THREE CASES OF BUBONIC PLAGUE ARISING IN ENGLAND.

BY A. RENDLE SHORT, M.D., B.S., B.Sc., F.R.C.S., SENIOR ASSISTANT SURGEON, BRISTOL ROYAL INFIRMARY.

As has been reported in the public press, two certain cases, and one probable, of bubonic plague have been treated at the Bristol Royal Infirmary.

The first was a lad, J., aged 16. He was admitted under my care on July 30th, sent in with a diagnosis of strangulated hernia. He had been well in the morning, went for a cycle ride, but was taken suddenly ill with pain in the right groin and vomiting. I saw him late at night. He was obviously very ill, pulse 126, temperature 103°, respirations 24. There was an intensely tender swollen lymphatic gland in the right groin, with nothing on the leg, genitals, or perineum to account for it. He was extensively fleabitten.

I instructed my house-surgeon, Mr. Hayman, to make multiple incisions into the inflamed area around the gland, and passed him over to the care of my medical colleague, Dr. Edgeworth. My house-surgeon sent the cultures to Dr. Walker Hall for bacteriological examination, but it was not till two days afterwards that Mr. Hayman and I specially asked that plague bacilli should be looked for. Eventually they were found. The patient's further progress will probably be reported by others. He is now at a tever hospital, nearly well.

fever hospital, nearly well. The second case, O., was a boy aged 10. He was admitted to my ward on August 1st with an inflamed gland in the right groin, a temperature of 103° , pulse 120, respirations 36. He did not look very ill. There was no obvious cause for the glandular inflammation. He had been laid up for one day previously. The temperature rapidly fell, the gland improved, and on August 5th he went home. This case has not been proved to be bubonic plague, and it would never have been suggested if it had not been that Dr. Edgeworth discovered that his father worked at the same factory as the lad J.

The third case was the one that definitely established the diagnosis, which in the other patients had been only a suspicion. A man, S., aged 23, was sent to my ward on August 5th diagnosed as appendicitis. He had been taken ill on the previous evening with pain in the right lower abdomen and groin, and had vomited four times. I saw him in the afternoon. He looked prostrate, restless, and anxious. The breathing was jerky, but not hurried. The temperature was 100°, pulse 96, respirations 24. There was great tenderness and rigidity in the right iliac fossa, but also an enlarged and tender gland in the right groin, with oedema round it, and no source in the leg, genitals, or perineum. He was covered with vermin.

After careful consideration I decided that, though it was probably plague, it was highly desirable to clinch the diagnosis by examining an excised gland, and as there was some possibility of its being appendicitis, and he had to have an anaesthetic anyhow, I explored and removed both the appendix and the gland. The appendix contained oxyurides, but was otherwise normal. The gland was soft, red, and swollen, and not suppurating. My housesurgeon stained a film, which we found full of bipolar bacilli. Dr. Walker Hall definitely established our diagnosis of plague a day or two later by cultural and animal inoculation experiments. The patient is recovering, but has a great sloughy hole in the groin (August 17th). The patients S. and J., and the father of O., all work at

The patients S. and J., and the father of O., all work at a rag factory, full of rats and fleas, in a poor part of the city. No further cases have arisen, as far as I know, from August 5th till now (August 26th).

One can only speculate as to the source of the infection. No doubt further light will be thrown on this in due course. Plague bacilli have been demonstrated in a rat found dead in the factory. My own theories have been three:

- (a) Infection from the rags. The patients, however,
- tell me that the rags do not come from abroad.
 (b) Infection carried by rats escaping from ships entering the port.
- (c) Deliberate inoculation of city rats by an enemy. If this last theory is correct, it is probable that other towns may have a visitation of rat plague, with human cases following.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ON THE USE OF PETROL FOR CLEANSING WOUNDS.

PETROL has been used for the first cleansing of wounds for over twenty years in the hospitals of Toronto, Canada, in their emergency wards in which accident cases are dressed; such cases include street, railroad, and machinery accidents, and have contused lacerated wounds with much dirt ground into them. Petrol has given excellent results in the cleaning of these wounds, probably through its fatsolvent action in removing tissue debris and particles of fatty tissue to which dirt clings, as well as dirt itself. As wounds received at the front are contused, lacerated

As wounds received at the front are contused, lacerated wounds, and come in a very dirty condition, it seemed worth while to try petrol in cleaning them; the method used in this field ambulance for the first cleansing of wounds is as follows:

The skin, and then the surface of the wound, is cleaned by vigorous rubbing with a swab of absorbent cotton soaked in petrol. Swabs of cotton are wound round an artery forceps or probe and soaked in petrol, and with them the wound is cleaned from the surface inwards as far as the forceps can be pushed. The forceps is rotated and pushed in all directions, a number of swabs being used, and the process is continued until a couple of swabs come out perfectly clean.

If there is much dried blood or gross dirt on the surface of the skin or wound, it is best removed with warm water and soap, and a brush if necessary, before the petrol is used.

The petrol does not cause any special smarting, and patients did not complain of it when questioned. If petrol is left wet on the skin and jaconet or adhesive plaster strips close together are applied over the dressing, preventing evaporation, blistering of the skin will occur, but otherwise this does not occur.

Petrol used in the manner described certainly seems to clean up the surface, and particularly the depths of wounds better than any other method we have tried. Many of the wounds, by shrapnel and fragments of shell or bombs, have small openings on the surface, but extend deeply for several inches, the tract being filled with a blackish mass of dirt, blood, and necrotic tissue. After cleansing such a wound by petrol as described above, this is all dissolved out, and a clean open track is left extending to the depth of the wound, which hardly requires drainage.

As to the results of this method of treatment it is moro difficult to speak. Wounded cases drossed in a field ambulance are practically all evacuated within twentyfour hours, only very slight cases being kept for treatment, and it is practically impossible to follow up cases and compare the results of the petrol treatment with other methods. Those cases which we have dressed again on the following day seemed to do very well. As a rule the track of the wound seemed quite clear from suppuration; there was scarcely any inflammatory areola, and any discharge present did not appear to be infective pus.

The conclusion come to was that petrol was a most efficient means of cleansing wounds, especially the depths of punctured wounds, and that the removal of so much dirt and tissue débris must be beneficial. Very little petrol is used in the process, and it can be carried about conveniently.

It might be well, therefore, if this method were given a more extensive trial for the first cleansing of wounds as soon after being received as the condition of shock and haemorrhage will permit, and if such cases were followed up and the results noted and compared with those from other methods.

M. H. EMBREE, Lieutenant R.A.M.C.

A SUM of £20,000 is to be spent during the next three years by the American National Association for the Study and Prevention of Tuberculosis in an effort to control the spread of the disease. More than fifty towns and villages, with populations ranging from four to ten thousand, have been suggested as possible places for the experiment. Dr. Edward R. Baldwin of Saranac Lake, President of the Association, is chairman of a committee appointed to select a place.

EXPERIMENTS ON LIVING ANIMALS.

A REPORT showing the number of experiments on living animals during 1915 under licences granted under the Act 39 and 40 Vict., c. 77, has just been issued.

ENGLAND AND SCOTLAND.

The return for England and Scotland is signed by the chief inspector, Professor G. D. Thane. Twenty-one new places were registered and two removed from the register during the year. Of the new places registered thirteen are laboratories connected with naval or military hospitals and sanitary institutions. The total number of licences during 1915 was 664. Reports were furnished by—or in a few cases on behalf of—nearly all the licensees, but in three instances it was not possible to obtain the necessary report owing to the absence of the licensees on war service. The return shows that 323 licensees performed no experiments. A table (II) gives the names of the licensees and the number of experiments performed by each. It is divided into two parts, which contain respectively experiments done without, and with, anaesthetics.

Number of Experiments. The total number of experiments in Table II (A) is 2,771. Of these there were performed:

Under Licence alone		••••	•···	•···	•••	1,505
Under Certificate C	•••	•••	••••	•••	•••	275
Under Certificate B	•••	• • •	•···	•••		782
Under Certificate B+EE	·	·				209

Table II (B) is devoted entirely to inoculations, hypodermic injections, and some few other procedures per-formed without anaesthetics. It includes 67,802 experiments, whereof there were performed:

Under Certificate A	•···	•••		•···	67	.521	
Under Certificate A+E	•••	••••	• • •	•••	•···	270	
Under Certificate A + F	•••		• • • •			11	

The total number of experiments was 70,573, being 16,680 fewer than in 1914; the number of experiments included in Table II (A) shows a decrease of 2,118; that in Table II (B) a decrease of 14,562. During the year 11,657 experiments were performed by fourteen licensees in the course of cancer investigations. Of these 281 are in Table II (A) and 11,376 in Table II (B); the latter are almost entirely inoculations into mice. Seventy licensees reported over 20,000 experiments for Government departments, county councils, municipalities, and other public health authorities. Twelve licensees reported nearly 25,000 experiments for the testing of antitoxic serums and vaccines and for the testing and standardizing of drugs.

Inspections.

During the year the several registered places were frequently visited, and a large number of experiments were witnessed by the inspectors. For the most part the visits were made without previous notice. The animals were found suitably lodged and well cared for, and the licensees generally attentive to the requirements of the Act and the conditions attached to their licences by the Secretary of State.

Irregularities.

The irregularities which came under notice were few End not serious.

End not serious.
Two licensees performed, in connexion with hospital work, three inoculation experiments on rodents, after the certificates which they held for such experiments had expired. They expressed their regret, and submitted fresh certificates. The Secretary of State caused a suitable admonition to be addressed to them, and their new certificates who held Certificate A for inoculations performed some experiments in which he exposed animals to certain gases which were to a misreading of his certificate, he was cautioned as to the importance of a careful adherence to the exact terms of the Act and of the licence and certificates granted thereunder.
A licensee performed two inoculation experiments at a military hospital which was not a registered place. It appears that this arcse from a misconception, it being thought that no official application was made. When this became known, the licensee had left on war duty. The place was then registered and a new licensee was authorized to performed see holding Certificates B + EE for experiments on dogs and cats performed there an IP4. A licensee holding Certificates B + EE for experiments on dogs and larger number of experiments left than was the case. He was admonished, and cautioned as to his future proceedings.

by the terms of those certificates. He explained that he had presumed that the experiments were covered by the certificates. He was told that no experiments can be performed under certificates except such as fall within their definition strictly construed. He expressed his deep regret at having exceeded his powers, and as the Secretary of State was satisfied that it was not a wilful contravention the licensee are consumed and the license was allowed to romain in oneration was censured, and the licence was allowed to remain in operation

IRELAND.

The inspector, Dr. Joseph O'Carroll, states that during the year an outhouse and laboratory at the Military Barracks, Tipperary, were added to the list of registered places. The number of persons holding licences at the end of 1915 was 27. Four new licences were issued, three lapsed, one licensee died, and one licence was revoked at the request of the licensee. The renewal of two licences was deferred. During the year 590 experiments were performed by 17 licensees, 66 being under licence alone and 524 under certificate; 488 were simple inoculations and 524 under certificate, 456 were simple inocitations under Certificate A. In 91 cases the object of the research was physiological, in 442 it was pathological, and 57 had a therapeutic aim. Three communications to learned societies—two physiological and one pathological—are recorded as based on the experiments of 1915. The inspector concludes by stating that he has every reason to believe that the helders of licenees chould the critician to believe that the holders of licences obeyed the spirit as well as the letter of the Act, and that experiments were not unnecessarily multiplied.

Medical Relvs.

DR. W. W. KEEN of Philadelphia has been invited to give the second Colver Lectures at the Brown University, Providence, Rhode Island. The university was founded 150 years ago, but the Colver Lecture is a new endowment. The first course was given by the president of Johns Hopkins University last winter, and Dr. Keen's course will be given next January.

THE Germans having now experienced the effect on their own soldiers of gas attacks have been devising gas masks and would appear to have resorted to a rather crude method of testing their efficiency. A correspondent of the New York Times with the German army on the Somme states that he was taken to the testing room at the central gas department through which every German soldier with a new gas mask must pass before being sent to the trenches. They are kept in this chamber half an hour, and if the officer who watches them through the window observes that they make frantic gestures this is considered to be prima facie evidence that the masks leak. It is claimed that the masks remain efficient for eight hours, but the whole story is not very clear, for the writer also states that enough masks are kept in store at one point for two army corps and rushed to the front whenever a big gas attack is reported.

is reported. THE Department of Health of the State of New Jersey some time ago began the publication of *Public Health News*, a periodical which is sent free to any person who applies to the director. The last issue, that for July, is an infantile paralysis number. It states that in New Jersey 47 cases were reported in 1911, 59 cases with 21 deaths in 1912, 87 cases with 20 deaths in 1913, 35 cases with 18 deaths in 1916, 20 cases were reported. The depart-ment has issued a circular to local boards of health in which it is pointed out that acute poliomyelitis is an in-fectious and communicable disease, and that healthy fectious and communicable disease, and that healthy persons who show no symptoms may harbour and transmit the infective organism to others. The virus, it is added, has been shown to exist in the nose, the mouth, the pharynx, and upper air passages and the intestine of infected persons, and in the dust of a room that has been occupied by an acute case. Evidence of the transmission of the disease by the bite of the *Stomoxys calcitrans* (stable quite probable that flies of various species do play a part in the spread of the disease by carrying infective material. The duration of the period of infectivity or contagiousness has not been definitely determined, but experiments on has not been definitely determined, but experiments on animals have shown that the virus sometimes persists in the nasal nuccous membrane for many weeks. It is stated that the mortality has been as high as 25 per cent. in some outbreaks, but that in others it has been from 13 to 16 per cent. The rate of permanent paralysis in those who re-cover is said to be 50 per cent. The average incubation period is stated to be about seven days, but it may vary from three to fourteen days.

I find that Professor Bayliss's only argument against me rests on the fact that I have used certain technical terms in a sense which does not meet with his approval. No argument has been brought forward to disprove my theories.-I am, etc.,

J. E. R. McDonagh. London, W., Aug. 18th.

*** This further letter from Mr. McDonagh is published in order that there may be no semblance of unfairness to him, but as the profession has now ample material for forming a judgement both on his theories and their outcome in drugs it is not proposed to continue this correspondence.

THE FASTING TREATMENT OF DIABETES.

THE FASTING TREATMENT OF DIADETES. SIR,—I accept Dr. Cammidge's explanation for not having referred to my paper with much less hesitation than his explanation of the "carbohydrate" content of turnips. He asserts that pectose is not turned into a sugar; this is not accepted by all. I hope to decide the question by making observations on patients who offer themselves for investigation. But even if it were assumed that for investigation. But even if it were assumed that pectose is not absorbed or transformed, it must be noted that Atwater and Bryant record 4.4 per cent. sugar in a specimen of turnips. A single observation showed me that boiled turnips may contain 2 per cent. of a substance which upon boiling with dilute acid turns into a body which may be fermented with yeast. My contention is that when the carbohydrate tolerance

is low, and whilst determining the tolerance, it is unwise to give foods the true carbohydrate content of which may vary from 0.75 per cent. to 4.4 per cent.-I am, etc.,

London, W., Aug. 23rd.

O. LEITON.

THE OBLIGATIONS AND CONSEQUENCES OF THE WAR TO MEDICAL AND ALLIED SCIENCES AND THE HONOUR AND INTERESTS OF THE MEDICAL PROFESSION.

SIR,-The letters in this week's issue of the JOURNAL have been most interesting, and I hope you will allow me space to comment upon them. In reply to "Adult," I would suggest there is no need for his recommendations, for the British Medical Association already possesses all the office room and the organization necessary for carrying out his suggestions without any additional whole-time officials and expenditure.

Dr. Hawthorne is absolutely right in saying that "medical practitioners require the provision of convenient facilities for post-graduation study." But, in industrial centres, medical organization is so defective that they would be unable to avail themselves of such facilities, even if they were provided. Again, I agree with him when he states "that the existence of clinical and laboratory educational oppor-tunities is a necessity of modern medical practice, and that any scheme for the future which neglects this need will be seriously or even fatally defective." How these things can be done in connexion with the State Insurance Medical Service is what I have been puzzling at for some consider-

Service is what I have been puzzling at for some consider-able time, and I wish Dr. Hawthorne and others would try and help to work out the problem. All my medical life I have taken an active part in political and municipal work, deriving from it great pleasure and satisfaction, and probably in consequence am better able to judge correctly upon matters affect-ing both the profession and the public. During most of these years I have been a member of a county borough council. With deep regret I affirm that never during the twenty-seven years of my medical life has the medical profession been in such bad odour with public authorities as it is at the present time. I honestly believe that the cause lies in such phrases as "the honour and interests of the medical profession," "freedom from un-necessary lay control," "inadequate remuneration," etc. A medical hierarchy would be just as hateful to a British community as was the Papal hierarchy of the Middle Ages. I shall never forget the howls of derision which once greeted my statement at a medical meeting that the

greeted my statement at a medical meeting that the medical profession only existed for the good of the com-munity. It is this inability to realize their raison d'étre which makes it so impossible for public authorities to deal with doctors.

The great after-the-war question which has to be

settled between the profession and the public is, " How is the most efficient medical service for the community to be provided?"

And, if we are to gain the confidence of the public, we must base all our schemes on the fact that we are primarily British subjects and only secondarily members of the medical profession.-I am, etc.,

Wigan, Aug. 26th. FERDINAND REES.

A FLAW IN THE RETAIL DISTRIBUTION OF MILK.

SIR,—Twice recently within a fortnight milk purperting to be "nursery milk" was left at my house in a dirty bottle. This was obvious from the fact that when the milk was poured out the bottom of the bottle was found to be crusted inside with dirty, dried milk. I may mention that the milk was furnished by one of the large London dairy companies. On a complaint being made to the manager of the local branch, the girl who brought the milk round confessed that she had given some one else the nursery milk intended for us, and had filled a dirty bottle collected from another house with milk from the churn and left it with us as nursery milk. When an allowance is made for the dislocation of labour consequent upon the war, it is disquieting to think that our infants are liable to be exposed to such grave risks as are incurred by the procedure above mentioned. It makes one shudder to think of the myriads of bacteria there may be in the bottom of a dirty, unwashed milk bottle which has stood in somebody's area or back garden, possibly for twelve or more hours, and as often as not in close proximity to a dustbin or water-closet, and then to think of a pint of milk being put into such a bottle and left at one's house as food for an infant. If such a condition of things obtains in a good residential district where the price of nursery milk is 6d. or even 7d. a quart, it is no wonder that our children's hospitals are flooded with cases of gastro enteritis from the poorer quarters, especially at this season of the year.

When I interviewed the secretary of the company with reference to my complaint he admitted that it was a serious matter, but that he could not easily prevent it, although instructions were given to men and girls who distributed the milk that they were on no account to fill dirty bottles with milk from the churns. He asked ma what I could suggest to prevent it.

In the first place, I would suggest that all persons concerned in the distribution of milk should receive elementary instruction in the potentialities for evil inherent in dirty milk, especially to infants and young children. Secondly, the filling of dirty bottles or cans collected from houses should be absolutely forbidden, and it should be impossible for anyone but an authorized person to have access to the cardboard discs with which the bottles are closed. Thirdly, bottles or cans with "nursery milk" should be filled only at the dairy and sealed with some sort of label to which again only an authorized servant of the company should have access. Fourthly, I would suggest that it should be made a punishable offence for any one to put milk, and especially milk intended for the food of infants, into a dirty bottle and that notices to that effect should be prominently displayed in every dairy.

Another point in this connexion is that the company in question, so the secretary informed me, was pasteurizing all the milk (general and nursery) it was supplying to customers. Apart from the absurdity of putting pasteurized milk into dirty bottles, the question arises whether it is right to describe such milk as fresh. Customers should be informed when milk is pasteurized, otherwise there is the possibility that it will be boiled again (as is always done in my own household) with the result that infants fed on this twice sterilized milk run the risk of developing scurvy.-I am, etc.

DAVID NABARRO. London, W., Aug. 27th.

Anibersities and Colleges.

SOCIETY OF APOTHECARIES OF LONDON. THE diploma of the society has been granted to Messrs. H. H. Bailey, C. P. Barber, I. H. Beattie, S. F. Cheesman, H. M. Hobson, L. A. B. Moore, E. O. Morrison, T. W. Robbins, J. M. Wall, and R. H. Yolland.