toneum was yellowish. The liver was the only organ which was at all abnormal; it weighed 50 ozs., and was soft and flabby; the left lobe was very flat, and had a small growth on its upper surface, the size of a hazel nut; the capsule was rough and peeled off easily. On cutting into the liver the cut surface was seen to be covered with reddish and yellow spots irregularly scattered over the surface. The heart, lungs, brain, intestines, kidneys, spleen, suprarenals, bladder and uterus were all normal. The pancreas and end of the Fallopian tubes were found slightly congested, and the gall bladder was empty.

Microscopical Examination.—A piece of the liver was examined by Mr. Pakes, of Guy's Hospital, who reported as follows: "The liver throughout shows granular and pigmentary degeneration; in places the pigmentary degeneration is well marked, and resembles what is frequently found in cases of malaria. In certain areas the liver cells show more advanced changes of fatty and granular degeneration; the outlines of the cells are blurred and indistinct, and the nuclei stain with difficulty or not at all; here and there this change has gone on to the complete destruction of cells. There is no large area of complete destruction, and scarcely any infiltration of round cells, the spaces previously occupied by the degenerated liver cells being occupied with loose fibrous tissue."

There was some doubt whether the case was really one of phosphorus poisoning or of acute yellow atrophy. The most careful inquiries, however, were made, and, as far as we could tell, there was no chance of her having either by accident or design taken any phosphorus, nor was there any evidence of this substance in the matter vomited. I am convinced, therefore, that the diagnosis which heads this paper is the correct one.

AN ACCOUNT OF SEVEN CASES OF ACUTE IRRITANT POISONING.*

By W. H. PACKER, M.D., L.R.C.P.,
Cressage, Salop.

HISTORY.

ON 'September 27th, 1900, seven members of a family of eight living in a small farmhouse partook of supper at 9 P.M. It consisted of stewed goose giblets to which had been added scraps of goose and slices of beef. During the night following they were all taken violently ill with purging, abdominal pain, and vomiting. The first case began to suffer about midnight and the others soon after. The eighth member of the family, and the only one who escaped, went supperless to bed suffering from toothache.

At first apparently no very great importance was attached to their condition, possibly they were too ill to think, as I was not sent for till after midday, September 28th. When first seen all seven were found to be in a very serious condition. Diarrhoea was profuse, frequent, watery, and smelling horribly. Pain referred to the umbilical region recurred every few minutes, and vomiting was incessant. This had been going on for some hours. The pulse was small and frequent. The history and symptoms clearly indicated some kind of irritant poisoning. The family affected consisted of the widow, A. H., aged about 65, her son and two daughters, the one daughter's husband and two children and the widow's brother.

As the stomach had evidently been very thoroughly emptied already, and as sixteen hours had elapsed from the beginning of symptoms, no antidote was indicated, even if one had been known. Stomachic and systemic sedatives and cardiac stimulants were ordered. One dose of castor-oil was given to each sufferer.

These symptoms continued on September 29th, but were slightly ameliorated, except in the case of the boy aged 14, who was then found markedly collapsed, with cold extremities, imperceptible pulse, and delirium. He rallied somewhat after a hypodermic injection of strychnine gr. $\frac{1}{15}$. His condition varied slightly, sometimes better, sometimes worse, but with a steady downward tendency, until October 4th, when he sank. The hypodermic injections of strychnine were given two or three times during each twenty-four hours, and apparently kept him alive. Towards the end the vomiting and diarrhoea almost ceased, and he drank greedily of water, but was with difficulty induced to take milk and eggs in very small quantities.

The widow, A. H., seemed to be doing fairly well until the morning of September 30th, when the pulse was noticed to be irregular and intermittent. On October 1st she was collapsed, cold, and delirious, and the radial pulse was not to be made out. Strychnine was given hypodermically, and free stimu-

lation was resorted to, but she sank rapidly during the night.

The others continued in much the same state, though luckily with no collapse, for some days, when the pain and vomiting ceased, and the intestinal flux was stayed. The temperature ranged from normal to 103° F. at various times and in the different cases. It fell below normal in the collapse stages. At the date of writing (October 18th) the survivors are about again, but still feeble. The granddaughter, aged 13, had stomatitis after the other symptoms had abated, but it soon yielded to treatment, and the brother, a man of 50, is suffering from congestion about the rectum, with a small but very painful fissure. It is to be noticed that the deaths occurred in the case of the oldest and the weakest (the boy was always weakly), and was due more to exhaustion than to the immediate action of the poison. The boy is also said to have eaten very heartily of supper. The fact that the first symptom of mischief in each case was diarrhoea, rapidly followed by pain and vomiting, is worthy of note.

The patients were seen several times daily by my colleague (Dr. J. F. Fernie) and myself, but although we discussed the probabilities of many irritant poisons, we failed to recognise symptoms pointing to any particular one, unless it were an animal toxin. The history points undoubtedly to an irritant poison taken at the supper of giblets. The only member of the family who escaped the attack had no supper. The bread and the beer taken at that meal may be excluded, as others ate of the former without harm, and several sufferers had no beer. A workman who did not live in the house partook of dinner with them and was not a victim, whilst A. H., who had her midday meal from home, suffered. This still further narrows it down to the supper.

It is therefore essential to further consider the history of the incriminated giblets and gravy. The ancient festival of the harvest home is still continued in this village, the amusements being in common, but food is provided in each farmhouse for its own workpeople.

At a certain farmhouse (W.'s) three geese were killed, and the patient A. H. assisted her neighbours to prepare and cook them. The giblets were stewed on September 26th, about 6 P.M., and partaken of by W.'s family. The geese were cooked the following day and placed before the workmen about midday; no one was ill after either of these meals. A. H. was given a portion of the giblets cooked on the previous day, consisting of gizzard, etc., with the giblets gravy, and pieces of goose and slices of beef also were placed in the same china dish. She took this home with her about 2 P.M. on September 27th, and placed it in her pantry. This concoction was produced at supper, not having been recooked, and was eaten cold.

NECROPSY.

A *post-mortem* examination was made by Dr. Willoughby Gardner by order of the coroner. Intense congestion of the intestines and stomach was found. The kidneys were small and the heart flabby. No indication of any special poison was found. The stomach was tied at both ends, as were pieces of large and small intestine, and, together with the liver, were sent to the analyst.

Mr. Blunt, an experienced county analyst, was unable to find any poison either in the remains of the supper or in the viscera of the deceased woman. Ptomaines were not looked for, as they would necessarily have been present in the then condition of the tissues and would have proved nothing. Nevertheless, it seems to be narrowed down by a process of exclusion to the so-called "ptomaine poisoning." This, I am told, is not a scientific term, but I understand it to mean the toxin or animal alkaloid formed by the multitudinous and unrecognised germs which usually lead to putrefaction and are generally present in decaying animal matter.

COMMENTARY.

Although animal matter has been known for many years to produce, after undergoing certain unknown changes, on rare occasions illness and death, as far as I can ascertain the bacteriologist has not yet succeeded in isolating either the special toxin or the virulent bacterium that is responsible for its manufacture. Gaertner in 1888 isolated a bacillus (*B. enteritidis*) from the meat and spleen of a diseased cow, from eating the flesh of which a man had died. This closely resembled a typhoid bacillus. He remarks that it acts most

* Read before the Shropshire and Mid-Wales Branch of the British Medical Association.

strongly on the intestine, and that there is desquamation on recovery. This was so in my cases, the desquamation being strongly marked in the little girl. Durham and others have found bacilli after meat poisoning since Gaertner's cases, but these differ slightly, and probably belong to different groups. Klein found a bacillus (*B. enteritidis sporogenes*) in rice and milk puddings that were said to have given diarrhoea to the whole of the patients in a hospital ward. Gaertner mentions that his bacillus causes illness after 24 hours, but that the toxin acts much sooner.

Unfortunately these changes in food can occur without being perceptible to taste or smell. Twenty-seven hours elapsed from the cooking of the giblets to their consumption by my patients at 9 P.M. When eaten immediately after preparation they were shown to be harmless. The gravy would make an excellent culture medium, and we are told that the bacilli begin to increase and multiply in half an hour, and may have 17 million lineal descendants in twenty-four hours. Presuming that in some unexplained manner one germ inoculated the medium soon after it had cooled sufficiently, there seems time for the stew to have become poisonous before it was consumed by the sufferers.

I would draw special attention, from the diagnostic point of view, to the fact that diarrhoea was the first symptom, and that desquamation occurred during convalescence.

The coroner's jury, after an exhaustive inquiry, found a practically open verdict of "accidental poisoning."

A CASE OF LEAD POISONING BY BEER.

By E. RICE MORGAN, M.R.C.S.ENG.,
Morriston, Glamorganshire.

THE following notes of a case in which lead was absorbed by a person drinking beer which held small quantities in solution, and which eventually caused death, seem to be worthy of record.

W. O., aged 43 years, a wheelwright and carpenter in a tin works, came under treatment first on May 2nd, 1898; the diagnosis then was gastric catarrh. He improved, and was not again visited till May 16th, when he got much worse, and I find my assistant then changed the diagnosis to hepatic disease. Early in June I saw him. As he was emaciating rapidly and as he could not retain much food, I was inclined to look upon the case as one of carcinoma of the stomach. On June 17th we called into consultation Dr. T. D. Griffiths (Swansea), who could arrive at no definite conclusion; there were no physical signs to point to cancer, still it was not excluded. At this time there was great prostration and general muscular trembling; he could not stand, he could not lift a cup with his hand, and had scarcely sufficient control of the facial muscles to speak; there was constant vomiting, persistent constipation, pains all over, and progressive loss of flesh. On July 4th, after very thoroughly going over the case I felt that there ought to be a proper explanation of the great muscular weakness as well as the marked nervous depression, and I then for the first time examined the gums, when at once the explanation of everything became plain, for there was a very decided blue line. As I have held appointments to lead works and spelter works for some twenty years it is a matter of surprise to me that I did not detect the nature of the case much earlier. The only explanation I can give is that as this man worked in a tin-plate works I was put off the scent, whereas I have little doubt that had he come from one of the spelter works I would have jumped at the cause at once. At the end of July his friends persuaded him to go into the Swansea Hospital, where my diagnosis was confirmed.

The difficult question arises, how this man with a very healthy occupation came to absorb so much lead. Every possible source at his home had to be excluded, but a hint was given me to the effect that he was rather fond of his pint of beer. Though I little anticipated I should discover anything at the public-house where he was in the habit of calling for his beer, still I deemed it well to go and see the place. I asked the landlady in her bar which beer this particular man usually drank, and she showed me the tap which drew the beer up from the cellar in leaden pipes. I was allowed to in-

spect the cellar, and there were two sets of leaden pipes very old and much worn, and the distance from the cellar to the bar was at least 20 feet. From the landlady I gleaned another most vital bit of information, which was that this man very "commonly," or, as it should be read, "daily," called for his pint of beer early in the morning—before breakfast, in fact—on his way to or from his work, and that he generally was the first to get the "dra" through one of these leaden pipes. I asked her if she would allow me to have, say, a pint drawn the first thing in the morning from these pipes, and allow an analysis of it to be made. She readily assented to this, and on the following Sunday morning I sent my groom with two large bottles, and told him to witness where the beer was drawn from. About a pint from each tap was drawn, and this was sent the following day to Mr. Seyler, Public Analyst to the county borough of Swansea, who on July 13th, 1898, reported that both samples contained lead in solution.

I had earlier sent off a sample of the patient's urine to the Clinical Research Association, London, S.E., and they reported the unquestionable presence of lead in the urine.

I think, therefore, that I have proved that this man was unquestionably suffering from the presence of lead in his system, that the evidence is fairly conclusive that he was in the habit of drinking beer early in the morning at this inn, and that by drinking the "first draw" of beer in the morning he ran the risk of taking a certain quantity of lead daily. He lived for years in the same house, he worked for years in the same works, and he passed this public-house some half a dozen times a day. I am fully satisfied that this beer was the source of his lead poisoning.

He remained some time at the hospital. When he came out he was still very weak, and scarcely able to walk. He was again confined to his bed in November, the main symptoms being much the same—great prostration and muscular tremors. Towards the end of the month he got a little better, and was able to get out a little; and from this date I lost sight of him as far as treatment was concerned.

As naturally follows in such chronic cases I found he was trying treatment elsewhere, but from occasionally meeting him out of doors I could see that he was making no progress, and the last I heard of him was that in the following January he fell down in a fit and lingered a few hours before he died. This is not an infrequent ending of cases of lead poisoning—the patient suddenly has a convulsive fit, which, with intermissions of 15 to 20 minutes, may go on for hours, but death nearly always follows in less than 48 hours.

If in this case it has been demonstrated clearly enough that the lead from the pipes from which beer is given to the public to drink is to be found in sufficient quantity to lead to lead poisoning and subsequent death, surely it is full time the public should be made thoroughly aware of the fact. I have heard of cases of men at large hotels complain of the first "draws" of beer in the morning that it does not taste nice and that it often will not stay on their stomachs—lucky for them that it does not stay there—but I have never heard of or read of a death from such a cause as this.

NOTES OF A SERIES OF CASES OF GLANDULAR FEVER OCCURRING IN EPIDEMIC FORM.

By LESLIE DURNO, M.D.,
Stoke Newington.

DURING the months of January, February, and March, 1900, a number of cases came under my notice presenting symptoms and a history very similar to those first described by Pfeiffer in 1889, and called by him "*Druesser Fieber*," and subsequently recognised by Dr. Park West and Dr. Dawson Williams.

With the exception of an adult, a mother who had nursed three of her children through the same illness, the ages of the victims ranged from 2½ to 13 years.

In every household in which the malady appeared very few of the younger members escaped.

The symptoms, physical signs, and general condition of the patients were practically the same, though differing very much in severity. There were no premonitory symptoms, the ill-