cancer of the bile-ducts may be of a similar nature the possibility of such an occurrence has to be borne in mind in making a diagnosis of pancreatitis.

The examination of the urine, fæces, and stomach contents in this case suggested obstruction of the common duct with secondary chronic pancreatitis, and the histological examination afforded abundant evidence of the correctness of these conclusions, thus once again demonstrating the usefulness of these methods when carefully and correctly carried out. The inference as to the simple nature of the cause of the obstruction was, however, proved to be incorrect, but the condition was so anomalous and outside our previous experience that a correct conclusion was practically impossible.

An examination of the stomach contents for free and physiologically active hydrochloric acid has proved of assistance in two cases of malignant disease of the head of the pancreas, but in this instance the results of this examination were misleading, as they had been in the cases of growth of the common duct previously mentioned. We are therefore of opinion that while the absence of free and physiologically active hydrochloric acid may afford useful confirmatory evidence in suspected cases of cancer of the head of the pancreas, their presence, even in considerable amount, is not of any diagnostic value, especially when the growth is situated in the common duct or gall-bladder.

The case is clinically interesting as showing how closely cancer of the gall-bladder may simulate cholelithiasis, if the disease be associated with suppuration. The intermittency and severity of the attacks of pain for 13 months, without jaundice, suggested the presence of gall-stones in the cystic duct, and the last severe seizure, followed by jaundice, made it appear probable that a calculus had passed into the common duct. Although no gall-stones were actually found, either at the operation or later, it is quite possible that cholelithiasis may have been the original cause of the disease, and this is rendered probable by the presence of more advanced inflammatory changes in the head of the pancreas than could be accounted for by the recent invasion of the gland by malignant disease from the duct of Wirsung. The nodular character of the growth felt before operation and the reported loss of flesh and strength led to a suspicion of cancer, but the well-marked signs of suppuration gave the impression that some relief, and possibly something more than relief, might be given by the evacuation of the abscess.

On several occasions it has been the good fortune of one of us to operate under similar circumstances and to find the disease to be simple, the operation leading to complete and perfect recovery, but in this case it became at once apparent on opening the abdomen that merely temporary relief was all that could be hoped for.

Our experience in other cases of cancer of the pancreas has shown that an inflammatory condition is apt to supervene as a complication in a certain proportion of cases, and unless this is borne in mind it may lead to errors in diagnosis and to useless operation, for it must be acknowledged by all who have had experience of such cases that primary cancer of the pancreas is a hopeless disease however it may be treated.

CALCULI IN THE APPENDIX.¹

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BEING at present engaged with Professor J. J. Charles in a little research work on the structure of the appendix my attention was directed to the subject of calculi and other bodies found in this organ by finding four small stones in one of the specimens submitted to me by Dr. D. P. Fitzgerald, our assiduous demonstrator of anatomy.

There seems to be no definite understanding as to the exact nature of these bodies, but that they are not always of the same kind is certain. Before attempting a classification I will give the results of a rough analysis of those specimens and a few extracts from recent literature on the subject. The appendix in this case was somewhat fusiform in shape, having a bulging middle and contracted ends. Microscopically the distal end for quite half an inch from the tip presented no lumen and no trace of glands or of lymphoid tissue. Between this and the distended site of the

calculi a portion intervened containing a plug of mucus in the lumen, a fairly regular set of glands, and showing some inflammatory changes. The distended portion showed atrophy of the mucous membrane and thinning of the muscular coat. The proximal end contained a plug of mucus. The calculi were four in number, each about two millimetres in diameter, dark brown in colour, smooth, and faceted. Allowed to fall on a plate they gave a ringing sound in no way differing from that given by a small gravel pebble of the same size. While engaged in this latter pastime I lost one of the precious stones.

The next step in the examination was to macerate one with a dilute solution of sulphuric acid and to test the surface layer microscopically and chemically for cholesterin. These tests were negative. Gmelin's test for bile pigments and Pettenkofer's test for bile salts also gave negative results. Further examination showed that the stones were composed chiefly of calcium phosphate with a small amount of organic matter.

To quote briefly from a few recent investigators:—

Howard Kelly² states: "Gall-stones, also, which formerly were supposed to enter the appendix frequently are exceedingly rare; but they are often so closely simulated by enteroliths that a chemical analysis is necessary for their exclusion. The clinical evidence in some of these cases so strongly supports the gall-stone theory as to leave no doubt in the mind of the observer." McAdam Eccles³ maintains that calculi in the appendix are always enteroliths and always formed *in situ*. Walsham and Spencer⁴ state: "The appendix may contain true faecal concretions or coprolites. Enteroliths proper where the faecal constituents and inspissated mucus are mixed with calcareous material derived from the inflamed wall, like tonsillar concretions and rhinoliths, are more rare, while foreign bodies, such as fruit-stones, &c., are still rarer." Roberts⁵ remarks: "They [gall-stones] cause trouble by lodging in the vermiform appendix." Lediard of the Cumberland Infirmary recently writing in THE LANCET describes a case on which he operated. The patient showed the usual signs of an acute appendicitis and there was no previous history of gall-stones or a symptom pointing to them. In the appendix were found 11 small black stones, and they were found to consist of cholesterin and bile pigments. Murchison⁶ expresses strong doubt of the presence of gall-stones. Osler,⁷ in reference to gall-stones in the intestine, remarks: "Courvoisier's statistics give a total of 131 cases, in six of which the calculi had a peculiar situation as in a diverticulum or the appendix." He also states: "The lumen of the appendix may contain a mould of fæces. Concretions, enteroliths, coprolites are also common."⁸

It is only by numerous analyses with careful reports of the separate cases met with that we can allay the uncertainty prevailing in connexion with this subject. It is important to arrive at some conclusion as to the different types of bodies found with the relative frequency of each. It will be seen from the above quotations that there is a confusion of terms. One concludes, for instance, that concretions, faecal moulds, enteroliths, and coprolites are all distinct things, while in addition the terms stercolith and coprolite are used. Would it not be well to use the term faecal mould for those masses of inspissated fæces somewhat resembling a date-stone in appearance and containing the usual percentage of inorganic matter found in fæces? The term "enterolith" might well be employed for other forms where the inorganic material preponderates.

To my mind, a very important consideration in these cases is the condition of the appendix itself. If gall-stones migrate from main gut to appendix we should expect to find, according to the size and number of the stones, a patent lumen with more or less destruction of the mucous membrane over which the stone has passed. The case reported by Lediard,⁹ where 11 gall-stones seem to have thus migrated one after the other, must surely have presented some interesting features in structure to which no reference is made. The case here reported by me showed changes exactly corresponding to formation *in situ* and to formation as a result of increased inorganic matter accompanying inflammation.

In conclusion, I would express an opinion that, excluding

² The Vermiform Appendix and its Diseases (Saunders).

³ THE LANCET, March 14th, 1903, p. 703.

⁴ Theory and Practice of Surgery, 1906.

⁵ Theory and Practice of Medicine, 1905.

⁶ Clinical Lectures on Diseases of the Liver.

⁷ The Principles and Practice of Medicine, p. 568.

⁸ Op. cit., p. 519.

⁹ THE LANCET, Jan. 12th, 1907, p. 83.

¹ A note read before the Cork Medical and Surgical Society on March 20th, 1907.

parasites which have been found on a few occasions, bodies in the lumen of the appendix may be classified under the following heads, which I give in the order of frequency of their occurrence: (1) faecal moulds as defined above; (2) enteroliths with or without a foreign body as a nucleus; (3) gall-stones; and (4) true foreign bodies.

Cork.

A CASE OF APPENDICITIS EXCITED BY A CLOVE, THE APPENDIX BEING THE SOLE VISCUS IN A HERNIAL SAC.

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AND

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THE patient who is the subject of this note was a man 58 years of age, who was admitted to the Radcliffe Infirmary and County Hospital on May 5th, 1907, complaining of a tense and painful swelling in his right groin. The history of the case was as follows. For quite 20 years the patient had suffered from a rupture in the right inguinal region, which he controlled by the use of a truss during the day-time. He was never inconvenienced by this and when, as occasionally happened, the bowel came down he was easily able to return it. One morning, however, about a week before his admission, he awoke to find that a swelling had come down, which, unlike his usual rupture, was hard and painful. He thought, however, that it must be the rupture and tried to reduce it as usual. This he was unable to do, but he nevertheless applied his truss on top of it and went about his daily work. At first the swelling, though painful, did not cause him any considerable inconvenience, but after a day or two he noticed that it was rapidly growing larger and at the same time the aching pain "as though something were gripping him hard" became so severe that he was unable to get about at all. On the next night (May 4th) he called in a medical man who, after attempting reduction without success, advised the patient to come to the Radcliffe Infirmary as soon as possible.

On admission the patient appeared to be somewhat anæmic. He was a man of a rather unhealthy appearance. His tongue was dry and clean and it was noticed that the lower parts of his abdomen and his thighs were deeply pigmented. Vomiting had not occurred and his bowels had been moved regularly throughout his illness. His temperature was 99° F. On inspecting the right inguinal region a considerable amount of swelling was observed running down into the scrotum, the skin overlying it was healthy, and no visible impulse was detected on coughing. On palpating the tumour it was found to be very hard, elongated and oval in shape, and about three inches by one inch in size. Its surface was smooth and the mass could be traced from the internal ring down the canal as far as the testicle. It was exquisitely tender to the touch. Percussion only showed that the swelling produced a dull note and nothing could be made out by rectal examination. On May 6th Mr. R. H. A. Whitelocke exposed the tumour by an incision made over the swelling. A small quantity of clear straw-coloured fluid exuded on pricking the sac, and on further opening the mass a rough-walled cavity was laid bare containing a dark red elongated mass. Some purulent material was found, and on lifting up the red mass a clove was discovered lying beneath it. It was then realised that the tumour consisted of a short but very greatly thickened appendix lying in a hernial sac, and accordingly it was removed and the stump cauterised with pure carbolic acid and buried. No other viscus was found to be present in the sac.

It is curious and interesting to note that the patient affirmed that he had not tasted cloves in his food for some time, the last occasion being about a month before his admission, when he remembered having cloves in an apple pudding. Nevertheless, the clove, when removed, was found to be well preserved, the antiseptic action of its essential oils having probably protected it from decomposition. It was in every respect complete, with the exception of one division of the calyx, which was knocked off during the

operation, and a little soft and swollen as might have been expected.

We have to express our thanks to Mr. Whitelocke for permission to publish the notes of this case, which appears to be of interest, first, because of the difficulty of diagnosis, for the tumour felt almost like a malignant mass, and yet it had come down so suddenly; secondly, because of the unusual cause—a clove; and thirdly, in that the appendix, greatly thickened and inflamed, was the sole viscus in the sac.

A RECORD OF THE PHYSICAL EXAMINATION OF 1000 BOYS AT THEIR ENTRANCE ON PUBLIC SCHOOL LIFE.¹

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BY the courtesy of the headmaster of Rugby School I am permitted to submit to the International Congress of School Hygiene the results of the physical examination of 1000 boys on admission to a public school between the ages of 13 and 15 years. These British boys may be regarded as a special class: strong and healthy, well-bred, well-fed, and reared mainly in the country. For even where in some instances their infancy and childhood were passed in towns and cities, the period of life from the age of 9 to 13 years was usually spent in the country at admirable preparatory schools. The record is entirely free from selection. The examinations were made as the boys severally entered the school and were solely intended to serve as a basis for regulating each boy's physical welfare during his secondary school life by detailing minutely his exact physical state and thereby affording a sure guide to the masters in the appropriate course of education, and for determining the physical exercise and games suitable to each boy's constitution and vigour.

Prior to registering the result of the examinations I drew up a schedule for recording the proposed analysis of my observations and submitted it to the Editor of THE LANCET with a request that he would refer the form to experts for suggestions tending to its completeness for its purpose. He replied:—"I have submitted your Physical Examination Chart to the author of the leading article in THE LANCET and to one other gentleman taking particular interest in anthropometry. Neither has any suggestion to make. They consider the chart to cover the ground entirely." I insert a copy of the scheme:—

N = Normal. Private and Confidential.

PHYSICAL EXAMINATION.

I.—NAME		Date.	
RESIDENCE			
II.—AGE.	Inches.	lb.	Chest Inches.
	Height.	Weight.	Measurement.
	Average	Average	Average
III.—GENERAL APPEARANCE.	1. Aspect	Colour of eyes.	Colour of hair.
	2. Physique	Violet.	Albino.
	3. Nutrition	Grey.	Very fair.
		Bluegrey.	Fair.
	a. Lateral curvature of spine...	Blue.	Light brown.
			Brown.
			Dark brown.
	b. Pigeon breast...	Green.	Black brown.
	c. Bow legs	Hazel.	Black.
		Brown.	Red brown.
		Brown black.	Dark red.
	d. Knock knees ...		Red.
	e. Flat feet		Golden.
			Light red

¹ A paper read before the Second International Congress of School Hygiene, held at the University of London, August 5th-10th, 1907.