with whom rests the responsibility of approving or otherwise, while in the case of a vessel no such provision obtains.

As a general rule, in designing a vessel a certain space is set aside for the crew, and when she is completed this space is utilised in the best way possible by an artisan without reference to the sanitary authority and without any control, except that exercised by the Board of Trade under the powers limited (from a sanitary point of view) of the Merchant Shipping Acts.

The arrangement and fitting of crews' quarters under the supervision of a sanitary authority, advised by an expert, would be a benefit both to owners and seamen, and would be of great value in preserving the health of those on board. The constant and close supervision of vessels while lying in port, and the prompt abatement of all nuisances and conditions likely to prove injurious to health, are essential. A foul ship is itself more to be dreaded than anything she may have on board.

The United States Government have always laid great stress upon the sanitary condition of vessels leaving foreign ports for their shores. They require a bill of health with actual information as to the health of the vessel on leaving.

Rohé quotes as an illustration of the value of this system from a report by the medical officer of the Marine Hospital at Naples that eight vessels left that port during the year 1893, when cholera was epidemic. These vessels were under similar conditions as to water supply and food, and carried passengers of similar class and origin. In four leaving without any sanitary conditions, there were 50 deaths, 90, 84, and 230 respectively. Of the four leaving for the United States on which sanitary precautions were compulsory, one which left before cholera was declared had 3 deaths, the other three had none: and further, every vessel leaving Naples had cases of cholera on board except those on which these regulations were carried out.

LEFT TRAUMATIC SUBCLAVIO-AXILLARY ANEURYSM CURED BY LIGATURE OF THE THIRD STAGE OF THE SUBCLAVIAN ARTERY.

By FRANCIS T. HEUSTON, M.D., F.R.C.S.I.,
Senior Surgeon to the Adelaide Hospital, Dublin.

A. N., a pensioner, aged 50 years, was placed under my care at the Adelaide Hospital by my friend Surgeon-Major F. A. B. Daly. He had served in the army for twenty-one years, during eighteen of which he was in the band as a clarinet player, and was discharged from the service in July, 1887, in good health. In the summer of 1892 a heavy board fell on his left shoulder, and although he had no pain until May, 1895, he attributes his affection to this accident. In November, 1895, he consulted Surgeon-Major Daly for pain in the left shoulder, clavicular and scapular regions. The superficial veins over the left clavicle were slightly enlarged, and a slight difference was noticed in the radial pulses, but no *bruit* could be obtained; aneurysm being suspected, he was given large doses of potassium iodide, and his diet was regulated. This treatment gave such relief that he resumed his work as night porter at the United Service Club.

In January, 1896, the pain in the shoulder and back returned with increased violence, and at times shot down the left arm and to the region of the diaphragm. He was then admitted to a civil hospital in this city, but was soon discharged without relief, his case not being recognised. He then again consulted Surgeon-Major Daly, who found his symptoms to be much better marked than when he saw him before, and that a well-marked tumour had developed in the left posterior inferior triangle of his neck.

The patient was admitted to the Adelaide Hospital under my charge on February 26th, 1896. He is a well-built, healthy-looking man, and states he has a severe continuous pain in his left shoulder and back, in the region of the scapula. This pain is relieved by placing his arm over his head. The left arm is greatly swollen and oedematous, its superficial veins are markedly distended and tortuous, the

left clavicle is raised and the supra- and infraclavicular depressions obliterated owing to a tumour which occupies the subclavian triangle and the axilla as far as the lower border of the pectoralis minor. This tumour has a distensible pulsation, and well-marked *bruit* and thrill. There is marked difference between the right and left radial pulse, and visible pulsation of the carotid and brachial arteries.

Ligature of the subclavian artery being decided on, the usual transverse incision for exposing the third stage was made, and the artery exposed as it passed from beneath the scalenus muscle. It was of normal appearance, but its sheath was very adherent. A strong catgut ligature was passed round the vessel and tied, the ends of the ligature being removed, the deep structures were united by catgut hidden sutures, and the skin by silkworm. The wound was dressed with zinc sulphite gauze, and the arm swathed in cotton wool.

The subsequent progress requires little note; the wound healed by first intention, although a stitch abscess occurred at the site of the most anterior skin suture. Pulsation returned in the radial artery on the eighth day after operation, and the patient left hospital on the twenty-third day to resume his duties at the United Service Club.

The patient was shown at the Surgical Section of the Royal Academy of Medicine in Ireland on May 1st, two months after operation. Since leaving hospital he had been engaged at his usual work as night porter at the United Service Club. The left radial pulse was small, but the artery was of good tension. The tumour had lessened considerably in size, and had no pulsation or *bruit*. All the other symptoms had disappeared. Eleven months have now elapsed since operation, and the patient continues in perfect health.

On referring to Edmond Souchon's article on Aneurysms of the Subclavian Arteries in the *Annals of Surgery* for November and December, 1895, it will be found that out of 120 aneurysms of the third stage of the artery, 35 implicated that of the left, and 85 that of the right side, and that of 31 traumatic aneurysms operated on by proximal ligature 19 recovered (about 66 per cent.), 4 of those being on the right and 15 on the left side.

A CASE OF REUNION OF TENDON NEARLY FIVE YEARS AFTER ITS DIVISION, WITH GOOD RESULT.

By R. CARMICHAEL WORSLEY, M.R.C.S., L.R.C.P.,
Ramsgate.

L. B., a cook, in 1890, when aged 30, broke a window and cut her right wrist badly. The wound was six weeks in healing, some fragments of glass working out. The thumb, index finger, and middle finger afterwards became firmly flexed into the palm. A year after the accident, the tendons of the index and middle fingers were cut down upon and reunited by suture, with good result, after long extension on splints; the extension movements of the index finger, however, remained weak and imperfect. In December, 1895, the thumb was strongly adducted and flexed into the palm. The extensor *primi internodii* and extensor *ossis metacarpi pollicis* had escaped division, but the extensor *secundi internodii pollicis* had been cut, and its retracted ends could be obscurely felt in the scar tissue on the radial side of the wrist.

On January 16th, 1896, assisted by Dr. Bowden and by Dr. Tamplin, who gave the anæsthetic, I cut down on the scar, having made the limb bloodless, and found the ends of the tendon separated by $1\frac{1}{2}$ inch of fibrous tissue traversing the scar. This band contained in its centre some gelatinous-looking substance, which on microscopic examination proved to consist of a few genuine tendon bundles running through the fibrous material. It was impossible to bring the ends of the true tendon together without splitting them, and as I was anxious to obtain strong union I excised an inch only of the fibrous band, and brought the ends together with one stout and two fine silk sutures. Rigid antisepsis was aimed at, and the forearm and hand placed upon a splint, with the thumb over-extended on a wire arm. The wound healed by first intention. There was very severe pain for a long time up the

forearm and arm, owing to stretching of the flexors, which had been so long contracted. This pain had prevented my practising any continuous extension preliminary to operation. Morphine gave but little relief, and insomnia was troublesome. After a week, very gentle passive movement was begun and kept up daily for a minute or two, the thumb being kept over-extended on the splint. On the nineteenth day a new splint was applied, fitting the radial side of the forearm, and fixing the thumb out, while the fingers had freedom, and the patient was able to do her work. In three weeks from the operation she was able to perform feeble extension of the thumb, but flexion took place if it was left off the splint. The constant current was now applied to the muscle for ten minutes daily (15 cells Leclanché).

Three months after operation the thumb became loosened from the splint in the night, and contracted towards the palm, but not to the former extent. It was secured and always kept on the splint except when exercised and galvanised daily.

In June, 1896, improvement continued, but slowly. If the bandage was taken off the thumb became flexed and adducted to beyond the line of the index finger. Movement in the direction of extension was stronger, however. There was still some pain in the forearm.

In October the patient could leave off the splint for fifteen to twenty minutes, and use the thumb a little. She was advised to take the splint off frequently and exercise the muscles. The current from ten cells was used. On October 27th the patient wrote a letter, using the thumb. On November 1st the splint was off for three-quarters of an hour, and she had a light steel spring attached to the thumb, rivetted to a leather wrist strap, which exerted a pull equal to 3 ounces. The tendon could be distinctly felt, with some thickening at the site of union. Since the operation the extensor indicis is much stronger, which I attribute to the disturbance of the adhesions throughout the old scar which then occurred.

At the time of writing—November, 1896—the thumb is practically, except for a little weakness, as good as the other one, and the patient will very soon, I hope, be able to dispense with all artificial support.

REMARKS.

I have thought this case worth recording in view of the long time that had elapsed since the division of the tendon, and the resulting confirmed deformity, which had induced more than one surgeon to advocate amputation. The ultimate good result I attribute to: (1) Early passive movement, very limited in extent, and gentle, not enough to disturb union of the tendon, but sufficient to prevent its adhesion to the scar tissue, there being no tendon sheath present. (2) Perseverance in over-extension of the thumb on splints, to overcome the action of the long-contracted flexor muscles. (3) Daily application of the constant current to the extensors of the thumb, long disused, and persistence in active exercises of the same muscles.

THE BACILLUS OF FRIEDLAENDER IN PHARYNGITIS AND TONSILLITIS.

By W. C. C. PAKES.

Assistant Demonstrator of Bacteriology at Guy's Hospital.
[From the Laboratory at Guy's Hospital.]

MM. NICOLLE and Hébert have published an account¹ of the occurrence of the pneumobacillus of Friedlaender on the throat of patients suffering from tonsillitis, follicular tonsillitis, or membranous pharyngitis. Upwards of 1,600 serum tubes inoculated from the throats of patients were examined by them, and they found the pneumobacillus of Friedlaender eight times, six times alone. Since November, 1894, upwards of 500 serum tubes inoculated from the throats of patients in the wards or out-patients of Guy's Hospital have been examined. In 5 cases I have found the bacillus of Friedlaender; twice it was found on the surface of the serum in pure cultivation, twice in association with the Klebs-Loeffler's bacillus, and once with the staphylococcus aureus.

BACTERIOLOGICAL EXAMINATION.

In each of the 3 cases which were not pure on the serum I

succeeded in obtaining pure cultures on the second subcultivation by inoculating three agar tubes from the once inoculated platinum spatula. The morphological characters which they exhibited were:

1. Non-motility.
2. Polymorphism.
3. Decoloration when stained by Gram's method.
4. The presence of a well-developed capsule, especially when taken from the heart blood of the inoculated mice after death.

The cultural characters were as follows:

1. Whitish, semi-translucent, sticky growth in bouillon.
2. Aerobic and anaerobic growth in gelatine, causing no liquefaction.
3. Whitish, moist, raised growth on slanted gelatine, the growth slipping to the bottom of the tube after four or five days.
4. Abundant gas production in glucose gelatine shake cultivation.
5. Slimy and almost transparent growth on agar and blood serum.
6. Formation of acid in dilute lactose bouillon.
7. Coagulation of milk with an acid reaction (in 4 cases before the ninth day, in 1 case on the eleventh day).
8. Brownish abundant growth on potato.

Pathogenicity.—Mice were inoculated at the root of the tail with a small quantity of a young agar culture from each case. In 2 cases the mice were dead on the second morning; in the other 3 cases they were dead on the third morning. The typical capsulated bacilli were found in the heart blood and spleen of each mouse, and from the heart blood pure cultures were recovered.

My notes of the cases are unfortunately not as full as those of MM. Nicolle and Hébert. The patients were all attending at the out-patient department of Guy's Hospital, and although three of them promised to come again in about a fortnight, not one of them came.

CASES I and II were both children. There were small yellowish plugs on both tonsils, which were spreading towards one another. Klebs-Loeffler bacilli were found in conjunction with the bacillus of Friedlaender. The children were sent to a fever hospital and were lost sight of.

CASE III.—A man, aged 30, complained of a sore throat, which he had noticed for a few days. The fauces were red, and the tonsils red and swollen: there was a slight colourless exudation on both sides of the fauces. There was no constitutional disturbance, and the patient said that he felt perfectly well except for the sore throat. The cultivation on coagulated blood serum was a pure one of Friedlaender's bacillus. On the following day the throat had the same appearance, and the second cultivation again proved to be a pure one of the same bacillus.

CASE IV.—A man, aged 20, complained of a sore throat, which he had noticed for about a week. The fauces were red and injected, and there were two or three whitish plugs over the crypts of the tonsils, but no sign of membrane. The culture on blood serum was found to consist of the bacillus of Friedlaender and staphylococcus aureus. Two days later the throat was still inflamed, but less sore. A second cultivation revealed the presence of the same two organisms.

CASE V.—A girl, aged 6, was brought to the hospital because she had a sore throat. The tonsils were red and swollen, and a few plugs of whitish material were present. The temperature was 100° F. A pure cultivation of Friedlaender's bacillus was found on the blood serum. No further observation was made.

REFERENCE.

¹ *Annales de l'Institut Pasteur*, January, 1897.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

CASE IN WHICH ACUTE PAIN IN THE REGION OF THE STOMACH AND PANCREAS WAS APPARENTLY PRODUCED BY THE CONTINUOUS USE OF SACCHARIN.

A., aged 49, first seen 3½ years ago, complained of great pain in the epigastric and right hypochondrial regions. It began in the epigastrium about one hour before rising, and radiated through to the back and across the liver. It disappeared gradually after rising, and never lasted more than an hour. In bad attacks he described the pain as agonising, stabbing in character, coming on in paroxysms which lasted about two minutes, followed by a short period of comparative relief.

I saw him in one or two bad attacks, and they simulated very much biliary or renal colic. There was never any jaundice or change in the urine, nor had he ever passed gall stones. There was distinct tenderness on deep pressure in right hypochondriac region.

In spite of treatment by dietary and medicine for three months, he was no better, and had lost 1 stone in weight. He went to Homburg and took a course of the waters, but returned no better. For nine months scarcely a day passed without pain. He had lost 1 st. 6 lbs., and was very despondent. He never vomited, and took food fairly well. He consulted a physician, and his case was diagnosed as pro-