

The shops in many of the Canton streets were closed, every inmate being dead. Business was at a standstill and prices ran up enormously. The incidence amongst the foreign community was not large. This year, however, the scourge has carried off quite a number of Europeans from the small foreign section, whilst "several Tens die daily" amongst the native population. Of this last statement—a translation of what the Chinese themselves say—there is ample evidence in the difficulty of securing coolie hire, in the difficulty in getting coffins, their large importation from the towns and villages round, and in the fact that three or four times the price has had to be paid to purchase an ordinary coffin as used by the natives. Then the conditions which are so conducive to the spread of cholera have this year, as in 1894, been largely experienced. Every year some small outbreak occurs towards the end of the dry winter season, February and early March. This year the country suffered from prolonged drought, so much so that the river water for 30 miles or more above Canton in certain streams was brackish, and in Canton itself the water from the wells, the main water-supply of the Chinese, was unfit for drinking. At the same time the heat in Canton was intense for that time of the year, and the Chinese, unclean, untidy, and insanitary as are their ways, supplied other necessary conditions. Extensive hospital practice amongst the natives and not a little amongst the foreigners has enabled me to compare the course of the disease and the effects of the treatment. The onset in each case has been sudden. This was particularly marked in the earlier cases when the disease was most virulent. Diarrhoea and vomiting were early signs and in times varying from two to 12 hours the patient died. In this stage of the epidemic delay in treatment meant certain death. I have not seen one patient recover where treatment was delayed. I speak of the early weeks of the epidemic. Later the epidemic seems to decrease in virulence. Spontaneous recoveries take place. Generally speaking, the earlier the onset of cramps the worse the prognosis. My own experience has gone to show that when cramps are a well-marked condition the patient does not recover. I have noticed that severe cramps in the limbs and the abdomen and large watery stools have gone together. Amongst my European patients, as my Chinese, little cramp and only small evacuations of watery fluid have been followed by recovery under treatment. My first and my last European cases afford illustration.

CASE 1.—The patient was a German merchant, aged 45 years. He was not a teetotaler but was temperate. He was not overworked. He was subject to diarrhoea and "biliousness." He dined on the steamer coming up to Canton. He said that he had eaten "shrimp curry and salad." After dinner as he sat on deck chatting he felt a little fullness, so he took about 20 grains of bicarbonate of soda in water from his cabin. He retired to rest about midnight and was restless. There was a tendency to diarrhoea about 3 A.M. Between 3 and 6 A.M. he had several attacks. He got home by 8 A.M. feeling "seedy" and he went to lie down. At 9 A.M. cramps came on in the legs which continued until 10.30 A.M., when I saw him. His condition then was one of intense collapse. Cyanosis was general and he had frightful cramps. He was pulseless at the wrist and the temporal pulse was slight. The vomiting had ceased. Two large evacuations of typical rice-watery stools occurred. Restlessness was present. He was speechless or could speak only with difficulty. He gradually sank into a quiet collapsed condition, in which he shortly died. The heart reacted only slightly to hypodermic injections of digitalin, strychnine, caffeine, and brandy. Had he been seen at 6 A.M. instead of four and a half hours later he might have been saved. Just after this case I saw a Chinese woman presenting very similar condition, but delay in being called also was followed by death, neither hypodermic medication nor intravenous injection of salines being followed by any rallying effect.

CASE 2.—A colleague and his Chinese boy were taken ill together and both came to hospital. The boy elected to go home and was dead by 6 A.M. next morning—i.e., in 12 hours. My colleague was treated at once. On admission he was found to be suffering from diarrhoea which was faecal in character; vomiting and moderate collapse were present. The stools rapidly became typical and his appearance altered. The eyes and cheeks became shrunken, the amount of shrinkage being astonishing. The pulse was 110; slight fever only was present. The treatment consisted of rest in

bed and hot-water bottles and subcarbonate of bismuth and lime-water to try to stop the vomiting; this was of little effect, however. The stools were small, being from two to three ounces at a time only, but evidently of an irritating character. A high enema of warm water and Condy's fluid, pink solution, was given, followed at once by 30 minims of tincture of opium, with 15 minims of solution of atropine (1 in 100). The vomiting ceased in a few minutes nor did it return as long as opium was administered per rectum. Stools occurred from every 10 to 15 minutes. The enema was repeated and 10 grains of salol were given every hour by the mouth, with 30 grains of bismuth subnitrate in one dose three times a day. Occasional doses of a pill of acetate of lead with one-twelfth of a grain of opium were given on the second and third day and the salol was reduced to four times a day (10 grains to the dose). On the second day the pulse was 98 and the stools were a little less frequent and still smelt. The cramp was not marked. On the third day the pulse was 94. The stools occurred about every one and a half hours; they were still small. After this improvement was steady. The patient took meat juice after the second day at frequent intervals. He sat up for an hour or so on the eighth day. The first formed stool occurred about the tenth day. There was no relapse. He finally went on a sea voyage in order to gain strength. The patient was not given alcohol in any form save on two occasions when from pain of cramp at the anus he fainted. In this case the advantage of immediate treatment is obvious, otherwise the patient must have shared the fate of his servant. I think that the pushing of salol (watching the urine at the same time) was a strong factor in his recovery, together with the high enemata.

Canton.

SOME CASES OF CHRONIC PANCREATITIS.

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It is only within recent years that the importance and the frequency of chronic inflammation of the pancreas have come to be recognised. Until Riedel first called attention to the association of thickening of the head of the pancreas with cholelithiasis, chronic inflammation of the gland was not recognised as a clinical condition; and for several years the association was considered most infrequent and of no great surgical importance. In 1900 Mayo Robson, in a lecture published in *THE LANCET* of July 28th, p. 235, and subsequently in a paper read at the International Medical Congress in Paris emphasised the surgical importance of chronic pancreatitis, and repeated the statement of Riedel as to the frequency of its dependence upon gall-stone irritation.

Chronic pancreatitis as seen by the surgeon is always secondary. It is dependent upon infection extending from the intestinal canal or from the bile-passages, upon the long-standing irritation of gall or pancreatic stones, or upon the invasion of malignant disease which may be primary in the gland itself or may extend into the gland from the duodenum or stomach. Certain toxic substances brought by the blood to the gland may set up chronic inflammation; of such are the poison of syphilis, the organism of tubercle, and, it is confidently said, alcohol. Pre-eminent among all these causes we must without question place cholelithiasis. Associated with, and dependent upon, gall-stone disease may be found every grade in the extension of inflammation to the gland. In the slightest cases a little thickening of the head of the gland is found; that portion nearest to the duodenum is denser and stiffer than the body or tail. In the severer cases the whole head and a part of the body also may be enlarged and extremely hard and solid, feeling like a plaster cast of an enlarged gland. But in all cases the duodenal end is more profoundly affected by the changes which have taken place than is the body. The tail is implicated only in the long-standing and severer instances. During the last two years, since my attention was more especially directed to the pancreas in operations in the upper part of the abdomen, I have seen several cases of chronic pancreatitis. These cases illustrate the association of the inflammation of the gland with pancreatic calculus, syphilis,

stone in the ampulla of Vater, stone in the common duct, and suppurative cholangitis due to stone in the gall-bladder and cystic duct. The following is a brief summary of my cases. The case of pancreatic calculus, the first recorded in which a correct diagnosis was made and successfully acted upon, is related at length in THE LANCET of August 9th, 1902, p. 355, and the following is a brief epitome of it.

CASE 1.—A married woman, aged 57 years, was seen with Dr. H. M. Robertson of Roundhay. The symptoms which I had to discuss, the relative value and significance of which I had to determine, were briefly these: steady loss of health, gradual wasting, irregular pigmentation of the skin in patches of the colour of *café au lait* (very closely resembling the pigmentation of molluscum fibrosum), persisting attacks of epigastric pain, and uneasiness of the type of hepatic colic, though less severe and unattended until very late in the history by jaundice which was then always trivial though unmistakeable, and pain passing through from the front of the abdomen to the middle of the back. There was no rigor or any complaint of sensations of heat or cold. The stools were occasionally "frothy" and "greasy." On examination under chloroform some indefinite swelling could be felt above the umbilicus and a little to both sides of the median line, though chiefly to the right. I considered that the evidence warranted a diagnosis of chronic pancreatitis. To explain the onset of this condition I suggested that a pancreatic calculus was present, that its transit down the canal of Wirsung had been attended by the attacks of epigastric colic, and that as it approached the ampulla an inflammatory condition had been started in the common duct and a slight jaundice had thereby resulted. Upon this diagnosis I felt justified in basing my suggestion for operative treatment. If chronic pancreatitis were found and no cause were discoverable the condition could be relieved by drainage of the gall-bladder; if a pancreatic calculus were found it could be removed either from the pancreatic duct or from the ampulla of Vater, if it had travelled so far.

Operation was performed on May 22nd, 1902. The abdomen was opened two inches to the right of the median line by an incision about seven inches in length and the fibres of the rectus were split. On opening the abdomen the gall-bladder at once presented; it was tense, well filled, and free from any adhesion; the cystic duct, hepatic ducts, and common ducts were all thoroughly examined, the liver being rotated for that purpose. The ducts were all free from adhesion and nothing abnormal was felt. The head of the pancreas was very much enlarged and hard, the body less so, but still larger and denser than the normal. The chronic pancreatitis affected the whole gland, but chiefly the head and in least degree the tail. The duodenum and the head of the pancreas were carefully examined and a small lump was then felt, as it seemed, between the two. The swelling did not feel like a stone and I expressed a suspicion that it might prove to be a growth deep in the ampulla of Vater. I therefore opened the duodenum and exposed the papilla Vateri; this was quite normal in appearance. The lump, however, was felt to be only a short distance beneath the mucous membrane. The papilla was therefore laid open and the cut edges were seized with a small French vulsellum and held apart. At the bottom of the ampulla a small object could be seen and the knife touching it could be felt to be impinging upon soft stone. A small scoop was therefore passed into the ampulla, pressure was made upon the head of the pancreas close to the duodenum, and the stone was lifted out. So far as I could judge—and the ampulla was well opened—the stone lay in the termination of the pancreatic duct with its end projecting into the ampulla. It was certainly not wholly in the ampulla, for it was not at once exposed on slitting up the papilla; equally certain it was not in the end of the common duct. The duodenum was stitched up with continuous sutures. The gall-bladder was aspirated and drained and the wound was closed in the usual way. The tube was removed on the seventh day and the wound then slowly healed. The condition of the liver was normal. There were no adhesions around it or any trace of pigmentation.

The following is the report of Dr. J. A. Milroy on the stone removed, clearly showing its pancreatic origin: "The stone contains nearly 50 per cent. of calcium carbonate. A small portion of the solution in which the magnesium was estimated was unfortunately used for qualitative testing so that I cannot state the exact quantity of magnesium present. These were the only inorganic substances found.

I was somewhat surprised to find phosphates absent. The organic substances consisted almost entirely of proteid. Traces of organic substance soluble in alcohol and ether were present. In the residue from the alcoholic and ethereal solutions cholesterol and fat were the only bodies identified. Purin bases and uric acid were absent. The quantity of the original powder was rather too small to allow of an accurate estimation of the constituents."

When seen in September, 1902, this patient had steadily gained in health since the operation and was better and heavier in weight than she had been for years.

CASE 2. *Syphilitic pancreatitis; gumma in the head of the pancreas.*—The patient was a woman, aged 51 years, who was seen with Mr. J. F. Woodyatt of Halifax. For 10 years she had symptoms which were referred to pyloric obstruction and which consisted of pain, which was intensified by taking food in moderate or large quantity, occasional vomiting, and constantly recurring attacks of "spasms." During the last year or more in several attacks the pain had been most intense over the gall-bladder region, jaundice had followed, and gall-stones had been found in the motions. The pain had constantly been more severe during the last few months and a gradual loss of flesh had been observed. On examination there was a general tenderness in the upper part of the abdomen to the right of the middle line. No tumour or undue resistance was observed.

Operation was performed on Oct. 1st, 1901. The abdomen was opened by the usual vertical incision over the gall-bladder region and the fibres of the rectus muscle were split. On exposing the gall-bladder and bile-ducts a number of adhesions were found. These were separated and a good view of the whole region was obtained. No stones were present in any part of the bile-passages. The head of the pancreas was noticed to be very much enlarged, a distinct rounded and very dense mass equal in size to a billiard ball being felt. There was no enlargement of the body or tail. A doubt was felt as to the nature of this local swelling, the diagnosis resting, as it seemed, between malignant disease and chronic pancreatitis, but an opinion in favour of the latter based upon the clinical history was expressed. The gall-bladder was aspirated and drained and the parietal wound was closed. There was some trouble from an acute attack of bronchitis for a week or more after the operation, but the patient otherwise progressed well and the wound healed soundly after the tube was removed on the eleventh day from the gall-bladder.

At the end of November Mr. Woodyatt asked me to see the patient with him again as he had noticed masses in the abdominal wall as to the nature of which he was in doubt. I saw her on Dec. 1st and found her condition to be as follows. The wound was soundly healed. About two inches to the left of its lower end was a hard, smooth, ovoid lump of about the size of a pigeon's egg. At the lower part of the abdomen, just above the right external abdominal ring, was a similar lump of about the size of a hen's egg in the abdominal wall. There were three other lumps of the same kind, though smaller, in the abdominal wall and two on the chest wall. At first I thought that these little nodules must be secondary growths, the mass in the head of the pancreas being the primary source, but on reflection it seemed more likely that they were gummata and that the distinct localised enlargement of the head of the gland was also gummatous. I therefore suggested a trial of iodide of potassium, with the result that all the nodules speedily vanished and the patient regained, and has since retained, perfect health. In July, 1902, Mr. Woodyatt writes that "Mrs — is still getting on well and is taking food better than she has done for years."

Remarks.—Syphilitic disease of the pancreas may assume two forms, a chronic diffuse interstitial inflammation, or a localised gummatous inflammation. There can be no doubt, I think, that in this case a gumma had formed in the head of the gland, the incidence of the gumma being determined, as is often the case, by the traumatism inflicted by the constant passing of gall-stones. Syphilitic pancreatitis has recently been studied by Schlesinger.¹ It is more common in children than in adults and is frequently a congenital lesion. The disease begins as a periarteritis. Opie has recently described a case in an infant who lived but three hours. The gummatous form is extremely rare. Cases are recorded by Drozda, Chvostek, and Battle. In a case related by Drozda the pancreas was represented by a mass of fibrous tissue containing breaking-down gummata.

¹ Virchow's Archiv, 1898, p. 501.

Glandular elements were only seen in the head. There was characteristic evidence of syphilitic cirrhosis in the liver also.

CASE 3. *Calculus in the ampulla of Vater; chronic pancreatitis; duodeno-choledochotomy.*—The patient, a female, aged 41 years, was admitted on March 23rd, 1901. The history was that attacks of pain in the right hypochondriac region had been intermittently present for eight or nine years. 16 months before admission jaundice was noticed for the first time. Similar attacks of pain followed by jaundice had been noticed several times since that date. On admission she was jaundiced and the colour had been present, though varying in tinge, for four months. A stone in the common duct was diagnosed. The abdomen was opened and a stone was found impacted in the ampulla of Vater. The head of the pancreas was densely hard—as hard as stone. I remarked at the time that the gland felt more like a plaster cast of a large pancreas than like a normal organ. The duodenum was incised and the stone was removed. The gall-bladder was drained for 11 days. The patient made a good recovery and is now quite well.

CASE 4. *Stone in the common duct; choledochotomy.*—The patient, a married woman, aged 58 years, was seen in April, 1901. The first attack of biliary colic occurred at Christmas 1896. This had been followed by others at almost regular intervals of three months until January, 1901, when the severest attack of all took place. She was confined to bed after it for three months and it was after this that she suffered from continuing, though varying, jaundice. Shivering was noticed on several occasions; on each the pain was rather worse and the jaundice was a little deeper.

At the operation a host of adhesions were found around the common duct, gall-bladder, and duodenum. A stone was found tightly fixed in the common duct near the termination of the cystic duct. An incision was made on to it and a stone equal in size to a Barcelona nut was evacuated. A couple of drachms of pus followed the stone. The common and hepatic ducts were thoroughly explored and found to be clear. The head of the pancreas was much enlarged and extremely hard, feeling as solid as stone. The adhesions which surrounded it were unusually tough and strong and were with difficulty separated. Before the separation was effected the enlarged head of the gland felt very like a malignant growth. A large drainage-tube was fixed by one stitch into the common duct and the abdominal wound was closed round the tube. After the operation there was retention of urine cystitis following upon catheterisation. Healing of the wound was delayed by cellulitis due probably to infection from the pus escaping from the cystic duct. Bile was discharged freely from the wound for several weeks. A year later the patient was quite well and her medical attendant informed me that "the relief from operation has been complete."

CASE 5. *Stone in the common duct; marked interstitial pancreatitis; choledochotomy.*—The patient, a single woman, aged 55 years, was sent to me by Dr. H. J. Clarke of Doncaster. She stated that two and a half years ago she had the first attack of jaundice, preceded by an extremely severe attack of pain lasting for two days. The jaundice passed away in 14 days, and afterwards she felt quite well. In December, 1901, a similar attack of pain over the liver, passing through to the right scapula, was followed by jaundice slight in character and lasting only for five days. After recovery from this attack she felt weak, easily prostrated, and had a "loathing for food." Flatulence was distressing and her weight gradually decreased. Six weeks before admission she had a similar attack of pain, followed by jaundice; since then the jaundice had varied in depth of tinge, but had never disappeared; the pain had varied, but a dull aching sense of oppression and weight had always been present. She had had several shivering attacks during the last six weeks. She had lost one and a half stones in the last three months. The jaundice was said by her friends to be less in the morning and to get gradually deeper in tinge during the day. On examination there were tenderness and rigidity in the gall-bladder area but nothing definite could be felt.

Operation.—A long incision was made. The gall-bladder was found buried in adhesions, thick and contracted. There were many adhesions between the abdominal wall, the liver, duodenum, transverse colon, and bile-ducts, which were so firm and so widespread that rotation of the liver was not possible. A stone was tightly wedged in the common duct. As the common duct could not be brought to the surface it

was necessary to cut down upon the stone in the duct and to remove it with a scoop. The stone was of the size of a nutmeg. The hepatic and the rest of the common duct were explored, but no other stone was discovered. A large tube was fixed into the opening made into the duct and the abdominal wound was closed. The tube came away on the eleventh day. The wound rapidly healed and the patient is now quite well and free from any pain, discomfort, or jaundice. The head and body of the pancreas were densely hard and slightly enlarged. The condition which I found was certainly the most exemplary instance of chronic pancreatitis that I have observed. Mr. P. J. Cammidge, after examining the urine, said that it reacted better to his test for pancreatitis than any sample of urine he had previously examined. The following is his report: "High colour; amorphous urates; no albumin; no sugar. A well-marked reaction for chronic pancreatitis was given. Some obstruction to the common bile-duct or pancreatic duct is probably present with a considerable degree of consequent chronic pancreatitis."

CASE 6. *Stone in the common duct; suppurative cholangitis; chronic pancreatitis.*—The patient was a female, aged 70 years. For the last eight years the patient had suffered from recurring attacks of pain which were localised in the right hypochondriac and epigastric regions. The attacks came on spontaneously, caused faintness, coldness, and vomiting, and lasted as a rule for about four hours. The pain had gradually increased in severity during the last year and had been nearer the middle line. In recent attacks she had often been cold and had shivered and subsequently had sweated profusely; she had had, in fact, miniature rigors of slighter intensity than those usually seen. Up to eight weeks previously she had never been jaundiced. After an unusually severe attack at that date jaundice was noticed which quickly deepened and then almost faded away, to return as deeply as ever. She had lost about two stones during the last seven months.

Operation was performed on August 27th, 1901. The usual sickle-shaped incision was made and the gall-bladder region was exposed. The omentum was found intensely adherent in all directions to the gall-bladder area. These adhesions were stripped except at the fundus of the gall-bladder, where they were so dense that the gall-bladder was cut across with scissors and the fundus was left adherent to the omentum. On dissecting the fundus out it was found that a stone had ulcerated through the gall-bladder into the omental adhesions which had protected the general peritoneal cavity. The fundus was removed piecemeal and bleeding vessels in the omentum were secured. The liver was now rotated so as to put the ducts on the stretch and to expose their whole length. A stone was felt in the common duct about three-quarters of an inch below the junction of the cystic duct. The common duct was incised, the stone was removed, and the duct, after exploration had revealed its patency and the absence of other calculi, was stitched up with a continuous suture of catgut. The pancreas was closely examined. The head was found enlarged and very hard; the body and tail felt normal. The difference in the consistence of the duodenal end and the tail was very striking. A tube was placed in the gall-bladder and the abdominal incision was then closed.

Mr. Cammidge reported as follows upon the urine: "The specimen quickly gave a well-marked reaction such as I am accustomed to find in cases of pancreatic disease. I therefore conclude that there is extensive inflammatory change in the pancreas and I should expect from the appearances seen that this is most likely due to malignant disease, although I am not quite certain on this point."

CASE 7. *Multiple calculi in the gall-bladder; acute cholangitis; chronic pancreatitis.*—A married woman, aged 60 years, was seen with Dr. L. B. Hayne of Harrogate. The history was that the patient had suffered for many years from "spasms," the pain being chiefly in the right upper quadrant of the abdomen, but radiating thence to the whole body. She had never been jaundiced. On July 18th, 1902, she had a "feverish attack." Her temperature was 101° F. and she had general muscular pains and frontal headache. On the 20th she had an intense colicky pain in the upper part of the abdomen, with tenderness in the epigastrium, accompanied by retching and slight vomiting. The pain continued paroxysmally till the 24th. In the early morning of the 26th there was another attack, the pain starting from the epigastric notch and radiating thence around the lower edge of the thorax on

both sides. The colon was distended. There was no sickness. The abdomen moved freely on respiration. There was tenderness under the right costal margin, especially at a point about two inches above, and externally to, the umbilicus, under which a distinct resistance to pressure was felt. Later in the evening she was cold and very collapsed. On the 27th the conjunctivæ were tinged with yellow and bile was present in the urine. On the 27th the stools were clearly coloured and 11 small calculi were found in the motions; some were bright green in colour, others were lighter, but all were cheesy in consistence. On the 30th there was another attack and on the following day three calculi were found in the stools. The next attack was on August 13th and from this date they have been repeated every 48 hours, but no calculi have been found. The attacks usually commenced with a feeling of weight in the epigastrium, flatulence was then complained of, and the pain, commencing in the upper part of the abdomen, spread generally and became extremely severe, causing collapse and coldness of the limbs. The pulse-rate had varied from 48 to 72.

On August 25th the operation was performed. The usual incision, splitting the rectus near its outer margin, was made and the gall-bladder area was exposed. There were many adhesions, those about the ducts and the head of the pancreas being extremely dense and with difficulty separated. The gall-bladder and the adjacent portions of the liver were thinly adherent to the abdominal wall, omentum, and stomach. The head of the pancreas, which was buried in adhesions, was slightly enlarged and very hard, almost stony, in consistence. The gall-bladder was opened and cleared of 81 stones. The cystic and common ducts were free. The gall-bladder was drained and the wound was closed in the usual manner. The patient made a very good recovery.

Mr. Cammidge examined the urine passed on the morning of the operation and wrote: "It gives a slight reaction but I should not like to offer more than a guarded opinion on such a feeble result."

Varieties of chronic pancreatitis.—Opie distinguishes two forms of interstitial inflammation of the gland—*interlobular*, in which the inflammatory process is localised chiefly at the periphery of the lobule; and *interacinar*, in which the process is diffuse, invading the lobules and separating individual acini, and involving the islands of Langerhans. In all the preceding cases the type of inflammation was the former—the interlobular. The distinction between the two forms is important, for in the interlobular variety the islands of Langerhans are rarely affected and then only in the latest stage, and therefore diabetes is exceptional. In 11 cases related by Opie in one only was diabetes of a mild type observed: in this the sclerosis was far advanced and affected the islands of Langerhans. In two out of three cases of interacinar pancreatitis diabetes was present.

The relationship of the islands of Langerhans to diabetes has recently received considerable attention from pathologists. Szobalov in 1900 reported two cases of diabetes in which the islands could not be discovered. Opie was the first to make a systematic study of the subject and his results are embodied in most valuable papers in the *Journal of Experimental Medicine*.² Weichselbaum and Stangl³ examined the pancreas in 18 cases of diabetes and found it affected in 17. Herzog reports four cases of diabetes in which changes were found in the islands. Steele⁴ has summarised the results obtained by previous investigators. Three distinct types of lesion have been described in these cases. 1. An atrophy of the pancreas affecting the secretory glandular epithelium but much more intensely the islands of Langerhans. These bodies show evidence of cellular degeneration and are diminished in number. There is an increase in the interlobular and interacinar connective tissue which Weichselbaum and Stangl hold to be secondary to the atrophy of the epithelium. 2. Hyaline degeneration of the islands of Langerhans as described by Opie. 3. A chronic interlobular and interacinar interstitial pancreatitis in which the islands have been involved apparently rather late in the process. In this variety the islands appear to resist the invasion quite vigorously and the secretory glandular epithelium is in a much more advanced stage of degeneration than the cells of the islands. The occurrence of glycosuria in this type is usually less pronounced.

The cases that I have related show very clearly the various

stages in a progressive inflammation of the gland. In the earlier stages a thickening of the duodenal end is found and is merely incidental, being merged in a more serious condition, giving rise to no special symptoms and requiring no special treatment other than the removal of the cause upon which it depends. In a more advanced stage the pancreatic inflammation becomes the dominant condition, and in the later stages it may exist alone, long after the irritation which gave rise to it has subsided.

Treatment.—The treatment of chronic interstitial pancreatitis must be mainly concerned with the removal of the cause of the gland implication. But in all cases drainage of the gall-bladder is necessary. It is my custom to fix an india-rubber tube into the gall-bladder or into the common duct by a single catgut stitch and to allow the tube to remain until released by the absorption of the suture. This generally occurs between the tenth and twelfth days and the wound then speedily closes.

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PYTHOGENIC PNEUMONIA.

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THE following details of a succession of cases of pneumonia in one household may not be without interest.

About nine months ago a man, with his wife and family of five children, took possession of some old business premises. The house was fairly commodious and in good condition, but several previous occupants had complained of illness during their tenancy and one of them had died some years before from typhoid fever. The drains were said to have been subsequently overhauled and some slight derangements of the system rectified. Almost from the beginning of their occupancy the new tenants commenced to have "illness" amongst the household. "Feverish" and "bilious" attacks were common amongst the children and one boy in particular suffered continuously from a most distressing cough for which no cause could be assigned and which only yielded to large doses of aperient medicines. The head of the family himself found his energies unaccountably flagging and he gradually assumed the worn-out and fagged appearance of the convalescent from acute disease, his wife, indeed, being the only occupant of the house who retained anything approaching to her former state of health.

One evening I received an urgent summons to attend the eldest son. He had been that morning in about his usual state of health and his mother imagined that he was in for one of his usual attacks of coughing, but she was rather anxious, as he appeared to be so much more generally ill than was usually the case. I found him flushed and breathing heavily, his respirations being 50, his pulse 120, and his temperature 104° F. I prescribed the usual dose of calomel and an ordinary fever mixture. In the morning I found distinct signs of commencing consolidation at the left base; the tongue was already dry and brown and the child was evidently acutely ill. On the third day of his illness I was informed that two of the other children appeared to be unwell. One, a girl, about seven years of age, did not present the appearance of being acutely ill and, in fact, beyond having a temperature of 101° for a couple of days, she did not give me cause for any anxiety; but the other child, an infant, nine months old, subsequently went through a very severe attack of broncho-pneumonia, barely escaping with his life. On the next morning I found the mother herself in bed; she had been taken with severe pain in the left side during the night, having been perfectly well on retiring to rest, and she also subsequently went through an acute attack of pneumonia, ending in crisis on the sixth day. The father had gone away for a change of air only the day previous to that on which his eldest boy was seized, and in response to telegrams he arrived back the very day that his wife was taken ill. That evening when I paid my usual visit I found him crouching over the fire complaining of severe headache and of feeling altogether very ill. I ordered him to bed at once and the next day I found him to have well-marked signs of lobar pneumonia of the left base. He very rapidly became worse and on the morning of the fourth day of his illness, owing to his extremely critical

² Vol. v., Nos. 4 and 5.

³ Wiener Klinische Wochenschrift, October, 1901.

⁴ American Journal of the Medical Sciences, July, 1902.