Clinical History.—On October 24th, 1904, was visited at Somerset by Surgeon of Terror. Temperature was 104° ; diarrhoea; lumbar pains; intense headache; had been feeling ill for ten days; tongue furred; no abdominal physical signs; heart and lungs normal; pulse, 100; respirations, 18. Removed to Royal Naval Hospital. Widal's reaction, positive (dilution, 1 in 80). Bowels opened twice; evening temperature, 103.2° . October 25th. Evening temperature, 103.6° ; bowels opened three times (liquid, light). October 26th. Bowels opened twice (loose, light yellow). October 27th. Bowels opened three times (liquid, dark). October 28th. Rose spots on abdomen. October 29th. Fresh rose spots; bowels opened four times (liquid, light); evening temperature, 103.2° . October 30th. Bowels opened once; evening temperature, 103.2° . October 31st. Bowels opened three times (light); evening temperature, 103.8° . November 1st. Two pea-soup stools. November 2nd. Two pea-soup stools; some abdominal distension. Noticed that most of the flies in the ward were collected round patient's bed. November 3rd. Three pea-soup stools. November 4th. Four pea-soup stools. November 5th. Twelve noon, slight haemorrhage per rectum; 4 p.m., slight haemorrhage per rectum; 6 p.m., severe haemorrhage per rectum, about two pints; pulse very bad; 9.30 p.m., haemorrhage continued; 11.45 p.m., more haemorrhage; patient semi-conscious; pulse hardly perceptible. November 6th. 12.30 a.m., haemorrhage continued; 1.15 a.m., pulse sinking; died at 2 a.m.

Post-mortem Examination (10 a.m.)—Patient very thin. Rigor mortis well marked. Heart, lungs, kidney, and liver normal. Spleen $2\frac{1}{2}$ oz., soft and friable. Abdomen: No peritonitis; colon and ileum distended with blood. On slitting up bowel innumerable typhoid ulcers were found in ileum and large intestine. Peyer's patches much inflamed. Large mass of typhoid ulcers at ileo-caecal valve, probably the main source of haemorrhage, but ulceration very deep in many of the ulcers of ileum. Ulcers in colon very numerous, but smaller and more superficial; extended into rectum. Appendix not inflamed, 4 in. long. Spleen removed and cultures made with same precautions as in last case on Drigalski and Conradi's medium, MacConkey's medium, and lactose agar. Growth occurred on all three. By plate cultures on Conradi and Drigalski's medium bacillus typhosus (Strain G) was isolated.

Strain E was obtained from the spleen of J. L., aged 26, Petty Officer 1st Class, H.M.S. *Rocket*, who had been living in Bermuda for several months:

Clinical History.—Went sick August 24th, 1902, with headache, vertigo, and general malaise. Had felt ill four days; temperature, 103° ; abdominal tenderness. August 25th. Sent to Royal Naval Hospital, Bermuda. Severe diarrhoea after purge given day before; evening temperature, 103° . August 26th. Morning temperature, 103.6° ; headache better; bowels opened once; stool like curdled milk. Tongue dry and caked. No rose spots. August 27th. Morning temperature, 101.2° ; severe headache and pain in abdomen. Transverse and descending colon dull, ascending tympanitic. Enema brought away large stool. Tongue dry and brown in centre. Evening temperature, 101.6° . August 28th. Morning temperature, 101° ; patient unconscious; low muttering delirium. Urine passed twice involuntarily. Picking at bedclothes. 8.30 p.m.: Temperature, 103° in axilla; patient rapidly sank; pulse uncountable; rapid breathing; profuse sweating; incontinence of urine. 12 midnight: Temperature, 104° in axilla. August 29th, 9 a.m., died.

Post-mortem Examination (10.30 a.m., August 29th).—Heart large, firm, with dark soft clot in pulmonary artery; 2 oz. of serous fluid in pericardium; lungs congested at both bases; liver nutmeg; spleen not enlarged; considerable erosion of mucous membrane of greater curvature of stomach with punctate haemorrhages. Bowel: In ileum patches of acute congestion with punctiform haemorrhages; in caecum, and extending a little way into colon, acute congestion with one ulcer $\frac{3}{4}$ in. long. Several whitish sloughs were found on surface of mucous membrane which could be picked off and left tiny punched-out cavities. Near caecum mesentery showed marked redness. Spleen was seared and punctured with a sterile needle and a streak culture made on agar. After twenty-four hours a grey growth was visible which was the original source, after various platings and subcultures, of bacillus typhosus, Strain E.

This Strain E had been in use for two years as the stock laboratory culture of bacillus typhosus, and was used for Widal reactions. No case presenting well-defined clinical symptoms of typhoid tested by this strain between August, 1902, and August, 1904, failed to give a reaction at one or other period of the disease.

The notes of this last fatal case are taken from the hospital records; the case was Staff-Surgeon Phillip's.

Reference to the attached tabular statement of tests shows that each strain of organism tested (except the bacillus coli) exhibited identical characteristics, and in no single test did Strains E, F, and G show any different reaction whatever to that shown by B, C, and D,

all of which latter strains were true Eberth's bacilli used as controls.

We therefore consider it justifiable to state definitely that Strains E, F, and G are all three specimens of Eberth's bacillus; and, seeing that they were isolated from fatal cases of fever contracted in Bermuda, and having the clinical and *post-mortem* macroscopic appearances of typhoid fever, it is necessary to conclude that this disease exists in the island.

THE CORNEAL REFLEX IN ANAESTHESIA.

By L. KIRKBY THOMAS, M.R.C.S., L.R.C.P.LOND.,
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FROM a practical point of view it is of the utmost importance for the administrator to be able to judge how far he can "push" the anaesthetic for the proper performance of the operation in hand.

In the BRITISH MEDICAL JOURNAL of February 4th, 1905, Mr. H. Bellamy Gardner dogmatically lays down his two principles for safety in the administration of anaesthetics. These are: (1) Keep the airway clear; (2) never completely abolish the corneal reflex.

I quite agree with Mr. Gardner as to (1), and do not consider its importance can ever be over-estimated; and I cannot help thinking that if it were kept more prominently in view we should have fewer anaesthetic deaths to deplore.

Mr. Gardner's second principle, however, cannot in my experience be accepted unconditionally. After giving between one and two thousand anaesthetics for gynaecological operations with an average anaesthesia of forty-five minutes, and including some six hundred abdominal sections, I am convinced that while there is any trace of corneal reflex the general anaesthesia is not deep enough to prevent some straining should an extra nervous influence come into play; as, for instance, when the ovaries or uterus are pulled upon during the course of the operation. This straining may not only hamper the surgeon, but may lead to serious after-results, such as the slipping of the ligature of an ovarian stump, which, owing to the straining, could not perhaps be drawn tightly enough.

I therefore find it necessary to push the anaesthetic in these cases till secondary dilatation of the pupil begins, in order to get the complete relaxation required, and, if the breathing and pulse-rate remain good, I see no objection to so doing. After all, the fact of the existence of the corneal and conjunctival reflexes simply indicates that certain muscles still react to stimuli, and it appears to me not illogical to suppose that other muscles may be stimulated by suitable means while these remain active. Furthermore, my experience leads me to conclude:

1. That there is, *caeteris paribus*, a much greater interval of safety between the loss of the corneal reflex and the failure of respiration and heart than is generally admitted.

2. That the reaction to corneal stimulation varies enormously in individuals.

In conclusion, then, I believe that the corneal reflex cannot be depended upon as a guide in the administration of anaesthetics in cases requiring complete muscular relaxation, especially in abdominal and haemorrhoidal operations, in which, I think, moderate secondary dilatation of the pupil, while keeping a careful watch on the respiration and pulse, is the best guide to complete success.

A TESTIMONIAL, accompanied by a silver salver, was presented recently to Dr. Deas, of Thorndale, Merton Park, as a token of the high appreciation the members of the Wimbledon and District Medical Society had for his kindly services as honorary secretary from its birth and during its early infancy. The presentation was made by the President, who referred to the great pleasure the members experienced in welcoming Dr. Deas back after his severe attack of scarlet fever, and spoke in highly eulogistic terms of the services he had rendered to the Society. Dr. Deas, in reply, said that he had had already three surprises this year—the first when he found that he had scarlet fever; the second that so many of his professional brethren offered their services to him and visited him at the Isolation Hospital, Mitcham; while that the members should have presented him with this testimonial for the slight services he had rendered to the Society was the greatest surprise of all. The presentation was followed by a smoking concert, in which Messrs. Bishop, Clapham, Hill, Hemingway, Robertson, and Spurgin took part.