moderately contracted, and reacting very sluggishly, or not at all, to light, and the colour is good. The last point is one which presents a great contrast to the condition almost always prevailing when a closed apparatus is used—that of cyanosis.

As regards after-effects, post-anaesthetic sickness is lessened, and there is assuredly less shock than when chloroform is used. In the course of my administrations by this method I have only had one really bad case.

The patient was a boy aged 16, with advanced tuberculosis of the knee-joint; excision of the knee was performed, and the operation lasted an hour and a half. Anaesthesia was induced and maintained throughout with ether by the drop method. For forty-five minutes the patient's condition was good, and presented the ordinary signs of ether administered in this way, but at the end of that time it changed, the breathing becoming shallow and the patient pale and cold. The pulse, however, remained fairly good. The anaesthetic was withdrawn for fifteen minutes without any sign of consciousness returning, but he then developed a clonic condition of the muscles of the leg, and the operator desired more anaesthetic given. This was done, but as he soon showed signs of extreme collapse, it was withdrawn entirely and finally twenty minutes before the operation was finished. Half an hour after being returned to bed there was no improvement in his condition, and the ward sister remarked that he seemed to be very deeply under the anaesthetic. An hour after the termination of the operation the resident medical officer ordered a brandy-and-coffee enema, but it was not retained. However, after sleeping for three hours, he gradually came round, and ultimately made a complete recovery.

In contrast to this, I have had many cases where prolonged operations, involving considerable shock, have been extremely well borne.

A man of 46, suffering from carcinoma of the stomach, bore an extensive operation very well, although the ultimate result was unfavourable. In this case about three-fourths of the stomach was removed, together with a part of the duodenum, the hepatic flexure, transverse colon, and splenic flexure. The operation lasted two hours and twenty-five minutes, and the patient left the table with a pulse of 84. He did well for four days, but on the fifth day he developed symptoms of pneumonia and died within twenty-four hours.

Another case was one of prostatectomy in a man of 71. This patient was in very bad condition, as he was slightly under the influence of morphine and was suffering from toxæmia. The breath had a urinous odour. The operation lasted one hour, but he stood it well and made a complete recovery.

The longest administration—three hours—was for the removal of gall stones. The operation was well borne, and the patient made a perfect recovery.

One case, where death was possibly attributable to the anaesthetic, falls to be recorded. This was a case of goitre in a girl of 19. Anaesthesia was induced with the C.E. mixture and maintained with ether. The whole administration lasted seventy minutes, and there was no cause for any anxiety throughout. However, on the evening of the operation the temperature shot up, physical signs of pneumonia developed, and she died on the fourth day after the operation.

In summing up I may say I do not claim that this method of administering ether is perfect. It has, like other anaesthetics and methods of administering them, advantages and disadvantages, but the former in my opinion far outweigh the latter.

The only disadvantages I have experienced are (1) the difficulty in inducing anaesthesia in strong or alcoholic men in a reasonable time with ether alone, (2) the quantity of ether used, which is undoubtedly greater than when a closed apparatus is used.

The advantages are numerous (1) it is cleanly in the surgical sense. The mask can be boiled and sterilized gauze used. Contrast this with ether administered with a closed apparatus, where the patient rebreathes his own expired vitiated air from an apparatus which cannot be sterilized and is in fact with difficulty kept clean. (2) The cyanosis, violent respiratory movements, excessive secretion of mucus with the consequent gurgling, frothing, coughing, etc., are greatly diminished and in many cases entirely abolished. (3) There is less shock than when chloroform is used. (4) Many of the unpleasant after-effects commonly associated with ether administered from a closed apparatus, are done away with.

REMARKS BY MR. J. LYNN THOMAS.

The first time I saw the method used was at the hospital of the brothers Mayo, of Rochester, Minnesota; subsequently I saw it employed in Dr. Ochner's practice. Having seen the method used over a hundred times, I was favourably impressed with it, and it has been

adopted almost entirely in my practice during the last twelve months. Its advantages over giving ether in Clover's inhaler are:

1. There is less capillary haemorrhage during operations.

2. There is less sickness after operations.

3. The surgeon is not bothered with the bag, which may or may not be sterile, when operating about the chest, neck, face, or head.

4. The whole mask is easily sterilized.

5. There is much less anxiety to the surgeon when it is given by an anaesthetist of little experience.

In one of the cases referred to by Mr. Brownlee the operation lasted two and a half hours. After removing three-fourths of the stomach and a large portion of the duodenum, together with the whole of the transverse colon with its mesentery and glands, I had to occlude the ends of the duodenum, of the ascending colon, and the descending colon, and had to perform a gastro-jejunostomy under difficulties, because the stump of the stomach would not be brought out to the surface. I had also to perform an ileo-sigmoidostomy, and although the operation was very extensive the shock could not have been less. The patient recovered and was quite cheerful within six hours.

So far I have seen no case in which there has been any anxiety from the administration of the anaesthetic, either during the operation or subsequently. I consider it a method well worth trying, as it is simple and clean, but a little more expensive on account of the larger quantity of ether used.

MALIGNANT ENDOCARDITIS LASTING OVER SIX MONTHS WITHOUT BRUIT.

By ROBERT CAPES, M.R.C.S.ENG., L.R.C.P.LOND.,

DENMARK HILL.

THE interesting point in the following case is that, although the illness and the pyrexia lasted seven months, at no time was a bruit ever heard, though the patient was seen by five medical men, all of whom were looking out for signs of heart disease. The rapid wasting at the end, with the enlargement of the liver and spleen, and loss of consciousness, made the theory of growth seem likely, though the continued rise of temperature for so many months was against it.

Hence although the petechiae, the pyrexia, and the slightly increased heart-rate all pointed to a possible fungating endocarditis, a positive diagnosis was not arrived at. Even towards the end, as the liver became quite as much enlarged in proportion as the spleen, the diagnosis still remained doubtful. Cases not infrequently occur in which for a long time there is no bruit, or only a very doubtful one; but it is very exceptional for a case of such prolonged duration to remain without a bruit throughout.

History.

J. M., a male, aged 64, was first seen on February 26th, 1906. He gave the following history: Had been confined to bed for ten days or a fortnight with influenza, followed by pain and swelling of the calf of the left leg, and subsequently by a similar condition, though not so severe, in the right leg. His condition corresponded with the history; his temperature was normal in the mornings, but occasionally in the evenings reached 99.4° F. or 99.8° F.; the heart sounds were normal and the breath sounds also, with the exception of slight crepitation at the base of the left lung. He was kept in bed until the condition of the legs had cleared up, when he was allowed to get about with an elastic stocking on each leg; and afterwards he went to Hastings for change of air.

On his return from Hastings, on March 20th, he said he was not feeling much better, his chief complaint being that he easily got tired. His temperature was usually over 99° F. in the evening, more especially after exertion, but was normal in the morning.

On April 11th he went to Matlock, and from there to Liverpool, and back to town about April 25th. He still said he did not feel any better, but resumed business.

On May 3rd I found he was still going up to business, but always returned home tired out, and with the evening rise of temperature.

On May 10th he was seen by Dr. Goodhart, who reported no physical signs of disease, condition of organs normal, and advised a further period of rest to be followed by change of air. Dr. Goodhart in a subsequent letter wrote: "I remember

examining the heart carefully, because his illness had commenced with thrombosis of a vein in the leg."

On May 12th he felt ill when out walking, came home, and went to bed. I saw him in the course of the day; his temperature was 102.6° F., but there was nothing fresh in his condition. Next day his temperature was normal, and there is no record of its having been above 99° during the next two months. The pulse-rate was 72. At first there was no albumen in the urine, but later a third, and this was reduced to a mere trace after a time.

On June 11th he went to Margate, having been in bed practically from May 12th to June 9th. I wrote to Dr. Sutcliffe:

"I think there is no doubt his heart was considerably affected by the influenza, but did not show any physical signs; his temperature has been very irregular ever since, and made me suspicious of endocarditis, but I could never get any evidence of it. I could find nothing in his rectum, and his expectoration gave a negative result. There is a minute trace of albumen, but nothing else abnormal in his urine. There is no doubt he stands exertion very badly."

On August 15th I went to Margate to see him. He had picked up a little at first, and then seemed to lose ground, and was then complaining of great weakness and inability to sleep. The physical signs were much the same, but he had oedema of both legs and a petechial rash over the greater part of his body, the petechiae being about $\frac{1}{8}$ in. in diameter. There was no marked wasting.

On August 18th he was moved into a nursing home at Brixton. From this date until September 22nd, when he died, he gradually failed, the chief points being high evening temperature with morning remissions, sometimes below normal, pulse between 80 and 90, rarely over 100, very profuse perspirations, gradual loss of flesh and strength.

On August 24th the sputum again examined, with a negative result.

On August 28th Dr. Newton Pitt saw the patient with me; he pointed out that both liver and spleen were much enlarged, and this became much more apparent as the patient got thinner. The heart sounds were normal; there were still a few small petechiae on the skin. Throughout his illness his temperature was frequently raised with slight exertion.

On September 3rd, blood examination showed:

Number of red blood discs	=	4,200,000 per c.mm.
Number of white cells	=	13,000 per c.mm.
Amount of haemoglobin	=	78 per cent. of normal
Differential count of whites:		
Small lymphocytes	=	30 0 } 31.0
Large lymphocytes	=	1.0 }
Polymorphonuclears	=	66.7
Eosinophiles	=	1.8
Mast cells	=	0.5

No myelocytes nor nucleated red discs were seen. Polkilocytosis was absent.

On September 10th emaciation was very marked and much more rapid; the urine dark owing to blood; bile was absent.

On September 18th the liver and spleen had increased in size, there was some ascites, and fresh crops of petechiae had appeared. There was incontinence of urine, and still a trace of albumen in it.

On September 19th the patient was unconscious, and apparently paralyzed in both arms and legs; the patellar reflex was absent, the superficial plantar reflex present; the pupils were equal and reacted to light.

On September 21st the pulse was 116 and the temperature in the rectum in the evening 99°. The patient was apparently dying. At 10 p.m. the rectal temperature was 103°, and the same at midnight; at 2 a.m. the rectal temperature was 102°. The patient died at 4.20 a.m., the rectal temperature being 103° immediately after death and 102° one hour after death.

Necropsy.

The *post-mortem* examination, kindly made by Dr. Newton Pitt, revealed fungating endocarditis. There were three small, flattened patches of vegetations on the inner margin of the mitral valve, firm to the touch, and not friable. Their surfaces were fairly smooth and uniform. Their uniform, flat surfaces allowed the valves to come together, so that they were not incompetent. The masses quite lacked the usual verrucous

appearance so often present in such cases, and which invariably interfere with the competence of the valves. The firm, flat, smooth, non-friable character of the vegetations indicate why there were no physical signs of valve lesion. There were three small haemorrhages in the cerebral cortex, two on the right side—namely, one in the temporo-sphenoidal lobe and one in the fissure of Rolando; one on the left side in the second frontal lobe. There were infarcts in the spleen and kidneys, and the liver was enlarged. The lungs were engorged.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL.

THE OPHTHALMO-REACTION OF CALMETTE.

I WOULD like to point out that the reaction is sometimes *bilateral*. Out of a series of 40 cases in which I have so far tried it a well-marked reaction occurred in both eyes with two patients. In both instances one drop only of a 1 per cent. solution of Calmette's serum was used. The first case was one of early pulmonary tuberculosis, with tubercle bacilli in the sputum. Six hours after the drop had been put into the right eye a well-marked reaction was seen; and twenty-four hours later a very distinct reaction was visible also in the opposite eye, and this did not pass off until four days later.

The second case was one of chronic discharge from both nostrils of three years' duration in a boy aged 14. In this instance also the reaction in the left eye was not evident until about forty-eight hours after the drop had been put into the right eye, which latter gave a very marked positive reaction.

I am not prepared with any explanation of this bilateral effect, though in the case of the boy with the nasal discharge an anatomical explanation would obviously not be far to seek.

Norwich, Dec. 16th.

SYDNEY H. LONG, M.D.

DEATH FROM A SINGLE PELLET WOUND.

THE following case, in which a gamekeeper died shortly after being found behind a tree unconscious and bleeding profusely from the mouth and nose, presents points of interest. As inspection showed nothing but a black eye and a very small abrasion on the upper eyelid, explicable on the supposition that he had fallen against the tree, it at first seemed to me possible that the bleeding was due to rupture of an aneurysm, for the haemorrhage, observed while still in progress, seemed arterial in character.

On *post-mortem* examination nothing but what has been noted was discovered externally, but on everting the eyelid an ecchymosed patch was found under the conjunctiva to the nasal side of the eyeball. On opening the skull an effusion of blood was found both external to the dura mater and between it and the brain, the amount being greater on the under surface of the brain on the left side and over the pons and cerebellum. A small puncture was found in the dura mater, and a probe passed through it penetrated through the sphenoid for $1\frac{1}{2}$ in. in a direct line with the abrasion on the external surface of the eyeball. The supraorbital plate was then removed, and the adipose tissue internal to the eyeball found to be ecchymosed, the main contents of the orbit being uninjured. On further dissection the orbital plate of the ethmoid was found to be splintered, and a probe inserted through the internal puncture readily reached this point. Following the track backwards I found it to pass through the left cavernous sinus and the internal carotid artery. On