

by subjecting them to some of the insanitary conditions above specified.

4. The phthisis of the cow is, in other respects, the same as that of man. Schüppel, "who has made an almost exhaustive study of tubercle in general, and particularly that of the bovine species . . . has fully established (in 1874) the absolute identity in structure and development of the cattle disease (known as 'Perlsucht') with tubercle in man."<sup>21</sup> Villemin, too, considers bovine identical with human phthisis.<sup>22</sup>

5. Marasmus, or "pining," a progressive emaciation and debility, occurs in all phthysical animals, however the tuberculosis has been produced.<sup>23</sup> According to Pierquin, it is a common cause of death in menagerie animals, and it is fatal in the cat and dog, sometimes as a sequel or result of nostalgia. In Scotland, phthysical cattle in the last stage of the disease are termed "piners."<sup>24</sup> This same marasmus—a gradual loss of flesh, strength, and spirits—usually attended with anorexia and self-starvation, is very common in the dog, cat, or other house pet, as the result of sudden and sore grief, a subject on which I have dwelt elsewhere. It is also a common cause of death in the human insane,<sup>25</sup> and Pierquin mentions fatal marasmus from dirt-eating among the Orinoco Indians of South America.

It does not appear to have been determined whether and how far there is any difference in the infective properties of cooked and uncooked meat and milk. It may prove that thorough cooking, roasting the one and boiling the other, may practically destroy all risk of infection. But Böllinger, in his experiments, showed that cooked tubercle at least was capable of producing tuberculosis in rabbits.

That fresh tubercle, when fed upon, begets tuberculosis in the feeder has been abundantly proved by the experiments of Chaveau, Böllinger, and others. Chaveau produced it in healthy calves by feeding them with tuberculous matter from an old phthysical cow,<sup>26</sup> and he showed that cattle can be infected by the ingestion of human tubercle.<sup>27</sup> He also noticed the infection of certain healthy calves—that were kept for the purpose of comparison with others that were the subjects of experiment—by using the same buckets for eating and drinking from; in other words, by the reception into the digestive canal of contaminated food or water.<sup>28</sup> Böllinger, too, set up tuberculosis, including tubercular peritonitis, in the goat by ingestion from the ox.<sup>29</sup> "A goat fed with tuberculous ox-lung became cachectic and died," with miliary tubercle in the lungs, as well as with miliary tuberculosis of the mesaraic and epigastric glands, and tubercles in the peritoneum and epiploon.<sup>30</sup> A sheep fed with tuberculous ox-lung showed isolated tubercles in its own lungs and peritoneum. Böllinger found that different results were obtained in carnivorous and herbivorous animals. In the latter, the ingestion of fresh tuberculous matter produces "intense tuberculous infection." Viseur, of Arras, artificially tuberculised cats by feeding them on tuberculous matter, and St. Cyr, of Lyons, has likewise "proved the transmissibility of the disease by the stomach."<sup>31</sup>

The same sort of tubercle, when inoculated in various parts of the body, gives rise to the same effect as when fed upon. Böllinger produced tuberculosis in the dog by inoculation from man, and in goats by inoculation from the ox. Professor Villemin, of the Val de Grace Hospital, Paris, who was the first to show the transmissibility of tuberculosis by inoculation in rabbits and guinea-pigs, the matter used being taken from the human lung,<sup>32</sup> successfully inoculated rabbits with tubercular matter from the cow,<sup>33</sup> and rabbits with tubercular matter from each other. His experiments or their results were verified also in guinea-pigs, among others, by Burdon-Sanderson and Wilson Fox, who showed, however, that the same effect could be artificially produced by inoculation with certain non-tubercular matters, or even by means of setons.<sup>34</sup> Demetrius Paraskera and Zallonis, at Syra (Greece), inoculated rabbits with the sputa and blood of human phthysical patients. But they went much further—further than could be ventured upon in this country—further, perhaps, than could

be justified by either ethics or pathology; they inoculated man himself, with the same too successful result, by means of sputa "from a man who had abscesses in his lungs."<sup>35</sup> Man is constantly—in his ignorance and stupidity, prejudice, and perversity—making experiments, only too successful, on himself in the manufacture of disease of all kinds and on the large scale. But it is not often he does it in this direct and deliberate way; though "martyrs to science" are every now and then appearing, who make themselves *corpora vilia*—reduce themselves to the level of "lower" animals, for the purposes of scientific experiment. The general evidence of experimentalists shows that "inoculation with the tubercles produced experimentally reproduces tuberculosis as readily as if human tubercle had been employed."<sup>36</sup>

Tubercular matter, then, contaminates the system by digestion in the stomach. It does so also by pulmonary inhalation, though the former mode of infection—viz., ingestion—is, according to Chaveau, "incomparably more frequent than contagion by the respiratory passages."<sup>37</sup> According to Villemin, dried expectorated tubercular matter, reduced to powder and carried by the air into the lungs, is probably a source of infection in man himself. And "veterinary surgeons have for many years believed that forage soiled by the expectorations of the disease . . . will communicate the malady"<sup>38</sup>—tuberculosis or phthisis.

Stephens, in his "Book of the Farm," tells us that "in-and-in breeding produces a liability to catarrhal affections and to consumption, the whole constitution being much weakened." Pierquin points out, on the other hand, that from cross-breeding of an unsuitable kind various difficulties and dangers in parturition arise.

(To be continued.)

## RARE CASE OF HERNIA.

By ALEX. PATTERSON, M.D.,

SURGEON TO THE WESTERN INFIRMARY, GLASGOW, AND LECTURER ON CLINICAL SURGERY.

W. H.—, labourer, aged thirty-five, was admitted to the Western Infirmary on Feb. 10th, 1878, at 8 P.M. The patient stated that, when a boy, he suffered from hydrocele, for which he was several times tapped. A number of years ago the hydrocele gave place to a rupture, which, he thinks, was caused by a "stress." The latter came down and went up, but was not attended by any serious inconvenience until the day of admission. That day, when at work, about noon, he was seized with severe pain in the right groin, spreading up towards the navel, and obliging him to desist from his occupation. He walked home a distance of two miles, on reaching which a medical man was called in, who tried ineffectually to return the contents of the swelling.

On admission he presented an extremely pinched and anxious aspect of countenance; the face was pale, the cheek wanting the sublivid flush so frequently observable in cases of strangled intestine. The pulse was 100, regular, and moderate in volume, not wiry. The man complained of great pain, chiefly situated in the tumour, which was a large, firm, tense, hourglass-shaped mass, occupying the right side of the scrotum, and extending upwards into the inguinal canal. The contraction existed at the junction of the upper and middle third of the protrusion. No vomiting had taken place, nor had there been any retching or hiccough. The abdomen was not distended, nor did pressure produce pain.

At 10 P.M., two hours after admission, chloroform was administered and herniotomy proceeded with under antiseptic precautions. On the sac being opened, a large quantity of blood-stained serum escaped, and the omentum, with veins much distended, came into view. The operator endeavoured to get behind the omentum, in the expectation of finding the bowel in its usual position, but was unable to do so until he had enlarged the wound downwards along the scrotum, and come upon the narrowed part of the hernia, where the strangulation really existed. At this point two flaps or wings of thickened omentum, apparently surrounded or grasped, as a crab's claw might do, a fold of small intestine about six inches in length. The knuckle of bowel was very tightly strangled, and almost *verging on gangrene*;

<sup>21</sup> Fleming: Tuberculosis, p. 463.

<sup>22</sup> Ibid., p. 471.

<sup>23</sup> Ibid., p. 470.

<sup>24</sup> Ibid., p. 462.

<sup>25</sup> Report on "Insanity and Insane Asylums," by Commissioner Wilkins, Sacramento, California, 1872; appendix, p. 233.

<sup>26</sup> Fleming's Tuberculosis, p. 478.

<sup>27</sup> Ibid., p. 481.

<sup>28</sup> Brit. and For. Med.-Chirurg. Review, January, 1874, p. 255.

<sup>29</sup> Fleming's Tuberculosis, p. 483.

<sup>30</sup> Gazette Médicale de Paris of November 22nd, 1873, as quoted in Brit. and For. Med.-Chirurg. Review, January, 1874, p. 255.

<sup>31</sup> Fleming's Tuberculosis, p. 485.

<sup>32</sup> Ibid., p. 470.

<sup>33</sup> Ibid., p. 471.

<sup>34</sup> Ibid., p. 472.

<sup>35</sup> Ibid., p. 473.

<sup>36</sup> Ibid., p. 476.

<sup>37</sup> Ibid., p. 481.

<sup>38</sup> Ibid., p. 436.

it presented much the appearance of maroon-coloured velvet. The stricture was relieved, and the gut very cautiously returned into the abdominal cavity, while the omentum, which was held in position by old adhesions, was allowed to remain. The case progressed favourably and without a single untoward symptom. No medicine of any kind was administered, and the patient was dismissed well on the 22nd February.

*Remarks.*—This case was unusual in three points—viz., (1) the entire absence of vomiting, retching, and hiccup is extremely uncommon; (2) the hour-glass shape of tumour is occasionally met with in hydrocele, but rarely in protrusion of intestine; (3) the almost gangrenous state of the intestine occurred in ten hours, much earlier than we are accustomed to meet with it in inguinal rupture.

Gastrotomy I have twice performed, and have operated for strangulated hernia seventy-one times, and never before encountered a case similar to that just detailed.

Glasgow.

## A Mirror OF

### HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

#### GUY'S HOSPITAL.

##### CASES OF INJURY TO THORACIC AND ABDOMINAL VISCERA.

(Under the care of Mr. BRYANT.)

*Punctured Wound of Abdomen and Thorax; Wound of Lungs; Pleuritic Effusion; Relieved.*—(For the following notes we are indebted to Mr. T. W. Fuller.) John B—, a waiter, aged thirty-three, was admitted into the Accident ward on the 18th September, with an oblique gaping wound, about an inch long, somewhat to the right of, and slightly above, the ensiform cartilage. There was a good deal of hæmorrhage from the wound, and it was stated that flatus and fæcal matter had passed out of it. The man alleged that he had been stabbed by a Russian with a clasped knife. He had himself but recently left a lunatic asylum.

On admission, he was collapsed, vomited a great deal, and had a severe cough and brought up some blood; his breathing was very laboured, the movement of the right side of the chest being very slight. Temperature 100.4°; pulse 100; respiration 24. He was ordered one grain of opium every four hours.

On the 19th he had revived and was quite sensible. He was able to keep down milk, and he coughed much less. Temperature 100°; pulse 96. On the 20th his motions were normal; urine slightly high coloured. Temperature 99.3°; pulse 108. On the 21st the front of his left chest was hyper-resonant and the back dull. This hyper-resonance changed with the position of the body. Fluid was present also, and there was abdominal distension and pain. On the 24th the expectoration was not so constant, but still streaked with blood. On the 25th he was delirious.

Sept. 26th.—He was extremely delirious through the night. Still continues to cough, but not so persistently. Temperature 100.2°; pulse 90. Opium continued.

28th.—During the night he had slight spasms, and passed his motions and water involuntarily whilst under the influence of opium. The cough still remains hard and without much expectoration. Breathing causes pain; respiration 30, hurried; pulse 90; temperature 100°. Patient less delirious.

On Oct. 6th the right side moved less than the left on deep inspiration. Resonance was fair over both lungs. There was some dullness over the right axilla and right lung posteriorly. Good vesicular murmur over left side anteriorly and posteriorly, deficient over right side posteriorly. He complained of general muscular twitchings. No albumen in urine. Temperature 100.6°; pulse 96. On the 12th he was better. The respiration was improved; the chest walls moved better. On the 15th he had a severe attack of rheu-

matism in hand and left knee. He also had a discharge of pus from wound. A blister was placed on the right side of chest. On the 24th he had passed a bad night, and was sweating a great deal. Respiration 24. He did not care for his food and vomited his medicine. On the 26th nausea still continued, although he seemed better. Temperature 101.4°; pulse 108. On the 27th he was much improved, and the following day vomiting had ceased. On Nov. 6th Dr. Fagge reported that he did not think there was any serious injury to chest; the dullness was not extreme. Tactile vibration was present. The respiratory murmur, although deficient, was not altogether absent. There was no alteration of vocal resonance; probably some pleurisy had been present, which was getting well, or possibly a thin layer of blood may have extravasated there. On the 11th the patient was much worse, sweating much. There was also pain over right side of the head and shoulder; rheumatic pains in hand. Nausea was also present; later in the day he vomited, and was very ill. Vomiting ceased next day, and he was better. On the 20th rheumatism had been troubling him again, but was fast subsiding. Some exuberant granulations of wound were touched with nitrate of silver, and again three days later. On the 30th the wound had nearly healed. The patient from this date gradually improved, and, although he was troubled with night-sweats and occasional attacks of rheumatism, he was able to leave the hospital on the 20th December.

*Ruptured Kidney; Hæmaturia six days; Recovery.*—(For the following we are indebted to Mr. T. W. Fuller.)—R. S—, a labourer, aged twenty-five, was admitted into Accident ward on the 7th November, 1877. He was unable to give any clear account of the accident, having probably been drunk at the time. He stated that he fell off his van, alighting on his head and right shoulder, and striking his right loin against the wheel of the van. When admitted into the surgery he declared there was nothing the matter with him, and left the hospital, but subsequently returned because he was apparently passing blood in his urine. The water was drawn off, and found to be extremely dark. He had pain over his right lumbar region and right shoulder. The urine contained a great quantity of phosphates as well as blood. A three-grain lead and opium pill was ordered, and milk and ice.

Two days later he was free from pain in his back, but still passed urine coloured with blood.

On Nov. 12th the urine still contained blood. He was ordered twenty drops of extract of ergot and ten drops of tincture of opium in one ounce of peppermint-water three times a day; to have a one-grain opium pill at night. Next day the amount of blood in the urine was less, but that of the phosphates was larger. On the 19th, fish diet was allowed. On the 29th he was up in the ward, and on the following day he left the hospital well.

#### MANCHESTER ROYAL INFIRMARY.

##### NOTES OF A CASE OF INTESTINAL OBSTRUCTION TREATED BY ABDOMINAL SECTION.

(Under the care of Dr. WILKINSON and Mr. BRADLEY.)

FOR these interesting notes we are indebted to F. A. Southam, M.B., F.R.C.S., house-physician.

James C—, aged forty-five years, mechanic, a strong, healthy man, was admitted at noon on Feb. 17th, suffering from symptoms of intestinal obstruction. He stated that while at work on the morning of Feb. 14th, he felt something suddenly "go wrong inside," and was seized with acute pain in the lower part of the abdomen. He remained at work till evening, though suffering acutely all day. As the pain continued, and vomiting came on, the next morning he called in a medical man, who from that time until his admission treated him with enemata and fomentations. In spite of this the pain and sickness continued, and there was complete constipation.

On admission, there were no urgent symptoms or signs of prostration or collapse. The abdomen was somewhat distended and tympanitic, but no tumour or unnatural fullness could be felt. There was slight tenderness on pressure over the umbilicus, to which point all the pain, though not severe, was referred. No tenesmus existed, nor was there a history of any hæmorrhage from the bowel. Sickness continued,