who was clearly peeling after an undiscovered attack of scarlatina; the child had apparently been in the best of health, and, as far as was known, had not been in contact for at least six or eight weeks with any but her fellow school children. As I anticipated from an exactly similar experience on a former occasion, this case was soon followed by others, and the outbreak continued till June, 1903, before it was stamped out.

Before dealing with statistics, I will note the following particulars relating to examination and isolation.

On the discovery of the first case, all the children were examined by myself, and subsequently, twice daily, by the matron and two nurses, who had all had considerable experience of scarlatina, for the slightest evidence of any rash, sore throat, or peeling; cases of the least suspicion were detained for my inspection. All cases of sore throat were specially isolated, however slight. Undoubted cases were immediately sent to the District Fever Hospital till it was unable to take any more. The remainder were nursed in the institution infirmary, an isolated building in the school grounds. The Committee engaged a large empty building outside the town, and to this house all the convalescent cases were drafted till the peeling stage was accomplished.

All the children who were peeling had a daily hot bath with carbolic soap, and were subsequently rubbed with carbolic oil; some of the more obstinate cases of feet peeling were subjected to the more heroic measures of strong soda water and pumice stone. The usual precautions were taken on sending the children back to school.

The total number of cases was 96; this number includes 3 children who had two distinct attacks.

E. S., October 13th to April 17th, rash etc.; June 12th to October 4th, peeling.

A. W., December 15th to February 19th, rash, etc.; May 29th to October 3rd, peeling.

N. M., October 15th to December 15th, rash, etc.; June 11th to October 3rd, peeling.

One boy sent to the District Fever Hospital with rash and other typical symptoms on May 27th developed another attack with rash, sore throat, and temperature of 104° F., while he was still in hospital on August 7th—that is, seventy-two days after admission; this boy did not return to school for eighteen weeks.

The cases may be divided into three classes:

Class I (31 cases).—Typical cases, with rash, sore throat, and elevation of temperature, usually not more than one or two degrees.

Class II (19 cases).—Children who had no observable rash, but only slight redness of tonsils and from one to two degrees of fever, with characteristic peeling beginning during the second or third weeks. These were all isolated on suspicion.

Class III (46 cases).—Children who simply peeled, and although specially examined daily, showed no signs of the slightest indisposition.

With reference to the cases under Class I, I may add that they were all fairly typical, though most of them were not at any time really ill. Nearly all of these were sent to the District Fever Hospital and mixed with scarlatina cases from other sources, as well as a large proportion of cases from Classes II and III; none of them contracted a fresh attack after admission, except the boy mentioned above. This fact may be taken to prove that all the cases were bona-fide cases of scarlatina. My diagnosis was also in all cases confirmed by Dr. Lorimer Sawers, the acting medical officer to the Fever Hospital.

One remarkable feature of the epidemic was the unusual length of time occupied by the process of desquamation. It will be seen from the subjoined table that the mildness or absence of symptoms was not necessarily followed by a shorter period of peeling, but if anything the process of desquamation was prolonged in the cases which showed no initial symptoms of illness.

For precautionary purposes, I considered cases were unfit to return to school in which there was any appearance of ragged skin about the hands and feet, but I did not regard a fixed patch of hard skin on the sole of the foot as technical "peeling," and therefore infectious, after eight or nine weeks from the beginning of the disease. Doubtless, infection had ceased in many instances before I felt justified in permitting them to return to school.

It is not improbable that some of the cases of prolonged peeling were due to reinfection without general symptoms.

In a few instances the children discharged from the District Fever Hospital with desquamation apparently quite accom-

plished, started peeling again a few days after admission to the convalescent house to which I sent all children previous to allowing them to return to school.

Duration of the Disease till the End of Desquamation.

*Weeks ...	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Class I, cases ..	—	1	—	7	7	2	1	—	1	1	3	1	4	—	—	—	1	1	1	—	—	—
Class II, cases	—	6	3	3	2	1	1	—	—	2	—	1	—	—	—	—	—	—	—	—	—	—
Class III, cases	—	3	4	4	2	10	2	2	1	2	2	9	—	3	1	1	—	—	—	—	—	—

* Portions of weeks omitted.

Although a large staff of teachers and servants were exposed to infection no adult contracted the disease. There was no case of serious illness except one boy who developed an attack of acute tuberculous pneumonia (Osler), and died after his return home, about four months after he contracted scarlatina. There was one case of suppurative adenitis.

The main school buildings were fumigated by the local sanitary authorities and by the school staff two or three times during the outbreak, but as the exposed surfaces of the school rooms, dormitories, corridors, etc., amounted to several acres of wall, floor, and ceiling, it was not possible to be certain that every corner of the building was efficiently disinfected.

My own view, however, was that the children themselves were chiefly instrumental in passing the disease from one to another before they showed any symptoms which justified their isolation.

The total extra cost to the institution of house hire, nursing, and disinfection was approximately £950.

This sum does not include the cost of feeding the children, the cost of maintenance at the Fever Hospital, or the provision of a new supply of school books, etc., to replace the whole outfit which the Committee ordered to be burnt.

It is unnecessary to comment on the appalling cost to a public institution of such an epidemic, but in the present state of public and professional opinion, it is not possible to relax any of the usual precautions; the well-known fact that scarlatina varies so much in virulence in different epidemics makes it compulsory to treat the disease with respect. In conclusion, I would suggest that from a financial point of view, it is most desirable that an attempt should be made to come to some definite conclusion as to the duration of the period of infectivity in scarlatina.

Dr. Klein and Dr. Mervyn Gordon have been making investigations on the bacteriology of scarlatina, and have, I believe, come to the conclusion that the micrococcus scarlatinae is the active agent in this disease, that it can easily be found in the throat secretions, and is rarely to be found in the nose, in the ear discharges or in the cuticle. If these observations are correct, the time is approaching when it may be possible to materially limit the detention of scarlatinal cases in quarantine, and the present rule-of-thumb method of detaining patients till desquamation and ear discharges have ceased may be superseded by the more precise and scientific proceeding which now obtains in diphtheria. The saving in time and money to the community if it is possible to shorten the time of isolation and limit the number of return cases will be enormous.

Health authorities might also take into consideration the possibility of economizing public funds by providing, on the sites of fever hospitals, an annexe for convalescent desquamating patients, which need not be constructed on such expensive lines as is necessary for the treatment of the disease in its acuter stages.

THE SURGICAL TREATMENT OF ABDOMINAL ANEURYSM.

By R. CHAS. B. MAUNSELL, M.B. UNIV. DUB., F.R.C.S.I.,
Surgeon, Mercer's Hospital; University Examiner in Surgery,
University of Dublin, etc.

In discussing the subject of abdominal aneurysm I will not refer specially to aneurysm of the iliac arteries, as I think that ligature or possibly Matas's operation, referred to later on, would be the only methods of operative treatment considered at the present day. With regard to aneurysm of the other smaller abdominal vessels, ligature or excision appears to be indicated if a surgeon should meet with one of these rarities. Henry Morris states that there are only 21 cases of

aneurysm of the renal arteries on record. Caton² could only find 11 cases of aneurysm of the hepatic artery; whilst aneurysm of the splenic and mesenteric arteries are merely pathological curiosities.

Aneurysms of the abdominal aorta are not common; they form but 5 to 10 per cent. of all aortic aneurysms; men are about seven times more subject to them than women; they occur most frequently between the ages of 25 and 50, chiefly, if not altogether, in those who have suffered from syphilis some years previously.

With regard to the syphilitic origin of non-traumatic aneurysms in general, Etienne³ states that in 376 cases collected by him 70 per cent. had syphilis. Heller⁴ strongly upholds the view that the disease begins as a syphilitic process in the tunica media.

Within the last few years I have seen 6 cases of abdominal aneurysm, five men and one woman; the ages varied from 24 to 37 years; four of the men stated positively that they had suffered from syphilis; one man, the case related in this paper, had a chancre and a bubo eight years previously; the woman had a history of miscarriages and dead-born children which pointed strongly to syphilitic infection, also the necropsy showed extensive arterial disease.⁵

It is generally estimated that at least 50 per cent. of abdominal aneurysms arise from the aorta above the superior mesenteric artery, the origin of the coeliac axis being the part usually most involved; about half these tend to grow at the expense of the anterior wall of the aorta, the remainder growing backwards, eroding the vertebrae or ribs. The aneurysm may be fusiform, sacculated, or dissecting, or may present a combination of these primary forms.

It is important to remember that general arterial disease frequently coexists, and that in many cases intrathoracic aneurysm may be present. It is beyond the scope of this communication to enter into a discussion on symptoms and diagnosis, but I would point out the frequency of stomach symptoms, emaciation, obstinate constipation and pains referred to the shoulder or back, which often lead to an erroneous diagnosis, and to the fact, pointed out by Foot,⁶ that in women the symptoms may be few and the disease entirely overlooked.

Spontaneous cures are not unknown and from time to time consolidated aneurysms are found in persons dying from some other complaint, but the ordinary termination of the disease is death from internal or external haemorrhage, within a period varying from a few months to three years subsequent to coming under observation.

The treatment of Bellingham⁷ and Tufnell⁸ by absolute rest and starvation, etc., is now rarely used in its original form as patients resent it, cure by it is extremely doubtful and its scientific accuracy is impugned by many, it is however frequently used in a modified form in connexion with any of the more modern methods. The administration of large and increasing doses of potassium iodide appears to be both scientifically correct and to have done good in many cases. Calcium chloride is undoubtedly establishing itself in the favour of surgeons, but the gelatine treatment of Lancereaux and Paulesco⁹ is hardly yet worth serious consideration although further use may lead us to acquiesce to its great French reputation.

Of the more distinctly surgical procedures we need merely mention the "needling" of Macewen, or the galvanopuncture of Velpeau, as they are both uncertain, but if ever had recourse to, the only safe method of using them would be after laparotomy and exclusion of the aneurysm.

In 1864 Charles H. Moore,¹⁰ of the Middlesex Hospital, passed a fine trocar and cannula into a large aneurysm of the ascending aorta, which was protruding in the second and third intercostal spaces, and introduced twenty-six yards of fine iron wire through the cannula, pushing the end home by means of a blunt trocar. The patient seemed much relieved, but died on the fifth day from acute sepsis. *Post mortem*, the aneurysm was found full of solid clot firmly engaged in the coils of wire.

Loreta in 1885¹¹ was the first to apply this method to an abdominal aneurysm. He performed laparotomy, and through a cannula passed 6 ft. of fine silvered copper wire into the sac, which was very large. The patient left hospital in ten weeks with the aneurysm reduced to a hard non-pulsating mass the size of a walnut, but died three weeks later from rupture of the aorta below the aneurysm.

G. L. Hunner¹² has collected all the published cases of this operation, both thoracic and abdominal, up to 1900. There were 14 operations, with 3 cures and 11 deaths; in 9 of the 11

fatal cases a necropsy was obtained, and all showed that the presence of the wire had induced firm clotting.

In a search through surgical literature I have been able to find eight cases of abdominal aneurysm treated by Moore's method, with three cures of the aneurysm.¹³ The operators were Loreta, Morse, Pringle and Morris, Lange, Stevenson, Langton, Parnham, and D'Arcy Power. The cases which did best were those in which from 5 ft. to 6 ft. of wire were used, and Moore himself considered that he had used too much wire in his thoracic case.

In 1879 Corradi¹⁴ modified Moore's method in a case of aneurysm of the ascending aorta, by passing 17 in. of annealed wire through a cannula, passing a current from a galvanic battery of 16 cells for 25 minutes, the anode being attached to the wire which was subsequently pushed under the skin. The patient improved, but died thirteen weeks later. No necropsy was obtained. G. L. Hunner¹⁵ has collected 23 cases of thoracic and abdominal aneurysms treated by this method with 4 cures, 1 considerably benefited and life prolonged, and 10 in which death was probably hastened.

I have been able to find 7 cases of abdominal aneurysm treated by the Moore-Corradi method, which I think represents all cases published up to the present date. The operators were Stewart, Noble, Halsted, Finney, Reeve, Finney, and Matas, which, with the present case, brings the total to 8.

In this list we can only claim one cure, which compares badly with Moore's method, but the cases are too few for definite conclusions, and careful study of all cases, both thoracic and abdominal, besides experimental data and scientific reasoning, lead steadily to the opinion that Corradi's modification is the better operation. D. D. Stewart,¹⁶ who has written a most valuable article on this subject, thinks highly of the method. He considers that the wire should be fine drawn, so that it will tend to coil spirally, and should be made of silver, gold, or platinum, not of steel or hard iron, as it may snap or perforate the sac; not of soft iron, as it will be decomposed by the electric current, leading to embolism. In his opinion too much wire is used by most operators. In a sac of 3 in. diameter 3 ft. to 5 ft. of wire is sufficient, and for a very large sac 8 ft. to 10 ft. He recommends that the anode should be connected to the wire, and the cathode connected to a clay plate applied to the patient's back or abdomen, a current of 40 milliampères to 80 milliampères being passed for forty-five minutes to an hour and a half.

Rudolph Matas¹⁷ is very despondent; he says that, if thorough clotting were to take place in the coeliac region, the blood supply would be cut off from the abdominal viscera; that there is a danger of throwing extra strain on weak spots in the sac; the sac may be perforated by the wire, or the wire may travel up the aorta to the heart. Gangrene may follow clotting; rupture of the sac may follow diminished pressure when the abdomen is opened, etc.

He thinks that the operation should only be performed when the patient is young; when the sac is small and thick walled, arising below the superior mesenteric, or, if above this, when on the side or posterior aspect of the aorta. G. L. Hunner¹⁸ is more enthusiastic and hopeful; he advocates using 10 to 20 ft. of fine-drawn wire, 75 parts copper to 1,000 silver, passed through a cannula insulated by French lacquer. He says that on no account should both poles be connected with the sac, nor should the cathode be connected with the wire, as gas would be evolved with the formation of soft clot, and not firm clot such as is formed around the anode. He says that clot is formed better on silver than on steel, as it presents less resistance, and also is more corroded by the current. Twenty to 100 milliampère currents were used by him in experiments upon dogs, the clotting being as good with the smaller current, whilst the stronger current distinctly injured the aortic wall, where the wire came in contact with it; therefore he advocates comparatively weak currents. The reasons given by him in favour of the copper and silver alloy are that it is finer and coils better than silver; it coils closer and is more easily corroded than steel, thus affording a good clotting surface.

I will now briefly relate the history of my case, and describe the technique of the operation as carried out on it.

W. B., male, aged 28, storeman, stated that eight years ago he was treated for a chancre and bubo, but he does not appear to have been treated for syphilis.

History.—About a year ago he began to suffer from cramp-like pain in the region of the stomach and shooting pains in his back; he sometimes found difficulty in swallowing, and pain and vomiting occurred after meals. During the past six months he had wasted considerably.

State on Admission.—He was sent to hospital as a case of gastritis or gastric ulcer, but my colleague Dr. Lumsden, under whom he was admitted, found upon examination that there was a distinct pulsating tumour in the left epigastric region. Upon closer examination this tumour appeared to be about the size of an orange, was firm, and pulsated in an expansile manner; it descended slightly upon inspiration, and then appeared to be connected with a larger mass which descended from beneath the left costal margin. The apex beat of the heart was situated outside the nipple line in the fourth intercostal space, but there was a diffused pulsation all over the lower part of the left chest. The second sound of the heart was accentuated over the aortic area, and a rough systolic *bruit* could be heard over the tumour and lower left chest, but could not be heard behind. The patient was kept under medical treatment for a month, but as the tumour rapidly increased in size and pulsated more vigorously, Dr. Lumsden requested me to take charge of the case, with a view to operative treatment, as the patient and his relatives were extremely anxious that something should be done, no matter how risky the procedure might be.

Operation.—On July 22nd, 1903, ether having been administered, the abdomen was opened by an incision extending from the ensiform cartilage almost to the umbilicus. The aneurysm was found to be very large, filling the whole left cupola of the diaphragm, pushing the liver over to the right; the stomach was stretched like a strap across its lower and left aspect; the gastro-hepatic omentum was incorporated with its anterior wall. No aorta could be felt above the tumour, which appeared to insinuate itself between the crura of the diaphragm, but below the transverse mesocolon the aorta could be easily made out. The small tumour, felt clinically, was the overhanging lower margin of the large aneurysm, which at this point appeared very thin-walled and progressive. A pursestring suture of No. 4 plaited silk was now passed enclosing an area the size of a shilling on the anterior aspect of the tumour, and the ends were clipped in a forceps. The peritoneal cavity was packed off with gauze pads, and a fine trocar and cannula plunged through the sac in the area surrounded by the suture, the point of the trocar being directed towards the left and upwards. The cannula had been previously insulated by coating it with ordinary sealing wax. There are some practical points which might be here mentioned. The trocar and cannula should be sterilized by boiling, then the operator or his assistant, having sterilized his hands, holds the cannula in the flame of a spirit lamp until it is fairly hot, next he places a few drops of previously melted sealing wax on the cannula, and, by alternately rotating it and passing it through the flame, forms a thin even coat of sterile wax, which is now hardened by placing the cannula in cold sterilized water until needed at the operation. The cannula should not be placed in carbolic lotion, as this softens the wax and renders it useless. Having withdrawn the trocar only a drop or so of dark blood came through the cannula, and now a piece

of No. 28 silver wire, previously sterilized by boiling, was passed into the aneurysm, always keeping the cannula pointed to the left so that the wire might not enter the aorta. The wire passed freely through the cannula, and when six yards had been introduced the remaining portion of the wire was removed from the reel, passed through a sterilized rubber tube, and attached to the anode of a galvanic battery; the circuit was

completed by attaching the kathode to an electrode which rested on gauze pads, soaked in salt solution, which were placed on the patient's sternum. During the first five minutes the current was increased from 1 to 65 milliamperes, at which strength it was maintained for thirty minutes and then again brought to 0. The battery should be fitted with a collector which prevents the shock of make and break whilst increasing or diminishing the current. The wire was now cut short, the end pushed home, and the cannula withdrawn. Fairly smart hæmorrhage came from the cannula puncture but was easily stopped by tightening the pursestring suture. The abdomen was closed in layers by sutures of silk and silkworm gut. During the passage of the current the tumour became firmer, smaller, and pulsated much less distinctly.

After-progress.—After the operation the patient's pulse was 112 and respirations 24, but in a few days both resumed a perfectly normal rate. The temperature throughout remained normal, except on the eleventh day after operation, when it reached 101° for a few hours owing to a superficial infection of the scar, which had been healed and without dressing for some days. The after-treatment consisted of fluid in small quantities for the first ten days, then a small amount of bread and milk puddings until the thirtieth day, when he was allowed chicken, etc. For the first few days rectal injections of gelatine solution were given, but they irritated the bowel and were stopped. After the first week he was given 30 gr. of calcium chloride three times daily, but this seemed to cause dryness and itching of the skin, with branny desquamation, and was stopped in a fortnight. The patient periodically suffered from pain in the abdomen and back, for which morphine was given, but he expressed himself as feeling better than he had been for the past year, and he certainly looked well and enjoyed life very fairly. For a fortnight after the operation the aneurysm appeared bigger than before, and the heaving of the left side of the chest was very marked, but from that period onwards it grew smaller and smaller, the pulsation ceased in the chest, the heart resumed almost a normal position, and the impulse felt in the epigastrium was no longer expansile in character.

Result.—About forty days after the operation he complained of pain in the point of his left shoulder, which became constant and severe, needing repeated injections of morphine for its relief. On the forty-fifth day he vomited several times; on the forty-sixth day he vomited blood and became weak; on the forty-seventh day he became progressively weaker and died.

Necropsy.—Leave was with difficulty obtained to reopen the abdominal wound and examine the aneurysm. The stomach and intestines were

Fig. 1.—A, stomach; B, aneurysm; C, aorta; D, pancreas; E, superior mesenteric artery; F, renal artery.

Fig. 2.—A, stomach; B, aorta; C, laminated clot and wire; D, right renal artery.

found full of blood. The aneurysm, stomach, and adjoining parts were removed for dissection.

The three accompanying drawings and the specimens show clearly the conditions found. Fig. 1 is a back view of the aorta, aneurysm, and stomach. The aneurysm is pear-shaped, about 4 in. long and $3\frac{1}{2}$ in. wide; it springs from the anterior wall of the aorta at the origin of the coeliac axis, and communicates with the aorta by an opening $1\frac{1}{2}$ in. long and $\frac{3}{4}$ in. wide; immediately below the aneurysmal opening are the openings of the two renal arteries and superior mesenteric artery, which are indeed actually springing from the base of the aneurysm; the aorta below the aneurysm is small, compared to that above, but the portion removed appears free from disease.

Fig. 2 shows the antero-lateral aspect of the aneurysm, cut open, and demonstrates the immense thickness of a firm laminated clot which had formed, almost filling the sac, and the small central cavity filled with a few coils of wire and more recent but yet *ante-mortem* clot. The six yards of wire are well covered in the organized clot, as only one or two loops are visible in the centre of the section, thus proving that the clot formation was subsequent to the operation.

Fig. 3 shows a left lateral view, the stomach being laid open from cardia to pylorus; it shows that the aneurysm had opened up the gastro-hepatic omentum, and that the lesser curvature of the stomach actually forms part of the sac; the cardia is acutely bent over the upper end of the aneurysm, and about $1\frac{1}{2}$ in. from it, in the centre of the adherent lesser curvature, is a round ulcer, about the size of a shilling, through the base of which shreds of organized clot protrude; on introducing a finger, deeply into it coils of wire can be felt firmly imbedded in the clot which fills the sac.

REMARKS.

The appearance of the specimen when fresh, and indeed even now, suggests that the fatal issue was due to ulceration spreading from the stretched portion of stomach, and not from progression of the aneurysm, which, but for the unfortunate position of the stomach in relation to it, was evidently fairly on the road to permanent cure, by consolidation and organization of its contents. I will not discuss the subject of the Moore-Corradi method further, but will leave this case to speak for itself, as most certainly the conditions here found plead better than I could for a further trial of this ingenious operation. In this case the branches of coeliac axis could not be traced, and, although certainly obliterated, no serious symptoms followed as collateral circulation had already been established.

From time to time some daring surgeons have ligatured the abdominal aorta, and I find 13 cases of permanent proximal ligature of the aorta have been recorded; 9 of these were for iliac aneurysm; 2 for haemorrhage from the iliac artery and 2 for aortic aneurysm. All these cases ended fatally, in from a few hours to forty-eight days, from shock, secondary haemorrhage, or gangrene and sepsis. The two cases in which the operation was performed for aortic aneurysm deserve consideration, as the operators have made most useful suggestions.

Milton,¹⁹ of Cairo, ligatured immediately below the renal arteries, in a case of ruptured aneurysm of the mesenteric region, with a fatal result on the following day from anaemia and shock. Milton suggests that temporary proximal compression might be applied to the aorta by means of an elastic band passed through the lumbar muscles, the ends off the band, protruding behind, being drawn on at will.

W. W. Keen²⁰ ligatured above the renal arteries, for a ruptured aneurysm of the mesenteric region, with a fatal result on the forty-eighth day from secondary haemorrhage. He

has since made experiments upon dogs, and suggests that temporary proximal clamping of the aorta could be used, and has devised an instrument for this purpose. He states that, in dogs, the aorta may be clamped for as long as twenty-four to one hundred and ten hours without causing permanent changes in the parts below the obstruction. More lately Robert T. Morris²¹ records a case in which he used a distinctly new procedure, namely temporary distal ligature by means of a rubber catheter passed around the aorta, at a point 2 in. below the aneurysm, and $1\frac{1}{2}$ in. above the aortic bifurcation. He removed the constricting band in twenty-seven hours, the aneurysm being completely consolidated, but unfortunately the patient died three days later from sepsis due to sloughing of a piece of intestine which had been injured by the clamp which secured the catheter. This method seems well worthy of further trial.

R. T. Stratton²² records several experiments made upon dogs, and advocates the gradual occlusion of large arteries by means of a waxed tape, worked on the principle of an *écraseur*, being tightened or rendered slack by means of a special instrument. The latest suggestion which has been made is that of Rudolph Matas,²³ who has devised—and practises—an operation in which, during proximal control of the circulation,

the sac is laid open, cleared of clot, a portion isolated to represent the original vessel, and the rest of the walls infolded by means of several layers of sutures. He has performed this operation successfully four times in aneurysms of the extremities. R. T. Morris²⁴ has used this method in a fusiform aneurysm of the popliteal artery, and thinks that it could be easily applied to abdominal aneurysms. Doubtless many abdominal aneurysms are beyond receiving benefit from any form of treatment, but I think that, with a careful choice of one of the methods of operation mentioned in this communication, we may yet save a fair proportion of these cases which are by many considered doomed to certain death.

Fig. 3.—A, pylorus; B, point of rupture; C, cardiac orifice; D, interior of stomach; E, aorta.

REFERENCES.

- ¹ *Lancet*, October 6th, 1900. ² *Trans. Clin. Soc. Lond.*, 1886. ³ *Annales de Derm. et de Syph.*, January, 1897. ⁴ *Münch. med. Woch.*, December 12th, 1899. ⁵ Maunsell, *Trans. Roy. Acad. Med. Ireland*, vol. xvii, 1899, p. 460. ⁶ *Ibid.*, vol. v, 1887. ⁷ *Dub. Med. Press*, vol. xxvii, p. 81. ⁸ The Successful Treatment of Internal Aneurysm by Consolidation of the Contents of the Sac, London, 1875. ⁹ *Bulletin de l'Acad. de Méd. de Paris*, 1897. ¹⁰ *Med.-Chir. Trans.*, vol. xlvii, p. 129. ¹¹ *Memotres Roy. Acad. Bologna*, vol. 6, series iv. ¹² *Bulletin Johns Hopkins Hosp.*, November, 1900. ¹³ See detailed list, *Trans. Roy. Acad. Med. Ireland*, vol. xxii, 1904. ¹⁴ *Lo Sperimentale*, April, 1879, pp. 445. ¹⁵ *Loc. cit.* ¹⁶ *Philadelphia Med. Journ.*, November 12th, 1898. ¹⁷ *American Medicine*, June 22nd, 1901. ¹⁸ *Loc. cit.* ¹⁹ *Lancet*, 1891, vol. i, p. 85. ²⁰ *Amer. Journ. Med. Science*, September, 1900. ²¹ *Annals of Surg.*, vol. xxxiv, p. 207, 1902. ²² *Ibid.*, August, 1903, p. 256. ²³ *Ibid.*, February, 1903, p. 161. ²⁴ *Ibid.*, October, 1903, p. 493.

THE UNITED STATES AND UNDESIRABLE EMIGRANTS.—A Bill is now before the New York State Legislature which provides for a State Board of medical experts to be stationed at Ellis Island to inspect immigrants, for the purpose of excluding those who exhibit such evidences of mental decline as would warrant the probability of their becoming public charges. It is believed that the United States Commissioner of Immigration favours the proposition, and that the necessary permission can be obtained from the Government.