congenital heart disease or pyloric stenosis or diaphragmatic hernia, and necessitate the most careful application of all our diagnostic methods. Finally, the placenta and membranes and cord ought always to be scrutinised, and when possible submitted to microscopical and bacteriological examination.

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EPIDEMIC CEREBRO-SPINAL MENINGITIS IN DUBLIN.*

BY
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CLINICAL REPORT BY DR. ALFRED R. PARSONS.

IRELAND has been free from cerebro-spinal meningitis in its epidemic form since 1886. The present outbreak commenced in the earlier months of this year; and I shall briefly refer in chronological order to the clinical records of the cases which have come under my observation at the Royal City of Dublin Hospital.

CASE I.—E. D., aged 28, a servant, was admitted to the ophthalmic ward on January 31st, complaining of seeing double. She was in good health till January 5th, when she had a shivering fit, followed by severe pain in the back of the head and vomiting. Her temper became irritable and uncertain. On January 23rd, as she developed diplopia, Dr. Flood, under whose care she was, asked Mr. Benson to see her. He found that in the right eye the vision was $\frac{1}{2}$; while in the left eye it was nearly normal. In both eyes there was optic neuritis, of a very intense character in the right, with oedema of the disc and retina, a large patch of white exudation above the disc, and great tortuosity and enlargement of the veins. There were no hemorrhages in the retina. She was removed to the City of Dublin Hospital. I examined her carefully, but failed to find any symptoms or signs beyond those enumerated—headache, chiefly in back of head, vomiting, diplopia, slight strabismus, and intense optic neuritis. The temperature, Dr. Flood informed me, was never higher than normal, and the pulse, always quiet, about 60. While in the hospital all the symptoms gradually subsided, the diplopia disappearing about February 12th. She left on February 23rd, feeling nearly quite well, and with her sight greatly improved. After a rest she resumed work, and now feels in excellent health. She remembers very little of the earlier weeks of her illness.

On March 10th her eyes were again examined by Mr. Benson. She said she was perfectly well, but that she could not use her eyes for long without feeling them fatigued. There was a very slight haziness of both discs, most marked on the right. No exudation was visible in the retina above the disc where the large white patch existed on a former occasion. At no time was there albumen or sugar in the urine.

I was unable to arrive at any positive diagnosis in this case while she was in the hospital. The symptoms were, I thought, more suggestive of meningitis than of any other intracranial disease, but the complete recovery of the patient differed from any form of meningitis I had met. In the light of the subsequent cases there is little doubt, I think, that it was a mild attack of cerebro-spinal meningitis.

CASE II.—D. S., aged 7, residing in Booterstown, was also sent in by Dr. Flood. He was admitted on February 14th, a fortnight after the previous case. On Saturday, February 10th, he complained of a slight headache, and his stomach seemed out of order, but he did not vomit. On February 11th headache was much worse, but his mother did not think him sufficiently ill to be sent to bed. On February 12th at 6 A.M. he began to rave, and he was unconscious by 7 A.M., when he was seen by Dr. Flood. Later during that day he regained consciousness, and complained of seeing double, and then his mother noticed that he had a squint.

Previous History.—He was in the Children's Hospital in Harcourt Street two years ago, and is said to have been operated on for morbus coxae. In his family there is no indication of any tendency to tuberculosis.

On Admission there was retraction of the head and rigidity of the neck muscles to such an extent that it was not possible to flex the head. There was extensive naso-labial herpes. The movements of the chest wall were normal, and there was perhaps slight retraction of the abdomen. The spleen was not enlarged; there were no spots, and I could detect nothing abnormal in the chest or abdomen. The temperature varied from 100° to 103° F. during the first week in hospital, and then gradually settled down, falling about 98° F. each day till it became normal on March 13th. It remained practically normal till the 22nd with one exception, when it rose rapidly to 104°, but fell in the course of eighteen hours to 98.4° again. On March 23rd and every second day till April 6th, the temperature rose some degrees, while on the alternate days it remained subnormal.

Briefly, therefore, it may be stated that during the early weeks the course of the temperature was like that of typhoid fever, but during the later it simulated tertian ague. Since April 6th the temperature has been practically normal.

On March 12th Mr. Benson examined his eyes and found that the right disc was more vascular than the left, the edges everywhere slightly hazy, and the veins a trifle large and dark. The left disc was clear everywhere at the edge except above; there was thus very slight optic neuritis, more marked in right eye.

On March 13th Kernig's sign (see Fig. 1) was present. Any attempt at extending the limbs made him cry with pain.

Fig. 1.—Case II; Kernig's sign.

On March 15th his temperature ran up to 104°, and he vomited, moaned, and complained of his head, and passed a restless night, but the following day he was as well as usual. He became greatly emaciated during his illness, but since the temperature became normal he has gained flesh. He is now in excellent health, the strabismus has disappeared, and the reflexes, superficial and deep, are quite normal, and he left the hospital on May 10th. In this case there was constipation throughout, and the Widal test was negative.

CASE III.—G. McC., aged 20, a checker, was admitted about 9 P.M. on Friday, March 2nd in an unconscious condition.

Previous History.—I subsequently ascertained from his father and his employer that he was apparently perfectly well till the previous Wednesday morning, when during his work he complained of his head and a feeling of sickness. His employer recommended him to go home, to take some hot rum, and go to bed. On Thursday he heard he was better, but on Friday so much worse that Dr. Byrne was sent for, and he recommended his immediate removal to hospital.

Condition on Admission.—He could be roused sufficiently to say that he had very violent pain in his head. He had no herpes, but there was retraction of his head and rigidity of his neck muscles. He had no indication of any pulmonary or abdominal disease, no cardiac hypertrophy, and no increased arterial tension. He had retention of urine and abolition of the knee-jerks.

After History.—On March 3rd, while drawing off the urine in the morning, my resident pupil, Mr. Wilson, was surprised to hear the air whizzing into his bladder as the urine escaped. This rather rare phenomenon is due to the complete paralysis of the bladder. The urine was loaded with lithates, and contained a large amount of albumen. The course of the temperature is shown in the chart. On the night of March 3rd he was comatose, cyanosed, and bathed in perspiration, and he died at 1.15 A.M. on March 4th, twenty-eight hours after admission and about three and a-half days from the commencement of his illness. A post-mortem examination was not permitted, and I regret that I did not make a lumbar puncture.

CASE IV.—R. M., aged 22, a cook residing in Wellington Road, was admitted on March 2nd, complaining of severe headache and not feeling well. *Previous History.*—She had a rigor the previous day at 4 A.M., followed by headache. *Condition on Admission.*—When admitted some thirty hours later, at 9 P.M., March 2nd, her temperature was 102° F. She passed a restless night, and during the following day she was vomiting and suffered much from her head.

After History.—On March 5th her headache was still very violent, and there was constant contraction and relaxation of the occipito-frontalis muscle. There was also pain and stiffness down the spine, and very abundant naso-labial herpes. On March 6th diplopia and convergent

CHART I.—CASE III.—
Death in 86 hours.

* Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, May 18th, 1900.

CHART II.—CASE IV.—At first irregular, later with daily elevation, subsequently normal. Recovery.

strabismus were present, and on March 7th retraction of the head and rigidity of the neck muscles. The pupils were slightly unequal, and there was some difficulty in breathing. On March 9th, the eyes were examined by Mr. Benson, who noted "slight oedema of the disc, left most marked, very considerable tortuosity and congestion of the veins, even out to their finer branches; no masses of exudation or hemorrhages anywhere visible; slight optic neuritis; venous congestion marked."

On March 13th there was complete loss of power in right external rectus. Kernig's sign was present; she had had severe pain in left shoulder for some days past. On March 17th the respiration was superficial, quick and snatchy. There was twitching of the occipito-frontalis, and the alae nasi were working. The lips and tongue were rather dry, the pulse 102, the heart sounds good. There was stiffness and pain in left shoulder, and pain on pressure over the skin in the lumbar and dorsal regions. There was tremor in the lower extremities, but no loss of control over the bladder or rectum. There was no albumen or sugar in the urine, and no diminution of the chlorides. The temperature (see Chart II), which during the earlier days of her illness was fairly regular, varying from 101° to 103°, became distinctly remittent from March 20th till April 7th, when it became normal, and remained so. In the morning, during this remittent period, she felt perfectly well, but towards 1 or 2 P.M. the temperature commenced to rise, violent headache and vomiting set in, and persisted for some hours till the temperature became normal again. Throughout her illness her pulse rarely exceeded 100, and her respirations averaged 26. Double vision persisted after the temperature became normal, but she gradually regained power over the external rectus and when leaving the hospital had practically recovered full control.

CASE V.—A. B., aged 13, was carried into hospital in a very stupid condition about 4.30 P.M. on March 21st. He could give no account of himself. The temperature was 99.2° F., the pulse 88, and the respirations 28. His face was flushed, he was noisy and a little delirious. My resident pupil, Mr. Wilson, did not notice anything else abnormal. Within half an hour after his admission he suddenly became cyanosed, his pulse became weak, and he died at 5 P.M. When I saw the body at 11 P.M. rigor mortis was present. There was well-marked post-mortem lividity, but no herpes. Dr. Littledale kindly obtained some blood serum tubes, which I inoculated with some fluid removed by lumbar puncture, and he kindly undertook the subsequent examination of them. The fluid I removed was straw-yellow in colour, and almost quite clear. Permission to make a post-mortem examination could not be obtained.

CASE VI.—M. Q., aged 6, was admitted on April 17th. *Previous History.*—Her mother stated that on April 14th she began to suffer with headache, vomiting, and loss of sight. She was a little easier on that night, but on April 15th she vomited every time she took a drink, and lay all day on her face, with her head thrown back and her eyes in a fixed stare. She was restless and delirious at night. On April 16th she complained of severe pain in abdomen and back, had a very restless night, as she was vomiting and delirious, and was sent into hospital on April 17th

Fig. 2.—Case VI; retraction of head and strabismus.

Condition on Admission.—There was great retraction of the head (Fig. 2), marked opisthotonos, so that if put on her back she rested on the occi-

pital and gluteal regions. There was abundant naso-labial herpes, weakness in both external recti, and double vision. Kernig's sign was not elicited till the limb was nearly fully extended. The knee-jerks were slight, marked flexion of lower extremities.

On April 18th there was tenderness on pressure along the spinal column. Kernig's sign was well marked in the left lower extremity. She was more sensible, and was asking for whisky and water to make her warm. The urine contained a trace of albumen, but no sugar. Chlorides were completely absent. She had been grinding her teeth a great deal.

On April 19th there was a very extensive herpetic eruption over the upper and lower lips.

On April 20th the albumen had disappeared and chlorides were present in the urine.

On April 26th she cried bitterly, complaining of pains all through her. The fundus of the right eye was examined, and it was found that the outline of the disc was almost invisible, and that the vessels were injected. Since admission she had frequently at night awakened up with a sudden shrill scream, at first "Oh, ma, ma," but subsequently it approached in its suddenness to a siren. During the next twelve days she suffered considerably from headache, pains in her back and extremities.

On May 8th large coarse involuntary movements occurred in the left arm and leg, while the right arm and leg were rigid, and the latter extended. During the day she had fits of screaming. At 11.30 P.M. she was unconscious, but the conjunctival reflex was present, and the pupils contracted on exposure to light. She was very restless during the night, continued screaming till 2.20 A.M., when she went to sleep and slept for two hours. At 4.30 A.M. she took 5v of milk, and then passed apparently into a heavy sleep, and has remained in that condition almost from that date to May 18th. The conjunctival reflex was generally absent. The pupils contracted on exposure to light. The teeth are firmly clenched, and a little milk introduced oozes out again. Not a particle of nourishment has been swallowed for the past ten days. If the skin be tightly pinched she moans a little and moves to a very small extent. Some foul-smelling fluid trickles out of her mouth. The evacuations are passed under her. She has been fed by nutrient enemata during these ten days. Her pulse has increased in frequency from 84 to 120, her respirations continue quiet, and her temperature is generally 101° in the evening and lower in the morning. For the past couple of days she has occasionally opened her eyes, but otherwise her condition is practically unchanged. There is well-marked strabismus, and knee-jerks are absent.

After the above note was written she remained in a semiconscious condition, apparently deaf, absolutely unable to swallow, and with partial right hemiplegia. Gradually becoming weaker and more emaciated, she died on June 15th.

CASE VII.—T. Q., aged 5 years, brother of the previous patient, was admitted on April 18th. He had been ill for two days before with headache, pain in the back of his neck, and vomiting.

Condition on Admission.—He had marked retraction of the head, and herpes was just appearing on his lower lip. He lay in bed turned three-fourths over on his chest. There was extreme retraction of head and arching of the back, and the thighs flexed on his abdomen. The pupils were equal, and their movements apparently normal. Kernig's sign was present. The urine contained neither sugar nor albumen, and chlorides were present.

On April 20th he was almost incessantly screaming. There was extreme retraction of the head, so that it formed an acute angle with the back, and the chin was pointing upwards. The thighs were flexed on the abdomen. An ophthalmoscopic examination showed a haziness of the outline of the disc, but no pronounced optic neuritis.

At times he has become pale, cold, collapsed, and looking as if he were dying, and in a few hours' time his colour has been good. His pulse is easily created, and he is warm. He has not passed for any length of time into the unconscious condition of his sister. The temperature, which has been very irregular, is now, I think, settling down. He is sleeping well at night, and taking nourishment fairly well.

June 15th. He has made an excellent recovery.

I shall now briefly refer to a few points.

Etiology.—Numerous outbreaks have occurred on the Continent and America, while England has escaped to a remarkable extent. The outbreaks have generally appeared as waves passing over a district, and not returning for years.

Age.—The incidence is chiefly on children and young adults. It rarely occurs after 35.

Season.—It is most common in spring. It has been thought to follow in the wake of cholera and measles, and to be closely connected with pneumonia.

Bacteriology.—Evidence is steadily accumulating that its immediate exciting cause is the diplococcus meningitidis intracellularis. It has been suggested that this organism may be found in the nasal secretion, and that by this route it probably reaches the brain. I have examined the secretion in two cases; in one there were numerous diplococci, in the other

they were very few. I do not think they were the diplococcus intracellularis.

Diagnosis.—The onset is sudden and definite. The patient can fix to the hour the time that he was seized with the headache.

Temperature.—There is no constant type. In some cases it resembles typhoid, in others malaria.

Decubitus.—The patient generally lies on his side with his head retracted, chin pointed, and lower extremities flexed on the abdomen.

Kernig's sign has been present in all the above cases in which I have looked for it. I have tried patients with various other diseases, but never elicited it. I have noticed it as early as the third day, and it has been present even after convalescence has set in, diminishing as the patient got well. I have not been able to elicit a corresponding spasm in the upper extremity, though I looked for it in some of the cases.

Knee-jerk has been diminished or absent; never exaggerated.

Eruptions.—Four of the 7 had well-marked naso-labial herpes. In 2 of the remaining 3 death occurred almost too soon to allow of the eruption to appear, and 1 I did not see till towards the end of the illness. None of the cases had herpetic eruptions in other parts and none had the purpuric eruptions so common in the 1866-67 epidemic.

Eye.—Most of my cases had strabismus and double vision, always due to the external rectus being involved. In the 4 who have recovered, full control of the rectus has been regained. I have seen none of the purulent infiltration of the cornea, nor of the ophthalmia which so seriously affected sight in 1867. When the fundus was examined there was always some involvement.

Urine.—Albumen was present in 2 cases, and in 1 there was complete absence of chlorides for a short time—a point of some interest on account of the connection supposed to exist with pneumonia.

Lumbar Puncture.—Professor Osler speaks very highly of this as a diagnostic agent.

Prognosis.—This depends very much on the epidemic; 3 of the 7 cases died, and 1 is still in hospital. Dr. Grimshaw considered that children have a better chance than adults, at least many of the children admitted to Cork Street Fever Hospital under his care in the epidemic of 1866-67 recovered, while 80 per cent. of the young constabulary recruits sent to Stevens's Hospital, and also under his care, died.

Treatment.—I have applied ice to the head and evaporating lotions. Trional, bromides, and morphine have been used to relieve restlessness and procure sleep. Calomel has not been administered except as a purgative. The patients, when suffering pain in the trunk or extremities, have often expressed themselves as greatly relieved when rubbed with a chloroform and camphor liniment. If symptoms suggested a cardio-respiratory failure from pressure, I would resort to lumbar puncture with a view to diminishing the pressure by the removal of cerebro-spinal fluid.

PATHOLOGICAL REPORT BY DR. LITTLEDALE.

Dr. Parsons gave me a syringeful of fluid which he had drawn off *post mortem* from the spinal canal of one of his cases. This fluid was very limpid and only slightly turbid, the turbidity being due to the presence of a few polymorpho-nuclear leucocytes in a degenerate condition—that is to say, their cell protoplasm was broken up and they had lost their circular shape. Cover-glass preparations were made from the fluid and stained with carbol fuchsin.

These cover glasses showed the presence of diplococci composed of two hemispheres, with their flat surfaces in close apposition, so that with an intense stain like carbol fuchsin they may easily be mistaken for a single large coccus. They had no capsules as a rule, but what looked like a capsule was observed in two other cases. They were present in very small numbers, lying either inside the body of the polymorpho-nuclear leucocyte, or just as often free in the spinal fluid. Their size was very variable, being on an average the size of the gonococcus, but some of them were three or four times as large, while others were much smaller than the gonococcus. They stained feebly even with carbol fuchsin, and were absolutely decolorised by Gram, however long or intensely stained with the aniline-water violet.

Preparations from Loeffler's serum cultures two days' old showed a central blue granule in some of the cocci when stained with Neisser's acetic-methylene blue and Bismark brown. No other organisms could be detected in these preparations, which were stained in several different ways.

When the spinal fluid had been kept at 37° C. for twenty-

four hours it showed a considerable increase of the organisms in the fluid. Cultures were made on the following media all under aerobic conditions:

1. Loeffler's serum (horse serum, three parts; 2 per cent. glucose broth, one part).
2. Hydrocele fluid glucose broth, inspissated (hydrocele fluid, three parts; 2 per cent. glucose broth, one part).
3. Plain inspissated hydrocele fluid.
4. Horse serum agar.
5. Glycerine agar.
6. Ordinary agar.
7. Ascitic fluid agar.
8. Glucose agar.
9. Ordinary beef peptone broth.
10. Glucose broth.
11. Glucose formate broth.
12. Litmus milk.
13. Liquid horse serum.
14. Ordinary gelatine.
15. Glycerine gelatine.
16. Wort gelatine.

Growth appeared on the first six media only, and in the same order of intensity.

Loeffler's Serum.—The first cultures were made by simply squirting several drops of the spinal fluid from the syringe on to the sloped surface of Loeffler's serum. These were put into the oven and kept at 37° C., but no sign of growth had appeared at the end of twenty-four hours. However, when examined again at the end of forty-eight hours, a copious growth was visible all along the line where the drop had run. All the inspissated serum used was perfectly white and opaque. The growth appeared as a glistening confluent streak, quite colourless—that is to say, the same white colour as the medium. Its notable features were the very intense lustre and absolute confluence, no isolated colonies being visible. It was extremely viscid, and could only be removed with difficulty with a platinum needle, pulling out into a long mucus-like thread. When stained it proved to be a pure culture of the same organism as that found in the spinal fluid, agreeing in every way—the variability of size and absolutely negative reaction to Gram. When these cultures on Loeffler's serum have passed through several stages of subculture they lose their viscosity almost entirely, and when such a growth has been several days in the oven it becomes a yellowish colour.

Hydrocele Fluid.—On inspissated hydrocele fluid and Loeffler's serum made with this, the growth was just the same, but more easily visible on the former, owing to the semitranslucency of the medium. There was never any liquefaction of the serum.

Glycerine Agar.—Subcultures on sloped glycerine agar also gave a thick confluent shining growth at the bottom of the streak, tapering off at the top to a few small isolated colonies. These colonies were also of a glistening character, perfectly circular with an opaque centre, spreading out to a thin transparent margin.

Agar.—On agar slopes the first attempts to grow the organism failed, but subsequently successful growths were obtained. It grew very feebly on agar, and even when a large quantity of a growth from Loeffler's serum was smeared over the agar surface, two or three colonies similar to those on the glycerine agar were all that ever appeared.

Serum Agar.—Serum agar plates gave a very luxuriant growth after twenty-four hours at 37° C. The colonies grew both superficially and in the depth of the medium. The surface colonies were precisely like the colonies described on the glycerine agar, and showed a tendency to spread out over the surface with a translucent margin, otherwise they presented nothing characteristic. The deep colonies, however, were very characteristic. They were either round or lanceolate, looking with Leitz Obj. 3 and Oc. 3 as if composed of coarse granules, but the chief feature was the presence of numerous small buds on the parent colony, giving it sometimes a mulberry appearance, at others like barnacles on a stone.

Glycerine agar plates failed on the first attempt, and subsequent plates only grew after forty-eight hours at 37° C. The colonies on these latter were precisely the same as those on the serum agar, but were much less numerous.

Other Media.—No growth could be obtained on any of the other media kept at suitable temperatures.

Inoculations.—Inoculations were made subdurally and into the spinal canal of rabbits by injecting a broth emulsion of a growth from Loeffler's serum, but no lesions were found in the only animal that died, nor could the diplococcus be recovered from the seat of inoculation. Intraperitoneal inoculation of a mouse had no effect on the animal.

Besides this case, I have assisted Dr. O'Sullivan in Trinity College Laboratory in investigating some five or six others which gave results precisely the same as the above in every case.

The same organism was always found and always quite pure, and there can be no doubt that it is the same organism as that described by Weichselbaum, who kindly sent us some cultures for comparison purposes, and more recently by Councilman, Malory, and Wright, and by Osler.

Attempts to isolate the organism from the nasal secretion of several cases failed, and examination of stained preparations of the nasal secretion from infected and healthy persons only showed what looked like the diplococcus meningitidis in one of the infected cases. They were hemispherical cocci decolorised by Gram and not lying in the polymorpho-nuclear leucocytes, and were only found after a long search.

It seems quite evident that the organism described has no relation to the diplococcus pneumoniae, but it has a great similarity to the gonococcus in its shape, intracellular arrangement, and its growth on serum agar.

There is considerable difficulty in keeping this organism alive, but it can be done by transplanting it on Loeffler's serum every three or four days, and keeping it constantly at 37° C. Cultures on Loeffler's serum kept at 37° C. were alive after fourteen days, and grew on transplantation.

A CASE OF HÆMORRHAGIC PANCREATITIS.

BY

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M.D. Lond., M.R.C.P., M.D. Edin.

THE following case was read before the meeting of the British Medical Association held at Brighton in March of this year, but the details have not been published hitherto; as these cases are, however, being regarded with an interest only equalled by the increasing interest taken in all abdominal cases of recent years, it has been thought advisable to bring the following particulars forward.

The patient was a man, aged 77; very stout; his general health had been good, but latterly he had complained somewhat of symptoms of "indigestion." He was first seen on January 31st, 1900. He had felt well on getting up in the morning, and ate a bloater for his breakfast. The bowels acted as usual about 9 A.M. About 11 A.M. he was suddenly seized with pain in the abdomen, followed by sickness and collapse. The vomiting continued more or less constantly until death, the vomited matter consisting chiefly of "coffee grounds," at first it was thought that the blackish particles might be portions of prunes which he had eaten the previous night. In the evening he was somewhat better; the abdomen was tender, but not distended; there was a slight hardness in the right iliac fossa, but no tenderness here, and the whole abdominal wall moved normally.

On February 1st the symptoms continued much the same. The abdomen was slightly distended. The possibility of intestinal obstruction was taken into consideration, but no surgical procedure was thought advisable. In the evening he became suddenly collapsed, but recovered again after two or three hours. The temperature was 99° to 100°; the pulse 120.

On February 2nd his condition remained unchanged, he having quite recovered from the collapse of the pre-vious evening, but in the evening this recurred, and now he had a running, uncountable, and irregular pulse, with subnormal temperature and profuse perspirations.

He again rallied from this attack of collapse, but never completely, and during the following afternoon (February 3rd) he had a third attack of collapse from which he did not rally, and to which he succumbed during the night. No further abdominal symptoms than those already mentioned presented themselves. As regards treatment, nutrient injections were given and hypodermic injections of strychnine and digitalis.

Necropsy.—The abdominal wall was very fat, about 1 inch in thickness. On opening the peritoneum numerous small white flat spots (fat necrosis) about the size of two pins' heads were seen on the intestinal peritoneum and the surface of the omentum. No sign of peritonitis was encountered until the lesser sac of the peritoneum was opened, when some blood-stained fluid was found, and a large, bulging, dark purple, cystic-looking object was seen pushing the peritoneum forwards; this object was about the size of an orange, and was the head of the pancreas. The entire organ was firmly adherent to adjacent structures, and was with very great difficulty removed whole. Scattered over its surface throughout its whole length were small spots of fat necrosis; the organ was considerably enlarged, in thickness rather than in length, especially its head. On making a section the capsule was observed to be thickened and tough. One large hæmorrhage about 3 cm. in diameter was seen in the head of the gland, and smaller hæmorrhages were scattered throughout its entire length, with the exception of about 2 inches at its tail end; there was also a hæmorrhage on its inferior surface immediately under the capsule, this being most marked on the middle third of the body, and also another on the posterior aspect of the head. Deposits of yellow fat were found taking the place of normal tissue in many parts of the gland.

By an unfortunate mistake the specimen was not properly preserved for microscopical or bacteriological examination.

NOTES ON A CASE OF ACUTE PANCREATITIS COMPLICATING MUMPS.

By HENRY W. JACOB, M.A., M.D.,
Great Malvern.

I HAVE recorded this case on account of the rarity of this complication of mumps.

J. S., aged 10 (schoolboy) is the only child of healthy parents. He has occasionally suffered from bronchitis, and had subacute rheumatism with slight endocarditis (?) in 1899, from which he recovered completely. On March 31st, 1900, he complained of sore throat, headache, and general *malaise*, accompanied by pain and stiffness about the angles of the jaw, especially on the left side. On examination the left parotid gland was found to be swollen and tender; there was also some tonsillitis. His temperature was 100°, and his pulse 90. On April 2nd the temperature was 101.4°; there was much more pain in the parotid glands, and the mouth could only be opened a little and with difficulty; both parotids were tender and considerably enlarged; the tongue was covered with a pasty white fur, and the skin was dry and hot. The diagnosis was sufficiently obvious from the boy's symptoms and appearance, but it may also be noted that several boys from the same school had recently been suffering from mumps.

On the morning of April 3rd he was sick, and continued to vomit at short intervals during the day. The vomiting was so severe that the smallest quantities of milk and water were rejected. During the day he complained of some pain in the stomach, and about 10 P.M. he was seized with a very violent pain in the upper part of the abdomen; the vomiting still continued, and after each attack the pain was slightly less for a brief period, but almost at once returned in its full intensity. On examination at 12 P.M. I found him lying on his back in a condition of evidently acute suffering; but the knees were not drawn up, and the abdomen did not appear to be much distended generally. The temperature had run up to 103.8°, and the pulse to 120; the tongue was covered with a thick, white creamy fur, the skin was very dry, and the face wore an expression of intense anxiety, especially when any attempt was made to examine the abdomen. The swelling of the parotids was now distinctly less than it had been on the previous day, and pressure over the parotid region did not appear to cause so much pain as before; the submaxillary glands were, however, quite tender and somewhat enlarged, a fact which I did not observe on previous examinations.

On examination of the abdomen no increase of liver dullness could be detected, although the edge of the liver could be felt and was tender to the touch. Below the liver a narrow area was clear on percussion, and was not markedly tender to pressure; below this clear area and separated by it from the lower border of the liver a sausage-shaped mass could be distinctly felt, which was exquisitely tender on pressure, and extended from within the epigastrium slightly upwards and to the left into the left hypochondrium, exactly in the position in which one would expect to find an enlarged pancreas. On pressing as firmly as could be borne over this mass a dull note was elicited by percussion, but when the finger percussed was only lightly laid on the surface a somewhat resonant note could be heard, indicating that the mass was in all probability situated behind the stomach.

The swelling did not move with respiration, but could be slightly moved between the hands. The right-hand termination of the swelling could not be well mapped out; in the right hypochondrium the note was clear on percussion.

There was no pain or tenderness in the lower region of the abdomen, and except for the tenderness noted in the lower border of the liver all pain and tenderness was strictly limited to the dull area beneath which the sausage-shaped swelling could be felt. I arrived at the conclusion that the mass was an enlarged pancreas which was undergoing so-called metastatic inflammation in the course of a case of mumps just as in certain cases the testis is similarly affected.

Turpentine fomentations were applied to the seat of pain, and one grain of calomel and three grains of Dover's powder given; the powder was administered in very hot water; a little later sips of hot water were given, a small quantity of bicarbonate of soda being dissolved in the hot water; the patient had no vomiting after the administration of the medicines until several hours later, when he vomited once; a diaphoretic mixture was given, and a dose of castor oil (half an ounce) was ordered to be given in the morning. This was done, and the patient had two free evacuations of the bowels that day, the motions being copious and offensive.

After the bowels had acted, the pancreatic swelling remained unaltered, but in consequence of diminution of tenderness it was possible to determine the outlines of the organ with certainty. The temperature had fallen to 100.2°, and the parotid glands appeared to be almost normal. The pain in the pancreatic region continued to be somewhat severe all day, but the vomiting did not recur.

On Thursday, April 5th, the pain had quite gone, and the temperature had fallen to 97.8°, but for several days after this the pancreatic enlargement could still be felt, and some tenderness elicited on pressure.

On April 10th (one week from the onset of the abdominal complication), and eleven days from the commencement of the attack of mumps) all tenderness had disappeared, and it was no longer possible to make out any abnormal condition in the abdomen. The urine was examined both during and after the attack, and it contained no albumen or sugar.

The boy made an excellent recovery, and is now (April 20th) apparently quite well, although slightly anæmic; his appetite is good, and his digestion does not appear to have suffered from the attack. It will be interesting to observe whether any symptoms indicative of atrophy of the pancreas occur in the subsequent history of the case. At no time in the course of the case was there any orchitis.

The case appears to me to be of interest for several reasons: First, the rarity of the affection; I cannot find any record of acute pancreatitis occurring as a complication of mumps. Secondly, the rapid onset and violent character of the com-