lived, and the lips were blue, and she swallowed with difficulty. She died at 4 in the morning.

A young child who had the highest suspicion of the mitral valve. Peter's patches were injected but the intestines were otherwise quite normal. The brain was normal. Webbeck-street, W.

IS BUBONIC PLAGUE STILL LURKING IN THE CITY OF GLASGOW?

BY THOMAS COLVIN, M.D. GLASG.,
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In August, 1900, the inhabitants of Glasgow were startled by the announcement that plague had appeared in their midst after an absence of 235 years from the shores of the British Isles. The first detected cases were three patients whom I sent into Belvidere, the city hospital for infectious diseases, from 57, Thistle-street, on the south side of the river Clyde, with a provisional diagnosis of an acute infectious malady simulating enteric fever. These cases were ultimately proved to be clinically, pathologically, bacteriologically, and epidemiologically those of bubonic plague. In all 26 were placed and of these 16 died, which gave a mortality of 44·4 per cent. The last patient was discharged from Belvidere on Nov. 3rd, 1900, and ten days later Glasgow was declared free from plague. The chief symptoms of these cases were fever, extreme prostration, and swelling of the armpits or the groin in. a febrile temperature, and extreme prostration, but the only definite symptom was an acute pain in the left iliac region. It is the association of two or more cases that puts the medical man on the alert. 2. This case occurred in Adelphi-street, about 100 yards from Thistle-street, and in the plague-infected area of the city for nearly three years. It occurred about the same time as Mr. Murdoch's cases in the latter part of August. 4. Acute ovariitis according to Galabin and other writers is a very rare affection, and as a rule follows septicaemia after delivery or abortion or suppuration. Dr. A. K. Chalmers had the slightest evidence of any of these conditions. Moreover, she was the very antithesis of those neurotics who often complain of ovarian pain, for she never had a day's illness before, unless during confinement, nor has she ever been ill since and is at present in excellent health. 5. Simpson states that the oeil of glands and lymphatics in the abdominal cavity may be affected and form a painful illac bubo which is tender to pressure. If on the right side the condition may be mistaken for acute appendicitis. The illac bubo may occur without any apparent enlargement of the inguinal glands. The previous history of this case, the clinical symptoms, and the after-history point all to an illac bubo and not to acute ovariitis.

Now it was during the week that my patient was ill that her two friends from Liverpool stayed three days with her. Although they did not occupy the same bedroom, for there were five and a half rooms in the house, the boys had close contact with the patient. On Sept. 21st, or about four weeks later, their mother sickened and died from plague after an illness of seven days with buboes in her axillæ. On Sept. 22nd the two girls who were ill with the disease for nine days later with axillary buboes. On Sept. 24th the other girl sickened with plague with a bubo in her groin and she recovered. A woman who assisted in laying out the mother's body also died from plague, while four children who were living in the same house, of whom two died. Now as the mother was never in Glasgow and she was the first to sicken the infection was indirect, and direct infection was also excluded by the date of sickening, for the average maximum incubation period of plague is ten days. But the mother superintended the washing and laying aside of the clothes worn in Glasgow and thus caught the infection, and having evidently developed a virulent form of the disease, she infected two of her children.

In proof of the contagiousness of the clothing I elicited a most important fact. Between the sickening of these two cases and the sickening of the four children nearly a month had elapsed, so here again the infection was indirect. Dr. A. K. Chalmers and both gentlemen were of opinion that the boy had bubonic plague and that the father had died from pneumonic plague. Dr. A. K. Chalmers, the medical officer of health, was at once communicated with and the boy and the dead body of his father were removed to Belvidere. Every one who was in contact with the patient was removed to the sanitary reception house, and the man's house and his rag-store, where the infection was presumed to have been caught, were disinfected in the same manner as was done the previous year in plague cases. The house of these two cases, in which I only learnt incidentally from Dr. Stewart many months after their occurrence that gave me the key to the solution of the origin of an outbreak of plague in Liverpool that happened two months later, or in October, 1900. At the time I was deeply interested in this outbreak, for I was asked by Dr. Chalmers to give him a report of an illness of a patient of mine, in whose house two Liverpool ladies had stayed for three days and on their return home sickened with plague, one of them dying with buboes, the other recovering. I have as a known fact connected with this outbreak, including the official report for which I am indebted to Dr. E. W. Hope of Liverpool, and including also correspondence with the young lady, who is still in Liverpool, and including also correspondence with the late Dr. I. H. Hope of Liverpool, and including also correspondence with the young lady, who is still in Liverpool, and including also correspondence with the latter part of August. 4. Acute ovariitis according to Galabin and other writers is a very rare affection, and as a rule follows septicaemia after delivery or abortion or suppuration. Dr. A. K. Chalmers had the slightest evidence of any of these conditions. Moreover, she was the very antithesis of those neurotics who often complain of ovarian pain, for she never had a day's illness before, unless during confinement, nor has she ever been ill since and is at present in excellent health. 5. Simpson states that the oeil of glands and lymphatics in the abdominal cavity may be affected and form a painful illac bubo which is tender to pressure. If on the right side the condition may be mistaken for acute appendicitis. The illac bubo may occur without any apparent enlargement of the inguinal glands. The previous history of this case, the clinical symptoms, and the after-history point all to an illac bubo and not to acute ovariitis.

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in the latter part of August, 1907, thus bearing out what
important fact is that my cases in 1900 occurred in the
Simpson has stated that plague recurs in the same locality
notes of these cases along with my reasons for con-
reappearance of plague in the city. There is a difference
infection, yet the net result was only 36 cases. In the
during that time her mother, who was 58 years of age, slept
charging of the city only admit the existence of two cases, while
inhabitants were exposed to infection, yet the net result was
of opinion about the number of cases. The Health Depart-
for several days before the disease was detected, and 200
men had handled a body of anyone who had died from
of opinion about the number of cases. The Health Depart-
A few remarks on the infectivity of plague in Great
in the light of our modern experience of it may not be
in the year for each particular locality. The practical
value of this observation is to be specially on the alert for
plague at the season of the year it first appeared in any
community.
A few weeks before detection and the whole city of 700,000
inhabitants were exposed to infection, yet the net result was
nine cases. In an outbreak in Leith in May, 1905, for an
official report of which I am indebted to Dr. W. Robertson,
and for the whole 18 days there was the most
powerful means of prevention, and this even when the cases are
few. This tenacious capacity, combined with its transport-
ability, makes it formidable because its slow progress, few
cases, and possibly slight mortality accustom the people to
its presence and lull the authorities into a frame of mind of
looking upon it as a disease that can be easily controlled.
A NOTE ON THE MORPHOLOGY OF
SPIROCHAETÄ DUTTONI.

BY THE LATE J. EVERETT DUTTON, M.B. VICT.,
AND
JOHN L. TORD, M.D. MCGILL,
ASSOCIATE PROFESSOR OF PARASITIC ZOOLOGY, MCGILL
UNIVERSITY.

(FROM THE EXPOSITION OF THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE IN THE CONG, 1903-04-05.)

PRENT (1), in the current number of the Annals of Tropical Medicine and Parasitology, describes the variations
in the morphology of Spirocheta Duttoni observed during the experimental study of that parasite made at the Runcorn
laboratories of the Liverpool School of Tropical Medicine (2). His description is based upon the examination of
dried and fixed preparations of blood and of organ juices of
infected animals stained by Giemsa's modification of
Romanowsky's method; films fixed while still wet were not
found to show more detail. In his paper many new points
are brought forward and antecedent observations made by
others and by ourselves (3) are confirmed and completed.
The first part of the present note is, with the exception of a
few additions, an abstract of Breinl's paper.

Spirocheta Duttoni is an organism shared on transverse section. Though often wound in spirals it may be simply waved and
hence may lie wholly in one plane; this can often be demonstrated in motionless parasites in fresh preparations.
The spirocheta consists of a central core which stains a deep
red and a surrounding periplastic sheath which stains a
light pink (4). Both ends of the parasite are pointed, but
each end (rarely both), through a extension of this sheath,
is often prolonged into a flagellum-like process from which
the central core is absent. No suggestion of peritrichous
flagella (5) has ever been seen (4). The central core, or
chromatic part, of the parasite frequently does not stain
uniformly but shows more or less numerous irregularly-
placed, unstained areas occupying the whole breadth of the
parasite (5, 6, 7). Sometimes, especially in preparations
taken just as the parasites are about to disappear from the
blood, this fragmentation proceeds until the whole chromatic
core is broken up into irregular granules; a clear area of

1 A paper read before the Society of Tropical Medicine and Hygiene on April 15th. This note summarizes the results of the study of the parasitic which Dr. Dutton was engaged at the time of his death. In remembering his work all must admire the zeal which he displayed in his studies and appreciate his unselfishness. As a man in many men are first attaining their mature capacity for usefulness.—J. T. L.

2 The parenthetical figures throughout the text refer to the bibliography at the end.