

membrane. This may in places present an irregular surface with polypoid excrescences, the condition being sometimes described as polyposis of the stomach. The chief seat of the new fibroid formation is the submucous layer. Here the fibrous overgrowth is easily distinguishable from ordinary scar-tissue in that it infiltrates without replacing the tissues both in this layer and in the muscular coat, the fibres of which are separated or segmented; they may also show some hypertrophy as the result of obstruction of the pylorus. Microscopically the fibrous bundles are found to run in all directions as in a neuro-fibroma. There are numerous well-formed blood-vessels, and collections of lymphocytes are found here and there. In five cases of this series cancer was associated with the fibromatosis, the sequence apparently being chronic ulcer, fibrosis, and subsequent development of epithelial new growth in the edge of the ulcer. The existence of cancerous change may be only discoverable on careful and prolonged microscopical examination. There is no evidence to suggest that the formation of fibrous tissue is due to syphilis or tuberculosis, the cause of the condition being presumably the entrance of some toxin or virus through the breach of surface formed by the ulcer, and the lymphatics of the part being in all probability the path of diffusion of the irritant. The disease seems to present a close resemblance to the peculiar overgrowth of fibrous tissue in the skin known as cheloid, but the authors do not discuss this analogy. The freedom of cases of duodenal ulceration from liability to this fibromatous formation and also from the development of cancer is remarkable. Distinction of fibromatosis from cancer at the time of operation is often difficult or impossible, as only prolonged microscopical investigation can prove the absence of malignant changes. The discovery of a chronic ulcer, not apparently cancerous, would warrant regarding a case as possibly fibromatous, and would, therefore, justify resection of a portion only of the viscus instead of total removal. If this be impossible, gastro-enterostomy or jejunostomy may give good results.

THE ISTITUTO MARAGLIANO.

It redounds greatly to the credit of our Italian colleagues that there exists at Genoa an excellent institution founded by Professor E. Maragliano for the study and treatment of tuberculosis and other infectious diseases. The Istituto Maragliano, as it is called, publishes annals of which the first number of the seventh volume has lately been issued,¹ and contains five communications of more than ordinary interest. Dr. G. Costantini contributes a paper on the value of Much's method of staining tubercle bacilli with a view to determine the correctness of the latter's assertion that besides the well-known Koch's bacillus, which can be stained by Ziehl's method, there is another form hitherto unrecognised, but which is virulent, is not stained in the same way, and has different characteristics. His observations lead him to the conclusion that Much's granulations represent an attenuated form of the tubercle bacillus which may develop virulency and give rise to the usual acid-fast-rod-shaped forms. From a practical point of view, Much's method is useful when the ordinary method of staining gives negative results, but there is still strong reason to suspect a tuberculous infection. The same observer conducted a series of experiments to ascertain the ultimate fate of tubercle bacilli in the blood-vessels, whether they undergo such dissolution and destruction as would point to the existence of a true bacteriolytic action. Professor Romanelli reports 16 cases treated by rectal injections of antituberculous bacteriolytic serum; these injections were well tolerated

locally, gave rise to no increase of temperature in apyretic cases, and greatly increased the specific defensive material in the blood of the patients. Dr. Sivori and his assistants give a brief note on the researches they are now making with regard to the presence of antigens and antibodies in tuberculous sputum, and another on the result of their investigations as to the different behaviour shown by diphtheritic toxin towards various kinds of antidiphtheritic serum.

BODY METABOLISM IN A SUBMARINE.

IN the *Annali di Medicina Navale e Coloniale*, Vol. I., Fasc. IV., 1913, we find an interesting record of experiments on body metabolism during a period of 24 hours' immersion in a submarine by Dr. C. M. Belli and Dr. G. Olivi of the Italian navy. The conclusions may be thus summarised: 1. Slight diminution of body weight due to increased elimination of water through the skin and lungs. 2. Appetite and digestive functions unaltered. 3. Nourishment was taken in normal proportions. 4. Assimilation and thermic equilibrium showed slight variations in one subject, remained unchanged in the second. 5. The N equilibrium showed no appreciable variation from the respiration of confined air. 6. The C equilibrium was unmodified. 7. The mineral equilibrium showed a slight loss to the body which would scarcely be attributed to the physico-chemical state of the atmosphere in the immersed submarine.

PLAGUE PROTECTION AND RAT CATCHING AT PALERMO.

PALERMO was threatened in 1907-08 with plague from Tunis. Dr. Arcangelo Ilvento, a professor in the University and port medical officer, has described in the *Archiv für Schiffs- und Tropen-Hygiene* how he endeavoured to minimise the risk. The great question was, he saw, the destruction of rats, for, as he truly says, the other animals which carry the infection of plague, as marmots, camels, and rabbits, are but rarely found on board ships. The methods of rat destruction are, as he states them, mineral poisons in food put out for them, bacterial virus, poisonous gases, cats, ratcatchers, and traps, and though he mentions the excellent success obtained by ratcatchers in England, he put his chief reliance on traps. He arranges a wire trap so that the rat falls through a trap-door which resets itself automatically. He has caught 23 rats at a time in such a trap. The bait should be carefully chosen, something attractive and different from the food generally available for rats in the vicinity. In a grain store he uses meat or fish, and in [dry Tunis water has been used with success. A female decoy is the best bait for male rats. The firm of Panchesi at Venice provided Professor Ilvento with a most useful sticky material like birdlime. He places this in a 2-inch deep layer on boards 18 inches long, 9 inches wide, with the bait in the centre. The rat, covered with this slime, gets away with difficulty, all sorts of dust adhering to it, but the fleas are thus imprisoned, a most important point, when the rat dies. In Palermo 1600 rats have been caught in four years, of which 53 per cent. were *M. rattus*, 46 per cent. *M. decumanus*, the remaining 1 per cent. *M. alexandrinus*; 60 per cent. were males; of the 40 per cent. females a quarter were with young. The commonest flea at Palermo was *Læmopsylla cheopis*; it lives on the neck of the rat, and when plague-infected is believed to be the origin of cervical buboes. *Ceratophyllus fasciatus* lives on the body and appears to cause inguinal buboes. Only 122 fleas were found on 527 rats examined to that end. This suggestive work is clearly capable of extension, when verification of some of the apparent results would follow.

¹ Genoa: Piazza del Popolo 11.