Dull on light percussion over lower half. Temperature 101 degrees; pulse 135. Operation: Lateral incision; abdomen full of sero-purulent fluid. Endothelium of intestines eroded. The appendix was easily located and removed; adherent, gangrenous and perforated. Drained. Death thirty-six hours after operation.

Case 121.—Date of operation Oct. 2, 1893. Operator, Dr. F. S. Hartmann. E. S. W., aged 32 years; male. Evening of Sept. 30 patient experienced abdominal pain which was relieved by an anodyne. The following morning pain returned, but patient went around as usual. In the evening pain became very severe, and during the night was so

intense that hypodermic injections were given. October 2, A.M., pulse 95, and strong; at noon pain became somewhat localized in the right iliac region. At 4:30, had a very severe chill. Examination 6:30 P.M.: Tympanites, general abdominal tenderness, more marked in lower portion of abdomen and right iliac region; induration in the latter location. Operation: Appendicisectomy; drainage of septic peritonitis; appendix gangrenous, perforated, containing enterolith; adhesions of bowel to parietal peritoneum, limited septic process above and to the inner side of incision; toward the pelvis no adhesions were to be felt. Patient died on October 4.

Postmortem revealed presence of general septic peritonitis; folds of intestine were agglutinated and presented many pockets of suppuration.

Case 122.—Date of operation Oct. 12, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. Ed. B., aged 21 years; male. Onset Oct. 7, 1893, with intense abdominal pain, more severe in right iliac region. Treated "expectantly" for one week. Was up and about after the first few days. Vomiting continued at intervals from beginning of the attack. Patient collapsed two days prior to admission to Hospital, and when admitted in very bad condition; respirations irregular, almost entirely thoracic, pulse feeble and rapid, temperature 102 degrees; general pain and tympanites all over abdomen. Induration not palpable, most sensitive in right iliac region. Diagnosis: Appendicitis, perforation, general suppurative peritonitis. Operation: Lateral incision; about a pint of pus escaped. Appendix perforated; firmly adherent; not removed. No limiting adhesions; pus distributed throughout entire peritoneal cavity. Strands of gauze placed in all directions. No irrigation. Hypodermic injections of strych. sulph. gr. one-sixteenth every hour. Patient rallied completely in forty-eight hours. Temperature dropped to 99 and remained so; he improved rapidly until October 22, when he was attacked with a double pneumonia, and died Oct. 24, 1893. All of his abdominal symptoms had subsided before the attack of pneumonia began; the drainage, however, had not been removed. I have placed this case in the list of recoveries, as I believe the cause of death was independent of his peritonitis. This is one of the very few cases that rallied from the collapse of general suppurative peritonitis.

Case 123.—Date of operation Oct. 14, 1893. Mary S., aged 11 years. Operation by Dr. Hartmann. On October 8, immediately after dinner, patient vomited very freely; the rest of the day felt as well as usual. During the night she again vomited. Felt quite well on waking the following morning, October 9. During the afternoon developed pain in the region of the navel, which was relieved by hot applica-

tions. October 11, on awaking, felt quite sick; intense pain in abdomen almost constant; remained in bed that day; during night developed a fever, which continued until the time of operation. Operation: Appendicisectomy; small iodoform gauze drain; suture; appendix swollen and mucous membrane gangrenous; recovery.

Case 124.—Date of operation Oct. 23, 1893. Operator, Dr. Hartmann. Post-Graduate Hospital. Mrs. M. O'B., aged 27 years. Since May, 1892, had ten attacks; always suffered with intense colicky pains in epigastrium, accompanied by vomiting of bile. The attacks occurred mostly during the night, came and disappeared suddenly. October 21, 6 P. M., patient experienced continuous pain in epigastrium, accompanied by persistent vomiting lasting until 4 o'clock the following day, when, after having ceased for a couple of hours, returned again. First complained of pain in the right iliac region during afternoon of 22d; chills in afternoon of same day. Examination: No tympanites, slight induration, tenderness confined to the right iliac region. Operation: Drainage of local septic peritonitis; appendicisectomy; appendix gangrenous, perforated, adherent; recovery.

Case 125.—Date of operation, Oct. 23, 1893. Alexian Brothers' Hospital. N. E., aged 24 years; male. Operator, Dr. Murphy. History: Patient admitted to medical ward of Hospital October 11, with a history of having been sick for ten weeks. Bloody stools for five days previous to operation. Severe pain and tenderness over abdomen general; diarrhea during entire ten weeks. Passage once every hour since entrance to Hospital; some pain during micturition; temperature 101 degrees, pulse 104, respiration 25. October 13, twenty-five stools in twenty-four hours; October 16, lumbar myositis, most painful in right side. October 20, great tenderness with tumefaction and tympanites. October 23, Dr. Murphy saw patient, and decided to make an exploratory laparotomy. Usual incision; about half a pint of very offensive fecal smelling pus, as well as fragments of necrotic tissue (three inches long) escaped. The cavity had the appearance of a large diphtheritic abscess. Iodoform gauze used as drainage. Condition gradually became worse, and patient died at 2 P. M.

Postmortem: Total destruction of mucous membrane of colon, in parts resembling microscopically the appearance of honeycombed tissue. Mucous membrane loosened from submucous tissue, and gangrenous, having lost all resemblance of a mucous membrane. The incision was directly into the cecum. Appendix not affected in any way.

Case 126.—Date of operation Nov. 1, 1893. Operator, Dr. Murphy. Mrs. J. C., aged 44 years. Case occurred in the practice of Dr. Wm. E. Quine. Patient suffered from five

attacks in the eight months preceding the operation; the last one, three weeks before the operation, was more severe than the former attacks. Began with severe pain in right iliac region and gradually extended all over abdomen. It was shortly followed by nausea and vomiting. Temperature reached 103 degrees. There was increased sensitiveness as well as induration in right iliac region; general tympanites shortly followed. After five days the symptoms began to subside and disappeared entirely. The operation was performed after all the inflammatory symptoms had subsided. Operation: Lateral incision; appendix found firmly adherent to side of cecum; distal end distended and somewhat edematous. Proximal end close to cecum very much contracted. Ligature applied at seat of contraction; packed with iodoform gauze; time of operation, six minutes; gauze removed in forty-eight hours, and sutures tied. Convalescence uneventful. Examination of appendix showed complete occlusion at the neck. Cicatrices at the side showing where it had ruptured into the cecum. Repeated accumulation in the appendix without an outlet was evidently the cause of the recurrences.

Case 127.—Date of operation Nov. 2, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. A. B. L., male, age 26 years. Case occurred in practice of Dr. Hoelscher. Patient felt slightly indisposed Tuesday, October 30. November 1, severe pain in abdomen, exaggerated in right iliac region. Patient seen on that evening by Dr. Hoelscher, and transferred to Alexian Brothers' Hospital at once. Temperature 101 degrees.

November 2, 9 A. M. Patient had considerable pain during the night; is very sensitive over the appendix; no induration; temperature 100 degrees. Operation: Lateral incision; appendix reached without difficulty, very much distended, gangrenous on one side, had not ruptured, no infection of the peritoneum. Appendix drawn out of the wound, packed about with iodoform gauze, ligated, amputated, top-sewed, sutures inserted, iodoform gauze drain. Removed drain in twenty-four hours; sutures tied; time of operation, ten minutes. Patient made a rapid recovery. Highest temperature after operation 100.4 degrees.

Case 128.—Date of operation Nov. 4, 1893. Operator, Dr. Murphy. T. D., aged 44 years; male. Attack began evening of October 26 with intense pain in the abdomen which continued for several hours; it was accompanied by nausea and vomiting. October 27, pain less severe, tympanitic, sensitive all over abdomen, most marked in right iliac region; very slight induration; pulse 90, temperature 103 degrees. Patient had a severe purulent bronchitis accompanying the attack. The symptoms continued until November 3, when he had a chill, followed by a temperature of

104 degrees. Following morning, laparotomy. Lateral incision; circumscribed abscess, retro-cecal. Packed around with iodoform gauze before opening. Appendix not removed. Following morning pulmonary symptoms more severe; bowels moved, temperature subsided to 101 degrees. Pulmonary symptoms continued to increase, and patient died on the fifth day. Postmortem not allowed.

Case 129.—Date of operation Nov. 5, 1893. Operator, Dr. Murphy. Miss N., aged 17 years. Case occurred in practice of Dr. Rose. October 22, 6 A. M., patient's illness commenced with a gnawing pain in the stomach; dressed herself with difficulty on account of soreness; not localized as far as she noticed. October 23 and 24 pain was accompanied with nausea and vomiting. Enema of hot water was given which relieved the symptoms. Induration felt. Patient did not manifest any serious symptoms for the following two weeks. Very slight elevation of temperature with slight digestive disturbances. Induration remained. Gives history of diarrhea with slight hemorrhage. November 5. Case seen by Dr. Murphy. Operation: Lateral incision; general peritoneal cavity not opened; appendix not removed; circumscribed abscess, a large quantity of pus; drainage; recovery.

Case 130.—Date of operation Nov. 10, 1893. Operator, Dr. Murphy. W. M., aged 12 years; male. Case occurred in practice of Dr. Hayes. On November 3 patient was suddenly attacked with pain in the right side. On November 4 nausea, vomiting, increase of pain which patient described as cramps. As the symptoms had not subsided, on the next day the attending physician was called in. Examination on November 5 temperature 105.5 degrees; pulse 120. Tympanites; abdominal tenderness general, but most marked in the right iliac region. An opiate was administered, which relieved pain. November 6, discontinuation of opiates resulted in return of pain. An operation was now advised, but was not consented to. The symptoms continued up to November 10, when an operation was agreed upon. Temperature at time of operation 99 degrees, pulse 90. Operation: Lateral incision; general peritoneal cavity opened; a general suppurative peritonitis present; the bowels were covered with flakes of pus; appendix not removed; drainage; recovery.

Case 131.—Date of operation Nov. 23, 1893. Operator, Dr. Wittwer. L. P., aged 16 years; male. Case occurred in practice of Dr. Bergeron. Family history good. Ten days before operation patient complained of pains around umbilicus, later localized in right iliac region; no vomiting; tympanites appeared after a few days; pain was more severe two days before operation; limbs constantly flexed. Last three days frequent urination; complete loss of appetite.

Status præsens: Pinched features; limbs flexed; a very tympanitic abdomen, very sensitive to pressure; induration in right iliac region not well defined on account of tympanites; not much pain at time of operation unless abdomen was touched. Operation: Usual incision in right iliac region; upon entering the peritoneal cavity, the intestines were found agglutinated to the anterior abdominal wall. Upon severing the recent adhesions a large quantity of thin, purulent, very offensive pus escaped. Intestines found covered with large flakes of lymph. Finger was used in separating all the adhesions that could be reached, and finally a large abscess was opened which was in contact with the bladder. Glass drain was introduced into abscess cavity near bladder; four days later a smaller one took its place; gauze drain also used; appendix not removed. No enterolith found. Ten or twelve days after operation boy commenced to vomit and complained of pain in left iliac region. His bowels had not moved for four or five days, and all evidences of a second abscess to the left of the urinary bladder were present. With the intention of making a secondary operation, patient was again visited, but it was found that by pressure from the outside and insertion of another glass drain the second abscess could be drained without another incision. Boy had no further trouble. Jan. 24, 1894, boy is up and around and is feeling perfectly well.

Case 132.—Date of operation Nov. 25, 1893. Operator, Dr. Murphy. Charles B., aged 40 years; male. Case occurred in practice of Dr. Rohr. Patient gives a history which leads to suspicion that he had previous attacks of appendicitis. Present attack began forty-eight hours before operation, with sudden pain in abdomen, nausea, vomiting and moderate rise of temperature (about 101 degrees). On second day extreme tympanites developed, the pain had increased, no induration to be felt. Operation: Appendicisectomy; the general peritoneal cavity was opened, and a general suppurative peritonitis found to be present without adhesions. Pus covered the bowels to a great extent. The appendix was located, brought into the abdominal incision, ligated and amputated. The abdominal cavity drained with iodoform gauze. The temperature at no time was over 101 degrees, the pulse was very rapid, 140 at the time of operation. The appendix was gangrenous, not perforated, contained no foreign body. Patient had persistent vomiting for three days after operation, which then subsided and he made an uneventful recovery.

This is another illustration of extensive purulent infection of the peritoneal cavity forty-eight hours after the onset of symptoms, in which there was no perforation, but a gangrene of the wall. The bowel was eroded somewhat of its endothelium, but not sufficient to admit of the fatal sapremia.

Case 133.—Date of operation Nov. 28, 1893. Operator, Dr. Murphy. Alexian Brothers' Hospital. Thos. S., aged 32; Case occurred in the practice of Dr. Rohr. History: Patient states that he had two similar attacks. Present illness began November 26 with colicky pains after a dose of oleum ricini to move bowels. November 27, 10 P.M., pains had continued, accompanied by nausea and vomiting, and did not cease until November 28, 3 A.M. Pain localized in right iliac fossa. Examination: Tenderness and induration in right iliac fossa on pressure; temperature 104 before operation. Operation: November 28, 2 P.M. Usual incision; no circumscribed abscess; appendix almost entirely covered with omental adhesions. Had not perforated. However, pus oozed out through punctures made by forceps used for holding it up for ligation. Appendicisectomy; appendix found to contain about half a drachm of pus; its tissue was gangrenous. Appendix three inches long and thickness of little finger. Flakes of pus visible on opening peritoneal cavity. Time for entire operation, seven minutes. Temperature fell to normal after operation, and patient made an uneventful recovery.

Case 134.—Operation Dec. 19, 1893. Operator, Dr. Murphy. M. W., aged 28 years; female. Case occurred in practice of Dr. Berry. December 16 complained of being tired and feverish. December 17, slight soreness in right iliac region; December 18, tenderness over entire abdomen. Temperature 100 degrees, pulse 80. December 19, temperature 101 degrees, pulse 85, before operation. Operation: Lateral incision, intra-peritoneal, retro-cecal abscess around appendix; flakes of pus on bowels outside of abscess. Peritoneum protected with iodoform gauze. Abscess opened. Appendix adherent to posterior parietal wall, easily elevated and amputated. Drainage with iodoform gauze; recovery. Pathologic conditions: Circumscribed abscess; appendix perforated; flakes of pus on bowel outside of abscess.

Case 135.—Date of operation Dec. 20, 1893. Operator, Dr. Murphy. E., aged 26 years; female. History: December 7 typical attack. Pain at first general, later local; no tympanites; temperature 100 to 103 degrees in first forty-eight hours. First constipated, then had an attack of diarrhea. Marked induration over appendix. Operation: Lateral incision; protection of peritoneal cavity with iodoform gauze, and drainage of an intra-peritoneal abscess; glass drainage and iodoform gauze used. Glass drain removed in two days. Temperature remained at 101.5 degrees for ten days after operation; then ran up to 103 degrees, and remained so for forty-eight hours. Temperature again normal on twentieth day; recovery. Pathologic conditions: Intra-peritoneal abscess extending down into the pelvis; about six ounces of a very thick creamy pus containing the appendix escaped; latter was entirely gangrenous and perforated at its base.

Case 136.—Date of operation Dec. 22, 1893. Operator, Dr. Murphy. O. S., aged 20 years, male. Case occurred in the practice of Dr. Hoelscher. On November 22 patient was attacked with sudden, severe, colicky pains in abdomen causing indisposition for a couple of days, after which he was able to be about again. These attacks occurred occasionally for the following twenty-six days. At no time was he well, though able to be about. On December 18 the pain became extremely severe, was located in right iliac region, and was shortly followed by nausea and vomiting. It increased in intensity; the temperature rose to 101. This condition continued up to the time of operation, four days later. Examination: Abdomen tympanitic, uniformly distended, no induration; excessively tender in right iliac region. Operation: Lateral incision; general peritoneal cavity opened; an abscess of considerable size was seen situated around the head of the colon and in the retro-cecal fossa. General peritoneal cavity protected with iodoform gauze packing; abscess opened; about eight ounces of pus escaped, and in it the gangrenous appendix. Glass drain; recovery. Pathologic conditions: Appendix completely gangrenous and separated from its attachment at the base; all of its coats were macerated except the peritoneal, which could be filled with water and resembled the rubber of a toy balloon. Two fecal stones.

Case 137.—Date of operation Dec. 29, 1893. Operator, Dr. Murphy. Mrs. G., aged 24 years. When performing laparotomy for tubal disease, the appendix was found very much elongated, congested, swollen and adherent to side of uterus and proximal end of right tube, causing traction upon cecum, and undoubtedly accounted for some of the symptoms from which she was complaining; recovery.

Case 138.—Date of operation Dec. 31, 1893. Operator, Dr. Murphy. Case occurred in practice of Dr. Weatherly. J. L., aged 21 years; male. Patient was seized with a chill December 29; severe pain when walking. This pain lasted through the night, and was accompanied by vomiting and fever. Dr. Weatherly saw the case December 30 at 8 P.M. Patient was sent to hospital December 31, P.M., temperature 101 degrees, pulse 83. Operation: Appendix found partially adherent to liver, two inches necrotic, but not perforated; not covered by omentum. No foreign body; when appendix was elevated, pus oozed through the pores in its wall, showing that perforation was about to take place. The mucous membrane had entirely disappeared and was commingled with the fluid débris. No pus outside of appendix; twenty-four hours' drainage; recovery.

Case 139.—Date of operation Jan. 4, 1894. Operator, Dr. Murphy. D. H. M., aged 25 years; male. Case occurred in practice of Dr. Geo. Barnett, Ishpeming, Mich. Recurrent appendicitis. First attack May 30, 1891, sick for six days;

second attack Sept. 23, 1892, sick for ten days; third attack Dec. 24, 1893; began with sudden severe pain in the abdomen, followed by vomiting, great tenderness; temperature 103 degrees; after two days, temperature dropped to 99.5 degrees, and remained so until December 31, when it suddenly rose to 104.2 degrees, with pulse 120. Marked tumor was present in right iliac region at that time. Operation was urged by the Doctor and consented to. Examination: No tympanites, no general abdominal tenderness, a distinct tumor in right iliac region, which appeared to come close to the skin; temperature 100 degrees. Operation: Lateral incision into an abscess, which had already penetrated the walls of the abdomen and invaded the subcutaneous cellular tissue. This opening was enlarged by the finger, and the abscess cavity within the abdomen examined. No fecal stone. Appendix could not be located. Drainage; recovery.

Case 140.—Date of operation Jan. 6, 1894. Operator, Dr. Murphy. L. B. C., Detroit, Mich., 35 years of age; male. Case occurred in the practice of Dr. Riese. Patient was attacked with severe pain in the right side of abdomen, followed by nausea and severe vomiting. Temperature on morning of operation 101 degrees; no induration; no tympanites. A very sensitive point could be felt in right iliac region; the appendix could be outlined. Operation: Lateral incision: Appendicisectomy; gauze drainage; sutures inserted but not tied. The appendix was not adherent; appeared normal on its peritoneal surface, although very hard to the touch. Mucous membrane inflamed, swollen, gangrenous in spots, contained a number of seeds. Gauze drain removed in twenty-four hours; sutures tied; recovery.

Case 141.—Date of operation Jan. 15, 1894. Operator, Dr. Murphy. Alexian Brothers' Hospital. C. G., aged 30 years; male. Present illness began fifteen days before operation with pain in abdomen, accompanied by fever and sweats. The pain gradually centralized in the right iliac region; was able to be up and about and came to office day of operation. Examination: No tympanites; induration and tenderness in the ileo-cecal region, extending down to pubes. Nothing to be felt from the rectum. Operation: Lateral incision; general peritoneal cavity opened; tip of appendix firmly adherent over iliac vessels; liberated with difficulty; body free; removed. Sutures inserted, but not tied; iodoform gauze drain; the distal half inch of a very much elongated appendix (four inches) was swollen to three times the size of the remaining portion. Minute gangrenous spots on mucous surface. No perforation; gauze drain removed in twenty-four hours, and sutures tied. Recovery.

Case 142.—Date of operation Jan. 30, 1894. Operator, Dr. Wittwer. L., aged 30 years; male. Occurred in the practice of Dr. Bergeron. Three days previous to operation

patient was suddenly attacked with pain in right iliac region; this was followed within an hour by vomiting; temperature 102 degrees. The following day the abdomen was tympanitic and very tender on right side. On morning of the third day, patient had a severe chill. Temperature at time of operation 100.5 degrees. Operation: Lateral incision over induration which was more marked under the anesthetic. General peritoneal cavity opened. Flakes of pus over cecum and omentum. Appendix adherent, necrotic; small circumscribed abscess at*base, containing thin sero-purulent fluid. Adhesions liberated; appendix ligated; iodoform gauze drain; recovery. Pathologic conditions: Appendix perforated in one spot, also showing two other gangrenous places ready to perforate.

Case 143.—Date of operation Feb. 6, 1894. Operator, Dr. Murphy. J. M., aged 19 years; female. Case occurred in practice of Dr. Berry. Primary attack. Present illness commenced three and one-half days prior to operation, with intense pain in right iliac region, which rapidly spread over entire abdomen. Nausea and vomiting followed within an hour. All these symptoms and tympanites were present on second day. Vesical tenesmus severe. Examination: Time of operation, temperature 102 degrees, pulse 120. Very anxious expression; mental exhilaration, great thirst, gulping, extreme tympanites; a complete absence of peristalsis; not a sound could be heard in any portion of the abdomen, for fully ten minutes. No dulness either on light or deep percussion. Operation: Lateral incision; general peritoneal cavity opened; at once a small quantity of sero-purulent fluid escaped, which was very offensive. There were no limiting adhesions. Every separation of the coils of intestines was followed by an additional discharge. Douglas' pouch full of pus. Appendix adherent to fundus of bladder, liberated and removed without rupturing. Iodoform gauze and glass drainage. Intestines denuded of their endothelium, resembling a blistered surface. Symptoms of sapremia continued and patient died twenty-two hours after operation. General suppurative peritonitis. Pathologic conditions: Appendix enlarged to size of thumb; gangrenous, full of pus; enterolith size of grape seed; no perforation, still, general suppurative peritonitis.

Case 144.—Date of operation Feb. 9, 1894. W., aged 19 years; male. Operator, Dr. Murphy. Case occurred in the practice of Dr. J. M. Auld, who made a diagnosis and advised operation three hours after onset of attack for which he deserves the congratulations of the profession and the patient. Patient had a similar attack (first one) a year ago, and a second three and one-half months before the present one. He was operated upon at the time of the second attack; a circumscribed abscess was drained; the appendix was not removed. The present attack began day before

operation with sudden pain, followed by nausea and vomiting. The patient was brought to the Cook County Hospital on the first day of sickness, and early the next morning he was operated upon, eighteen hours after onset. Temperature at the time of operation 99 degrees, pulse 100. Slight tympanites; no induration to be felt. Operation: Lateral incision an inch towards the median line from the old scar. General peritoneal cavity opened. Sero-purulent fluid around the head of the colon. Peritoneum congested, but not abraded. The appendix was situated across the iliac vessels, adherent behind, half of it hung over brim of pelvis. Appendix and cecum were elevated out of the wound. About three drachms of sero-purulent fluid was sponged out. There were no limiting adhesions around the pus. The seat of penetration of infection could be easily recognized on the peritoneal surface of the appendix. Appendix ligated, amputated; gauze drain; recovery. Pathologic conditions: The proximal two-thirds of the mucous membrane of appendix greatly swollen. A small ulcer existed where the infection penetrated the wall, but there was no perforation. What could have been the result in this case under expectant treatment?

Case 145.—Date of operation Feb. 12, 1894. Operators, Drs. Murphy and Verity. Mrs. E. P., aged 42 years. Patient had first attack in July, 1893. Had a second attack Jan. 14, 1894, which commenced with severe pain just below the margin of the last rib. This was accompanied by nausea, but no vomiting. For the first few days there was fever; temperature not taken. This subsided, but the pain and tenderness continued until the time of operation. Patient had never been jaundiced. Examination: With anesthetic; an induration extending from the margin of the ninth costal cartilage downward three inches could be felt distinctly. It was stationary during the respiratory act. It could not be separated from the abdominal wall, nor could it be displaced to the left. It could not be separated from the kidney, nor could the kidney be outlined. Operation: Temperature at the time of operation normal. Incision over induration. Peritoneal cavity opened. Colon was found adherent to lateral wall of the abdomen, just below the margin of the ribs. The adhesions were separated and the remains of an abscess detected; no pus; the cecum was adherent to and folded upon the posterior surface of the ascending colon. The appendix was found perforated at its tip communicating with the abscess cavity. It could be seen where the abscess had emptied into the posterior wall of the colon at its hepatic flexure. Appendix ligated, amputated. Recovery.

Remarks: This is the first time I have found the cecum folded on to the posterior surface of the colon. The abscess was situated just below the edge of the liver.