CONTEMPORARY ITALIAN SURGERY.

BY PROF. RAFFAELE BASTIANELLI, ROME.*

General Surgery. — *Disinfection.* — Puccinelli¹ has made extensive researches on the bacterial flora of the atmosphere and of the operative field in a theatre more or less crowded with students, and found that after one hour a Petri capsule exposed open near the patient presented 242 colonies as an average, while only four colonies could be counted in the same room when empty. Among the fifteen varieties of germs identified, the micrococcus aureus, hæmolytic and virulent for rabbits, was present only once, and occasionally he found non-virulent *M. albus* and *citreus*; but other species of non-pathogenic germs were generally abundant. On the skin of the patient, treated with tincture of iodine, at the end of the operation the same germs could be found as before the sterilization, among them being the *M. pyogenes albus*, *citreus*, and *aureus*. In the depth of the wound the same skin germs were always scanty.

Aperlo² prefers Ahlfeld's method for the disinfection of the hands, and attributes to the alcohol the greatest importance in diminishing the number of germs on the skin. A bacteriologically complete asepsis for the hand and skin cannot be maintained during the course of an operation. Gloves are necessary.

Pellegrini has had very good results in disinfecting the skin with chlor-alcohol 0.26 per cent, which is obtained by letting liquid chlorine bubble freely through dehydrated alcohol. The chlor-alcohol is non-irritating, non-staining, and gloved hands can be washed in it with no damage to the rubber.

Fossati³ prefers a solution of chlorothymol in alcohol, Monzardo⁴ an alcoholic 5 per cent solution of thymol, Crucillo⁵ tincture of iodine 6 per cent.

General Narcosis.—Virno,⁶ instead of giving ether or chloroform by the open method, lets the patient breathe under a thick towel the vapours emanating from an ether or chloroform bottle in which a wick is put, as in a lamp, and in proportion to the length of the wick drawn out, more or less vapour is given off, so that the narcosis can be easily graduated. A small quantity of anæsthetic is required, and the narcosis appears to proceed quietly.

Insufflation Anæsthesia is studied by d'Avack⁷ and by G. Egidi.⁸ Both present new simple apparatus and clinical cases.

Grafts.—Fieschi⁹ has made experiments with pieces of rubber sponge put in the peritoneum and in the muscles of dogs, and found that the sponge is penetrated by granulations and tolerated perfectly by the tissues. Hence the idea of using it to fill gaps in the organs. He used it with good results in the shape of a bottle-stopper in femoral hernia to fill up the crural canal.

Stomach and Intestine.—*Ludwig's Angina.*—Puglisi Allegra¹⁰ reports three cases treated with intramuscular injections of electro-argol (10–15 c.c.).

* I am greatly indebted to Dr. G. Pieri for collecting the literature.

Gastric Ulcer.—Treatment, according to Schiassi,¹¹ when surgical, should if possible be excision, and he gives details of his technique. Arcangeli¹² describes acute post-operative dilatation of the stomach and its pathogenesis. Solieri contributes an article¹³ on the causation of hyperchlorhydria associated with appendicitis. Ponzio¹⁴ describes the characters in *x*-ray photography which allow the bilocular stomach due to a non-malignant disease to be distinguished from those due to cancer of the middle of the organ.

Exclusion of the Pylorus is no longer performed by Parlavecchio¹⁵ with a silk thread but with a tape, and Randis and Toppolo,¹⁶ to prevent adhesions, cover the tape with a layer of organic tissue (omentum or aponeurosis). Experiments of Baggio¹⁷ show that whatever may be the procedure, all these ligatures around the pylorus have only a temporary effect, and Parlavecchio's tape should be preferred, and according to Nasseti,¹⁸ the Wilms aponeurotic ligature is not efficient.

More radical is the method of Mariani,¹⁹ who in cases of gastropptosis with gastrectasia, performs the exclusion of the pylorus and the gastropexis by sewing the pylorus in a buttonhole made in the rectus muscle of the right side.

Gastro-enterostomy with galvanic wire without opening of the stomach and intestine is studied by Meneghini.²⁰

Intestine.—Crosti²¹ and d'Alessandro²² found that, instead of the usual intestinal sutures, the Michel clips can be quickly and safely used (eight new cases with one death).

Clinical studies on multiple sarcoma of the small intestine, and on intestinal invagination, are respectively contributed by Cartolari²³ and by Vaccari.²⁴ The pericolic membranes and their importance are extensively treated in articles by Tosatti²⁵ and by Leotta.²⁶

In intestinal obstruction, severe alterations of the pancreas have been studied by C. Santini.²⁷ He thinks that these are due to obstruction of the venous circulation, and that they contribute in large measure to the fatal result of the occlusion, wherever it may be located.

The treatment of cancer of the colon is reviewed by R. Bastianelli²⁸ from his Report to the International Congress in London, 1913.

Liver and Spleen.—Giordano²⁹ contributes an article on the treatment of traumatic lesions of the liver, and Colleoni one on the subject of liver excision (tumour of the left lobe removed, with multiple ligature and cautery).

Extensive excision of the common duct was experimentally repaired with success in dogs, by Noferi,³⁰ by grafting a piece of ureter.

Cases of Splenectomy for various diseases are contributed by Parlavecchio,³¹ who, when the spleen could not be removed in consequence of adhesions, has sutured a portion of spleen in the wound, and destroyed it progressively with thermocautery, or with electrolysis. This operation he calls esospelenolysis, and it was performed by him twice. Also cases for Banti's disease by Buzzi,³² for malarial enlargement by Cartolari,³³ for hæmolysis by Fieri,³⁴ for torsion of the pedicle by Fata,³⁵ for pelvic ectopia with enlargement by Cormio.³⁶ A special form of splenomegaly characterized by anæmia and enlargement of the spleen, and due to a chronic thrombophlebitis of the splenic vein, was described by Tansini and Morone.³⁷ Clinically nothing distinguishes this form from a primary splenomegaly. In their case the spleen was removed

and a Talma operation performed (ascites was present), with cure still complete after three years.

Hæmorrhage from wounds of the spleen, if superficial, can be arrested, according to Ricci,³⁸ by elastic compression of the pedicle for four hours; if deep, even eight hours' compression is useless. These results are against Sheldon's experiments.

In excision of the pancreas, Chiarugi³⁹ maintains the superiority of implanting the cut end of the pancreas into the intestine over the methods of intra- or extra-peritoneal treatment of the pancreatic stump.

Peritoneum—Omentum—Herniæ.—The old question of the surgical treatment of *peritoneal tuberculosis* is examined anew by Guaccero,⁴⁰ who is in favour of laparotomy in cases of tuberculous ascites. He thinks that the mechanical factors of the laparotomy are useful for the radical cure, especially when the peritoneum is thoroughly dried with sponges and washed with peroxide of hydrogen 5 per cent. The peroxide treatment was previously recommended by Grocco, and performed with success through a bilateral paracentesis, by Cionini and Marcantoni, in twenty-nine cases.

To perform a permanent drainage of *cirrhotic ascites*, Mantelli⁴¹ has sutured one end of a piece of saphenous vein to the peritoneum, leaving the other end free in the thigh, with a good result.

Brunetti⁴² has collected all the literature, and gives a complete clinical and pathological review of *mesenteric tumours*, adding to the existing cases many from Bastianelli's clinic.

Cartolari⁴³ publishes an extensive study on mesenteric and retroperitoneal blood-cysts.

Hernias.—Contributions on vesical hernia are given by Putzu,⁴⁴ on the pectineal hernia by Mantelli,⁴⁵ and on the treatment of strangulated hernia by Egidi,⁴⁶ who has collected 164 cases from Bastianelli's clinic, giving details of the local anæsthesia as used in that clinic, and technical details for the resection of gangrenous gut.

Modifications in the technique of hernia operations are suggested by Santini,⁴⁷ who in the direct hernia forms a pedunculated flap from the aponeurosis of the external oblique muscle to close the opening in the transversalis fascia; by Crosti,⁴⁸ who in femoral hernia cuts the iliac fascia to expose the crural nerve and to make the suture of Poupart's ligament to the pectineal fascia easier; by A. Santucci,⁴⁹ who, instead of separate transverse stitches uniting the muscles to Poupart's ligament, applies a row of U stitches going through all the layers and knotted on the external aspect of the external oblique aponeurosis. These stitches do not impair the circulation of the muscular fibres, being parallel to them.

R. Bastianelli⁵⁰ describes the antefunicular reconstruction of the abdominal wall, closing the internal ring with a peculiar stitch; also a plastic operation for direct hernia, displacing the cord under the skin and closing completely the external ring.

Lungs and Chest.—On surgery of the lungs, Porta⁵¹ contributes a very thorough monograph, with numerous cases from Biondi's clinic.

Lerda,⁵² instead of performing thoracotomy through an intercostal space, makes a transverse division of the 6th to the 9th ribs, exposing the base of the

lung, which can be sutured either on the upper or on the lower border of the wound, according to the necessity of the case.

Operations on the diaphragm have been studied by G. Giordano,⁵³ who is in favour of a thoracic approach, using the Auer-Meltzer anæsthetic method or the pneumatic chamber. When large portions of the diaphragm must be removed, it is possible to cover the gap with large free aponeurotic grafts.

Heart Wounds have been reviewed by Leotta,⁵⁴ who contributes a successful case of his own.

Blood-vessels.—Reversing of the circulation in the lower limbs (Wieting's operation) was performed by Nassetti⁵⁵ with only temporary success. He gives a study of the questions, with conclusions against that operation, while Doria,⁵⁶ publishing five new cases from Biondi's clinic, would restrict its scope to a few well-selected cases.

The Trendelenburg operation for embolism of the pulmonary artery can be accomplished more quickly (in 30 min.) according to Giordano and Rodano,⁵⁷ by using intratracheal insufflation, making a large opening in the third intercostal space and the pleura, and clamping and cutting through one wall of the artery by means of a special instrument, before encircling it with the elastic tube.

Vascular Grafts have been studied by Castiglioni,⁵⁸ who found that in autoplasmic grafting the preservation of function and structure are perfect, while in the homoplasmic the structure undergoes important changes, and in the heteroplasmic graft, thrombosis follows as a rule. Practically, indications for vascular grafting are limited. In a case of large popliteal aneurysm, excision and autoplasmic grafting with 15 cm. of the saphenous vein was successful.

Ligating large Vessels with thread is sometimes followed by bad accidents, and to avoid them Nassetti⁵⁹ used in experiments aponeurotic or tendinous strips (Halsted did the same later), or their lumen can be diminished by infolding one wall with a double transverse stitch, as Scalone⁶⁰ did. It is claimed by Chiasserini⁶¹ that loss of substance in arteries can be patched with aponeurotic free flaps.

Circular Suture of vessels can be accomplished, according to Porta,⁶² by cutting in each end four small quadrangular flaps, which are united intima to intima by a stitch with double thread put at the base of each and knotted on each side of the flap. If small gaps should remain between the flaps, they can be sewn by separate stitches.

Experimental Studies on traumatic aneurysm of the aorta have been performed by Dominici;⁶³ and the end-to-side anastomosis between vena cava and vena porta, was done by Perroncito⁶⁴ with a special instrument.

Uffreduzzi and Giordano⁶⁵ have also made extensive researches on the surgery of the aorta.

Urinary System.—*Hydronephrosis*, when old, closed, and difficult to remove, could be treated, according to Formiggini,⁶⁶ by ligature of the renal vein. This has not yet been tried on man.

Ceci⁶⁷ removes renal tumours systematically through a lumbar abdominal incision, opening the peritoneum to explore the anatomical conditions.

Pyelotomy for the removal of stones should be preferred to incision of the renal substance, according to R. Bastianelli,⁶⁸ even if the stones are large and

if the kidney is not easily brought into the wound. Plastic closure of the wound in the renal pelvis by means of a fibrous fat capsular flap was performed by him with success, but he insists on the fact that even large openings in the renal pelvis, left alone without suture and without plastic closure, will heal perfectly, if the kidney is left without drainage in its fatty capsule.

Bladder Extrophy.—The treatment of this condition has been the object of new and interesting operations.

Lerda⁶⁹ believes that our aim should be the reconstruction of the bladder, and the formation of a new channel, under the control of the sphincter ani, but not communicating with the rectum. He has formed from the perineum a tubular channel constructed from a skin flap which was introduced between the anterior margin of the sphincter ani and the dissected anterior rectal wall; this was extended to the base of the bladder and connected with it. After some days the bladder was closed. The result was not satisfactory owing to the congenital weakness of the sphincter.

More radically Taddei⁷⁰ proposes a deviation of the urine, by implanting the trigonum into the excluded cæcum, which is drained outwards by an appendicostomy.

Our experience in such cases is that the simple Maydl operation will do just as well, as all the more complicated and most ingenious devices.

Bladder Tumours.—The treatment should be a more radical one, even in cases of apparently benign papillomata with large bases. Resection of the entire thickness of the bladder wall with the tumour is advocated as a rule by R. Bastianelli,⁷¹ who related two cases of complete excision of the bladder. One was successful. The ureters should not be implanted into the rectum or in the bowel, but left in the bottom of the drained wound. A suprapubic fistula remains which can be kept dry by an appropriate apparatus.

Nervous System.—The usual methods of *decompressive trepanation* have, according to Stoppato,⁷² many inconveniences, which can be removed by forming a large osteocutaneous flap on the parietal eminence, with a narrow (3 cm.) pedicle including the arteria temporalis. The bone must be cut with a chisel, or sawn in quadrilateral form, 8 cm. long, 6 cm. broad, and then it has to be rotated on itself forwards by 45°, so that its angles will overlap the surface of the adjacent bone, leaving only small corners uncovered by bone. The flap will in time become adherent to the bone, and protect the brain, it being impossible for it to sink inwards or compress it. This rotation of a large curved piece of bone enlarges the capacity of the skull by 2 cm. in height. The same flap could be cut on the frontal or on the occipital eminence, according to the circumstances. How the dura should be treated as a rule he does not say; but even excision seems to be possible, without injury of the brain, as the bone would directly come in contact with the brain and prevent adhesions with the skin.

Rocchi⁷³ is in favour of a complete removal of a piece of bone, either opening the dura in one of the usual ways, or only excising some few small strips between the vessels, so that the brain is protected and supported, and the cerebral fluid can have free escape.

Removal of pineal tumours, and especially puncture of cystic tumours of this gland, has been studied by Nasseti,⁷⁴ who believes that through a large

occipital approach, pushing to one side the occipital lobe, and having as a landmark the splenium corporis callosi, it is possible to puncture a cyst.

To perform Franke's operation (removal of posterior root ganglia), Uffreduzzi⁷⁵ proposes to go through the pleura, as its opening under intra-tracheal insufflation or in a pneumatic chamber has no danger. The *thoracotomy* makes the operation easier and quicker. In three cases of spastic paralysis, Buccheri⁷⁶ has resected the posterior roots (Foerster's operation), with three deaths.

Successful cases of *spinal facial anastomosis* (i.e., union of facial with spinal accessory nerves) are contributed by Serafini⁷⁷ and by Pomponi.⁷⁸

Bones and Joints.—*Bone transplantations* are performed frequently in Italy. I will point only to the clinical contributions given by Putti,⁷⁹ by Galeazzi,⁸⁰ and to the experiments of Gazzotti,⁸¹ who has studied the value of fibula transplantations to reproduce bone continuity. In cases of pseudoarthrosis this procedure has not been always successful.

The open treatment of fractures is generally reserved for a few selected cases, a conservative treatment being practised by Italian surgeons.

When resorting to an operation, it may be useful to apply traction through a nail in the calcaneum as Codivilla taught first;⁸² or according to Pieri,⁸³ to unite the bones, after open reduction, with a large bipointed angular nail which is inserted from outside into the fragments and removed in due time. Muzi⁸⁴ prefers to unite the fragments with a strong quadrangular rubber band, which, having been pulled tight through them, will maintain the apposition better than wire or plates.

Osteitis fibrosa or cystic disease of the bones has formed the subject of a clinical and pathological contribution by Perez.⁸⁵

That peculiar disease described by Schlatter as a fracture of the tuberositas tibiæ in adolescents, is interpreted by Bassetta⁸⁶ not as fracture but as an inflammatory bone formation due to the pull of the tendon.

Under the name of cinematic amputation, Vanghetti described many years ago a method by which the muscles and the tendons of the stump are prepared and connected together in such a way as to be of some use for moving artificial limbs and even for holding working instruments. The idea has found strenuous advocates in Ceci, Codivilla, and others, and from time to time modifications of it are published in our country. Dalla Vedova,⁸⁷ performing the supracondylar amputation of the femur, first cuts an osteo-cartilaginous flap from the anterior aspect of the condyles, leaving it attached to the periosteum, and then saws the femur transversely. The flap is turned back on the femur, and the patella with intact cartilage is put on it, and maintained in place by suturing the patello-tibial ligament to the posterior tendons of the thigh. In this way the femoral stump is covered by the patella like a cap, on which the antagonistic muscles of the thigh can still exercise their action.

To fill up bone cavities, Pieri⁸⁸ removes their lateral walls completely, forming cutaneous periosteal flaps which are turned down and sutured on the bone. After excision of the lower jaw, very good cosmetic and functional results can be obtained by applying in the wound a heavy tin prosthetic apparatus⁸⁹ which will distend the scar and keep in place by its own weight and form.

Partial and complete *joint transplantations* have been studied experimentally by Pucci,⁹⁰ who concludes that to the stumps of a resected joint can be grafted with success the entire joint taken from other animals, suturing their periosteum exactly to the periosteum of the stumps. The graft will live by itself without being replaced by new bone. The experiment is successful even with grafts eight days old, if suitably kept.

According to Giani⁹¹ the transplanted epiphyseal cartilage does not continue to grow and cannot contribute to the growth in length of the bone. In performing arthrotomy, arthrectomy, and even limited excision of the articular surfaces, the epiphyseal cartilage does not suffer any damage, while if the excision is deeper, even if the growing cartilaginous layer is not removed, there are atrophic changes due to the changed conditions of vascular supply.⁹² *New ligaments* can be best made artificially by free or pedunculated periosteum strips.⁹³

Arthroplasty has been practised in twenty-one cases by Putti⁹⁴ with some good results, by interposing free aponeurotic flaps between the prepared extremities of the ankylosed joint (Codivilla's method).

This report is confined chiefly to practical matters. To give a review of the many other subjects less directly practical, and more of a general pathological character, would require many pages. I will only further direct attention to the researches and clinical reports on tumours, which may be found collected in a journal specially devoted to that subject: *Tumori*, Tipogr. Senato, Roma.

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